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Infrastructure Privatization

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I. Introduction

Countries around the world face a dramatic growth in the demand for infrastructure, which is defined as the basic facilities and installations on which the continuance and growth of a community depend, such as roads, power plants, communications systems and transportation. These needs are apparent both for new facilities and for repair and replacement of existing facilities. Estimates of needed investments in infrastructure over the next decade run into the trillions of dollars. At the same time, the public sector's ability to finance infrastructure projects has been constrained by limited tax revenues and spending needs in other areas.

Governments are responding to this funding constraint by turning to the private sector to finance, build, operate, and maintain infrastructure facilities. For example, existing telecommunications systems across South America are being sold to private investors, new toll roads in Mexico and power plants in the Philippines are being developed by private companies, and airports in the UK are being managed and expanded by private operators.

Because of the nature of infrastructure, its privatization is very different from that of other State-Owned Enterprises (SOEs), such as manufacturing or processing facilities. As a result, the approaches taken to privatizing infrastructure are often quite different from the efforts undertaken in other sectors. This paper focuses on several important aspects of infrastructure privatization: the unique features of infrastructure privatization, the role of the public sector, and emerging structures for infrastructure privatization.

II. How is infrastructure privatization unique?

There are essentially two general types of infrastructure privatizations that should be distinguished. In the first case, an existing enterprise is sold to the private sector. Examples would include the sale of a telephone utility or an electric power system. In the second case, a private developer contracts with a government to build facilities that provide services under contract. Examples would be the construction and maintenance of a highway by a private firm who receives toll revenues from users and/or fixed payments from the government. In either the system privatization or project financing, there are special issues that governments must address to ensure a successful privatization.

A. Unique nature of infrastructure

Infrastructure companies or facilities possess several characteristics which differentiate them from ordinary state-owned enterprises:

- **Market Power:** Most infrastructure providers face few or no competitors and should therefore be regulated to prevent them from exploiting their market

power. Unlike other types of SOEs, which are frequently subject to market forces after privatization, infrastructure enterprises often require a post-privatization regulatory framework.

- **Traditional role of governments:** In many countries, infrastructure provision and operation has traditionally been the domain of governments due to its importance in the economy and in citizens' lives. Prices are politically determined at low levels and, partly as a result, government has underinvested in the service.
- **Service versus good provision:** Infrastructure companies provide services -- such as telephone calls, power, or transportation -- and their services frequently cannot be exported. Consequently, the price they receive for their services may be set by an internal market and denominated in a local currency which is not easily converted to hard currency.
- **Size and revenue streams:** Infrastructure enterprises and projects are normally very large, requiring substantial up-front investments with small initial revenue streams and long payback periods. Revenue streams can improve dramatically in later years but, because of the high risks associated with many projects, future returns are heavily discounted. These factors make the privatization of infrastructure enterprises very difficult to finance and mean that investors require strong guarantees that future returns will not be obstructed by public regulators.

These characteristics of infrastructure produce a unique set of incentives and obstacles facing promoters of infrastructure privatization. For the public sector, these characteristics mean that privatized infrastructure SOEs may require regulation. For private sector investors and developers, these characteristics mean that infrastructure privatization may carry a unique set of risks.

B. Regulation

Regulation accompanies many privatizations of infrastructure enterprises or facilities. An established regulatory framework is essential to the privatization of infrastructure for two reasons:

- **Limitation on market power:** Because most infrastructure enterprises are monopolies or near monopolies, regulation is necessary to protect consumer interests by ensuring that the prices charged by the privatized infrastructure enterprise are consistent with the public interest. It is generally unacceptable to allow a monopolist electricity company to set its prices unrestricted by government. Through regulation--either by a regulatory body or by contract--

the government can also provide an adequate opportunity for competition in the industry and maintain a voice in the enterprise's operations.

- **Definition of the enterprise's economic environment:** The regulatory framework can significantly affect investors' valuation of an enterprise. Regulation sets the parameters under which the private owners and operators of the infrastructure earn their returns. Most important to investors are the stability and severity of the regulatory framework. Investors need to know that the rules of the game are fairly established and consistently enforced and that they will be allowed to earn a fair rate of return if their performance is as planned.

The approach to regulation adopted by the government is one of the most important aspects of the public-private relationship in infrastructure privatization.

C. Nature of risks in infrastructure

Because private providers of infrastructure services are normally regulated by contract or a regulatory body, there is a possibility of allocating or sharing risks between the private and public sectors. Following is a description of the major areas of risk, and how they are commonly addressed in infrastructure privatizations:

Business Risk

- *Operating risk* is the risk that the enterprise's operating costs will exceed expected levels and/or service quality will fall below expected levels. This risk is usually borne by the private sector.
- *Revenue risk* is the risk that demand will be insufficient and/or acceptable user fee rates too low to generate expected revenues. The private investors may bear the revenue risk, or the government may guarantee a minimum level of demand at agreed upon rates. For the private development of new facilities, the government may agree not to build competing infrastructure for the term of the concession.
- *Cost overrun risk* is the risk that construction delays, design changes, or other factors will cause facility enhancements to cost more than anticipated. Fixed price construction contracts like those used by many private developers can protect investors from having to finance cost overruns.

Financial Risk

- *Debt service coverage risk* is the risk that operating cash flows will be insufficient to cover the required principal and interest payments from the debt used to finance

purchase of the infrastructure SOE. The private investors may bear this risk alone, or the government may guarantee a portion of the debt.

- *Exchange rate risk* is the risk that local currency earnings will not be convertible to a foreign currency at an expected exchange rate, thereby diminishing the foreign currency value of the earnings. The private sector may bear this risk alone, or the government may provide currency insurance at an agreed upon exchange rate.

Political and Legal Risk

- *Rate regulation risk* is the risk that the government will not allow sufficient rate increases to provide investors with reasonable returns on investment. To mitigate this risk, a specific regulatory mechanism is usually established which allows for increases in rates by an agreed upon formula, without the requirement for government approval.
- *Expropriation risk* is the risk that the government will re-nationalize the enterprise, confiscate the facilities, or impose taxes or regulations on the private operators that severely damage the enterprise's value to investors. The government usually agrees not to expropriate an enterprise without paying fair compensation to investors.
- *Repatriation risk* is the risk that investors will be unable to transfer their earnings out of the country where the infrastructure enterprise is located. The government usually agrees to allow repatriation of earnings. Investors can also obtain insurance against repatriation risk through the Multilateral Investment Guarantee Agency (MIGA) and through other third-party public-sector agencies.
- *Dispute resolution risk* is the risk that contract disputes between the private developer and government sponsor will not be settled fairly in a neutral jurisdiction. Private partners may require that contracts be enforceable in a third country and can insure themselves against breach of contract with public sector investment insurers including MIGA.

Other Risks

- *Environmental risk* is the risk that the enterprise has caused environmental damage that the new private owners will be required to correct. The government may agree to rectify all environmental damage caused by the enterprise while under public ownership.
- *Force majeure risk* is the risk that events beyond the control of the public and private partners (such as floods or war) will impair the ability of the enterprise to earn money. Force majeure can often be covered by private or government insurance.

Many of these risks are present to some degree in almost all infrastructure privatizations. Because government alone can control some of the political and legal risks associated with private development of infrastructure, the degree of risk assumed by the government and its ability to resolve other issues can be the determining factor in the success of an infrastructure privatization.

III. Why privatize infrastructure?

A. Benefits

Many of the benefits of privatization are the same for both infrastructure and other privatizations. Because of its unique nature, infrastructure may emphasize different aspects of the benefits and costs of privatization. Specific advantages of infrastructure privatization often include:

- **Additional source of capital:** Many governments are encountering growing deficiencies in infrastructure operation and provision that inconvenience the public and slow economic growth. Privatization can provide new capital to maintain and operate existing enterprises or develop and operate new facilities.
- **Rapid and efficient operations and development:** Prospective private operators may be able to apply technical expertise to improve service quality and develop operating efficiencies.
- **Project revenue enhancement:** Privately-operated infrastructure enterprises frequently rely on user fees (*e.g.*, electricity fees, tolls) as their major sources of revenue. The private sector may also develop innovative revenue sources, such as real estate development, concessions, and parallel uses of right of way, or may introduce more equitable rate structures (*e.g.*, reflecting peak hour usage). In addition, because the private sector has a direct interest in minimizing fee evasion, collection mechanisms may be strengthened and revenues enhanced through better enforcement.
- **Increased public-sector revenues:** Privatization can produce new revenues for government because private operators pay taxes and may generate lease or franchise payments.
- **Reduced public sector risk:** Private ownership of infrastructure companies can transfer risk to the private sector that would otherwise be borne by government (and, ultimately, taxpayers). Risk-sharing between the public and private partners may allow some important projects to be developed that neither partner would be willing to undertake alone.

- **Identification of projects:** The private sector may be better suited to identify new projects and latent demand for infrastructure than is the public sector. Because private developers determine which projects and services to pursue based on economic rather than political criteria, they may be more likely to identify projects and services for which there is or will be significant future demand.
- **Expansion of capital markets:** Infrastructure enterprises, because of their large size and relatively stable revenue streams (at least in out-years), can provide secure investments that are available to a substantial number of investors. Because of these characteristics, private infrastructure securities can help expand local capital markets.

The points above describe some of the most significant benefits of private development and operation of infrastructure but are not all-inclusive. The most important justifications for privatizing an infrastructure enterprise or facility depend on the infrastructure itself and the country which it serves.

B. Costs

Private involvement in infrastructure can result in several costs to the public that are not faced under purely public ownership and operation. The costs of private participation in infrastructure development include the following:

- **Reduced public control:** Private participation may require the government to relinquish direct responsibility for certain aspects of a sector, such as the location of new facilities, the level of service quality, and the amount of resources devoted to the sector.
- **Regulatory costs:** The government often maintains indirect control over a private infrastructure provider by regulating user charges, private profits, repair and maintenance, and service quality. Regulation is only an indirect method of influence, yet has high costs, both for the government and the private sector. These costs stem from the fact that regulation requires government resources, is time-consuming, can be politicized, and can reduce the incentives of the private partner to operate efficiently.
- **Return on investment requirements:** The return on investment required by a private partner may result in higher user fees. The return on investment, however, compensates the private partner for assuming risks that are otherwise borne by the public sector.

In spite of these costs, privatization can provide substantial net benefits for an infrastructure enterprise. The optimal public-private structure for the infrastructure privatization reflects the specific benefits and costs of the individual enterprise or facility.

IV. What role does the public sector play in developing private infrastructure?

A. Public sector issues

The public sector can aid its private partners, thus expediting the privatization process, by thoroughly understanding its potential for:

- **Minimization of political risks:** In many countries, political risk may be the single most important factor in limiting the privatization of infrastructure. Legal changes are required in some places as are basic changes in government and public attitudes towards infrastructure development. Recent events in Thailand and the UK have heightened investor concerns about political risks. In Thailand, the government has been unable to fulfill part of its contract with Bangkok Expressway Company, Ltd, a private road developer, and has been forced to lower the initial tolls allowed on the facility. In the UK, pricing formulas for the telephone utility were adjusted significantly, changing the regulatory and business environment in which the private investors operate.
- **Mitigation of other risks:** The public sector can support the privatization of infrastructure enterprises by absorbing some non-political risks. Loan guarantees from multilateral agencies or the sponsoring government can significantly aid a project's ability to get financing. The degree to which the government protects the private sector from various risks should reflect both the government's ability to control those risks and the government's role in the operation of the enterprise or project after privatization.
- **Development of long-term capital:** World markets frequently face a deficit of long-term capital which can severely inhibit the ability of private investors to obtain financing. Although many governments may not be able or willing to extend or guarantee long-term loans to private investors, they can assist investors in obtaining guarantees from multi- and bi-lateral loan agencies like U.S. AID and the World Bank.

Safeguards that protect the public's interest can lead to the development of higher-quality infrastructure facilities and operating procedures and enhance the public benefit from the infrastructure. For example, private roads in Mexico, Argentina, and elsewhere are designed, constructed, and operated safely according to government standards.

B. Structures for the public-private relationship

The privatization concession agreement defines the manner in which the public and private sectors share the risks, responsibilities, and rewards of an infrastructure enterprise.

The structural options available to public-private relationships encompass the full spectrum from fully public to fully private. The major options include:

- **Operation and Maintenance Contract:** A private partner operates a publicly-owned facility under contract with the sponsoring government. Private operation of a facility can result in improved service and efficiency. Operating and maintenance contracts are commonly used by local governments to provide municipal services such as solid waste removal. This model is also being used for infrastructure facilities. The Botswana Telecommunications Corporation is operated and managed under contract by Cable and Wireless, a private company.
- **Sale of the infrastructure facility:** Particularly for infrastructure that has not been maintained or is in disrepair, the sale of the facilities themselves may be the quickest way of achieving the benefits of privatization, including enhanced operations and maintenance. Argentina used this method to privatize parts of its road network.
- **Sale of the SOE through public share offering:** An infrastructure enterprise can be privatized by selling shares in the company. The transaction is very similar to that of a non-infrastructure SOE although post-privatization regulation is required for many infrastructure enterprises. Telecommunications of Jamaica was privatized under a variation of this structure. The Government of Jamaica initially retained 40 percent of the shares of the new enterprise.
- **Sale of the SOE to a single private investor:** In some cases, a small infrastructure enterprise with technically complex operations may be most effectively privatized through sale to a single team of private investors that would also operate the facility. Because the operators own the facility, they maintain a strong interest in operating efficiently. This method may also be easier to implement than sale of shares in countries with shallow capital markets. The Government of Grenada is following this approach in privatizing its electric utility.
- **Sale of development rights:** New infrastructure can be developed through the sale of development rights. A wide variety of models, including BOO and BOT, can accomplish the sale or lease of development rights. The Philippines is using this approach to develop power plants.

Each of these structures provides a varying degree of public and private risk and responsibility. The appropriate structure for the privatization is determined in part by which risks are most significant to the enterprise or facility and which party has the most control over those risks.

C. Regulation

Regulation by government plays an important role in developing infrastructure privatization because it defines the environment in which the private operators and investors function. The choice of regulatory frameworks depends on i) which institutional structure is best suited for regulation, and ii) which ratemaking mechanism best achieves the goals of regulatory policy.

Regulation criteria

The optimal regulatory framework, including the institutional structure and ratemaking mechanism, provide many benefits to the enterprise's customers, the government, and the private investors:

- *Financial stability and viability for the regulated enterprise*
- *Protection of consumer interests under privatization*
- *Incentives for efficient operations and management*
- *Limited political intervention in the rate-making process*
- *Informed regulation*

Institutional structures

A variety of institutional structures are available to develop and oversee the regulation of private infrastructure enterprises. Two basic forms are regulation through a government ministry and regulation through an independent regulatory commission. Judged against the criteria outlined above, regulation through a government ministry:

- allows maximum government input into the ratemaking process;
- may reflect public-sector social goals in the rate structure;
- creates the potential for negative political intervention and the development of cross-subsidies.

Regulation through an independent regulatory commission:

- provides less potential for negative political influences on ratemaking (depending on the structure of the commission);
- makes the enterprise more attractive to potential investors because regulation can be detached from non-economic political considerations;

- encourages informed regulation by a panel of experts;
- may incur high costs in establishing a separate governmental body.

Ratemaking mechanisms

Most ratemaking mechanisms are variations on either rate-of-return or price cap regulation. Rate-of-return regulation allows investors to earn a specific rate-of-return on the capital or assets of the enterprise. Price cap regulation sets an initial price for the service provided by the enterprise and allows that price to increase according to a pre-determined formula. For example, enterprise service prices may be allowed to grow as fast as the rate of general price increases less an adjustment for gains in enterprise productivity (RPI-X regulation).

Rate-of-return regulation:

- allows the best protection against abuse of market power;
- generates detailed analysis of the enterprise's cost structure and rate design, guarding against cross-subsidization;
- is relatively costly and time-consuming;
- provides incentives to over-capitalize;
- is least favorable to potential investors.

Price cap (RPI-X) regulation:

- is less costly and time-consuming than rate-of-return regulation (although its ease of administration may be diminished by complex fuel adjustment clauses, for example)
- provides excellent incentives for efficiency;
- creates a weak framework for detecting discriminatory pricing and cross-subsidization.

Public sector regulation, including choice of institutional structure and rate-making mechanism, demonstrates the public sector's commitment to the privatization concession agreement and the concept of infrastructure privatization.

Potential for competition

The ultimate goal of some privatizations and regulatory frameworks may be to bring the privatized enterprise into a competitive market. Regulatory frameworks can allow the original enterprise to expand services (or meet other goals of the government) and then open the market to competition. Ultimately, competition may eliminate the need for regulation. The British Office of Telecommunications is in the process of introducing competition into the telecommunications industry in order to increase the range and quality of services, while diminishing the role of regulation in enterprise operations.

V. Conclusion

The ultimate test of infrastructure privatization is the ability of its implementors to develop public-private relationships that emphasize the benefits of privatization while dividing the risks in an acceptable manner.

Recent telecommunications company privatizations, including those in the UK, Chile, Mexico, Argentina, and elsewhere, have developed a model that may serve future infrastructure privatizations. These privatizations have provided benefits to all parties concerned:

- **Telecommunications customers** receive better services and access to services, while prices increase more slowly than inflation.
- **Governments** receive fiscal relief, absorb less financial risk, and deflect responsibility for poor service.
- **Private investors** get a stable investment environment including reliable price/profit regulation and control over operating decisions.

Through the evolution of transaction structures that provide clear benefits to all groups, infrastructure privatization can become a widespread, acceptable tool for meeting the infrastructure needs of many countries.