



**FOSTERING INFRASTRUCTURE DEVELOPMENT  
IN LATIN AMERICA AND THE CARIBBEAN**

*A Strategy Proposal*

**Document prepared by the staff of the  
Infrastructure and Financial Markets Division**

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## GLOSSARY

**ADR** - American Depositary Receipts are offshore holdings of foreign equity securities used to raise funds on U.S. stock exchanges, but which are not required to meet Securities and Exchange Commission disclosure requirements for listings.

**BOT** - Build-Operate-Transfer construction contract usually used for “green field” projects where private developer builds to specifications and operates a facility for a specific period of time before transferring it to the public sector.

**Competition "in the market"** - Reducing barriers to entry in a "natural" monopoly so that new firms can compete in the market. For example, the break up of an integrated monopoly, such as long-distance telephone service in the U.S., electricity supply in the U.K. and Chile, to allow new competitors. (See competition "for the market").

**Competition "for the market"** - Use of price competition (bidding) for the right to operate a monopoly franchise as means to select a low cost provider; thus achieving some of the gains of a competitive market. Commonly used with lease or concession contracts in natural monopoly industries, such as distribution networks in electricity and water, where there are economies of scale.

**GDR** - Global Depositary Receipts are similar to ADRs (see above) but are listed on non-U.S. stock exchanges.

**Green field projects** - An investment project in a new location.

**PPO** - Primary Public Offering is a company's offering of newly issued stock to the public.

**IPP** - An independent power producer who produces for the local electrical utility usually under long-term power purchase agreement (PPAs) of the general electricity "pool". Generally, financed with non-recourse financing under highly leveraged agreements (75-80 percent debt).

**MIGA** - Multilateral Investment Guarantee Agency established in 1988 as part of the World Bank Group to provide political risk insurance coverage for investments in developing countries.

**PPA** - Power Purchase Agreement (see IPP).

**Yardstick Regulation** - Uses comparator company costs to determine price an individual company receives, e.g., compares costs among regional monopolies in electricity distribution to determine price. Provides incentive to drive costs down relative to other companies, although some risk of collusion is present.

## **FOSTERING INFRASTRUCTURE DEVELOPMENT IN LATIN AMERICA AND THE CARIBBEAN:**

### **A Strategy Proposal**

#### **Summary and Recommendations**

Support for infrastructure projects has been, and will continue to be, a main component of Bank lending activity. The changing economic and political environment of the past years, however, has raised new issues as governments have provided a larger role for the private sector in the provision of infrastructure services. Increasingly, market regulation, management of infrastructure services, and private sector financing are central concerns for policymakers and will require a new focus for Bank lending activities. The Bank is well-suited to provide workable solutions to the region's infrastructure needs that combine its traditional tools (direct lending, sector reform loans, and technical assistance) with new programs to lend directly to the private sector and provide guarantees.

To complement the Bank's lending activities, the Strategy Proposal identifies several areas for action. First, the Bank should support the development of domestic financial markets in order to expand the availability of loanable funds of the type and term required for infrastructure projects. Safety and soundness issues will be the main focus with a concentration of legal and regulatory reforms in debt and equity markets, which are critical parts of the financing packages needed for infrastructure. Second, the Bank should examine a variety of new financing techniques that include local infrastructure funds, bond insurance, securitization, leasing, among others. These techniques can provide innovative, market-based financing solutions that leverage Bank resources and enhance the viability of financing packages. Additionally, the Bank should examine options such as political risk insurance and reinsurance. Third, the Bank should encourage market-based activities in infrastructure through hemispheric agreements such as a Multilateral Investment Treaty and/or Hemispheric Infrastructure Protocol. To support the dialogue on these topics, an Infrastructure Finance, Regulation and Management Studies Program will be executed to carry out and disseminate studies and research.

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IN LATIN AMERICA AND THE CARIBBEAN:  
A Strategy Proposal**

Prepared by:

*Antonio Vives and Martin D. Chrisney  
Infrastructure and Financial Markets Division*

Glossary

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# FOSTERING INFRASTRUCTURE DEVELOPMENT IN LATIN AMERICA AND THE CARIBBEAN: A Strategy Proposal

## I. Introduction

- A. *The Infrastructure Problem in Latin America & the Caribbean:* Traditionally, infrastructure was viewed as a natural monopoly which fell in the domain of the public sector owing to large fixed costs and economies of scale in the provision of services. The public monopolies that controlled many infrastructure services, however, provided inadequate levels and quality of service as they attempted to meet competing economic and non-economic objectives while operating with little transparency or flexibility. Conditions worsened in the 1980s, as the economic downturn led to a retrenchment of the state and underinvestment in basic infrastructure services. The strain on regional infrastructure is evident in electrical brown-outs, urban traffic congestion and the low quality of services in many areas. To confront mounting problems, governments began to privatize utilities and use alternative contractual arrangements, such as concessions and service contracts, to engage the private sector in the provision of services.
- B. *Dimensions of Infrastructure Needs:* In the 1980s, infrastructure investment amounted to 3.0 percent of GDP in the region, compared to 4.7 percent in East Asia and the Pacific. Over the next decade, estimates for needed infrastructure spending are on the order of \$50 billion to \$60 billion a year -- some 4.4 percent of GDP -- with additional sums required for the maintenance of the existing stock. Satisfying the unmet demand in energy, ports, transport, water and sanitation, and telecommunications would place an undue burden on the administrative and financial resources of governments if they sought to act alone. As a result, greater reliance is being placed on the private sector to design, fund, and operate infrastructure in the region.
- C. *Institutional Environment: Regulation and Management Issues:* The basic goals of an infrastructure strategy are to expand coverage and improve the quality of services. Clearly, the relative importance of each of these goals will vary according to the state of infrastructure development. Yet, regardless of which goal is given priority, governments must establish the appropriate institutional and legal framework, paying careful attention to the incentives created by regulatory and management arrangements in infrastructure. For example, owing to a lack of full information about an infrastructure company's costs ("*asymmetric information*"), the regulator faces a trade-off between achieving cost reductions or extracting rents from the regulated firm. In setting a price mechanism for a regulated industry, the regulator may seek to lower costs (improve efficiency) by means of a **fixed-price contract** (e.g. price cap) which provides an incentive to lower costs since any cost reduction results, dollar-for-dollar, in savings for the company. Alternatively, to extract rent **cost-plus pricing** transfers gains from lower costs to the regulator, but provides little incentive to lower costs.

- D. *Social and Environmental Considerations:* It should be underscored that important social and environmental concerns are also interlaced with infrastructure decisions regarding technology choice, coverage, and charges. For example, although toll roads can serve to reduce traffic congestion, and water metering can promote greater conservation both will have distributive effects that will be a greater burden on low-income households. For these reasons, regulatory and management issues cannot be viewed in isolation from broader objectives in consumer protection, and environmental and social concerns.
- E. *Financing Issues:* By their nature, infrastructure projects involve large sums of at-risk capital with long gestation periods. These factors, combined with the inherent risks associated with uncertainty in regulatory regimes, creditworthiness, and market conditions, have made private financing, especially long-term debt, extremely difficult. Furthermore, low national savings rates and the underdeveloped state of many local capital markets for debt and equity finance have, *per force*, led to a reliance on local government and external finance. The public sector's ability to generate local revenues from taxation and the higher quality of its credit risk, means that governments still have a predominant role in financing infrastructure. Nonetheless, they may not be willing to assume all the risks associated with financing infrastructure projects and may prefer to devote their limited borrowing capacity to activities harder to finance. When the rules of the game are well established and debt financing is available, equity seems to be available owing to the relatively large returns afforded by high leverage. Notwithstanding the potential of greater international financing, the absence of long-term funding, specially in local currency, remains a key constraint on infrastructure development in the region.
- F. *IDB Role:* Between 1971 and 1993, Bank investments in transport, power, water and sanitation, and telecommunications totaled approximately \$1.8 billion annually, in 1993 dollars. In 1995, the inventory of infrastructure projects totals \$3.7 billion in investments, including water and sewerage projects and approvals for the public sector are expected to average between 2.0 billion and 2.5 billion a year over the next five years. In addition to traditional loans for infrastructure projects, the Bank has also actively supported reform efforts through technical cooperations and investment sector lending. From 1990 to 1994, the Bank provided sector loans totaling \$6.12 billion to support infrastructure investment and the private sector through public sector economic reforms (administrative and budgetary reform), investment policy (privatization, legal, and regulatory reforms) and the productive sectors (trade, agriculture, transportation, communications, and energy). The Multilateral Investment Fund (MIF) was recently created with a capitalization of more than \$1.2 billion. Its purpose is to provide grants to countries to enhance private sector participation, including assistance to infrastructure through technical assistance for privatization, and regulatory and

legal reforms.<sup>1/</sup>

Under the terms of the Eighth Replenishment in resources, the Bank will also take a direct role in supporting private sector infrastructure investments under its new **private sector lending window** and through the **use of guarantees** to encourage medium- and long-term private sector financing.

The Bank's role is being defined by the current environment for infrastructure investment: 1) the redefinition of the roles of the state and private sector in infrastructure, 2) insufficient long-term financing, and 3) requirements for institutional and legal reforms to create the enabling environment for investment.

At present, **the Bank is uniquely positioned** to assist in providing an integrated approach to the complex web of financial, regulatory, management, environmental, and social issues related to infrastructure provisioning, and to assist policy makers and private providers in establishing workable solutions.

## II. Changing Environment for Infrastructure Investment: Trends in the 1990s

A. *Technological and Market Changes:* Pent-up demand for infrastructure services (lengthy waiting periods for phone connections, use of self-generators, etc.) has focused popular pressure to break up inefficient public monopolies. At the same time, new technologies, such as the development of cost effective small-scale generators and mobile telephones, are enhancing the potential for competition through the *unbundling* of services in markets that were once viewed as natural monopolies. Moreover, international competition has drawn attention to the importance of infrastructure as a key advantage for competing in global markets. These trends in demand and technology have accelerated the reforms in market structure and regulation.

B. *Institutional Arrangements for the Provision of Infrastructure*

1. *A New Regulatory Approach:* Market competition and regulatory activities can be viewed as complementary means to develop infrastructure. For example, the restructuring of vertically integrated monopolies (e.g. *unbundling*) or the creation of horizontal competition via *yardstick* regulation have enhanced the potential for competitive private provision of infrastructure services. In cases where competition has not been feasible, such as electricity transmission or water delivery, authorities have created competition "*for the market*" (through

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<sup>1/</sup> During 1994, 6 operations were approved in 6 different countries totaling \$10.2 million. The MIF has also assisted in the development of capital markets through 2 regional operations for \$5.1 million.

concessions and leasing arrangements to service the whole "market") rather than "*in the market*" (through privatization of parts of the "market", e.g. generation, distribution, transmission) to achieve efficiency gains. The new regulatory approach is based on the recognition that the functions of regulation and production should be separated, and that, in order to create viable commercial entities, tariffs must reflect costs and pricing (or profit) rules must be transparent.

2. *New Contracting and Property Rights Approaches*: In tandem with market liberalization, authorities have taken steps to design new contracting techniques and reassign ownership in infrastructure services. These arrangements range from complete private ownership to combined private-public partnerships to full public ownership -- each of which has implications for the allocation of project risks among the parties. Below are listed some of the more common contractual arrangements, in order of increasing private sector involvement (Annex A contains a description of each and describes their implications for infrastructure investment).

- *Corporatization* (public sector)
- *Operation and Maintenance Contracts* (private-public)
- *Lease Contracts* (private-public)
- *Concession Contracts* (private-public)
- *Build-Operate-Transfer Agreements* (private-public)
- *Privatization* (fully private)

C. *Financing Infrastructure*:

1. *International Financing*: In part, the expanded opportunities for regional infrastructure development reflect the resurgence of capital inflows in the 1990s. Net capital flows swung from an outflow of \$3.0 billion in 1989 to an inflow of \$19.3 billion in 1993 (World Bank Debt Tables 1994-95). Reversing previous experience, recent capital movements include the repatriation of funds, as well as a greater reliance on foreign direct investment and portfolio flows. Notwithstanding the availability of international funds, risks remain. Portfolio inflows can easily be reversed, while bond issues still have relatively short tenors (at less than five years for public and private issues), are subject to widening spreads, and are declining. <sup>1/</sup> Direct lending by commercial banks, once the mainstay of private financing, has been greatly reduced. New lending has been modest and largely limited to shorter term credits and project financing, which expose bank assets to lower risks.

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<sup>2/</sup> In 1994, external bond offerings for the region totaled \$17.9 billion, down from \$26.3 billion in 1993, and are likely to be lower in 1995.



a. *New Instruments for Financing Infrastructure:* Sources of international funds have diversified as emerging market securities have developed into a new class of investment assets. The successful privatization of state-owned telecommunications companies in Argentina, Chile, and Mexico all included the issuance of **international equity** (American Depositary Receipts (ADRs) and/or Global Depositary Receipts (GDRs)). Moreover, as countries receive **investment grade** ratings from international rating agencies, and both the public and private sectors gain access to pension and insurance fund investors, the costs of international borrowing will be lowered.<sup>1/</sup> Alternatively, **asset securitization** can be used to enhance credit quality as in the case of toll revenue bonds for highway construction. (See Annex B “Options for Infrastructure Financing”).

b. *Project Finance:* Perhaps the most direct method to finance infrastructure is through **non-recourse or limited recourse project financing**. Although cumbersome and time consuming to arrange, project finance is intuitively appealing because it directly links income streams from an infrastructure project to the repayment of debt financing and the return on equity, while apportioning project risks (construction, commercial, political etc.) to the parties most capable of bearing them. More often, project financing is limited by the lack of available debt, rather than a shortage of equity. For the most part, international private lending does not have the tenor required for long-term infrastructure projects and local financing is almost nonexistent. Nevertheless, the technique has been used in several sectors, including energy. In energy, this has been applied, for example, in generation through *Independent Power Producers* (IPPs) where energy generated is transmitted through a national electricity grid to the state owned utility or to a "pool".

2. *Local Financing of Infrastructure:* The absence of long-term capital market instruments, the high cost of capital, and insufficient liquidity in securities markets make raising local funds problematic. The **development of local capital markets** is critical, not only for making resources available for infrastructure investment, but also to channel domestic savings. Although the total stock market capitalization of the top Latin American economies is roughly \$390 billion (approximately 31% of GDP), it ranges widely (from 7% of GDP in Venezuela to 139% of GDP in Chile), and most markets are dominated by a small number of heavily traded issues. More importantly, long-term financing is especially difficult, as the markets are relatively illiquid and the public is only willing to make short-term commitments. Efforts are needed to support the creation of

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<sup>3/</sup> Presently only two countries in the region have investment grade ratings that enables U.S. institutional investors (pension funds and insurance companies) to purchase their securities. Chile has an investment grade from both Moody's (Baa2) and Standard & Poor's (BBB+), while Colombia has an investment grade from Standard & Poor's (BBB-).

domestic sources of funding through the development of local bond and equity markets, the promotion of domestic institutional investors (such as pension and insurance companies), and the growth of ancillary market institutions (such as accounting, investment banking, and credit rating agencies). Market institutions, in particular, are essential to raising the substantial funds required for infrastructure projects, which require significant amounts of local currency to naturally hedge foreign exchange exposure (most infrastructure projects require investments in foreign exchange, but revenues are mostly in local currency).

### III. The Bank's Role and Strategy

A. *Goals of IDB Lending*: Ultimately, Bank loans, grants or technical assistance for infrastructure should be evaluated by their contribution to the economic and social development of the region. To achieve these objectives, infrastructure projects should achieve one or more of the following broad objectives:

- Expansion of infrastructure coverage.
- Improved quality of service.
- Achievement of social and national objectives (e.g., reduction of health risks associated with unsafe water, improved competitive environment).

Within the context of:

- Improved efficiency in supply and support for the long-run sustainability of services.

Depending on the size and complexity of domestic markets, the technical capacity of regulatory institutions, and social conditions, any one of these objectives may take precedence over the others -- there is no "cookie cutter" approach. At present, a range of instruments is available to the Bank, namely, direct lending (both with and without counter-guarantees), sector reform loans and technical assistance. Each of these instruments is examined below, and their relation to the broad objectives of infrastructure lending are identified. Subsequently, strategic areas for Bank actions are recommended that will foster infrastructure development in the region.

#### B. *Tools for Supporting Infrastructure Development*

1. *Direct Lending Activities*: Traditional infrastructure lending for projects in energy, roads, ports, water and sewerage, and solid waste will continue to be a major activity with new investment, maintenance and rehabilitation. Investments should promote the goals of expanding coverage and providing for basic social needs while, at the same time, seeking the appropriate balance between public and private provision to achieve efficient outcomes. In its direct lending, however, the Bank will continue to move from reliance on strengthening the provision of services by the public sector to promoting market-based reforms that seek the most effective and efficient institutional arrangements for the delivery of services. Key areas will be new contractual options, ranging from corporatization to privatization (detailed in section B.2 and Annex A), and greater reliance on user charges and more diversified financing.

Bank financing options will also expand to include direct lending for **private sector infrastructure projects without government guarantees** as established under the Eighth Replenishment Agreement which sets aside up to 5 percent of lending for this purpose. Additionally, the Board will be considering the use of

**guarantees** for 1) *partial risk* coverage of non-commercial risks in private sector infrastructure projects (e.g., governmental or agency performance of contractual obligations), and 2) *partial credit* coverage to extend the maturities of debt financing through the use of "roll over" options and other modalities. These facilities will increase the Bank's ability to leverage its resources by attracting additional private sector financing to infrastructure projects and will eventually enhance market access for its borrowing members.

2. *Sectoral Reform Lending*: To create the conditions for the expansion of infrastructure and more efficient market structures, the Bank will use sector reform loans -- either as **pure sector loans** (investment sector reform) or **hybrid loans** combining both sectoral reforms and investment components. The leverage for policy reforms offered in hybrid loans will likely encourage their greater use to promote private participation in infrastructure, more efficient regulatory regimes, and greater market competition. Additional support is being provided by Bank operations to broaden legal reforms in the **state and civil society**, support for property rights (including intellectual property rights), consumer protection and strengthen the administration of justice (in particular, supporting an effective judicial process for the resolution of contract disputes).

3. *Technical Assistance*: Aside from loan-based services, the Bank can also provide technical assistance, MIF projects, and dissemination of research on infrastructure issues. For example, **technical assistance** can help in the design and implementation of new regulatory regimes (which may require specialized staffing at the early stages of development), of sectoral strategies for private sector entry, or of improvements in public investment management at the national and local levels. The use of TC-Funds, pre-investment loans, and **MIF grants** is instrumental in channeling these services to member governments.

C. *New Strategic Areas for Supporting Infrastructure*

1. *Financial Market Development Activities*: Given the critical role of domestic financial markets in channeling savings into productive investment, *financial market development* is a strategic area for Bank activity. Well-developed debt markets will provide the longer term resources needed to finance infrastructure projects with long payback periods, improve the terms of project financing with opportunities for asset securitization, and provide clear market signals of credit risk. Better capitalized and more liquid equity markets will support infrastructure with markets for primary public offerings (PPOs), as well as developed secondary markets that will allow divestment (i.e., an exit strategy for investors) or the refinancing of short-term loans (e.g., "take-out financing"). A sound banking system is also critical to funding infrastructure and facilitating financial intermediation. Bank activities should focus on "**safety and soundness**" issues with legal and regulatory reforms for debt and equity markets, as well as banking systems that include standardization of supervisory practices across countries, establishment or improvement of clearance and settlements procedures, promotion

of the responsible use of derivative instruments, support for institutional savings (pension and insurance funds), the strengthening of securities regulators and continued improvement in bank supervision.

*2. Innovations in Infrastructure Finance:* The Bank must look for better ways to finance infrastructure projects and develop innovative market-based financing mechanisms that leverage its resources and enhance the viability of financing packages. The Bank is currently looking into a variety of instruments, both in terms of financing and enhancements to mitigate risks -- through the development of local infrastructure funds, bond insurance mechanisms, securitization, and leasing, among others. A brief description of the principles of infrastructure finance and new financing options is presented in Annex B.

An important direction for future Bank activity will be the development and promotion of **Political Risk Insurance**. The increasing use of project finance techniques in the region will raise the demand for insurance coverage against expropriation, currency inconvertibility, contract repudiation, and other project-related risks. Latin American and Caribbean investors have a limited supply of insurance coverage available. The market is dominated by bilateral insurance agencies; there is limited multilateral insurance, and private insurance is costly. The absence of insurance funds and the high costs of self-insurance inhibits intra-regional investment projects. The Bank should investigate options for expanding the availability of political risk insurance coverage to intra-regional projects as part of its comprehensive review of the investment climate for infrastructure. The effectiveness of this mechanism may require agreement on a **Multilateral Investment Treaty** among Latin American and Caribbean countries, which could support the agreements set out in the Infrastructure Protocols mentioned below.

These new instruments and others will be discussed in a **Roundtable on New Financing Tools for Infrastructure** to be held in late 1995. In addition, research on and dissemination of information on infrastructure finance that highlight risk-sharing techniques, new financing mechanisms, and best practices will be disseminated among borrowing members and staff. As well, staff training and field presentations on issues relating to private sector participation in infrastructure provision will be provided to upgrade skills.

*3. Regional Enabling Environment:* At the Summit of the Americas in 1994, the Heads of State confirmed the Bank's role in promoting a hemispheric dialogue on infrastructure issues, and supporting reforms and investment programs for infrastructure development. The Bank should take a leading role in creating the enabling environment for market-based solutions for infrastructure. As identified in the **Summit of the Americas' Plan of Action**, multilateral development banks working with governments and the private sector, where appropriate, should develop the means to deal with the lending and investment issues related to infrastructure investment. Below strategic initiatives are proposed to fulfill this

mandate that go beyond those aspects normally covered in the sector reform loans:

a. *Infrastructure Protocols*: In order to attract external financing for infrastructure projects, regional governments should consider schemes to reduce the perception of the risks of doing business in their countries. Besides the actions already mentioned in the discussion of sectoral reform lending by the Bank, Infrastructure Protocols (IP) are potentially useful instruments, either at a Hemispheric level (HIP), covering all projects or as bilateral instruments covering Bank-financed projects. These protocols will set forth certain basic policies and principles applicable to the financing of such projects. These will include the development of mechanisms to take account of investors' legitimate concerns for project viability in the event of regulatory and legal changes by those governments and for the establishment of regulatory regimes to remove uncertainty regarding governmental rules affecting project viability. Other issues covered by the Protocol may include arbitration and other types of dispute settlement, national treatment and lenders' rights, especially with regard to security arrangements. As a first step the Bank will explore at a ministerial-level the feasibility and interest in such an instrument, explore the legal and institutional issues, and share information on the topic with interested parties.

b. *Expanded Dialogue on Financing, Regulation and Management Issues*: Establish a regional forum for analysis and discussion of issues in regulatory, financial and management practices. To this end, the Bank will create a **Infrastructure Finance, Regulation and Management Studies Program** to produce analytical work, coordinate technical assistance, and disseminate information on best practices to improve infrastructure service delivery in the region. The Program will provide a focal point for the Bank's know-how and technical expertise on regional infrastructure issues and can serve as an independent source of information for participants in infrastructure services, such as regional utility regulators. The Program will aim to identify policy solutions for key issues in utility regulation -- particularly where there is private sector participation -- highlight management issues, and identify new and innovative financing techniques both public and private. Participants in the conferences, technical assistance, and research activities of the Program will be drawn from member government institutions, the private sector and Bank staff in order to ensure that the work is relevant to policymakers and provides workable solutions.

#### IV. Conclusion

To meet the expanding infrastructure needs of the region will require a combined effort

by governments, the Bank and the private sector. By virtue of its lending activities, the Bank will be in the lead in many areas of innovation in infrastructure financing, regulation and management practices. At the same time, the Bank should enhance cooperation among the various actors involved in infrastructure provisioning to achieve the best possible outcomes. The Bank is well-suited to meet this challenge with a wide range of lending tools, from direct lending to sector reform, and technical assistance tools to support the enabling environment. The new mandate under the Eighth Replenishment to support private sector activities with direct lending without government counter-guarantees broadens the Bank's range of activities. In addition to lending and technical cooperation activities, the Bank should also seek to expand its role as a regional institution on hemispheric infrastructure issues, support innovative financing instruments, and serve as a clearinghouse of information on the successes and failures in infrastructure policy.

## ANNEX A

### Options for Ownership and Management of Infrastructure

In tandem with market liberalization, authorities have taken steps to design new contracting techniques and reassigned ownership in infrastructure services. These arrangements cover a range of alternatives from complete private ownership to combined private-public partnerships to full public ownership. Below are some of the more common arrangements, in order of increasing private sector involvement, and their implications for infrastructure investment.

***Corporatization*** (public sector): Cases where the authorities choose to maintain ownership for strategic reasons do not preclude the use of commercial principles that will enhance government performance. Efforts aimed at increasing the independence of public sector institutions that operate infrastructure, expanding accountability by establishing clear targets and providing appropriate pricing policies to reflect costs, enhance the efficiency of operations. Corporatization achieves this objective by converting a government agency or department that provides infrastructure services into a separate legal entity subject to the same laws as a private firm.

***Operation and Maintenance Contracts*** (private-public): A simple form of contracting out where the contractor operates and maintains a facility, but does not have responsibility for investments. Generally these are short-term contracts where the contractor is rewarded on a fixed-fee basis and does not assume commercial risk. In this case, the government maintains ownership of the asset. Service contracts may also be awarded for specific activities (such as metering or bill collection) with the public sector remaining responsible for operation and maintenance.

***Lease Contracts*** (private-public): Generally a longer-term commitment from the private sector (5-10 years) in which it assumes the financial risk during its management of the operation. Although the public sector is responsible for capital investments, the lessee must pay for working capital and replacement during the life of the contract. Compensation is usually based on the rate bid in the competitive award of the contract, that, is a percentage of the tariff charged for the service, e.g. water rates, with the remainder paid to the public sector as a rental fee. This arrangement can be used to create competition *for the market* where a natural monopoly exists, e.g. water delivery systems.

***Concession Contracts*** (private-public): Building on the lease contract, a concession adds responsibility for fixed investments during the life of the agreement which are recouped by the tariffs charged over a longer period, say 15-20 years.

***Build-Operate-Transfer Agreements*** (private-public): A form of concession usually applied to *green field* projects, where the private sector finances, builds and operates a facility for a specified period of time. At the end of the contract, the facility is transferred to the government. Alternatively, the facility may be kept by the original contractor (build-own-operate). These contracts include technical specifications for the finished project which must be met as a contractual obligation.



***Privatization*** (fully private): Complete divestiture combined with liberalization of markets allows competitive entry and provides the most direct route to increased private participation. Privatization can provide direct revenues to the public sector from sale proceeds as well as future tax revenues from the privately run enterprise. For competitive markets, privatization can provide an efficient means to expand supply and achieve efficiency gains (e.g., bus services, independent power producers) with the private sector solely responsible for capital investment. In industries that are not subject to competitive entry, i.e., natural monopolies, a regulatory framework must be put in place to ensure that national goals are achieved via pricing (or profit) regulation and monitoring of access to third parties (electricity transmission, telecommunications).

## **Annex B**

### **Options for Infrastructure Financing**

The Bank has traditionally lent directly to governments for infrastructure and other public sector programs. Recently, the growing importance of private sector participation has expanded the institutional options for the private provision of infrastructure accompanied by changes in ownership, management, and regulation. Infrastructure financing by the private sector presents new challenges and opportunities for the Bank. This annex briefly reviews the role of the Bank in the private infrastructure finance and some of the features of private finance applied to infrastructure. The issues of public sector financing of infrastructure are not addressed here.

Bank's Role in Private Infrastructure Financing Instruments: The trend towards greater use of debt and equity instruments in international and local capital markets has lead to a wider range of financing tools for infrastructure projects. For the Bank, these new instruments offer an opportunity to leverage its resources and more fully utilize the private sector in funding and operating infrastructure services in the region. New financing products must be incorporated into direct lending to the private sector, thereby enhancing the leverage of Bank resources and benefiting the development of local capital markets. Also, the Bank must contribute to the development of other instruments by the markets and support the creation of the legal and regulatory conditions for new financial instruments through investment sector reform loans (traditionally these loans have not been focused on the requirements for the development of these financial instruments). The Bank must push for the move towards more mature and complete financial markets.

Goal of Private Infrastructure Finance: The objective of infrastructure finance from the perspective of a project sponsor or developer, is to ensure a project's financial viability by arranging the appropriate capital structure relative to the expected income stream and risk profile. This requires access to sufficient capital at the lowest cost given the allocation of risks. In balancing these objectives, the project developer may access capital with instruments which have wide marketability, or attempt to allocate some risks to segments of the capital market which have a greater tolerance for those specific risks. New tools such as guarantees, securitization or pooling arrangements, can be used to mitigate risks and enhance creditworthiness. As a result, privately funded infrastructure projects will almost certainly access several different financial markets for one project -- capital and equity, local and foreign, institutional investors and public markets.

Characteristics of Private Infrastructure Financing: As noted in the text, infrastructure projects have long payback periods and special features that make their financing more difficult. The large size and longer term of infrastructure financing generally require a capital structure with significant equity participation from the project's sponsors/developer to ensure that their interests are closely allied with those of other long-term creditors. In general, equity participation is on the order of 20 percent to 30 percent with the remainder financed through debt. All project returns are directly linked to project cash flows. The returns to debt are contractually set (fixed or variable interest rates), while equity returns will vary with the success of the project. <sup>1/</sup>

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<sup>4/</sup> In general, equity returns are expected to be around 20 percent to 25 percent of project costs. Since the return on

Therefore, when a project is financed “off” the balance sheet of the project’s sponsor, say, through a special purpose vehicle, one of the critical variables is the ratio of project income to debt service (principal and interest) since the project does not depend on the financial support of its sponsor.

The cost of funds is related to the variety of risks which create uncertainty about project revenues and costs. A partial listing of these risks includes:

- construction (failure to complete, delays, and cost overruns),
- commercial (market disruptions, adverse price movements),
- financing (interest rate, exchange rate movements),
- political (regulatory policy, government contractual compliance, expropriation, war and civil disturbance), and
- *force majeure* (natural disasters).

Project financing plays a central role in apportioning these risks to those groups that are best able to bear them. Additionally, financing can be divided according to the phase of project development (construction and operation phases) with “take-out” financing by long-term investors who replace the original creditors once construction is completed. <sup>1/</sup> Certain classes of risk can be mitigated through the use of insurance, hedging instruments, supply and output contracts, performance bonds, and other financial techniques. In principle, every project risk should be assigned or mitigated in some manner.

Sources of Financing: It is beyond the scope of this annex to identify all the types of infrastructure financing, however, a range of financing techniques and newer variations is assessed. The focus here is on “off balance sheet” financing of infrastructure projects where the creditworthiness of the project (ie. its projected cash flow) is the basis for raising funds from local and international investors. <sup>1/</sup> In this case, there is usually limited or no recourse to the project sponsor’s balance sheet. Nonrecourse financing can be used for concessions, long-term leases, Build-Operate-Transfer (BOT), Build-Operate-Own (BOO), the expansion of private provision of services, and other types of projects.

Equity Instruments: Participation in a project can be through the ownership of shares where the profitability of the project will determine the level of dividends and/or capital gains. Every project will require at least some equity capital, and in general, the riskier the project the more equity is required.

Private offerings: This is the sale of unregistered securities, generally to institutional investors, both local and international. In the U.S., which is one of the largest markets for

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equity is a residual after the payment of operating costs, taxes, reserve funds and debt service, equity holders -- unlike bond holders assume the project’s potential gains as well as losses.

<sup>5/</sup> For example, construction financing may be an attractive option for local banks which have short-term foreign currency deposits but lack the long-term funds required for the operational phase.

<sup>6/</sup> At the opposite end, corporate financing relies on the creditworthiness of the corporate sponsor and may utilize many of the same techniques as project financing for similar purposes.

developing country securities, Qualified Institutional Buyers (QIBs) such as insurance and pension funds, can purchase a security that has not been registered with the Securities & Exchange Commission (SEC) and hence does not meet the disclosure requirements for a public offering. This exemption is allowed under section “144a” of the SEC code. These securities are generally illiquid and therefore are more expensive to the issuer. American Depositary Receipts (ADRs) can be issued with a “144a” exemption.

Public offerings: Public offerings of common or preferred shares must be registered with a public authority (in the U.S. this is the SEC) and generally involve a large number of buyers. Subsequent to their initial offer, they are usually listed on an organized exchange. This method is often used for initial offerings of shares in privatized enterprises.

Equity Funds: Equity funds are investment vehicles that focus on a specific asset class (e.g., emerging markets, energy etc.), and are generally sold abroad. They can buy into private or public offerings. Equity funds are sources of long-term funding, especially for utilities, energy, and telecommunications investments.

Debt Instruments: Long-term capital funds with contractual interest payments and amortization schedule that are linked to the cash flows of the project and take a security interest in project assets, include: direct commercial bank loans, corporate bonds, revenue bonds (linked directly to project revenues), and subordinated debt (unsecured funds). Like equity, debt issues can be either private or public offerings.

Securitization: In its broadest sense, securitization refers to the use of securities markets (debt, equity) rather than bank intermediation for funding. In the narrow sense, it refers to the creation of marketable, asset-backed securities linked to the income stream from a project, such as toll roads, bills payable to a water utility, or a specific class of assets, such as credit card or mortgage receipts. Securitization provides increased liquidity and can be used to raise “take-out” financing once a project is completed. It is often used by municipalities to raise resources for infrastructure projects (“revenue” bonds), such as bridges, without relying on taxes. (See also “Pooling”).

Infrastructure Funds: These are a source of long-term debt and/or equity financed by a local government, the private sector and/or multilateral institutions. Local infrastructure funds can raise funding on local or international capital markets through standardized debt issues or asset-backed securities. Risk diversification and lower transactions costs than bank intermediation reduce the overall cost of these funds. Furthermore, a fund can be combined with other facilities such as insurance, guarantees or other credit enhancements (see below). Local infrastructure funds, however, may require public sector capitalization and/or guarantees in the early stages. International infrastructure funds are investment vehicles used mainly by large institutional investors who provide the equity.

Leasing Arrangements: This is a contract for the use of a fixed asset. It is often used to finance capital equipment for a contracted period of time at an agreed upon interest rate, principal payment schedule, and residual value for the asset. Usually the lease offers the option to buy. Leasing arrangements are becoming increasingly common in power generation with smaller-scale combined cycle gas generators.

Guarantees, Insurance & Credit Enhancements: Instruments or techniques that improve the marketability or enhance the value of a security or loan often by lowering risks (price, political etc.) or increasing liquidity.

Guarantees: Guarantees are a commitment provided by a guarantor to take responsibility for payment or performance of a party. An example is the guarantee of debt service by a borrower to bond holders. Multilateral institutions can provide guarantees for *credit risk* as a means to lengthen the maturity of private sector lending (e.g., roll-over options on medium-term credits), or for the *policy risk* associated with the obligations of government entities (e.g., tariffs, regulatory framework, purchase and supply agreements of public entities, convertibility of foreign exchange).

Insurance: Private and public sector political risk insurance is available for project financing covering currency inconvertibility, expropriation, and civil disturbances. Public sector entities from OECD countries, the Multilateral Investment Guarantee Agency (MIGA) and a few Latin American governments provide long-term insurance. Private insurers offer coverage for shorter periods (up to 3 years) and at greater cost.

Bond Insurance: Bond insurance is a mechanism to enhance the credit rating of a debt instrument. It has been traditionally used in the U.S. municipal bond markets where an issuer pays a one-time premium to a bond insurer to guarantee debt service payments. The issuer secures the higher credit rating of the “AAA” rated insurer and, thereby, lowers funding costs.

Stand-by Letters of Credit: This is a commercial bank line of credit for a specific amount and time period. It is often used to ensure that construction cost overruns or other unexpected costs can be met without jeopardizing the project investment.

Pooling/Credit Enhancement Vehicles: This is a bond that links several projects under one financing instrument in order to provide risk diversification, greater liquidity, and lower transactions costs, resulting in lower borrowing costs. It is commonly used with mortgages as a secondary market instrument, but also has been used in project finance. In addition, there can be cross-guarantees from one project within a “pool” to another for the purpose of servicing debt.

Derivatives: These are financial instruments whose value is “derived” from underlying cash markets. They are used to hedge or reduce exposure to price risk (e.g., interest rates, exchange rates and/or commodity prices) and can help to assure or enhance the financial

viability of the project. Derivatives are also used by investors/issuers to exchange obligations (“swap”) with a counterparty to lower funding costs or reduce risks by eliminating maturity/currency mismatches. For example, in a power project where a fuel supply contract is not available, forward contracts for fuel can be used to minimize the variation in prices. In the same vein, where no Power Purchase Agreement is available for the output, electricity can be sold through forward contracts. Similarly, future foreign currency obligations can be covered through the forward market or through swaps of currencies.