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# Recouping Infrastructure Investment in Latin America and the Caribbean

Selected Papers from the  
*2004 IDB Infrastructure Conference Series*

Juan Benavides  
Editor

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Juan Benavides is Senior Infrastructure Specialist in the Infrastructure and Financial Markets Division of the Sustainable Development Department, specializing on regulation and contracts. This collection of selected papers is published with the sole objective of contributing to the debate on a topic of importance to the region, and to elicit comments and suggestions from interested parties. As such, it does not reflect the official position of the Inter-American Development Bank.

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# Foreword

Recent studies show that, from 1980 to 1997, Latin America's infrastructure gap relative to East Asia grew by 40 percent for roads, 70 percent for telecommunications and nearly 90 percent for power generation. This infrastructure gap can account for nearly 25 percent of the Latin America's GDP gap relative to the East Asian economies over the 1980-2000 period. The gap has widened despite the fact that Latin American countries turned to the foreign private sector for financing part of their infrastructures since the early nineties. However, some countries completely failed to attract those investments and others that initially attracted capital were unable to keep doing so at a rate sufficient to reduce the infrastructure gap.

Many factors have been put forward to explain the failure to increase infrastructure investment. Among them are slowdowns in growth in the region, lack of commitment on the part of relevant stakeholders, social reluctance to foreign investment, poor enforcement and protection of property rights, the inexistence of domestic financial and capital markets, weak regulatory frameworks, and fiscal constraints (which limit the ability of governments to borrow to improve and/or expand capital investments).

Given the above concerns and the central role that infrastructure plays in regional economic competitiveness, the Bank launched the 2004 *IDB Infrastructure Conference Series* to raise the awareness of government authorities and the private sector about the substantial infrastructure investments required. The conferences also helped identify major obstacles to investment in the sector, and have promoted a discussion, with relevant stakeholders, of solutions that will enable countries to increase investments in infrastructure.

The 2004 *IDB Infrastructure Conference Series* included four major events that took place in Madrid (January 22-23), Washington, D.C. (February 19-20), Lima (March 27, during the Bank's Annual Meeting); and Tokyo (May 13). These events brought together leading specialists and stakeholders including established firms and potential investors in Latin America's infrastructure, representatives of academia and multilateral financial institutions; and banking, industry, and legal experts.

Five papers discussed during the conference series are included in this selection because they help depict overall infrastructure investment issues in the region. The papers, which

are preceded by an overview of general lessons and challenges, address themes such as the mismatch between public perception and the gains from privatization in Latin America; innovative financial structures; investor perceptions of infrastructure risk; the potential of public-private partnerships; and the fiscal dimension of infrastructure investment.

In organizing the *2004 IDB Infrastructure Conference Series*, the Bank has reiterated its commitment to help improve the investment climate for private participation in infrastructure and find new ways for the public and private sectors to cooperate to the benefit of consumers. We are looking forward to supporting governments' requests for help in creating new avenues of cooperation for the benefit of the countries of Latin America and the Caribbean.

*Carlos M. Jarque*  
Manager  
Sustainable Development Department

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# Challenges for Infrastructure Investment in Latin America and the Caribbean: Overview

*Antonio Vives\**

## INTRODUCTION

There are causal links between the stock of physical infrastructure and economic growth. The quality, price, and availability of electricity, gas, water and sanitation, and telecommunications and transportation networks are fundamental for the well-being of the population and for business competitiveness. New infrastructure investment needs for the countries of Latin America and the Caribbean, as estimated by Fay and Yepes (2003) for the period 2005-2010, come to US\$37.9 billion per annum. It is estimated that maintenance costs during the same period will reach US\$32.9 billion per annum. In all, the region will need US\$70.8 billion yearly during that period (equivalent to 3 percent of regional GDP). These huge outlays cannot be financed solely by public budgets. Mobilizing the necessary financial resources will require significant private sector participation, not only in direct ownership of assets, but also in management and operations, to enhance efficiency.

These investment requirements pose a new challenge to the institutional changes introduced over the last 15 years in the region, particularly in the infrastructure sectors. Private sector participation declined after an initial surge (see figure 1-1) and contract renegotiations have persisted. As discussed by Chong in this publication, it is unclear why public opinion has remained hostile even as, in many cases, private participation has yielded net welfare gains in infrastructure during the last ten years (the success story of telecommunications being the clearest example). While private participation did not win social acceptance, in most cases, public sector provision of traditional infrastructure services left much to be desired: coverage has yet to extend to the poor, efficiency is low, and the deficits of public enterprises contribute to ever-mounting fiscal deficits.

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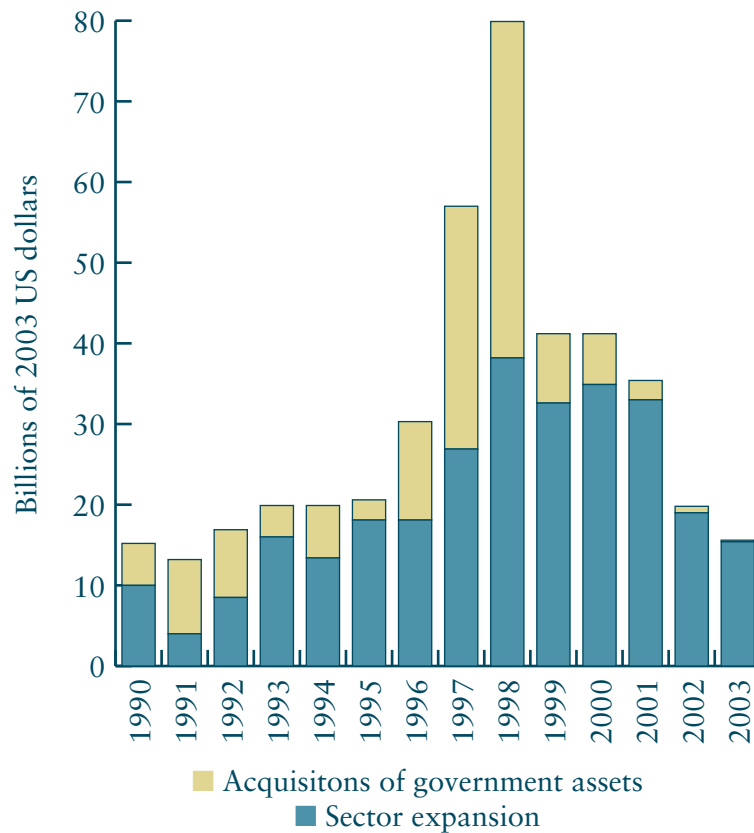


Infrastructure reforms produced results that fell short of the anticipated spectacular performance. With the benefit of hindsight, it appears that analysts and reformers were overly optimistic regarding their ability to structure the sectors, structure regulation, and set up concessions. Moreover, it was not sufficiently anticipated that regulation could not provide complete insulation from the influence of politics. As a result, it has been very difficult to eliminate the distortions in tariffs and subsidies due to political opposition to the adjustment. Furthermore, anticipated results were exaggerated to enhance the political and social acceptance of the reforms.

The *2004 IDB Infrastructure Conference Series* facilitated the airing of different perspectives in order to distill common problems and make progress in the identification of solutions. The events held in Madrid, Washington, Lima, and Tokyo yielded three general lessons.

1. The Latin American and Caribbean countries should focus on identifying and removing the binding constraints that hinder private sector operations and its willingness to take risks and make investments. Furthermore, the public sector should avoid the mistakes that led to the failure of state-owned enterprises in the past. More proactively, and while maintaining a long-term commitment to institution-building, governments should prioritize the implementation of short-term actions with direct impact on infrastructure investment.

**Figure 1-1.** The Evolution of Private Sector Participation in Infrastructure



2. The countries of the region cannot afford the opportunity cost of first building a comprehensive set of institutions as a prerequisite for action. Institutional advances in infrastructure governance will take place at a pace that depends on the political economy of reform, the cultural context, and the country-specific ways of securing property rights. The prescription is not to look for ideal institutions, but to strike a balance between the costs that society is willing to accept to set things in motion and the expectation of sustained improvements in the future. Persistence will be required.
3. The discussions confirm that there is no universal set of governance and financial structures to stimulate infrastructure investment, and that it is difficult to implement extreme solutions, be they purely private or purely public. One must tap the comparative advantages of each and tailor the combination to the prevailing conditions.

The rest of this overview presents some more specific concerns that were discussed in the four conferences: business climate and scope of regulation; public investment and fiscal prudence; the political economy of reform consolidation; contracts and incentives in weak legal environments; and financial innovation.

## **BUSINESS CLIMATE AND SCOPE OF REGULATION**

The countries of Latin America have made major efforts to improve the climate for private participation in infrastructure, especially by introducing modern regulatory regimes. But regulations are too new to be trusted and the track record of independent decisions made by the newly-created institutions is meager.

The industrialized countries have already solved their problems of generalized access to services and do not face severe fiscal restrictions when it comes to implementing the first-best choice of providing direct subsidies to the poor. In those countries, regulation stimulates efficiency gains and encourages timely investment via competition. In contrast, in the region, regulation emerges as a consequence of the poor financial condition of the services, brought about by public mismanagement of state firms.

The focus on the search for efficiency gains may not help address a core problem of Latin American infrastructure: insufficient coverage in places with high subnational risk. The supervisory reach of a centralized regulator is limited in relation to a universe of hundreds of decentralized firms dispersed across the national territory (a problem most observed in the water and sanitation sector). Regulation must be part of a comprehensive package that also includes proper industry structure, technical support, incentives, and community participation.

## **PUBLIC INVESTMENT AND FISCAL PRUDENCE**

Given the new challenges facing infrastructure financing, the right balance needs to be found between the public and private sectors. The public sector faces severe fiscal constraints and the private sector perceives risks to be too high to be supported by tariff levels that are politically and economically feasible. Nevertheless, many of the investments in infrastructure help generate revenues and contribute to economic growth. These investments should not be treated as expenses in government accounting. Fiscal sustainability should be understood

from three complementary perspectives: government accounting based on balance sheets; criteria for excluding publicly-owned and commercially-run companies from fiscal deficits; and economic criteria for considering public-private initiatives as productive assets.

Furthermore, many of the decisions to invest by domestic and foreign players are made at the subnational level. In this respect, social capital and the municipalities' capabilities play a crucial role. Instruments and interventions need to be adapted to these institutional and politically more complicated environments. All of these topics are being discussed with the International Monetary Fund, which has shown a willingness to reconsider its traditional stand of classifying these investments as expenses.

There has been a lively debate in the region about the potential for government-sponsored infrastructure funds to foster investment. Such funds must be financially viable and endowed with mechanisms that ensure that only productive projects are financed, that they not provide loopholes to fiscal prudence, and that they are not designed to by-pass low public creditworthiness.

## THE POLITICAL ECONOMY OF CONSOLIDATING REFORM

Infrastructure reforms have proven to be political processes with plenty of surprises, and prone to mistakes and backlashes. Multiple interests continuously subject the new order to contradictory pressures, possibly altering the intended goals and direction. Reform "losers" maintain their intention to recover the benefits they enjoyed in the past, while reform "winners" sometimes do not feel like winners at all, as they may perceive either that current sacrifice will not be rewarded with increased future benefits, or that private firms will eventually capture most of the gains.

To push the reform forward, governments and regulators need to move deftly in a setting where different interest groups form coalitions, invest in lobbying, or block a measure via high-level political influence. More importantly, governments need to find ways to take the reforms out of *redistribution traps*, in which the gains of one group become (or are perceived as) the losses of another. If those who stand to lose have veto power, the reforms will not become consolidated.

This situation is commonly found in the electricity and water and sanitation sectors, where subsidies intended to reach only poor customers go mostly to the middle classes. Because the middle classes have more access to information and more political influence, they can react quickly and block the standard recommendation; namely, the elimination of subsidies to nonpoor groups. There are limited legal avenues, and many financial constraints and credibility problems when it comes to awarding compensation. As Bardhan (2001) states, in a perfect world, a government could issue long-term bonds to buy off the losers and tax the winners. This may not be realistic; moreover, the losers may anticipate that future governments will break current promises. External multilateral funding, in the form of policy-based lending, could be used to finance part of the upfront costs of compensating reform losers when the outcome represents an irreversible and positive increase in overall social welfare.

## CONTRACTS IN WEAK LEGAL ENVIRONMENTS

Infrastructure service contracts in Latin America and the Caribbean reached unexpectedly high renegotiation levels during the nineties. A recent study (Guasch, Laffont and Straub, 2002) shows that 40 percent of a sample of 796 infrastructure concessions was renegotiated in the region; and the average time to renegotiate was approximately 2.2 years. There is nothing wrong about renegotiating a contract when an unexpected shock has a chronic effect on the financial health of a project. However, many renegotiations are the result of *weaknesses in the enforcement of the contract*. As discussed by Strong, Guasch and Benavides (see Chapter 3), when the judiciary is weak, strategic investors optimize the combined value of project profits *plus* the expected value of what could be obtained by besting the granting authority in a legal dispute. By winning a concession contest, the concessionaire purchases the option of obtaining extra profits in contract renegotiation. The key point is that the “right” to be paid extra profits will depend on the investment made by both the government and the concessionaire in more and better legal services.

On the other hand, in the same weak legal framework, the “creeping” expropriation of a firm that has made a specific, irreversible investment has often been an issue in concession and regulatory contracts in Latin America. In a recent survey of Spanish infrastructure investors in Latin America that was carried out by Analistas Financieros (see Chapter 4), one of the major concerns expressed was over the change in bargaining power from the investment stage (which favors the firm) to the operational stage (which tilts the balance towards the government because the firm is “stuck” with the investment).

In order to help level the playing field, it might be useful to set up a legal fund to defend public interests as well as adjudication mechanisms to resolve disputes when there are major asymmetries between government agencies and concession operators. One of the suggestions in the above-mentioned survey is to set up a high commissioner to arbitrate such disputes.

## FINANCIAL INNOVATION

Infrastructure financing has to exploit local capital and financial market mechanisms and rely less on external sources, which introduce significant foreign exchange risks. Securitizations might create a new class of project bonds to increase tenors and to bridge the gap between bank debt and capital markets. Pension funds also need to be tapped to aid in the recovery of Latin American infrastructure finance. The countries of the region have been among the world’s leaders in pension and social security reform. However, these pension portfolios remain concentrated in the fixed-income instruments of governments and commercial banks, and are saddled with regulations that preclude investment in infrastructure projects. At the same time, these projects have failed to structure the instruments so that they can be incorporated into the pension funds’ portfolios (Vives, 1999).

## FINAL OBSERVATIONS

In the shorter term, practical measures are needed to cope with the risks inherent to countries with high redistribution pressures and imperfect property rights protection. In such an

environment, contracts *and* governance require a joint design reflecting the legal and cultural constraints (in contrast with common project finance practice, in which governance is quite generic). We can give two examples of these measures.

The first example stems from Strong, Guasch and Benavides (see Chapter 3), who point out that the growing popularity of public-private partnerships (PPPs) in the region could respond in part to the fact that the first wave of private participation in infrastructure tended to shift too much risk to the private parties without necessarily offering a commensurate return, thus leading to costlier provision or renegotiation. In the Latin American and Caribbean context, it would be a mistake to view PPPs just as a means to tap the expertise and financial contribution of the private sector. Examining China's investment boom of the 1990s, Rodrik (2004) notes that:

“Private entrepreneurs were effectively partners with the government. In a system where courts cannot be relied upon to protect property rights, letting the government hold residual rights in the enterprise may have been a second-best mechanism for avoiding expropriation. In such circumstances, the expectation of future profits can exert a stronger discipline on the public authority than fear of legal sanction. Private entrepreneurs felt secure not because the government was prevented from expropriating them, but because, sharing in the profits, it had no interest to expropriate them.”

This practical lesson has important implications for infrastructure provision and clarifies the scope of PPPs whenever the key problem is protection of investors' property rights. It challenges the use of classical concessions in weak legal environments, even—or especially—in the presence of attractive financial ratios. All modalities of private sector participation must be explored, from outright purchase of the assets to simply managing or operating the services.

Another example of the types of measures that would be beneficial relates to proactive management of public guarantees for infrastructure projects, which are established *ex ante*. Governments take no contingent action to prevent the worsening of project flows or economics. There is room for allowing some predefined flexibility in contract parameters and for undertaking actions that may help avoid costly renegotiations.

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# TWO

## Privatization in Latin America: A Review of the Evidence

*Alberto Chong\**

### INTRODUCTION

This chapter evaluates the privatization experience and assesses the empirical validity of the main criticisms of it. The analysis focuses on Latin America because this region has seen one of the steepest declines in the state's share of production over the last 20 years (it is second only to the transition economies of Eastern Europe). Given the extent of privatization in Latin America and the quality of the data, researchers have been able to produce comprehensive analyses that provide cogent academic responses to some of the main criticisms raised.

Overall, the empirical record shows that privatization leads not only to higher profitability, but also to major growth of output and productivity, fiscal benefits, and even quality improvements and better access for the poor. In light of the overwhelming evidence and despite some failures, arguments that privatization should be halted are not well founded. The analysis in this chapter suggests that privatization failures can be understood within a political economy framework. The roots of the failures can be traced to substantial state participation in opaque processes; poor contract design; inadequate re-regulation; and insufficient deregulation and corporate governance reform, increasing the cost of capital and limiting firm restructuring in a competitive environment.

This chapter discusses the first hurdle: verifying that the profitability increases recorded by the literature are robust, unbiased, and not explained solely by selecting a sample of the best firms.<sup>1</sup> It also analyzes criticisms of privatization focused on the welfare of workers,

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1. The first generation of privatization papers suffered from this problem. However, several recent Latin American studies analyzed here use comprehensive firm-level data that provide solid evidence of post-privatization changes in performance.



consumers, and the state and examines the policy implications based on the privatization record thus far.

## WHICH FIRMS ARE UP FOR SALE?

### Sample Selection Bias

Privatization studies analyze the impact on firm performance by comparing pre- and post-privatization firm-level data. This literature has presented worldwide evidence on the benefits of privatization in terms of increased firm profitability. However, critics have suggested that this evidence may be the result of sample selection bias, which may arise from five basic sources. Several early studies on firm performance after privatization in Latin America suffer from these biases. Some of these papers are specific case studies of a limited number of large firms (e.g., Galal et al., 1994; Chong and Sánchez, 2003); others do not include econometric or statistical analysis (e.g., Sánchez and Corona, 1993; Hachette and Luders, 1994); others are econometric studies of one or two heavily-regulated sectors (e.g., Ramamurti and Vernon, 1991; Ramamurti, 1996 and 1997; and Pinheiro, 1996); and some provide evidence from cross-country analysis of oligopolistic sectors such as telecommunications (e.g., Ramamurti, 1996).

A recent research effort across Latin America has expanded the detailed privatization analysis for the region using comprehensive data that help address the concerns raised in this section. As summarized in table 2-1 (page 23), the papers cover privatization programs in Argentina, Bolivia, Brazil, Chile, Colombia, Mexico, and Peru (Chong and López-de-Silanes, 2005a).<sup>2</sup> These studies compare firm performance before and after privatization, adjusting for macroeconomic and industry effects with matching firms. With the exception of Brazil, where access to pre-privatization data for non-publicly traded firms was denied, the coverage across firm sizes for all countries is enough to put to rest the main concerns regarding sample selection. The samples used for Bolivia and Chile are the smallest (around 66 percent in terms of value), while for the rest of the countries the samples cover 80 percent, 90 percent, and even 95 percent of transaction values and of the total number of privatization contracts. Overall, the coverage and industry-matching techniques of the recent series of privatization studies in Latin America reassure us that the higher profitability of privatized firms is hardly the result of sample selection bias.

### Non-comparable Data

There are two additional problems with data collection procedures relating to the comparability of firms before and after sale. In several countries, governments have either split existing state-owned enterprises (SOEs) to sell them as independent units, or grouped them together to form packages of firms to be sold as a unit. In both cases, large amounts of data are needed to conduct a firm-by-firm analysis of the pre- and post-privatization periods. In order to keep units comparable across time, it is essential to have disaggregated information at the plant

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2. The specific studies in the book are: Galiani et al. (2003) for Argentina; Garrón et al. (2003) for Bolivia; Anuatti-Neto et al. (2003) for Brazil; Fischer et al. (2003) for Chile; Pombo and Ramírez (2003) for Colombia; Chong and López-de-Silanes (2005b) for Mexico, and Torero (2002) for Peru.

level as well as access to financial statements that were prepared before the sale. A second set of problems with the data emerges from changes in the sample after privatization, as the SOE may be merged with the acquiring firm or with one of its subsidiaries. In both cases a new entity is created, making it difficult, if not impossible, to make meaningful comparisons.

The resulting samples typically excluded: (i) some cases of SOEs for which data from the pre-privatization period was missing, often due to mergers or spin-offs; (ii) a few instances of very small state ownership shares being sold (Argentina and Chile), firms that underwent changes in accounting (Bolivia and Chile), and some very recent privatization cases (Bolivia and Brazil); and (iii) firms that were liquidated after privatization. However, robustness checks were applied to ensure that the results would not be significantly changed if they were included. To summarize, several early privatization studies suffered from biases introduced by non-comprehensive samples and the use of “poor” data when the nature of the firm changed after privatization. Today, due to recent Latin American studies outlined in this paper and other research efforts (mainly for Eastern European countries) these concerns have been largely put to rest with comprehensive firm-level data across sectors and company sizes. The rest of this section outlines the evidence on performance changes after privatization emerging from the Latin American countries included in Chong and López-de-Silanes (2003a).

## Evidence from Comprehensive Data

This section analyzes recent Latin American evidence on the effects of privatization. As previously explained, the data are some of the most comprehensive and up-to-date for the region, allowing us to address many of the concerns raised about privatization. The basic results for the sample of Latin American countries are presented in figures 2-1 through 2-5 (pages 25–29).<sup>3</sup> The analysis includes profitability as well as the behavior of inputs, output, and taxes. Consistent with earlier worldwide evidence, Latin American studies find improvements in firms’ profitability. These increases are typically accompanied by reductions in unit costs, boosts in output, and lower or constant levels of employment and investment. The evidence suggests that higher efficiency, achieved through firm restructuring and productivity improvements, underpins profitability gains. The raw results on firm performance are followed by industry-adjusted information to verify their robustness. Whenever possible, we show the data for median firms, to minimize the impact of outliers.

The evidence from Latin America shows substantial gains in profitability after privatization, measured by net-income-to-sales and operating-income-to-sales ratios (see figure 2-1, page 25). For the countries in the sample, the median net-income-to-sales (operating-income-to-

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3. The data presented in this paper come from the series of papers in the book edited by Chong and López-de-Silanes (2003a). Homogeneous data for such extensive samples are difficult to collect since not all the same information is available or reported for all firms in all countries. The figures in this section show comparable information across countries but the comparisons are not perfect. When strictly comparable information is lacking, data for these countries is not included in the figures and the results are only discussed in the text. The specific information for each country comes from: Galiani, Gertler, Schargrodsky, and Sturzenegger (2003) for Argentina; Anuatti-Neto, Barossi-Filho, de Cavalho, and Macedo (2003) for Brazil; Garron, Machicado, and Capra (2003) for Bolivia; Fischer, Serra, and Gutiérrez (2003) for Chile; Pombo and Ramírez (2003) for Colombia; Chong and López-de-Silanes (2003b) for Mexico; and Torero (2002) for Peru.

sales) ratio increased 14 percent (12 percent). The largest gains are in Peru and Argentina, where median changes were about 20 percent. Brazil shows the smallest gains, from 2 to 5 percent depending on the ratio. Unlike their counterparts in other countries, Colombian SOEs were highly profitable before privatization. The levels of relative profitability in Colombia are largely explained by the protectionist industrial policies implemented by the government in the 1980s (Pombo and Ramírez, 2003).

The data for Latin America also suggest that the main reason behind the profitability gains is the improved operating efficiency brought about by privatization. Figure 2-2 (page 26) shows cost-per-unit, the ratio of sales to assets, and the ratio of sales to employment. For the countries for which data is available, cost-per-unit plummets: the median decline is equivalent to 16 percent. The results are statistically significant at 1 percent for all countries except Chile. In four of the seven countries, SOEs were highly unprofitable before privatization, with losses above 10 percent of sales in terms of the net income to sales ratio. The exceptions are Chile and Bolivia, whose SOEs exhibited slightly positive profitability ratios, and Colombia, where the SOE sector was very profitable compared to private competitors.

The sales-to-assets ratios show a similar upward trend in four of five countries. The median country increase in the ratio is 26 percent. Peru is the only country with a decline (about 20 percent) in the sales-to-assets ratio, as privatized SOEs made large investments that overtook output increases. Finally, the impact on sales-to-employment is dramatic, with a median gain of almost 70 percent. Chile and Mexico show the most impressive results, as sales-per-employee doubled. Information for Colombia (which is not in the figure to ensure strict comparability), suggests that SOEs also underwent restructuring with significant efficiency gains. The mean (median) manufacturing firm in Colombia experienced a 43 percent (13 percent) gain in labor productivity and the total factor productivity index increased at a rate of 2.4 percent per year.

As figure 2-3 (page 27) shows, labor retrenchment is a significant component of the privatization experience in Latin America. Privatized firms reduced their workforce by a substantial percentage in almost all countries. The exception to this trend is Chile, where the mean number of workers in privatized firms increased by 15 percent and the median fell by 5 percent. In general, the median country reduced its workforce by 24 percent. Privatized SOEs in Colombia, Mexico and Peru show significant reductions: the median firm fired 24 percent, 57 percent, and 56 percent of its workforce, respectively. The magnitude of employment reductions in these countries speaks of SOEs with bloated workforces before their sale and prior adherence on the part of decisionmakers to the political economy view of the benefits of privatization.

The analysis so far suggests that the profitability gains of privatized firms are mostly due to efficiency gains, not to other related factors. Most countries show drastic cuts in employment and fairly consistent capital stocks. Perhaps the most striking finding is that the output of privatized SOEs increased dramatically, despite dwindling employment and modest investment. The largest gains are in Mexico and Colombia, where median output increased by 68 percent and 59 percent respectively. The country with the lowest—though still significant—increase in output is Brazil, where real sales were up by 17 percent.

## WHO WINS AND LOSES FROM PRIVATIZATION?

Some of the main criticisms of privatization are based on the belief that the gains in firm profitability are achieved at the expense of society. These gains are claimed to be extracted from consumers through the use of market power, from workers by means of lower salaries, and from the government, which gives up a stream of positive cash flows (Campbell-White and Bhatia, 1998; Bayliss, 2002). In this section, we use the recent empirical evidence from Latin America and elsewhere to assess the sources of privatized SOEs' profitability gains.

### Government Revenues

Critics of privatization often argue that the government—and thus society at large—loses from privatization because it gives up a positive stream of cash flows and puts it in the hands of private buyers. The argument is extended to claim that the sale of SOEs is equivalent to the “privatization of gains and socialization of losses.” In other words, well-connected groups are able to reap the profits of privatized firms and receive government-sponsored bailouts when things go wrong. The evidence used to support these claims comes mostly from case studies of profitable SOEs that were privatized, unprofitable SOEs that turned out to be great moneymakers after privatization, and SOEs that became money-losers and went into financial distress. This perception has swayed public opinion because of the excessive costs to society in some cases of botched privatizations. In Mexico, for example, the bailouts granted to keep banks and highways from going bankrupt increased public debt from less than 25 percent to over 50 percent of GDP (López-Calva, 2003).

The underlying logic of these arguments is similar to that undergirding the arguments for the economic benefits of state production, which justified the existence of SOEs in the 1950s and 1960s on the grounds that they help solve market failures by taking into account the social costs of their actions. Today, there is ample academic evidence to the contrary in at least three areas. First, there is systematic evidence that SOEs are less efficient than private firms in developed and developing countries (Shleifer and Vishny, 1994; Shleifer, 1998). Second, SOEs' inefficiency may be the natural result of political meddling as governments use them to achieve political objectives. This political use of state production leads to excessive employment, inefficient investments, and inappropriate location of production sites, among other impacts (see López-de-Silanes, Shleifer and Vishny, 1997). Finally, over the last ten years, a large body of empirical work reviewed in previous sections shows that, by and large, privatization leads to substantial increases in the profitability of firms, rather than profitability increases leading to privatizations.

The criticisms of privatization that center on what the government gives up disregard the fact that SOEs are typically money-losing entities before privatization and that the visible losses may underestimate the real bottom line because its precise magnitude is obscured by large cross-subsidies from other SOEs and soft loans from the government. In fact, tax collection from SOEs improved after privatization in most Latin American countries analyzed in Chong and López-de-Silanes (2003a). The only exception in the region is Brazil, which had the smallest profitability gains and where the net taxes-to-sales ratio was still positive

but fell by about 1 percent (the difference is not statistically significant). The ratio of net-taxes-to-sales in Mexico increased by 7.6 percent. Although we do not have direct information for Argentina, Bolivia, Chile, or Peru, it is safe to assume that net taxes-to-sales increased since the ratio of net income-to-sales rose from 12 to 20 percent. Increased fiscal revenues mean more resources that can be channeled to address pressing social needs, thereby benefiting society at large.

Higher tax revenues, if managed appropriately, should bolster governments' capability to undertake activities that improve welfare and benefit the poorest segments of society. Argentina, Bolivia, Mexico, and Peru are examples of countries where privatization revenues and the increased tax receipts from non-profit-making firms was probably large enough to offset the cost of job losses (Rama, 1999; Chong and López-de-Silanes, 2005a; 2005b). However, privatization revenues are not a blessing if they are misused. For example, Anuatti-Neto et al. (2003) point out that, in Brazil, privatization brought about high macroeconomic costs because the revenues generated may have delayed fiscal adjustment and helped prop up an overvalued currency. This is obviously not an argument against privatization, but against the political misuse of the resources it generates.

Overall, the empirical literature on privatization shows that it has an impact on government budgets by reducing government subsidies for SOEs, producing substantial revenue from the sale, and increasing tax revenues as a result of the higher profits of the privatized firms. The benefits of a well-managed privatization program could be substantial, not only for the privatized firm but also for society as a whole.

## Worker Exploitation

The second potential source of post-privatization gains is to be found in transfers from workers to shareholders, given that cuts in labor costs may account for a large fraction of total cost reductions. Labor cost reductions can come from two sources: fewer workers or lower wages and benefits. As explained, the research that look at comprehensive samples from Latin America find that direct employment by the median SOE falls by 20 to 30 percent after privatization depending on the measurement (see figure 2-3, page 27). Layoffs explain part of the cost reduction and, thus, the higher profits after privatization. Cuts in wages and benefits constitute the other potential component. The hypothesis that privatization leads to the redistribution of income from workers to the new owners predicts a reduction in real wages and benefits for those workers who remain in the firm. Data on wages at the firm level are scarce, but for those countries with available information (Argentina, Bolivia, Mexico, and Peru) the evidence shows the exact opposite: real and industry-adjusted wages of workers in privatized firms increase. As figure 2-6 (page 30) shows, real and industry-adjusted wages for the median firm increased by about 100 percent in Mexico and Peru. In Argentina, they increased by about 70 percent, and in Bolivia the change was still positive but substantially smaller.

The two components of transfers from workers to profits move in opposite directions. Therefore, the share of change in profitability that may be attributed to labor cost savings have to consider the lower costs due to layoffs and the higher costs due to wage increases for

the remaining workers. Following the methodology used in La Porta and López-de-Silanes (1999), recent studies by Galiani et al. (2003), Garrón et al. (2003), and Torero (2002) compute the impact of lower post-privatization labor costs on profits.<sup>4</sup>

The evidence from Argentina, Bolivia, Mexico, and Peru in figure 2-7 shows that even with the extreme assumption that laid-off workers had zero productivity, the median savings from labor costs is equivalent to 23 percent (20 percent) gains in net income-to-sales (operating income-to-sales) after privatization. The figures range from nearly 5 percent in Peru to 45 percent in Mexico. This back-of-the-envelope calculation is extreme since we are assuming that laid-off workers had zero productivity. If we assume that these workers are half as productive as those retained by the firm, the median savings from reduced labor costs for the countries with data falls to 11.6 percent (10 percent) of the gains in net income-to-sales (operating income-to-sales). Overall, the evidence does show that labor cost reductions are a source of the gains after privatization, but it is hard to make the argument that these savings explain the bulk of the higher observed profitability.

The welfare of displaced workers after privatization is another issue for consideration. The calculations above also overstate workers' losses to the extent that some of those laid off found alternative employment or attach some value to leisure. Galiani et al. (2003) suggest that some of these workers did in fact find jobs. They surveyed displaced workers in Argentina and estimated that their welfare loss was equivalent to 39 to 51 percent of their pre-privatization earnings, and that 40 percent of them actually thought they were not worse off after privatization. This is surprising since most theories and evidence suggest that workers in SOEs are overpaid and have very low productivity. Further work is needed in this area to provide clearer evidence on the extent of workers' losses, but the available evidence thus far suggests that although laid-off workers do lose in this process, the losses may not be as large as previously thought.

Finally, privatization could also have compositional effects on the labor force, hurting unskilled workers disproportionately. The empirical evidence on this issue is inconclusive for the two Latin American countries with disaggregated wage and employment data. In Bolivia, blue-collar workers fared better than white-collar employees since only 4 percent of them were laid off, whereas over 35 percent of white-collar workers were fired by the median firm. In terms of wages, the data run in the opposite direction: unskilled workers who remained saw their real (industry-adjusted) wages increase by only 4.2 percent (3.4 percent) versus a 15 percent (30 percent) gain for skilled workers. The case of Mexican blue-collar workers also yields inconclusive results, but this time with higher blue-collar layoffs in the median firm (61 percent or 32 percent industry-adjusted), and sharp rises in blue-collar real and industry-adjusted wages that climbed by 148 percent and 122 percent respectively. Meanwhile, fewer white-collar employees were fired by the median firm (46 percent and 31

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4. Savings from lower labor costs are computed as:  $\frac{\text{Wage}_{bp} * (L_{bp} - L_{ap})}{\text{Sales}_{ap}}$  where  $\text{Wage}_{bp}$  is the average wage of

employees in the SOE before privatization;  $L_{bp}$  is the number of workers employed before privatization;  $L_{ap}$  is the number of employed workers after privatization; and  $\text{Sales}_{ap}$  is the value of sales after privatization. The resulting number is thus expressed as a fraction of sales. The number is then divided by the percentage increase in net income-to-sales and operating income-to-sales ratios to determine the percentage of the respective increase due to transfers from workers.

percent industry-adjusted), but those who stayed enjoyed substantially smaller real-wage increases than blue-collar workers (100 percent and 48 percent industry-adjusted). Therefore, for neither of these countries can we conclude that unskilled workers fare worse than skilled labor as a result of privatization.<sup>5</sup>

## Abuse of Market Power and Consumer Exploitation

The last concern about the sources of post-privatization gains is that increases in firm profitability may come at the expense of consumers as a result of weak regulation and abuse of market power. Recent research on Latin America provides useful data for assessing these claims. If market power is a significant determinant of the gains, we should expect firms in noncompetitive sectors to experience large gains in operating income due to higher product prices. Since profits are likely to be higher in the noncompetitive sectors before and after privatization, the relevant comparison to establish the facts is relative changes between privatized firms in competitive and noncompetitive sectors.

For the Latin American countries with data disaggregated by competitive and noncompetitive sectors, we find that changes in profitability are generally larger in the competitive sector.<sup>6</sup> This evidence goes against the hypothesis that market power explains most of the gains. As figure 2-8 (page 32) shows, the median operating income-to-sales ratio in Mexico increased by 14.5 percent for privatized firms in the competitive sector and by only 8.5 points for firms in noncompetitive industries. Similarly, competitive firms in Colombia performed relatively better than their noncompetitive counterparts as their median profitability decreased by only 2 percent compared to the 13-point drop for noncompetitive sectors that underwent severe deregulation. In Chile, although the noncompetitive sectors' profitability increased more (8.5 percent), it is not statistically different from the 5.5 percent increase in the competitive sectors. Data for Peru reinforce this trend: firms in noncompetitive sectors increased their profitability by an average of 27 percent while the mean increase in the whole sample was 32 percent.

Regression analysis for Peru and Bolivia using concentration proxies also helps assess the role of market power. Confirming the trend above, market concentration in both countries was found not to be a significant determinant of profits. Finally, information on firms' product prices before and after privatization in Mexico also suggests that market power is not a major source of gains. Cumulative price increases in the noncompetitive sector in Mexico were only 6 percent higher than the growth of the industry-matched PPI index over the post-privatization period. La Porta and López-de-Silanes (1999) use this product price data to calculate the contribution of price changes to the observed change in profitability of the whole sample of privatized firms. Their data show that price increases accounted for

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5. Notice that empirical evidence elsewhere (Megginson and Netter, 2001) point to overall employment increases after privatization when taking into account indirect employment generated.
  6. Firms are classified as competitive and noncompetitive as follows: (i) for Chile, firms are classified as noncompetitive if they are in telecommunications, electricity or social services sectors; (ii) for Colombia, noncompetitive firms are those in the energy sector; (iii) for Mexico, firms are classified based on the description of the industry provided in the privatization prospectus of the firm; and (iv) for Peru, the noncompetitive sector comprises firms in the electricity, financial and telecommunications sectors and the data under "competitive" industries shows the numbers for the whole sample instead. The data for Peru refer to mean rather than median values.

only 5 percent (7 percent) of the change in mean (median) operating income-to-sales after privatization.<sup>7</sup> If market power were an important source of profits for privatized firms, those in noncompetitive sectors would be expected to show lower growth in employment, investment, and output than firms in competitive sectors (see La Porta and López-de-Silanes, 1999). Available evidence for Latin America does not support these claims either (see figure 9). In Mexico and Colombia, employment dropped by 46 percent and 24 percent for firms in the competitive sector, and it only decreased by 19 percent and 10 percent for noncompetitive firms, respectively. In Chile, the pattern is even more striking: employment actually increased in both sectors, rising by 16 percent in competitive industries and 32 percent in noncompetitive sectors. For Peru, employment data show no divergence in results between competitive and noncompetitive sectors as the latter declined by 50 percent while employment fell by 51 percent for the whole sample. Output growth data for Mexico and Peru reinforce this trend. In Peru, growth of output was very similar in both sectors, with noncompetitive firms seeing sales increases of 47 percent, and the sample as a whole, 50 percent. Similarly, in Mexico, competitive firms' output increased by 56 percent, while sales in the noncompetitive sector were up by 78 percent.

Additional evidence comes from investment patterns. Investment-per-employee grew 49 percent and 154 percent in the noncompetitive sectors of Mexico and Colombia, respectively. Meanwhile, the same ratio grew by only 29 percent in Mexico's competitive sectors and stagnated in Colombia's competitive industries. The evidence for Chile runs in the opposite direction, but it is hardly conclusive of market power abuse. Although investment-per-employee grew by 74 percent in Chile's competitive sectors, it also climbed by almost 50 percent in noncompetitive industries.

Overall, the Latin American evidence presented in this section does not support the claim that consumer exploitation is a significant source of privatization gains. These studies suggest that a major source of the gains may lie in deep firm restructuring that leads to lower costs and higher efficiency. Evidence from Chile and Mexico are suggestive of this pattern. Unit costs in the competitive sector fell by 3 percent in Chile and 13 percent in Mexico, while those of noncompetitive industries decreased by 8 percent and 24 percent respectively. To conclude, abuse of market power may be an issue for some firms, but the bulk of the evidence suggests it is not the main explanation for privatization gains across the board.

## Other Dimensions of Consumer Welfare Beyond the Effect on Prices

Beyond its effect on prices, privatization may have an impact on consumer welfare through decreased access, poorer distribution, and lower quality of goods and services. These con-

7. To isolate the contribution of changes in relative prices as a factor behind the observed profitability gains, the calculation compares the observed percentage increase in operating income-to-sales with what would have taken place had privatized firms increased output but left real prices unchanged at pre-privatization levels. Specifically, the formula used for the price contribution is

$$\text{Price Contribution} = \frac{\text{Sales}_{\text{ap}} - \text{Cost}_{\text{ap}}}{\text{Sales}_{\text{ap}}} - \frac{[\text{Sales}_{\text{ap}}/(1+\pi)] - \text{Cost}_{\text{ap}}}{\text{Sales}_{\text{ap}}/(1+\pi)}$$

where  $\text{Sales}_{\text{ap}}$  are sales in the post-privatization period,  $\text{Cost}_{\text{ap}}$  are operating costs in the post-privatization period and  $\pi$  is the increase in real prices.



cerns are significant because, for the most part, the poorest segments of society are the main consumers of goods and services previously produced by SOEs. The evidence of increased output, firm restructuring, and prices presented above should alleviate some of these concerns, particularly for the case of standardized goods and products. Output and price are suitable proxies for measuring the availability of most of these goods. However, in the case of services and public utilities, access and distribution may still be a concern because some segments of the population may lack access to the network and thus may be unable to purchase these services independent of price. Similarly, the quality of services such as water, electricity, telecommunications, or transportation may be reduced to meet price regulation, for example. In all of these circumstances, consumer welfare may suffer as a result of privatization.

A new generation of studies has emerged with more detailed data and new econometric approaches that seem to corroborate the early results in terms of access and quality. For instance, Torero and Pasco-Font (2001) show that the number of telephone lines in Peru increased from 2.9 to 7.8 per 100 inhabitants and the electrification coefficient jumped from 48 percent to 70 percent from 1993 to 1998. Another study by Torero et al. (2003) examines the impact of the privatization of telecommunications on the welfare of urban consumers in Peru, showing significant welfare gains and dramatic improvements in terms of efficiency, access, and quality of service. Similarly, Fischer et al. (2003) find improvements in access and service quality in the telecommunications sector in Chile, where the number of phone lines in operation increased sixfold, bringing teledensity levels from 4.7 to 23.1 lines per 100 inhabitants from 1987 to 2001. The average length of the waiting period for a new phone line dropped from 416 days in 1993 to only 6 days in 2001, while the waiting list for a phone dropped from a peak of 314,000 households in 1992 to only 32,000 by 2001.<sup>8</sup>

There are similar examples of improvements in access to water, electricity, telecommunications, and other services throughout the region that have created benefits beyond lower prices. Nonetheless, one may still be concerned about the distributional impacts of the increased coverage, as it may not be reaching the poorest sectors of society. Bayliss (2002) recognizes that privatization has the potential for welfare-enhancing outcomes if it leads to an increase in access to the service network for low-income households. However, her review of cases suggests that the drive to seek higher profits in the private provision of services will almost invariably lead to a loss for the poor. Birdsall and Nellis (2002) also argue that privatization may lead to improvements in efficiency and profitability accompanied by worsening income distribution and wealth.<sup>9</sup> They conclude that the profitability gains are probably not worth their distributive effects.

Again, recent detailed econometric analyses with better samples provide some answers to these concerns. Galiani et al. (2003) have some of the best data available for the municipal level in Argentina, where about 30 percent of localities privatized water delivery services. Their results show a significant increase in the proportion of households connected to water services in municipalities that privatized compared to those that did not. Their regression

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8. Trujillo et al. (2002) provide evidence for 21 Latin American countries from 1985 to 1998 and find that private sector involvement in utilities and transport had a marginally positive impact on per capita GDP.

9. They also indicate that these results are less valid for Latin America than for transition economies, and less relevant for the privatization of utilities than for the privatization of banks or oil.

estimates suggest that, as a result of privatization, the number of households connected to the water network increased by 11.6 percent (excluding Buenos Aires where 98 percent of households were already connected). Similarly, using less comprehensive data from Bolivia, Barja et al. (2002) find that privatization increased access to water relative to both the existing trend and the nonprivatized areas. More importantly, they find that the relative benefits of water privatization are greater for the poorest segments of the population, who gained from the largest increases in access.

Galiani et al. (2003) cleverly design tests that map water delivery to infant mortality in order to directly address the concerns about post-privatization quality. Their regressions show that, controlling for other factors, child mortality in Argentina fell by 5 to 7 percent more in areas that privatized water services. The effect was greater in the poorest municipalities that privatized, where child mortality fell by 24 percent. Privatization translated into 375 child deaths prevented per year. In the same vein, Mookherjee and McKenzie (2003) provide an overview of four studies from Argentina, Bolivia, Mexico, and Nicaragua that use household surveys to measure the impact of privatization on welfare. They conclude that the sale of SOEs brought positive welfare effects and that the poorest segments of the population appear to be relatively better off. In Argentina, for example, they report falling electricity prices that improved the welfare of all income deciles. For Bolivia, they also report welfare gains from increased electricity access for all but the top income deciles. The gains exceeded 100 percent for the lowest deciles despite real price increases. In Nicaragua, although the price of electricity increased, since the budget share allocated to electricity is typically low, the welfare loss to households that already had access was less than 1 percent of their per capita expenditure. On the other hand, the value of gaining access to electricity was positive and of a larger magnitude for lower income deciles who had relatively less access before privatization. The net positive impact of electricity privatization for these low-income groups was nearly 16 percent of per capita expenditure.

## FINAL OBSERVATIONS

There is no question that an appropriate regulatory framework after privatization is a key component of the success or failure of the program, particularly in utilities and services. Based on the available evidence, a common element across many failed privatizations is inadequate regulation leading to suboptimal levels of competition or allowing producers to keep the gains from privatization without sharing them with consumers (Megginson and Netter, 2001; Boubakri and Cosset, 1999). The classic position of critics is to turn this into an argument against further privatization. However, the ample empirical evidence surveyed here shows that privatization can be done correctly, and can lead to social gains. This should be enough to discard a simplistic interpretation of privatization failures.

There are two prominent instances in which regulation should be carefully revised in conjunction with privatization: (i) industries characterized as natural monopolies or where oligopolistic market structures exist; and (ii) industries where the government owns most of the assets in the industry even if no individual firm had substantial market power. Sectors with heavy state presence tend to be protected by a web of regulations originally instituted to cut SOE losses and reduce fiscal deficits. In some of these cases, the regulatory effort needed can be better understood as “deregulation” to get rid of protective structures that shield

companies from competition, which could allow privatized firms to make extraordinary gains at the cost of consumers. As explained in the early and more recent literature (Yarrow, 1986; Allen and Gale, 1999), competition and deregulation should be carefully considered in privatization. Winston (1993) argues that deregulation has the power to produce efficiency gains, which can benefit consumers and producers. There is no reason to believe that deregulation should lead to different outcomes in the case of privatization of overprotected industries. In sectors with oligopolistic power, the deregulation effort needs to be complemented by re-regulation that clearly establishes a new package of rules and disclosures to enhance supervision and reduce abuse of market power.

Generally speaking, re-regulation or deregulation can take place at three different moments: before privatization, at the time of privatization, or after the SOE has been sold. The literature has emphasized the importance of having efficient regulation at an early stage. Re-regulation or deregulating before privatization of the industry may increase the pace of divestiture and help sell companies at a higher price if it reduces regulatory risk. However, it is not easy to establish effective pre-privatization regulation for at least three reasons. First, changes to the regulatory regime prior to privatization are likely to lower SOE profits, translating into higher financial needs for the government at a very difficult time. Second, without the pressure of imminent privatization, the political will for a true regulatory reform might not materialize. Finally, governments with little experience in privatization often find it difficult to carry out an effective pre-privatization regulatory reform. The political economy approach explains why it is hard to bring about changes in regulation after privatization and why privatized firms are frequently able to renegotiate their contracts on more favorable terms. In this context, it is advisable to push for changes in the regulatory framework at the time of privatization or earlier, if possible. While further developing and improving the new regulatory framework may take a long time, this should not be an excuse for postponing the privatization of money-losing entities.

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**Table 2-1.** Firm Performance after Privatization in Latin America

Study	Country	Sample, Period and Methodology	Summary of Findings and Conclusions
Galiani, Gertler, Schar-grotsky and Sturzenegger	Argentina	It covers 21 federal non-financial SOEs plus all privatized banks in Argentina. This coverage equals 74% of total privatization revenues. It tests whether performance indicators of SOEs improved after privatization. Period: 1991-2000.	Profitability of non-financial firms increased 188% after privatization. Employment decreased approximately 40% as a result of privatization. Investment increased at least 350% after privatization. There was no impact on prices.
Garrón, Machicado and Capra	Bolivia	It covers 32 firms, which account for 60% of total transactions in Bolivia. This study tests whether performance indicators of SOEs improved after privatization. Period: 1992-1999.	Privatization did not have a significant impact on profitability, but increased operating efficiency (142%) and decreased employment (85%), investment in physical assets (83%), and sales (33%).
Anuatti-Neto, Barossi-Filho, de Carvalho and Macedo	Brazil	It includes 102 publicly-traded firms (which account for 94% of total value of transactions in the country). It tests whether performance indicators improved after privatization. Period: 1987-2000.	Privatization improved the firms' profitability (14%) and reduced their unit costs (33%) and investment to sales (41%).
Fischer, Serra and Gutiérrez	Chile	Due to political and economic turbulence during the 1970s and changes in accounting standards, this study covers only 37 non-financial firms. It tests whether performance indicators improved after privatization. Period: 1979-2001.	It finds no significant increase in profitability after privatization. There is no difference between the regulated and unregulated sectors in productivity. It concludes that there is no evidence that firms fired workers after privatization. Layoffs occurred prior to privatization.
Pombo and Ramírez	Colombia	It analyzes 30 former IFI Program firms, which account for 95% of the total accumulated privatization sales. This study tests whether performance indicators improved after privatization. Period: 1974-1998.	Firms were profitable before privatization. Labor productivity grew 13% and investment fell 5.9% to 2.5% per year due to previous overinvestment. Employment was reduced by 23%.

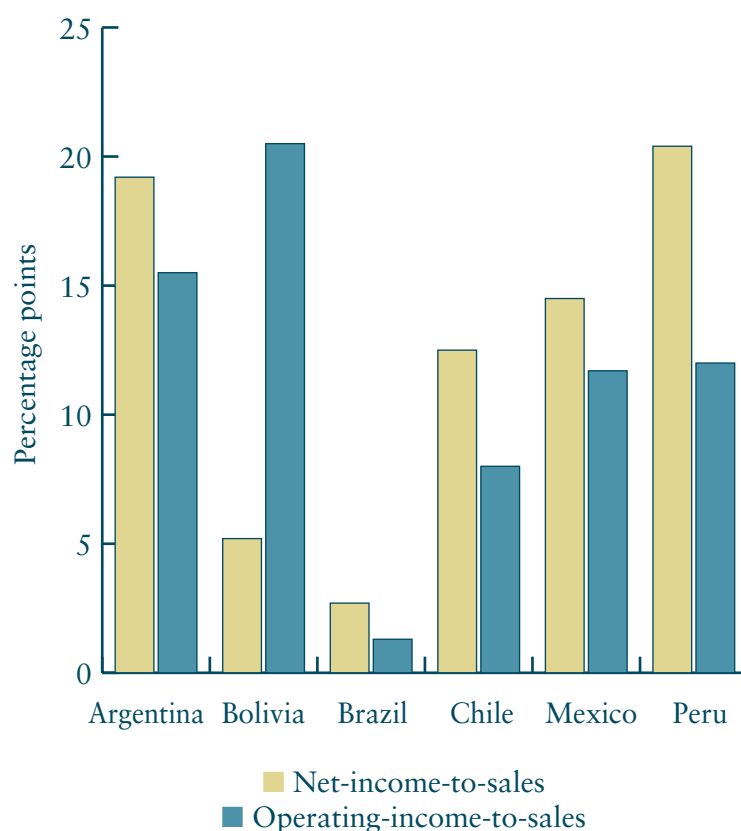
*Continued*

**Table 2-1 (continued).** Firm Performance after Privatization in Latin America

Study	Country	Sample, Period and Methodology	Summary of Findings and Conclusions
La Porta and López-de-Silanes (1999)	Mexico	An assessment of whether the performance of 218 privatized SOEs improved after divestment. It compares performance with industry-matched firms, and splits improvements documented between industry- and firm-specific results. Period: 1983-1991.	The output of privatized firms increased 54.3%, while employment was cut in half (though wages for remaining workers increased). Firms achieved a 24% increase in operating profitability, eliminating need for subsidies that amounted to 12.7% of GDP. Higher product prices explain 5% of improvements, transfers from laid-off workers 31%, and incentive-related productivity gains the remaining 64% of the improvement.
Torero	Peru	This study covers 36 non-financial firms, which account for 90% of privatization cases and 86% of total transactions. In addition, it includes a separate analysis for the financial sector. It tests whether performance indicators improved after privatization. Period: 1986-2000.	Profitability, operational efficiency, and output increased after privatization. The ratio of sales to employees increased by 50% in telecommunications, 69% in electricity, and 25% in the financial sector. After privatization 36% of employees retained their jobs.

Source: Chong and López-de-Silanes (2005a)

Figure 2-1. Profitability Changes after Privatization in Latin America

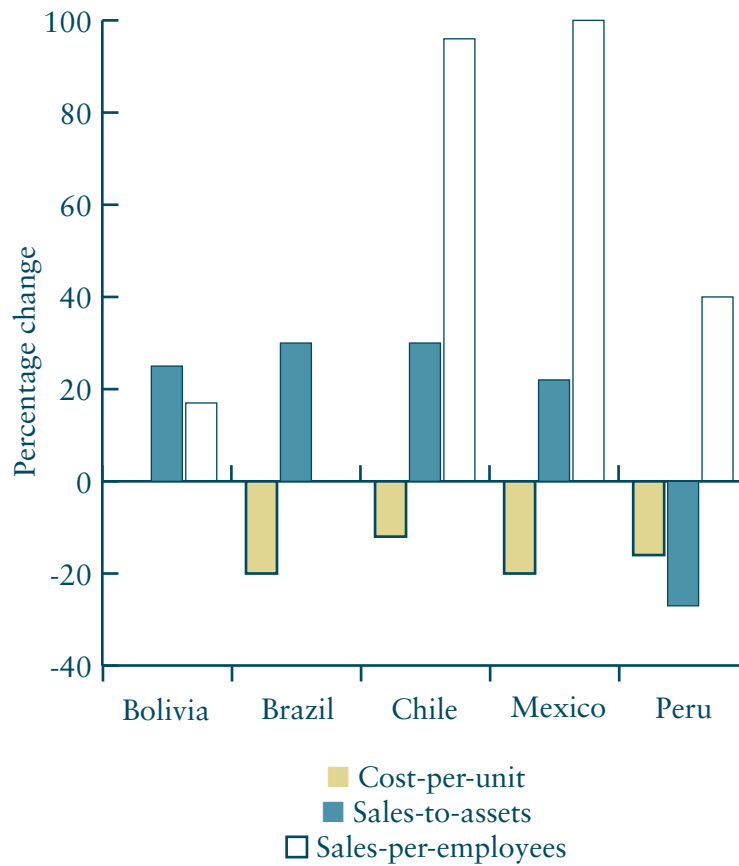


The figure presents the median change in the net income-to-sales ratio and the operating income-to-sales ratio after privatization. The components of the variables are defined as follows: (i) *net income* is equal to operating income minus interest expenses and net taxes paid, as well as the cost of any extraordinary items; (ii) *operating income* is equal to sales minus operating expenses, minus cost of sales, and minus depreciation; and (iii) *sales* are equal to the total value of products and services sold, nationally and internationally, minus sales returns and discounts.

Sources: Galiani et al. (2003); Garrón et al. (2003); Anuatti-Neto et al. (2003); Fischer et al. (2003); Chong and López-de-Silanes (2005b); and Torero (2002).



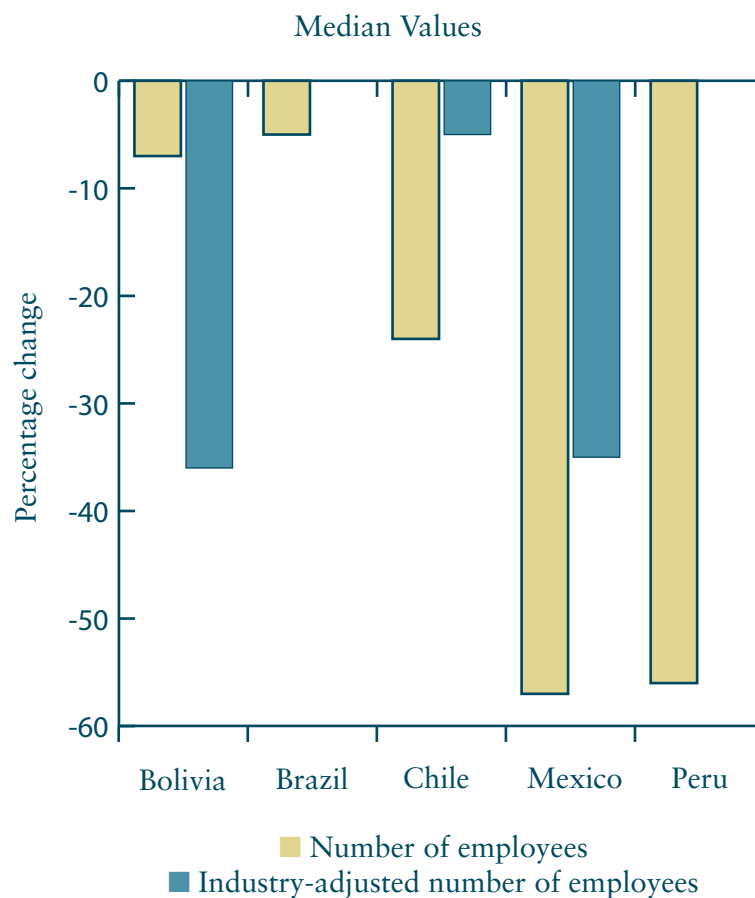
Figure 2-2. Operating Efficiency after Privatization



The figure presents the median change in the cost-per-unit ratio, the sales-to-assets ratio and the sales-per-employees ratio for each country after privatization. Cost-per-unit is defined as the ratio of cost of sales to sales. The components of the variables are defined as follows: (i) *cost of sales* is equal to the direct expense involved in the production of a good (or provision of a service), including raw material expenditure plus total compensation paid to blue-collar workers; (ii) *sales* are equal to the total value of products and services sold, nationally and internationally, minus sales returns and discounts; (iii) *employees* corresponds to the total number of workers (paid and unpaid) who depend directly on the company; and (iv) *assets* are defined as property, plant and equipment (PPE), which is equal to the value of a company's fixed assets adjusted for inflation. For Brazil, the sales-per-employee ratio is not available. For Bolivia, cost-per-unit information is not available.

Sources: Garrón et al. (2003); Anuatti-Neto et al. (2003); Fischer et al. (2003); Chong and López-de-Silanes (2005b); and Torero (2002).

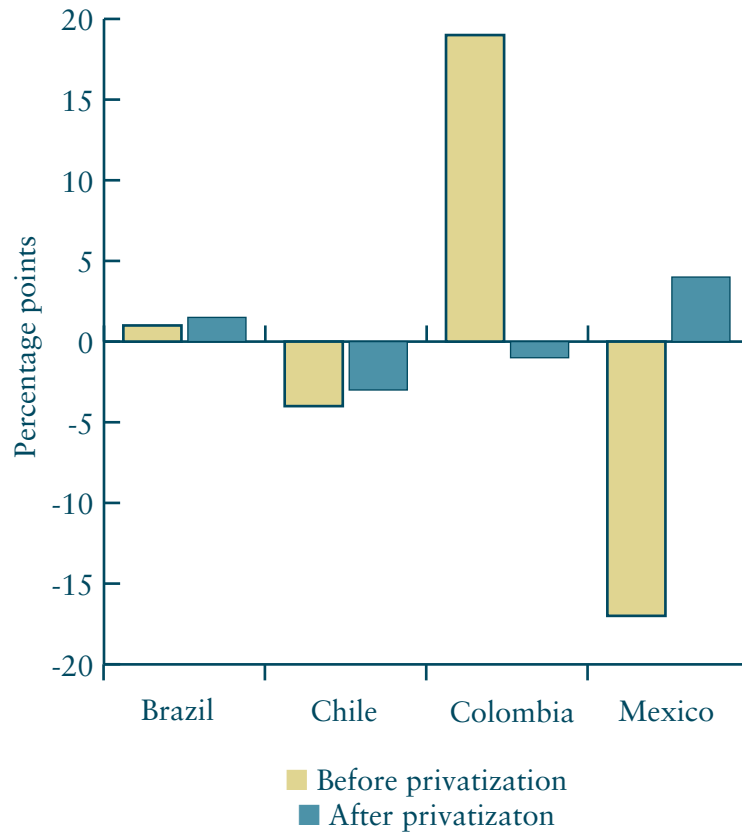
Figure 2-3. Employment Changes after Privatization



The figure presents the percentage change in the number of employees and the industry-adjusted number of employees after privatization for each country. The number of employees corresponds to the total number of workers (paid and unpaid) who depend directly on the company. The industry-adjusted number of employees is computed by augmenting the pre-privatization number by the difference between the cumulative growth rate of the number of employees of the firm and the cumulative growth rate of the number of employees of the control group in the post-privatization period relative to the average number of employees before privatization.

Sources: Galiani et al. (2003); Garrón et al. (2003); Fischer et al. (2003); Pombo and Ramírez (2003); Chong and López-de-Silanes (2005b); and Torero (2002).

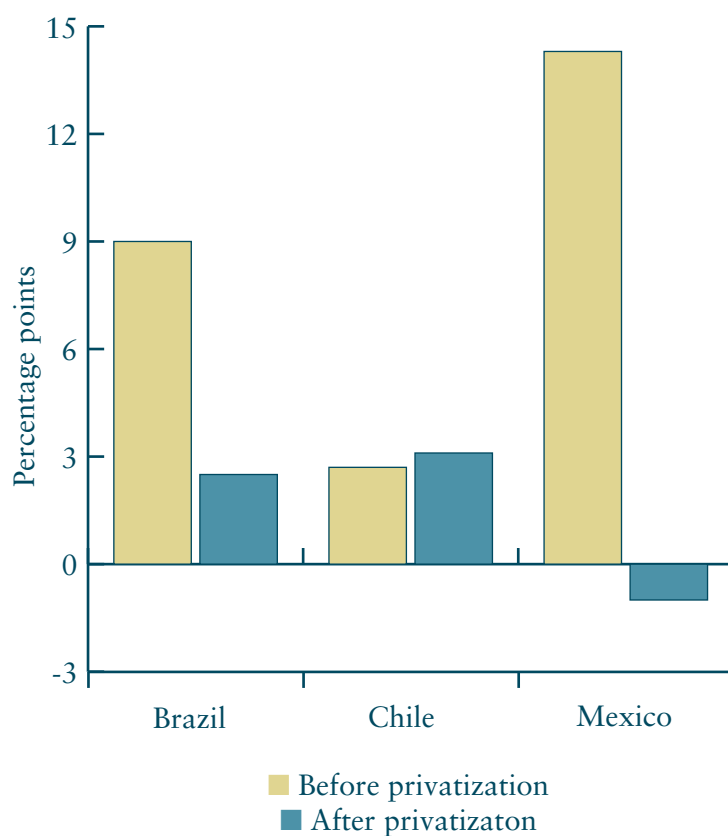
**Figure 2-4.** Net Income-to-Sales Gap between Privatized and Private Firms Before and After Privatization



The figure presents the net income-to-sales gap between privatized SOEs and private firms, before and after privatization. The components of the net income-to-sales ratio are defined as follows: (i) *net income* is equal to operating income minus interest expenses and net taxes paid, as well as the cost of any extraordinary items; and (ii) *sales* are equal to the total value of products and services sold, nationally and internationally, minus sales returns and discounts. For Colombia information is from the energy sector.

*Sources:* Anuatti-Neto et al. (2003); Fischer et al. (2003); Pombo and Ramírez (2003); and Chong and López-de-Silanes (2005b).

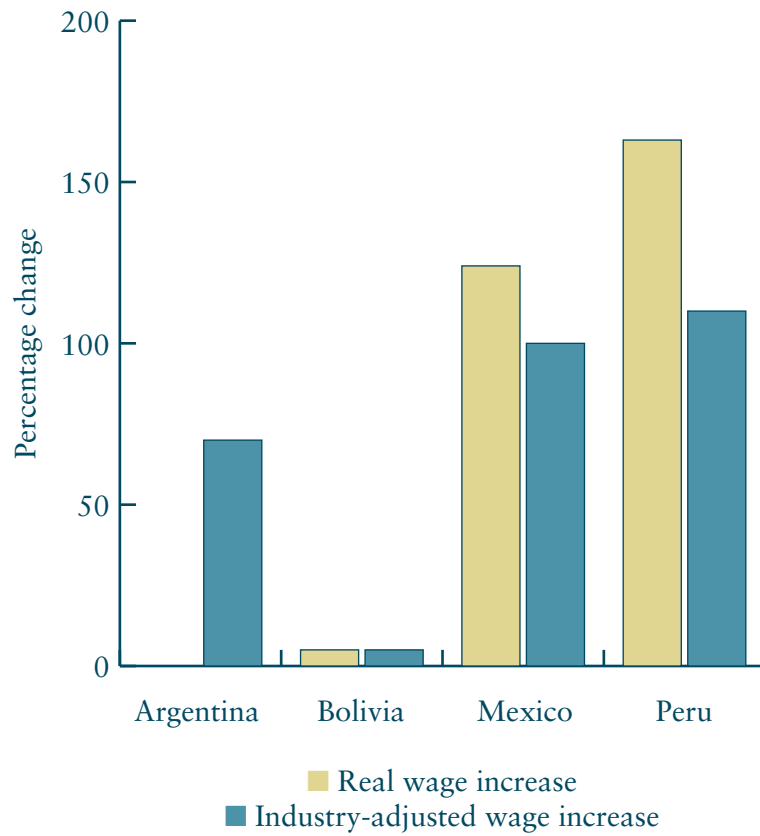
**Figure 2-5.** Cost-per-Unit Gap between Privatized and Private Firms Before and After Privatization



The figure presents the cost-per-unit gap between privatized SOEs and private firms, before and after privatization. Cost-per-unit is defined as the ratio of costs of sales to net sales. The components of the cost-per-unit ratio are defined as follows: (i) *cost of sales* is equal to the direct expense involved in the production of a good (or provision of a service), including raw material expenditure plus total compensation paid to blue-collar workers; and (ii) *sales* are equal to the total value of products and services sold, nationally and internationally, minus sales returns and discounts.

Sources: Anuatti-Neto et al. (2003); Fischer et al. (2002); and Chong and López-de-Silanes (2005b).

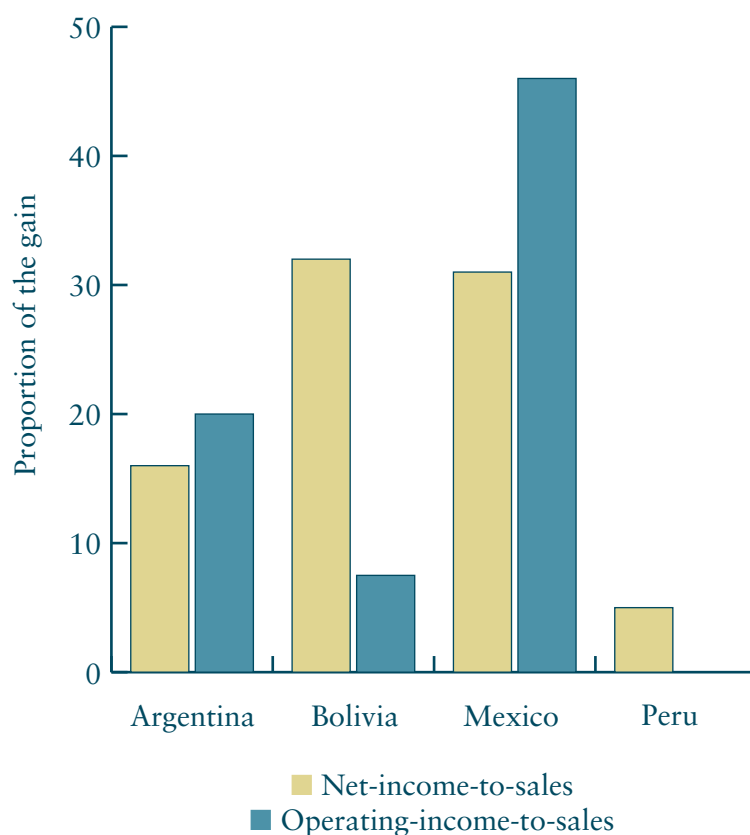
Figure 2-6. Real and Industry-Adjusted Changes in Wages after Privatization



The figure shows the median increase in real wages and industry-adjusted wages after privatization for each country. Real average wages are defined as the inflation-adjusted total compensation paid to the average worker. The Consumer Price Index was used as a deflator to calculate real wages. Industry-adjusted wages are computed by augmenting the pre-privatization value by the difference between the cumulative growth rate of real wages per worker of the firm and the cumulative growth rate of real wages per worker of the control group in the post-privatization period relative to the average real wage per worker before privatization. For Bolivia, Mexico, and Peru information is for a sub-sample of firms that have available wage evidence.

Sources: Galiani et al. (2003); Garrón et al. (2003); Chong and López-de-Silanes (2005b); and Torero (2002).

**Figure 2-7.** Transfers from Workers as a Percentage of Increased Profitability After Privatization



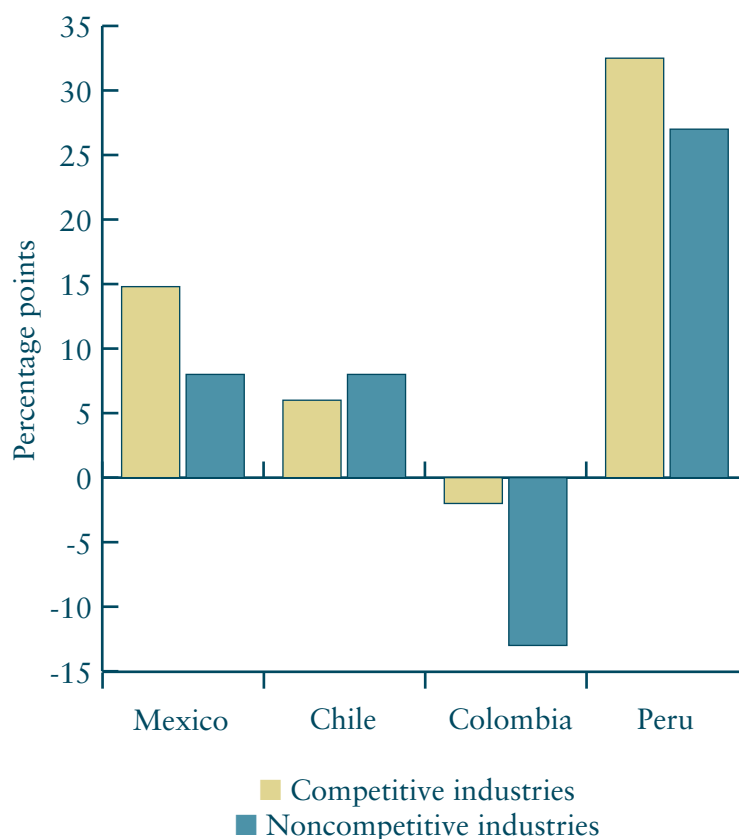
The figure shows the median gain in net income-to-sales and operating income-to-sales explained by savings in labor costs due to layoffs after privatization. Savings due to layoffs is calculated as:

$$\frac{\text{Wage}_{bp} * (L_{bp} - L_{ap})}{\text{Sales}_{ap}}$$

where  $\text{Wage}_{bp}$  is the average wage of employees in the SOE before privatization;  $L_{bp}$  is the number of workers employed before privatization;  $L_{ap}$  is the number of workers employed after privatization; and  $\text{Sales}_{ap}$  is the monetary value of sales after privatization. The resulting number is thus expressed as a fraction of sales. We then divide by the percentage increase in the operating income-to-sales ratio to determine the percentage of the increase that is due to transfers from workers. For Bolivia, Mexico, and Peru information is for a sub-sample of firms that have available wage evidence.

Sources: Galiani et al. (2003); Garrón et al. (2003); Chong and López-de-Silanes (2005b); and Torero (2002).

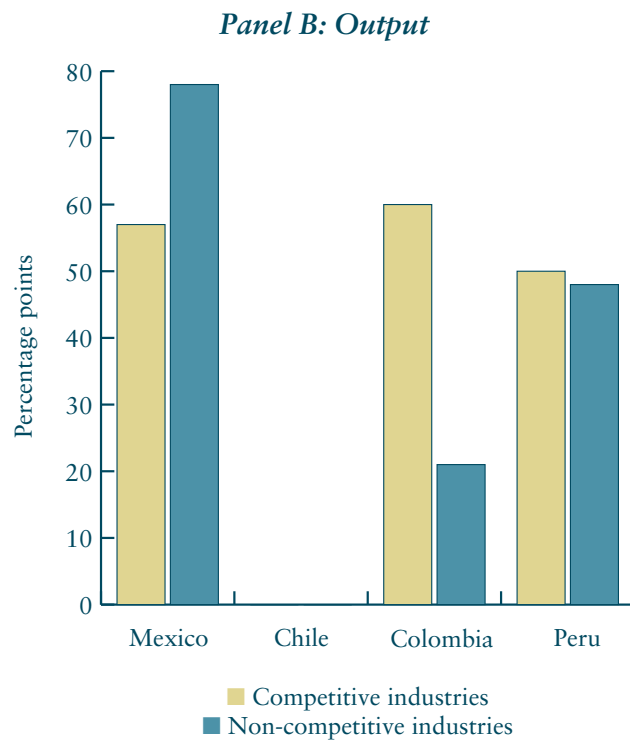
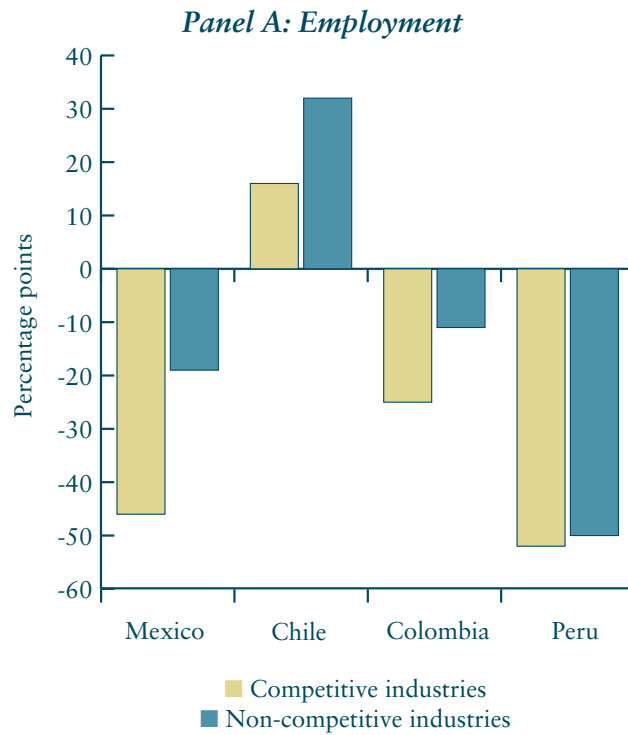
**Figure 2-8.** Changes in Profitability of Privatized Firms in Competitive and Non-Competitive Industries in Latin America



The figure presents the median change in profitability for competitive and non-competitive industries after privatization. Profitability is defined as the median ratio of operating income-to-sales except for Peru where it is the mean net income-to-sales ratio. Firms are sorted as competitive and non-competitive as follows: (i) for *Mexico*, firms are classified into competitive and non-competitive based on the description of the industry provided by the privatization prospectus of the firm; (ii) for *Chile*, firms are classified as non-competitive if they are in telecommunications, electricity, or social services sectors, and otherwise as competitive; (iii) for *Peru*, the non-competitive sectors are electricity, financial services, and telecommunications, and the data for the competitive industries show aggregate information for the whole sample; (iv) for *Colombia*, noncompetitive firms are those in the energy sector, all other sectors are considered competitive. For *Peru*, the information is expressed in mean values.

*Sources:* Chong and López-de-Silanes (2005b); Fischer et al. (2003); Pombo and Ramírez (2003); and Torero (2002).

**Figure 2-9.** Changes in Employment and Output of Privatized Firms in Competitive and Non-competitive Industries in Latin America



Continued



**Figure 9 (continued).** Changes in Employment and Output of Privatized Firms in Competitive and Noncompetitive Industries in Latin America

The figure presents the median change in employment (Panel A) and output (Panel B) for competitive and non-competitive industries after privatization. The variables are defined as follows: (i) *Employment* corresponds to the total number of workers (paid and unpaid) who depend directly on the company; (ii) *Output* is the monetary value of sales. Firms are sorted as competitive and non-competitive as follows: (i) for *Mexico*, firms are classified into competitive and non-competitive based on the description of the industry provided by the privatization prospectus of the firm; (ii) for *Chile*, firms are classified as non-competitive if they are in telecommunications, electricity, or social services sectors, and otherwise as competitive; (iii) for *Peru*, the noncompetitive sectors are electricity, financial services, and telecommunications, and the information for competitive industries shows data for the whole sample; (iv) for *Colombia*, noncompetitive firms are those in the energy sector, all other sectors are considered competitive. For Peru, the information is expressed in mean values. For Chile, output information is not available.

*Sources:* Chong and López-de-Silanes (2005b); Fischer et al. (2003); Pombo and Ramírez (2003); and Torero (2002).

# THREE

## Managing Infrastructure Investment Risks in Latin America: Lessons, Issues, and Recommendations

*John S. Strong, José Luis Guasch and Juan Benavides\**

### INTRODUCTION

We now have over a decade and a half of experience with alternative approaches to private participation in infrastructure in Latin America. From 1990 to 2001, Latin America and the Caribbean led the wave of private participation in infrastructure. With 887 private infrastructure projects in 28 of the 32 countries, the region attracted US\$361 billion in capital (US\$231 billion in greenfield projects and US\$130 billion in divestitures of former public infrastructure; World Bank, 2002). The record of the past decade has shown that it is possible, even during recurrent emerging market crises, to mobilize private finance. But the larger question remains as to whether this mobilization was accomplished “on whatever terms necessary,” resulting in an uneven distribution of benefits and ambiguous results with respect to effects on poverty and social welfare (see Foster and Irusta, 2003; and Foster and Araujo, 2004).

Latin American governments faced severe shortcomings when it came to funding urgently needed investments for capital-starved public enterprises. This almost inevitably resulted in poor service and inefficiency that had consequences for competitiveness, economic development, and equity (since the poorest groups often suffered the worst services). Competing needs for investment in the social sectors (education, health, social assistance) made the opportunity costs of public investment in infrastructure very large. Also, understanding the significant impact of infrastructure on economic growth and poverty increased the urgency of finding a solution to the steady deterioration of the infrastructure stock and quality of service (see Calderón and Servén, 2002; and Canning, 1999). In short, deficient sector performance and the need for investment forced consideration of alternatives to the traditional model of public provision of infrastructure services.

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The sense that established models and practices were not sustainable led to a redefinition of the role of the state. As a result, much infrastructure was shifted (back) to private operation/participation for the same reason it was nationalized in the first place (that is, because there was a change in the prevailing way of thinking about the problem). This time, though, the shift to private participation was driven by the pressing need to secure investments and to improve country competitiveness through more extensive and efficient provision of infrastructure services.

The macroeconomic effects of increased private participation in infrastructure have been more modest than anticipated (see Easterly and Servén, 2003). Trujillo, Martín, Estache, and Campos (2003) find that the effect of private sector participation in utilities and transport on per capita GDP has, as of yet, been unimpressive. They also find that the effect of private participation on public investment and recurrent expenditures is mixed. In some cases, additional private investment requires complementary public investment or spending, while in other cases private participation serves as a substitute for public funding. Overall, the net effect on the public sector is uncertain.

The 1980s and 1990s saw a widening of the infrastructure gap between Latin America and other successful developing economies like those in Asia. Latin American infrastructure spending declined as a percentage of GDP during the macroeconomic crises of the 1980s and 1990s. Private infrastructure spending did increase after the sectors were opened up to private participation, but they did so unevenly across sectors and countries. Most successful were telecommunications and electricity, with water and transport lagging behind. Research suggests that the widening infrastructure gap can account for as much as one-third of the output gap compared to East Asian economies. Lagging telecommunication assets, power generation capacity, and road networks all contributed to this relative slowdown.

Overall, private participation in infrastructure thus far has had only a limited effect on Latin American economic development. For Latin America to recover its long-run growth potential, increased attention to infrastructure policy is well warranted.

This chapter discusses the Latin American experience with infrastructure concessions; reviews the related risks; proposes financial policies, extensions, and initiatives to support increased infrastructure in the region; and discusses the critical role of governance arrangements in supplementing contract choice and financial structures.

## **LATIN AMERICAN EXPERIENCE WITH INFRASTRUCTURE CONCESSIONS**

Latin America has used a variety of organizational forms for private participation in infrastructure. Build-Own-Operate or Build-Own-Transfer schemes were used for greenfield projects, while outright sale was generally used in the privatization of transport operators such as airlines. Privatization was also used more frequently in telecoms and electricity generation. Most of the projects involved the transfer of existing facilities along with investment or operating requirements, and thus fell into the category of concessions.

Why were concessions used rather than outright privatization? In many cases, there were legal or constitutional impediments to privatization, including the definition of state assets or

a prevailing view that certain activities or infrastructure were of such strategic importance that they must remain in public ownership (although not necessarily in public operation or management). Since these facilities or services were imbued with a high degree of public interest and visibility, the social and political impact of outright privatization was sometimes seen as unacceptable.

The concessioning of infrastructure required a host of complementary activities, including sector restructuring. This generally took two forms. First, putting the sector on a commercial basis frequently required a change in organizational status. For example, airport concessions typically necessitate a transfer from the transport ministry to public enterprise status. Second, sector reforms also frequently call for the unbundling of vertical and horizontal activities. Examples of this unbundling are the separation of port terminals from activities at ports; the separation of airport services from air navigation activities; the geographical breakdown of the railroad network; and the separation of track jurisdiction from railway service operations.

Given the (quasi) natural monopoly of a number of the segment operations in the transport sector, the transfer from public to private status or to private participation also required a new system of regulatory oversight, including new legal instruments, organizations, and—most importantly—a shift in perspective from the “government as owner-operator” to the “government as a monitor, regulator and enabler” (see Strong, Meyer, Harral, and Smith, 1996). In addition, complementary reforms were often needed in the areas of contract law with regard to concessions, competition policy, and labor and social welfare policy (Kerf et al., 1998).

The most relevant aspect of the differences between concessions and privatizations relates to the degree of residual control or influence retained by the government. Concessions generally do not transfer property, but rather a right to its use, typically for a fixed period of time. They frequently involve more extensive obligations and contain provisions for termination or cancellation.

This residual role has important implications for the performance of concessions. Incentive issues are pre-eminent; there is a need for extensive clauses describing rights and responsibilities of both the government and the concessionaire. These concessions are typically large and long-lasting projects, in highly sensitive sectors providing essential services. As a result, tariff levels are highly politicized. In addition, the long asset lives and sunk cost character of transport infrastructure creates “stranded assets” that provide incentives for opportunistic government actions. At the same time, the importance of the facilities means that there is continuing pressure for subsidies or guarantees. Financially, the fact that the assets remain in government hands makes them unusable as collateral for loans or guarantees. The long lives and amortization periods and typically short tenor of available domestic debt instruments have led to extensive foreign currency financing, but with services that are largely consumed (and frequently paid for) in domestic currency, leading to significant foreign exchange risks.

## The Effect of Concession and Regulatory Problems: Renegotiation<sup>1</sup>

The World Bank has undertaken a long-term study of infrastructure concession performance worldwide. The study covers approximately 1,600 concessions in telecom, water, power, and transport. Of these, approximately 1,000 are from Latin America and the Caribbean, including 273 transport concessions. Most are from the 1989-2000 period. In addition, reviews of private participation in transport in Brazil, Argentina, Peru, Bolivia, Mexico, and the Dominican Republic have been undertaken, as well as project reviews in Panama, Colombia, and Chile.

Overall, results have been mixed. Operational efficiency generally has improved, and net investment also appears to be stronger than before. Infrastructure coverage and access has more of a mixed record, but overall appears to be adequate. Problems have arisen with respect to the alignment of costs and tariffs, and questions remain about the sustainability of many concessions, especially as they became subject to worsening global economic conditions and regional or country-specific shocks.

The last decade of experience in concessions leads to one inescapable conclusion: renegotiation is very common. In the sample, and across all sectors, about 44 percent of all concessions were renegotiated, 85 percent of these (38 percent of the total) within four years of award. There appears to be a strong linkage between the degree of real or potential competitiveness of the sector and the incidence of renegotiation: telecoms and energy sectors have had a lower incidence of renegotiation compared to transport, water, and sewage. In transport, renegotiation occurred in 57 percent of the cases, 79 percent of which happened within the first four years of award (45 percent of total). (These percentages will likely become even greater as the large number of concessions put in place in 1999-2000 pass through this four-year horizon in the next two years.)

Examples of renegotiated transport concessions include railways and toll roads in Mexico; ports and airports in Peru; roads, railways, and buses in Argentina; and toll roads in Brazil and Venezuela. In addition, a number of other proposed concessions have not been implemented due to what one private company said was “renegotiation before the concession.” Such renegotiation is costly because it affects sector performance, tariffs, investments, credibility of the concession process, and indeed, the country’s reputation. While not all renegotiations are or were inappropriate, many are opportunistic and mechanisms to minimize their negative impact should be devised *ex ante*. It also is important to remember that virtually all of these renegotiations came about after extensive work between concession award and financial closure.

All involved parties—government, creditors, and sponsors—have sought renegotiations. Examples exist of governments seeking to re-do concession contracts due to changes in priorities, changes in political power, or opportunism given the sunk cost nature of most transport infrastructure. At the same time, sponsors/concessionaires have sought renegotiation to deal with macroeconomic and macrofinancial shocks, overly optimistic demand forecasts that

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1. This section draws from the research work led by José Luis Guasch and the following papers: Strong, J. S. and J. L. Guasch. 2002. “Lessons Learned in Transport Infrastructure in Latin America.” Manuscript; Guasch, Laffont, and Straub (2003); and Guasch (2001).

led to lower cash flows, and, in many cases, reduced needs for investments pledged as part of the concession agreement. There also is some evidence of low-balling bidding strategies, in some cases supported by collusion among bidders, suggesting that the sense of urgency and the perception that the government “wanted to get a deal done” gave an incentive to bidders to adopt a strategy of “buy in, then get well through renegotiation” that has long plagued military procurement elsewhere. The source of some renegotiations is unclear, either because it was disputed or mutually agreed upon.

The factors that are associated with a higher probability of renegotiation in the transport sector are the award criteria, the nature of the concession agreement, the regulatory and legal frameworks, the rate of return as opposed to price cap regulations, spillover and reputation effects, and others.

*Award criteria.* Concessions awarded on the basis of minimum tariff were renegotiated 71 percent of the time; those with up-front, lump-sum canon payment awards were renegotiated only 31 percent of the time; and those with annual canon payments, 20 percent of the time. The tariff-based awards faced renegotiations sought by governments (because tolls or toll adjustments were deemed “too high”), or by sponsors who found that revenues were inadequate (due in most cases to overestimates of traffic volumes and inadequate attention to income and/or GDP elasticity). This issue has been particularly difficult to manage in the case of toll roads, in which trucking demand forecasts and estimated toll elasticities have been overly optimistic owing mainly to factors such as who benefits from time and cost savings (drivers versus companies), and to the more stringent oversight of size, weight, and safety regulations, and policing of contraband goods on toll roads.

*The nature of the concession agreement.* The longer the duration of the concession the less likely changes will be sought. Concessions where specific activities were mandated in the contract faced renegotiation 78 percent of the time, while those concessions that contained operating and investment performance standards were renegotiated in only 15 percent of the cases. The existence of a pre-specified investment obligation increases the likelihood of renegotiation. One of the strongest conclusions is that investment programs in concessions should not be mandated but rather driven by operating and performance “triggers.” Such metrics can and should also be established for safety, environmental, and access dimensions of transport infrastructure.

*Regulatory framework.* In many cases, the regulatory institutions and procedures were not in place at the time of contract award. In 72 percent of these cases, contracts were renegotiated as actual regulatory behavior diverged from the conceptual framework in the agreement. When regulation was in place at the beginning, only 19 percent of the contracts were renegotiated.

*Legal framework.* The stronger the legal grounding (constitution, law, decree, administrative rule), the lower the probability of renegotiation. When the regulatory system is imbedded in the general law, renegotiation is only about half as likely compared to regulation spelled out only in the concession contract (45 percent versus 85 percent). In general, the key seems to be the ease with which either party can unilaterally amend the regulatory system, either through decree (as was the case with Peru) or administrative discretion.

*Rate of return vs. price cap regulation.* Rate of return regulation resulted in reworking the contract in 30 percent of the cases, while 77 percent of price cap structures were revised. While price cap regulation may provide greater incentives for cost control and efficiency, the stability of rate of return regulation is due (in part) to the ability of concessionaires to adjust the amount of investment downward (upward) if the revenues and profits from the operation are less than (more than) that required to achieve a minimally-acceptable return.

*Spillover and reputation effects for countries and sectors.* A history of prior renegotiations increases the likelihood of renegotiations in other sectors. It also increases the likelihood of further rounds of renegotiation. Spillover effects extend beyond sectors, as experiences in other infrastructure sectors are positively correlated with transport even when there are sector-specific regulatory bodies.

*Other significant factors.* The presence of a local or national (versus a foreign) operator increases the probability of renegotiation by 10 to 25 percent, although renegotiations involving foreign sponsors or consortia tend to take much longer to resolve. The greater the number of bidders, the more likely renegotiation will be sought. It seems that while more bidders should provide more information about contract design and regulatory issues, this effect appears to be more than offset by the problem of “the winner’s curse” (paying too much and seeking redress subsequently).

## **A REVIEW OF RISKS IN LATIN AMERICAN INFRASTRUCTURE INVESTMENT**

There are many risks endemic to infrastructure project finance (see European International Contractors, 2003). Among those, it is worth highlighting five particular types of risk that have special relevance for Latin America. Ranging from most broad to the most project-specific, they are: macroeconomic and macrofinancial risk; currency risk; counterparty risk; regulatory and political risk; and project and concession design risks. Each is discussed in turn below.

### **Macroeconomic and Macrofinancial Risks**

The public and private sectors of all countries are in constant competition for the pool of global capital. To attract capital from global markets, emerging market countries must have sound economic policies and structural reforms in place, and economic leadership that engenders confidence.

Given that infrastructure investment has underlying linkages to many core economic functions, returns are particularly susceptible to macroeconomic conditions. In addition, given the long duration and significant upfront costs of such investment, it typically is best financed with long-term funds, especially debt finance. In the absence of local long-term debt markets, infrastructure sponsors have been faced with two suboptimal choices: either use shorter-term finance, creating a maturity mismatch with refinancing risk, or use long-term foreign currency debt, creating currency risk (discussed below).

The series of macro shocks that has buffeted Latin America since the mid-1990s has had dramatic effects on inflation, recession, trade, currency, and prospects and lags in growth

and recovery. It is important to keep in mind that the *degree* of economic dislocation was unanticipated by many—if not most—participants in infrastructure projects. One of the consequences was that many projects and associated contracts were, in effect, overwhelmed by macroeconomic events. Then, as the dust began to settle, the economic recessions and financial market problems in developed country financial markets made recovery even more difficult.

Whatever the various causes of the recent crises, this experience has left a legacy that will be difficult to overcome. Three major factors need to be addressed:

1. The re-establishment of a credible track record of macroeconomic monetary and fiscal management, not only in terms of recovering from crises but also in terms of reducing their future likelihood, magnitude, and duration.
2. A global economic environment that has more sustainable growth and trade prospects.
3. The development of more extensive and robust capacity in domestic or regional financial markets.

## Currency Exposure and Currency Risk

With hindsight, perhaps the biggest risk factor in infrastructure finance was the mismatch of largely domestic currency revenues with the predominance of foreign currency debt. Managing this currency exposure requires a stable currency because derivative markets for hedging are not liquid enough or long-term enough for most (if not all) countries in the region. In the absence of currency stability and hedging instruments, there is a need to develop long-term domestic (or perhaps regional) debt markets.

## Counterparty Risk and the Credibility of Guarantees

Many of the infrastructure projects involved substantial sector restructuring. This process often left the government with one or more residual “counterparty” roles as offtaker, supplier, or regulator. The economic performance of the project was dependent on the government meeting its obligations, but in many cases the fiscal situation facing the government made it unable or unwilling to do so. In other cases, sector restructuring led to the establishment of new entities without a track record of sustained creditworthiness. For example, some sponsors have raised concerns about the medium- and long-term viability of newly created electricity distribution companies.

In other situations, the government’s main counterparty role was in the provision of revenue or financial guarantees. In practice, it has proven very difficult to enforce these guarantees given severe fiscal and budgetary environments. As a result, many projects looked to multilaterals to provide additional backstopping or policy-related guarantees. While necessary, such policy or sector guarantees add complexity, delays, and costs, and may prove difficult to enforce in practice.

## Regulatory and Political Risk

Regulation of infrastructure operations entails inherent risks as a result of its complexity, the temptation to use it for political objectives, the limited capacity of regulators, the need



to balance discretion vis-à-vis flexibility in regulatory framework, and the need for efficiency in performance and marshalling of investment (since these activities generally face shortages of capital investment or maintenance).

Regulation, in addition to its intrinsic complexity, involves the redistribution of resources, moving them off budget. Thus it is often tempting for the government, which may decide to use it for political objectives, in detriment to economic objectives. The end result is that regulation is a significant risk factor in the financing and operation of infrastructure services. Regulatory risk is different from commercial risk or political risk in that it involves changes in prices or terms (forced by the government) that affect the financial status of the operation. These changes often adversely affect the profitability of the concession. In other cases, regulatory changes have benefited the concessionaire, sometimes at the expense of the government, the users, or the general public.

These risks go beyond those that arise in the “normal” course of regulation, such as tariff reviews or technical definitions of asset valuation and realized investment levels. Other risk factors include unilateral or arbitrary changes in agreed (either explicitly or implicitly) terms of operation; reversals in interpretation of ambiguous regulatory or contract clauses; and changes in the regulatory framework. Moreover, concession processes that contained incomplete and uncertain remedies or dispute resolution procedures magnified all of these risks.

Much attention has been paid to the degree to which concession contracts are enabled under constitutional, contract, or commercial law. However, merely having legal structures and institutions in place without an enforcement incentive and orientation leads to opportunism and exploitation in the short run and a tendency to treat such issues as mere “window-dressing” in later concessions. As Laffont showed conceptually in his 2001 manuscript entitled “Enforcement, Regulation, and Development,” and as has been proven true in many settings, the probability of renegotiation decreases with the level and effectiveness of enforcement measures. There is an ongoing need not only to develop legal and regulatory institutions, but also to ensure that such institutions are credible. Where concessions are new, the importance and visibility of the first enforcement decision can hardly be understated. The reputation effect is critical in driving the behavior and incentives of the operators of subsequent concessions.

One such example of regulatory risk is illustrative. In Brazil, the nationwide toll road concessions overseen by the national roads authority DNER were subject to ongoing revisions from 1997 to 1999. Changing interpretations of contract terms led to an ongoing series of adjustments to maintain “financial equilibrium” clauses guaranteeing a minimum internal rate of return for both toll roads and for the water sector. Brazil’s Paraná toll road was faced with a unilateral 50 percent reduction in the tariff that had been agreed upon in the concession contract.

Reviews of infrastructure projects suggest that investors and sponsors take these regulatory risks into account in determining whether to bid, and in the terms of the bid itself. Interviews with private participants in transport infrastructure projects indicate that investment scenarios commonly incorporate regulatory factors of higher costs plus lost or deferred rev-

venues on the order of 10 to 15 percent of the project. In some cases, lenders and sponsors have explicitly built “regulatory risk premiums” into their financial models. Even where the cost or revenue forecasts are adjusted, both approaches translate into an increase on the order of 2 to 6 percent in the cost of capital (the required rate of return). Depending on the specific transport project, this higher cost of capital translates into lower upfront or ongoing canons to the government or in higher prices to users. In a significant non-transport example, it has been estimated that, as a result of a legal uncertainty about the rights to grant water concessions, water companies in Brazil face a cost of capital that is up to 5 percent higher than in the electricity sector. This 5 percent differential translates into a 35 percent decrease in sales prices for concessions or, equivalently, a 20 percent increase in the water tariff. In another example, the regulator of the Buenos Aires water concession grants an increase in tariffs of 3.5 percent for each 1 percent increase in the cost of capital (Guasch, Laffont and Straub, 2003).

## Project and Concession Design and Implementation Risks<sup>2</sup>

The most common problems in infrastructure concessions in Latin America have been: poor concession design; imperfect and overly optimistic service usage predictions; vague and ambiguous contract clauses and regulatory rules; *ex post* changes of the rules of the process; inconsistent interpretation of the concession clauses; and opportunistic behavior by operators and/or the government following the concession award. These problems can be classified into four groups: pre-concession issues, concession design issues, concession award issues, and regulatory issues.

### *Pre-Concession Issues*

- Failure to pay attention to the underlying political economy of the transaction. In some cases, there is a sense that concessions were being pursued due to political philosophy or electoral politics. There was relatively little effort spent on explaining to stakeholders, including the public, the reasons, motivations, and expected benefits behind proposed concessions. The result was a distrust of the process by the public and a sense that any benefits went only to a few.
- A lack of awareness about labor rationalization issues. If labor severance, buyout, and restructuring programs were not in place as part of the concession process, the concession was much more likely to fail. This lack of labor redundancy planning led to major delays and problems in port concessions in Brazil, Guatemala, Honduras, and Peru. The concession process needs to explicitly address labor redundancy and adjustment plans.
- Improper sector restructuring prior to the concession and not imposing open access policies. If changes can be implemented with net gains, the pre-concession phase offers a unique opportunity to shape market structure (both horizontally and vertically) to facilitate new entry, competition, and regulation prior to the concession. This has been a common problem in other infrastructure sectors, including the Chilean and Guatemalan electricity sectors and telecoms in most countries.

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2. See Guasch (2002); and Strong, J. S. and J. L. Guasch. 2002. “Lessons Learned in Transport Infrastructure in Latin America.” Manuscript.

- The absence of either prior rebalancing of tariffs or a time schedule for that purpose. In many, if not most, cases prices for state-run transport infrastructure services were not sufficient to cover recapitalization needs. As a result, increases in these prices post-concession were often seen as profiteering.
- Excessively optimistic demand forecasts. Toll roads in Mexico, Argentina, and Brazil have all suffered from this problem. The reasons for such forecast errors include inadequate attention to income or GDP elasticity relative to price elasticity; the willingness of travelers to continue to use free alternatives; and the reluctance of truckers to save travel time even if they run the risk of more vigorous enforcement of operating regulations. In addition, many of the bidders believed they could propose lowball bids and then renegotiate when demand failed to materialize. In addition, traffic or revenue guarantees reduced incentives for the private sector to be conservative in forecasting, while public officials failed to understand or did not care about the contingent liability exposure. One clear lesson is that guarantees should not serve as substitutes for due diligence and poor project design.

### *Concession Design Issues*

- Inadequate prequalification screening. This can result in failed concessions or bids that are not realistic.
- Using means as opposed to outcomes as requirements for operators. Performance targets, such as investment triggers, help manage capacity provision and help ensure that overinvestment does not occur. This was a major problem everywhere, for example in Peruvian port concessions and in most of Bolivia's transport capitalization program, where investment, rather than improved performance, was the primary instrument used. Later, when concessionaires saw that the capacity needed to serve demand was well below investment pledges, they either sought to renegotiate or merely cancelled or deferred the program.
- Ambiguous conflict resolution procedures and vague or imprecise terminology for conditions for renegotiating or terminating the concession. Even minor changes in Brazilian toll road investment planning led to an ongoing series of negotiations and adjustments in contract terms. This convinced at least some observers, especially the press, of a lack of transparency and of collusion among concessionaires, with complicity by the government.
- Little or no evaluation of the extent or cost of universal service obligations. This has proven a severe problem in telecoms and water, and has also been an issue in how to provide service to the poor in some urban transport concessions, including Argentina.
- Improper use of guarantees. In Mexico, the toll road program's traffic and revenue guarantees created incentives for prospective concessionaires to bid extremely unrealistic short durations in order to win the concession. In Colombia, unrealistic estimates of landing fees and guarantees to finance a new runway in Bogota had the effect of weakening the government's ability to extend additional concessions and to generate enough revenues to cover the operating and capital needs of the rest of the civil aviation sector.
- Changing several of the concession terms after launching of the award process. This occurred in the case of Peruvian ports where both evaluation criteria and canon payment

terms were adjusted after discussions with prospective bidders. This led to a perception that the bidders had too much influence over the process.

- No provision of incentives to expand the network if needed. This has been the case in the Mexican, Brazilian, and Argentine railways. As a result, bottlenecks and congestion reduce both the value of the concession and social welfare. This problem could be reduced if investment triggers were linked to performance indicators, as noted previously.
- Guaranteed financial equilibrium clauses without reference to efficient costs. This is a form of guarantee of the concession's internal rate of return. In Brazil's road and transport concessions, the extent, frequency, and conditions for review and adjustment to maintain financial returns were not well specified and, as a result, have been repeatedly invoked.

### *Concession Award Issues*

- Multiple award criteria leading to wasteful rent-seeking, opportunities for corruption, and arbitrary selection of winners. Simpler technical and financial bids have proven more durable and are more likely to be perceived as fair by the public and by other bidders.
- Questionable choice of single criterion for award. This was the case in Mexican toll roads, which used shortest concession duration, as well as water concessions in Argentina, which used largest tariff discount. Minimum price in the tariff structure has proven problematic for virtually all water concessions, and for transport concessions in which capital spending had been long-deferred.
- Use of single lump-sum transfers to government, as opposed to yearly canon payments or a lump-sum payment disbursed in annual installments through a trust or escrow account. In design, the canon payments were commonly intended to help finance other aspects of the transport sector, but in most cases, lump-sum payments were used to cover general budget shortfalls. In contrast, an annuity structure helps create a sense of ownership by subsequent government administrations.
- Choosing fiscal objectives rather than efficiency objectives in concession awards has provided short-term budget help, but may lead to capacity shortfalls or inferior operating performance. This has been generally true of Caribbean telecom concessions, but has also characterized concessions of major international airports.

### *Regulatory Issues*

- Efforts to set up sector regulatory agencies, rather than multisector bodies, have been widespread in Latin America. This has made it harder to hire and keep qualified staff, and to build enough institutional status and power to be effective.
- The political economy of regulatory reform has been a persistent issue. Making the concession as attractive as possible has led to charges that no consideration is given to social welfare. Lack of independence and the politicization of regulatory bodies through the appointment process have been widespread. This creates incentives for significant ministerial or populist influences. To the extent that regulatory processes are seen as subject

to state capture or industry control, public support will be undermined. The result is a perception—not unfounded in some cases—that infrastructure concessions attempt “to privatize the benefits while socializing the risks.”

- Lack of appropriate compensation instruments or policies when governments unilaterally amend concessions. This situation characterized both the Paran  toll road in Brazil and the La Guaira toll road in Venezuela, in which tariff adjustments were mandated without a clear process for redress.
- Failure to impose information requirements and proper accounting standards on concessions, thereby undermining sound tariff policies and weakening the capacity to monitor financial and operating performance.
- Lack of clarity on jurisdiction of ministries, executive branches, competition authorities, and regulatory bodies.

## **LOOKING AHEAD: PROMOTING AND MANAGING THE NEXT GENERATION OF INFRASTRUCTURE INVESTMENT IN LATIN AMERICA**

This section discusses possible financial policy changes, extensions, and initiatives to support increased infrastructure investment in the region.

### **Changes in Loan Syndication and Securitization Markets**

Consolidation in the financial services industry, especially the trend toward high profile global bank mergers, has reduced the size of the loan syndication market and its capacity (and willingness) for substantial hold amounts. While project size has remained the same or increased, the unwillingness of major banks to take a lead role in large project loans means that the number of institutions required to serve as co-managers has grown. This makes syndication harder and more expensive. Moreover, the increase in the volatility of financial and currency markets has also raised the risk for syndicate managers, as they fear holding period losses before the syndicate can be completed. In addition, there is some evidence of contagion resulting from investor losses in one project or market inducing sales and price pressure in other markets. This investor contagion effect creates further incentives to reduce total exposure. Finally, changing bank capital requirements may also be reducing the incentives for commercial banks to provide project finance (see Esty and Sesia, 2003).

The development of new capital sources and access to new investors (for example, floating-rate funds) is required to reverse these trends and to re-establish a syndication market that had largely closed in recent years. Because the useful life of most project assets is quite long (40 or 50 years is not uncommon), the most appropriate long-term project debt capital is provided by life insurance companies, pension funds, and similar institutional investors. Generally, the risk appetite of such investors is quite small (limited, at most, to interest rate and other “controllable” commercial risks) given the long-term tenor of their financing. Moreover, these investors will usually require investment grade rating from one or more of the recognized rating agencies for their investments.

Not long ago, securitization was seen as a potential boon to project finance, by offering a means of transforming loans or receivables into bond-like structures with better diversification and the ability to design tranches for particular maturity and yield structures.<sup>3</sup> By refinancing a commercial bank's project finance loan or pool of such loans, the ability of the bank to originate and provide project finance commitments and loans is restored.

Project loans can be securitized in at least two ways.<sup>4</sup> The first is for the holder(s) of such loans to sell the loans to a special purpose entity that will fund the purchase by issuing debt or equity securities to long-term institutional investors. The second is for long-term investors to refinance the original project loans. Such refinancing, especially if it involves more than one project, may use a special purpose entity, owned by the project entities, to be the new borrower and issuer of the debt securities.

In theory, securitization could extend beyond a single project (for example, creating long-term financing through securitization of a single project's export receivables). There was hope that two new structures would emerge. First was the idea that some of the largest banks in project finance would securitize and sell off a selection of their respective project finance portfolios. Second was the idea that sponsors could securitize a pool of their project assets.

The principal problem in securitizing most commercial loans is that it is difficult to estimate the risk of loss because of uncertainties as to the credit quality of the borrower. Typically, these loans will not be homogeneous. Project loans involve different industries and different economic issues and contractual structures, and therefore it will still be difficult to use the "law of large numbers" to predict defaults.

In addition, it is harder to estimate the risk of loss because project finance is based on "unbundling" project risk and allocating such risk (usually by contract) to various project participants. For example, a project's construction risks (delay and/or cost overrun) are most often addressed by a lump-sum guaranteed-completion turnkey contract. The marketability of a project's output is usually addressed by long-term supply contracts covering the expected output of the project at a price designed to assure that all costs of the project's production of such output are covered (including a return of and on equity capital).

Assuming a satisfactory project structure, the rating agencies will also examine and assess the creditworthiness of all material project participants as well as the projected financial performance of the project and the assumptions underlying such projections. Where a group of project loans is being securitized, the rating agency will examine the portfolio, when rating it, for appropriate diversification to avoid or minimize geographical, demographic, or technological concentration. Generally, to date, only single project loans and a small number of affiliated project loans have been securitized. This may indicate that it is easier for a rating

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3. One such example is the Petrobras securitization of 2001. Salomon Smith Barney and Banco Bilbao Vizcaya Argentaria made a US\$750 million Rule 144A offering of Senior Trust Certificates by PF Export Receivables Master Trust. The Senior Trust Certificates were issued in three tranches and represented senior interests in certain receivables generated by Petrobras sales of heavy fuel oil. The transaction featured innovative credit enhancement techniques, including monoline insurance from three providers and a financial institution as counterparty under a key offtake contract.

4. For current information on the securitization market, see [www.securitization.net](http://www.securitization.net).

agency and prospective investors to evaluate the credit and other considerations applicable to one good project financing than to attempt to evaluate a pool of project financings which vary by industry and credit quality.<sup>5</sup>

Why have only a limited number of project finance securitizations occurred? In practice, there was not enough depth of demand in the markets to sustain a larger number of securitization transactions. Many institutional investors will not buy bonds from greenfield projects unless accompanied by financial guarantees from multilaterals or private insurers.

Moreover, before the series of crises beginning in 1997, project finance loans were among a bank's better-yielding and more complex assets. As a result, the economic incentives were not there for banks to securitize these loans, even if there was demand for collateralized loan obligations. The fact that the market had not been established in good times meant that it was impossible to get it off the ground when the series of economic crises hit in the late 1990s. Investors have become increasingly skeptical of the credit quality of pools that include project finance loans.

In contrast, the late 1990s saw a new source of project finance capital open up in the form of Rule 144A project bonds.<sup>6</sup> However, the institutional investors who participated in Rule 144A bonds were not those who bought pieces of the few project finance securitizations that were undertaken. The few successful deals were bought by investors with experience in asset-backed securities, not project finance.

Project sponsors are increasingly unwilling and/or unable to rely on bank debt alone. Looking ahead, it may be time to once again promote project finance securitization: financial institutions and multilaterals could renew efforts to educate institutional investors about the risk of pools of project finance loans. In short, it may be time to try to encourage new bridges between securitization and project finance. Such securitizations might create a new class of project bonds to increase tenors and to bridge the gap between bank debt and the capital markets.

## New Forms of Finance

New models for sponsor equity also have developed. Historically, construction companies were involved in project deals, but then disposed of their stakes when construction was completed. However, the need for more equity financing and the development of longer-

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5. One noteworthy exception was the US\$617 million March 1998 CSFB Project Funding Notes issue. The Project Funding Notes were secured by an initial portfolio of 40 project finance loans originated by Credit Suisse First Boston and made to US borrowers and one project finance loan originated by Credit Suisse First Boston and made to a foreign borrower. All loans were denominated in US dollars and met certain specified eligibility criteria. The respective principal balances of the loans in the initial portfolio ranged from US\$1 million to US\$50 million. The Project Funding Notes were issued in several classes, with respective aggregate principal amounts, ratings, scheduled and legal maturities, and credit enhancements.
  6. Bonds sold directly to institutional investors may have the designation 144A, which refers to the rule in US securities law under which they are issued. Rule 144A allows US and foreign entities to raise capital in the United States through a private placement without having to go through the full formal registration process, and allows such bonds to be traded. Rule 144A was first used in 1992 by a few pioneering IPPs, and has since become a favored route to capital markets for large-scale, conventional power projects as it provides more flexible financing than normal fully-public bond issue.

term consortium structures means that such companies now face dual roles as contractors and as financial investors. Experience has proved it useful to separate these two perspectives. Many international construction companies have established special entities to represent their investment interests, acting (somewhat) separately from the contracting and construction subsidiary. These two perspectives may create new opportunities for sponsor finance. One possibility could be the enhanced use of cross structures to serve as a revolving fund for new projects. Another possibility could be to revive the notion of sponsored securitization. To date most sponsors do not have enough projects on their books to facilitate a quality pool. However, it may be possible to establish a multi-sponsor pool of subordinated loans and/or equity investments, once projects have reached completion of construction.

In addition, infrastructure funds that are oriented to mezzanine finance may help bridge the gap between traditional bank debt and sponsor finance. The major attraction in such structures is the mix of equity and subordinated debt inherent in mezzanine instruments. Mezzanine structures can help fill gaps between the amount of term debt a project can raise, while maintaining limitations on the amount of equity needed to earn required returns. Such instruments can provide income yields from the mezzanine loans, the potential for equity kickers, and a clear, ex ante exit timetable. These structures are particularly valuable in a highly volatile environment, but where derivative products are not well established. Mezzanine finance can help bring derivatives into markets in the form of conversion options, warrants, and profit participations, while keeping them linked to established debt and equity financing instruments. This “seeding” of derivative products could be enhanced by developing domestic markets for mezzanine financing in local currency. Over the medium term, this could lead to a more liquid derivatives market, which in turn could help support both local bond markets and instruments for risk management.

## New Investors

Infrastructure project finance has traditionally been the province of commercial banks and construction sponsors. However, the risk and return profiles of many of these projects (especially given highly leveraged structures) are broadly equivalent to high-yield debt markets in developed economies, or to venture capital investments. Moreover, the idiosyncratic nature of many projects is similar to that of private equity investments that are common in North America, Europe, and Asia. Nevertheless, project finance investments have largely been “off the radar screen” for these investors.

Pension funds are another key funding source that needs to be tapped to help bring about a recovery of Latin American infrastructure finance. Latin American pension portfolios remain concentrated in short-term, fixed-income instruments. The fundamental mismatch between these short-term investments and the long-term obligations to pensioners needs to be managed. Diversification into longer-term assets is a key part of addressing this mismatch. The region’s infrastructure projects could serve as the basis for creating more long-term instruments.

One possible strategy would be for multilaterals to launch an effort to educate such investor types about the characteristics of project finance deals, much as real estate, commodity funds, venture capital, private equity, and hedge funds have done to position themselves for investment by pension and endowment funds and insurance companies.



## Insurance, Guarantees, and Multilateral Institutions<sup>7</sup>

Multilateral financial institutions have played four key roles in infrastructure finance. First, they frequently serve as a “knowledge partner” with the host government in terms of project preparation, design, and implementation. Second, they provide a “comfort factor” for other project participants, serving as an invisible form of risk mitigation. Third, they have become increasingly important as a lender or investor. Fourth, they provide a variety of financial mitigants for project enhancement.

The agencies could review and possibly expand their risk cover programs in both scope and volume. Because political risk is often caused by actions of government authorities, a political risk guarantee by the host government is of limited value. Political risk guarantees from multilateral financial institutions are now seen as indispensable to get infrastructure investments done in Latin America. More extensive and specific guarantee mechanisms will contribute to the establishment of a climate of confidence and security for lenders, investors, and insurers.

In this environment, the existing risk mitigation products offered need to be strengthened and new ones designed. In general, insurance offered by export credit agencies (ECAs) is limited in coverage and terms, and private insurance for political risk remains limited and unavailable for many countries in Latin America. Private coverage remains very expensive and is frequently short-term, with insurance periods of three years or less and with no guarantees concerning renewal terms. In practice, political risk cover of various sorts is limited in value for a number of reasons. Coverage is typically restricted to a percentage of project cost, often 50 percent or less of total value.

Partial risk guarantees covering political risk typically require counter-guarantees by the host governments (which have been difficult to obtain for BOT-type projects). While there have been initiatives by some multilaterals to provide stand-alone partial guarantees, this has only been done on a limited scale to date. Other aspects of multilateral participation that might be considered include extending the percentage, total amount, and length of multilateral guarantees and mitigants; improving coverage of small-scale projects; and increased access for non-sovereign entities, especially state and local governments, to guarantees and other products.

Coverage for expropriation is often limited to total project loss. In practice though, a more common problem is “creeping expropriation” through a series of government actions or decisions that gradually reduce the value of the project. Such creeping expropriation generally remains uninsurable, but is a significant deterrent to getting projects launched. Breach of contract or contract frustration guarantees typically have been limited in scope to specific events and large-scale project loss. It has also proven difficult to obtain cover for various types of public unrest, including demonstrations, strikes, and other protest actions. Given that such unrest has been common in Latin America in recent years, there is a pressing need to extend cover to this area.

Another issue is the coordination between multilateral institutions and private insurers. The evolution of private insurance companies has greatly facilitated the acceptance of wrapped project bonds by institutional investors. However, the difficult environment facing global insurers means that projects now face much higher upfront fees for such cover. This can raise project costs dramatically. There is a need to develop structures in which insurance costs are spread more evenly over time. There may be a need for further refinement and clarification of conditions for the role of insurer of record.

In sum, guarantees by host governments are often seen as having little value, especially for political risk. The private market is limited and bilateral coverage is restrictive by design. Accordingly, multilaterals may need to review and extend their political risk cover programs to deal more effectively with the definition and coverage of breach of contract and creeping expropriation. There also is a need for more multilateral attention to developing non-sovereign guarantee products, since many infrastructure projects are local or provincial in scope, or involve state or local governments as key participants.

## Local Debt Markets

Most Latin American countries do not have local financial markets that function well for providing long-term funding. Investment instruments for such projects are often lacking. When a project is funded with foreign-denominated debt but revenues are in local currency, a long-term currency exchange risk results. Tariff adjustment formulas often do not take into account exchange risks, nor can banks manage emerging market exchange risk on a long-term basis. Governments and multilaterals should consider a renewed effort to get local banks and other local financial institutions to lend longer term.

There is an emerging role for commercial and investment banks beyond loan origination and participation. In the past decade, many international banks expanded their domestic presence in Latin America, but this did not lead to additional longer-term domestic loans. The need is to shift from bank-based to capital market-based finance. International banks seeking a continuing role in project finance are moving toward underwriting local bond issues to be placed with domestic investors. Such transactions have already taken place in Chile, Mexico, and Brazil, and others are being planned.

One useful model for consideration is the Asian Bond Market Initiative, launched in 2003. This program has two main components. First is the establishment of the Asian Bond Fund, which will provide long-term dollar-based finance and will be managed by the Bank for International Settlements (BIS). This will help address the reliance on short-term debt. The issue of currency mismatch is being addressed through the creation of the Asian Bond Market Forum, which will deal with many topics, including more and better choices for pension investors; the development of real-time benchmarks to price long-term investment risk; and the development of local, long-term currency debt instruments.<sup>8</sup> The Asian Development Bank has shown its willingness to promote the local currency side of the Asian bond market; such consideration could also be extended in Latin America (see Dailami, 2003).

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8. The initial meeting was held in November 2003. See [www.abm-forum.org](http://www.abm-forum.org).

## NEW APPROACHES TO GOVERNANCE

It is important to highlight the role that new governance mechanisms could play to attract private investors in infrastructure. Better governance could help mitigate the risks that are inherent to countries where political-economic conflicts and legal system weakness are pervasive, as is common in the region. In such a context, contracts and governance require joint design (in contrast to project finance practice, in which governance tends to appear as a standard addendum to standard financial structures). Contracts with high-powered incentives that cannot be enforced or that can otherwise be easily reshaped are an invitation to disaster.

As D. Rodrik noted in his Harvard University manuscript entitled “Economic Reform without Rules of Thumb,” (October 2003) institutional imagination is required to supplement contract choice and financial structures, which are necessarily incomplete because of an uncertain economic environment, high transaction costs, and the potential for political interference. Three lines of action deserve further consideration:

*Governance measures aimed at balancing risk-taking by the private sector.* The logic of public-private partnerships responds in part to the fact that the first wave of private participation in infrastructure tended to shift too much risk to the private parties, thus leading to costlier provision or renegotiation. There is a need to harmonize fiscal and infrastructure policies, perhaps in the form of an independent government agency. This could add credibility to project structures and public funding (see Chapter 6).

*Governance measures aimed at leveling the playing field between strong contractors and governments* (Garcia, Reitzes and Benavides, 2005). When the judiciary is weak, strategic investors optimize the combined value of project profits *plus* the expected value at stake (e.g., cost overruns not covered by contract) that could be derived from besting the granting authority in a legal dispute. By winning a concession contest, the concessionaire is also purchasing the *option* of being reimbursed its costs, *ex post*. The key point is that the “right” to be reimbursed is the outcome of a legal struggle in which the probability of winning the dispute is *endogenous*: it will depend on the investment of both the government and the concessionaire in more and better legal services. It might be useful to set up legal funding and adjudication mechanisms to resolve disputes. This measure has an impact on the optimal contract structure (e.g., fixed payments vs. cost-based). Clearly, this measure should be considered a component of a consistent program to strengthen the legal system in the long run.

*Governance measures aimed at actively preventing project financial stress.* In many cases, the default approach to managing contingent liabilities has been to set them based on the information and expectations *ex ante*, and then leave the project adrift. Once an environment to balance risk-taking between contractors and governments has achieved a track record of cooperation, there is a basis for putting in place a framework for adjusting contract parameters to avoid massive renegotiations. This is a difficult territory to explore, and certainly should not become a loophole for *creeping* renegotiation.

## CONCLUDING OBSERVATIONS

The infrastructure project market in Latin America has been in turmoil since 1997. Investors, insurers, and sponsors have a poor perception of the risks and possible outcomes of such projects. Given the linkages between infrastructure investment and GDP growth, Latin America's infrastructure gap has hindered economic development.

Project risks have become the most important concern in raising financing for projects. There has been a trend toward less availability of capital and stricter lenders' requirements, including higher spreads and margins; reductions in the size and tenor of loans; more conservative coverage ratios; and more requirements for equity participation. As a result, available resources are reduced and result in more risk transfer to other participants in the project, most notably governments and project sponsors. To the degree that governments cannot meet their direct or contingent obligations, even more risk falls on sponsors. This transfer then results in a higher required rate of return for the project overall. In many cases, these required returns are far in excess of those achievable in practice.

It is important to keep in mind that infrastructure finance is strongly conditioned and limited by the macroeconomic and sovereign financial situation. However, there were some signs of improvement in 2003, as documented by the IMF (International Monetary Fund, 2003a and 2003b). Stronger global growth and low risk-free rates provided a more positive external environment for emerging markets. Credit default spreads fell for sovereign borrowers, although most countries in the region remain below investment grade. Measures to address high debt levels and unstable debt structures, to boost reserves, and to adapt exchange rate arrangements to the degree of capital account openness appear to have improved investor perceptions.

Revitalizing the infrastructure finance market will require avoiding the mistakes of the past, along with new governance and regulatory structures, new financial tools, new instruments, and new investors. In the end, though, these aspects will be of only limited help if the macroeconomic environment remains prone to recurrent crises. If long-term stability can be achieved, then the underlying growth potential for the region will drive renewed interest in infrastructure investment.

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# FOUR

## Investor Perceptions of Regulatory and Institutional Risk in Latin America

*Analistas Financieros Internacionales (AFI)\**

### INTRODUCTION

This chapter describes the perceptions that major Spanish companies in the infrastructure sectors (transport, electricity, oil and gas, telecommunications, water and sanitation, and solid waste collection) have of the regulatory and institutional risks and obstacles that they have faced in Latin America.<sup>1</sup> It provides a general overview of Spanish overseas investment and its share in infrastructure investment in Latin America and summarizes the obstacles encountered by Spanish investors in Latin America on the basis of the interviews conducted, as well as some of the views expressed by the firms interviewed about the role of international financial organizations. The chapter presents an account of experiences in specific countries detailing both the strengths and weaknesses observed so far. It also describes a series of mechanisms that helped mitigate some of the risks associated with infrastructure investment. This chapter provides quantitative data on Spanish investment in Latin America (Annex 1) as well as lists of the firms and persons interviewed (Annex 2).

### OVERVIEW OF SPANISH INVESTMENT IN LATIN AMERICA

The pattern of Spanish foreign investment underwent a major change in the 1990s. Traditionally a destination for foreign investment, Spain remained a net recipient of foreign direct investment (FDI) until 1996. As of 1997, as a result of the growth in overseas investment, it

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1. This work is based on personal interviews with executives of the 15 largest Spanish firms with investments in the region. In order to maintain the confidentiality of the individual opinions expressed, no specific references are made to the opinions of particular firms. For purposes of data collection, these firms were sent a questionnaire. Since the universe of companies interviewed is small and some preferred not to fill in the questionnaire, the replies received did not undergo any statistical processing.

became a net exporter of FDI. In 1999, net outflows exceeded 5 percent of GDP. The scale of the drive towards overseas investment is clear from table 4-1. This change in the direction of net FDI flows was accompanied by a shift in the geographical destination of overseas investment. While in 1995, Europe accounted for 52 percent of total Spanish overseas investment, more than half of the investment undertaken from 1996 to 2000 went to Latin America. During those years perceptions of the region’s profitability and/or risk improved substantially thanks to the restructuring of foreign debt and the adoption by Latin American governments of what UK economist John Williamson called “the Washington Consensus” (prudent macroeconomic policies, privatization and market regulation, and trade liberalization). Such policies generated confidence among major Spanish businesses, which came to see Latin America as a natural market in which to expand.

As table 4-2 indicates, Latin America’s share in Spanish direct investment fell to 21 percent in 2001 as a result of the end, in large measure, of the cycle of privatization in the region, the Argentine crisis, international political uncertainties, and slower growth. Particularly noteworthy was the spectacular drop (65 percent) in investment between 2000 and 2002, especially in Brazil where investment fell by nearly 90 percent during this period.

In this recent period, the pattern of overseas direct investment shifted to other areas, particularly the OECD countries. It is worth noting, however, that China and the emerging European economies received an insignificant proportion of overseas Spanish investment.<sup>2</sup>

According to a recent survey (Chislett, 2002) of 107 Spanish firms with a presence in Latin America—which includes all forms of investment and not just (as in this chapter) those in infrastructure—the determinant factors behind Spanish firms’ investment decisions are those listed in table 4-3. The main obstacles are listed in table 4-4.

**Table 4-1.** Spanish Investment Flows\* (Billions of euros)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Foreign Investment in Spain	5.5	6.8	5.7	5.6	6.9	8.4	18.9	39.4	34.2	28.6
Spanish Overseas Investment	1.8	4.2	4.8	5.0	10.7	15.4	51.3	56.7	43.1	37.5
Net Inflow	3.6	2.6	0.9	0.7	-3.9	-7.0	-32.4	-17.3	-8.9	-8.9

\*Note: Effective gross investment  
Source: Registry of Foreign Investment

2. According to data from the Registry of Foreign Investment, effective gross Spanish investment in China in 2002 was 4.9 million euros, 0.01 percent of total investment. The countries of Central and Eastern Europe (including Bosnia, Bulgaria, the Czech Republic, Croatia, Hungary, Kazakhstan, Poland, Romania, Russia, Slovenia, and Slovakia) received 58.8 million euros worth of investment from Spain in 2002, 0.16 percent of total Spanish investment in that year.

Table 4-2. Gross Spanish Overseas Investment by Destination (000s of euros)

	2000	% total	2001	% total	Variation 2001/2000	2002	% total	Variation 2002/2001
Total OECD Countries	29,143,231	51.39	33,397,755	77.53	14.6	27,934,138	74.55	-16.4
Total Tax Havens	892,431	1.57	333,490	0.77	-62.6	256,177	0.69	-22.3
Total Central and East Europe	1,284,886	2.27	256,431	0.60	-80.0	58,830	0.16	-77.1
Total African Countries	117,954	0.21	56,024	0.13	-52.5	340,841	0.91	508.4
Central America/Caribbean (not tax havens)								
BELIZE	4	0.00	0.00	0.00	-100.0	0	0.00	N.C.
COSTA RICA	1,515	0.00	5,358	0.01	253.8	175	0.00	-96.7
CUBA	771,228	1.36	15,553	0.04	-98.0	512	0.00	-96.7
DOMINICAN REPUBLIC	20,697	0.04	64,644	0.15	212.3	26,302	0.07	-59.3
EL SALVADOR	28,688	0.05	1,567	0.00	-94.5	42,973	0.11	2,642.7
GUATEMALA	20,479	0.04	33,937	0.08	65.7	181,967	0.49	436.2
HONDURAS	73	0.00	2	0.00	-97.8	79	0.00	4,854.4
MEXICO	3,983,195	7.02	1,748,841	4.06	-56.1	2,920,002	7.79	67.0
NICARAGUA	135,131	0.24	6,304	0.01	-95.3	226	0.00	-96.4
Total C. America/Caribbean (not tax havens)	4,961,008	8.75	1,876,209	4.36	-62.2	3,172,236	8.47	69.1
South America								
ARGENTINA	3,269,109	5.76	1,874,795	4.35	-42.7	3,530,709	9.42	88.3
BOLIVIA	13,114	0.02	58,166	0.14	343.5	1,330	0.00	-97.7
BRAZIL	14,533,132	25.63	1,651,586	3.83	-88.6	1,589,105	4.24	-3.8
CHILE	933,475	1.65	972,903	2.26	4.2	266,845	0.71	-72.6
COLOMBIA	313,264	0.55	157,280	0.37	-49.8	69,836	0.19	-55.6

Continued



Table 4-2 (continued). Gross Spanish Overseas Investment by Destination (000s of euros)

	2000	% total	2001	% total	Variation 2001/2000	2002	% total	Variation 2002/2001
ECUADOR	1,465	0.00	5,535	0.01	277.9	622	0.00	-88.8
GUYANA	574	0.00	326	0.00	-43.2	0	0.00	-100.0
PERU	778,588	1.37	466,224	1.08	-40.1	51,813	0.14	-88.9
PARAGUAY	370	0.00	192	0.00	-48.0	99	0.00	-48.4
URUGUAY	306,778	0.54	1,181,606	2.74	285.2	69,136	0.18	-94.1
VENEZUELA	111,638	0.20	728,588	1.69	552.6	26,433	0.07	-96.4
Total South America	20,261,506	35.73	7,097,201	16.48	-65.0	5,605,928	14.96	-21.0
Total Latin America	25,222,513	44.47	8,973,410	20.83	-64.4	8,778,164	23.43	-2.2
Total Asiatic Countries (except Japan)	52,324	0.09	57,458	0.13	9.8	100,231	0.27	74.4
Total Other Countries	0.00	0.00	12	0.00	N.C.	640	0.00	5,150.6
Total	56,713,338	100.00	43,074,580	100.00	-24.0	37,472,021	100.00	-13.0

Source: Registry of Foreign Investment. NC: Non-calculable

**Table 4-3.** Determinants of Spanish Investment in Latin America (%)

Growth expectations	89
Improvement in sector performance	89
Market size	81
Macroeconomic stability	72
<b>Political/social stability</b>	<b>69</b>
<b>FDI Legislation</b>	<b>67</b>
Low labor costs	50
Belonging to integration zone/group	47
Availability of skilled labor	43
Fiscal assistance/incentives	40
Infrastructure quality	39
Availability of raw materials	23
Potential for agriculture	13

*Source:* Chislett (2002).

**Table 4-4.** Obstacles to Spanish Direct Investment in Latin America (% of affirmative replies)

<b>Bureacracy and red tape</b>	<b>58</b>
<b>Corruption</b>	<b>53</b>
<b>Political instability</b>	<b>48</b>
<b>Legal/judicial insecurity</b>	<b>48</b>
Violence	45
Devaluation risk	42
Poverty/social problems	29
Difficulty in profit repatriation	28
Lack of qualified labor	27
Lack of developed financial markets	25
Deficient infrastructure	25
Tax burden	23

*Source:* Chislett (2002).

## PERCEPTIONS OF OBSTACLES AND RISK

### The Pervasiveness of “Hold-Up” Problems

The first thing that the interviews reveal is a curious paradox about the consequences of the intense period of private investment in infrastructure in Latin America. On the one hand, the Spanish companies involved perceive a significant improvement in the quality of the public services provided.<sup>3</sup> On the other hand, however, those interviewed lament the “public disillusionment” that they see in many Latin American countries and the antipathy generated in some toward Spanish companies. Many of the interviews attribute some of these current problems to the excessive optimism of the governments, on the eve of privatization, regarding the capacity of companies to come up with funds. This optimism led governments to charge (and Spanish firms to pay) high prices for the companies privatized, while at the same time demanding standards of service delivery for which, from the outset, a gradual increase in tariffs was anticipated. This increase in tariffs resulted in social and political hostility, sometimes instigated by the public authorities themselves. However, the decision to invest was voluntary, and this excessive optimism was shared and accepted by the companies that invested.

Spanish investment in infrastructure accounts for 71 percent of Spanish FDI in Latin America (Chislett, 2002), far in excess of the 26 percent accounted for by the financial sector. The Spanish companies interviewed drew attention to a clear change in the behavior of the authorities prior to and following the decision to invest. Once the investment had taken place, the bargaining power changed, often pushing the government to make increasing demands on the company and altering the conditions that had been agreed upon at the outset. Vernon (1971) shows that, in extreme circumstances, this can lead to re-nationalization. In cases where the economic/financial balance of the investment is upset, many firms come to the conclusion that they have little bargaining power once the investment is made. Many of the investors interviewed used phrases such as “they only respect the rules of the game while you are undertaking the investment.”

This confirms the presence of the well-documented *hold-up* problem that is prone to emerge with specific, irreversible investment: once the private investor has completed the investment, he or she may be expropriated *ex post* by an opportunistic host government or regulator or by a change in the legal or regulatory framework agreed upon at the time the investment was made. Private investment will only take place if firms believe that the authorities will respect the initial agreements and resist the temptation to renege on their commitments in the future.

The interviews also highlight the wide range of risks arising from investment in infrastructure projects. Some are sector specific, while others are true of all infrastructure. In what follows, both are outlined, and at the end of the chapter some thoughts are added about the role that international institutions can play in risk mitigation. It should be noted that this catalogue of risks and obstacles is merely the sum of all those found in specific countries; accordingly, it does not take into account the major differences among countries.

3. This perception conforms to the conclusions of Chong and López de Silanes (2003).

## Common Risks

Of the risks common to infrastructure projects, the companies interviewed drew attention to the key obstacles described below.

- Cash flow profile and political risk, whereby there are large investments and losses in the first few years and expectations of profits after a certain initial period. This creates a degree of vulnerability for the firm and increases the likelihood of *ex-post* expropriation by the government.
- Lack of funding in local currency (resulting from a lack of macroeconomic stability), which gives rise to exchange rate risks for those projects where income is in local currency.
- Frequent overreaction by stock markets on which investing companies are quoted in the event of macroeconomic crises in those Latin American countries where they have invested.
- The small size of many Latin American countries.

### *Cash Flow Profile and Political Risk*

The typical time profile of major private investment projects in infrastructure (i.e. huge investment and large losses in the first few years followed by subsequent years of profits) creates an asymmetry in the negotiating capacity of investors and the authorities. The risk is that governments and regulators will ignore the initial investments and losses borne by the company once the project starts to generate profits. This risk becomes more acute when there are changes of government. The interviews yield many examples where the authorities or the regulators have shifted the terms of the economic/financial balance of investments. In most cases, the changes were made by authorities that came to power after the initial period (authorities that were not a party to the decision to bring in the private sector and did not receive the income from privatization).

In the opinion of those interviewed, the decisions that most frequently upset the economic/financial balance of the investments were the refusal to allow tariffs to be updated along the lines contractually agreed upon; interpretation of the terms of the concession to the disadvantage of the firm holding the concession; and obligatory extensions of service provision to people who lack the means to pay or in the absence of subsidies.

Those interviewed said that the risk of the economic/financial balance of a project being upset increased in countries where certain factors are present, including:

- Political instability and major electoral fluctuations, with the risk that new governments (whether national, regional, or municipal) ignore the commitments undertaken by their predecessors.
- The lack of a stable and well-qualified bureaucracy, to help reduce the risks arising from political fluctuations.
- A “populist”-inclined judicial and legislative system, liable to adopt interventionist measures or to consistently interpret legislation or contractual clauses to the detriment of the

firms, especially if they are foreign. The interviewees pointed to the use of the judicial system in bad faith by consumers with bad debts (using procedures such as *liminares* in Brazil or *interdictos* in other countries); the passage of laws that drastically curtail interest on bad debts; the threat of impeachment of individual ministers by Congress; and the use of the courts to arbitrarily scrap tariff increases approved by the regulator.

In countries where there is public hostility toward private sector participation in public services, political parties can make electoral gains by attacking private companies during political campaigns, particularly when they are foreign. Their campaigns affect the way they behave when they win the elections. The interviewees were also of the opinion that the risk of upsetting the economic/financial balance was more acute in the following cases:

- In those services where the standard of quality expected of the private concessionaire or the price originally paid involved large tariff increases to ensure the profitability of the investments made.
- In those public services with implications for public health (such as drinking water distribution and sewerage). In such cases, a foreign company is not in a position to mount a credible threat to suspend supply.
- In those services where the foreign investor is a large and highly visible firm, against which the authorities can whip up public pressure.

### *Lack of Financing in Local Currency and Exchange Rate Instability*

In addition to accentuating demand risks inherent to any infrastructure project, macroeconomic instability in many Latin American countries also tends to have two other serious adverse effects: it renders local currency liable to devaluation, and it hinders the development of a market for long-term finance in local currency.

The lack of long-term finance in local currency means that projects have to be financed in dollars or other foreign currencies. This involves inevitable losses in the event of devaluation, which have to be borne mainly by those who provided the equity for the project. Where there is a large devaluation, the economic/financial balance of a project is jeopardized since the authorities will be tempted to prevent tariffs from rising even where they are indexed to the exchange rate. Even if a tariff increase is permitted, the elasticity of demand and the increase in the number of illegal connections may reduce income in undesirable ways. Furthermore, if there is inflation, delays in adjusting the exchange rate and in collecting on overdue bills can significantly reduce the real value of the company's income.

In sum, what seems to be just a financial risk arising from macroeconomic instability may interact in a pernicious way with regulatory risk, compounding it. For this reason many of those interviewed considered it important to look for arrangements whereby private operators of public services could avoid bearing such exchange rate risks. Even in cases where funds are raised in domestic currency and where, consequently, no such major exchange rate risks are involved, the devaluation of the local currency against the euro will have adverse effects on the Spanish parent company, as shown below.

### *International Stock Market Overreaction*

The equity values of Spanish companies with major investments in Latin America have suffered from the political and macroeconomic volatility in the region's larger countries. Under this heading, at least two concerns should be mentioned, both very much in the minds of senior executives of such companies: the impact on the financial accounts of the parent company, and the risk of market overreaction and contagion.

It should be noted that even if the project or subsidiary in Latin America does not suffer monetary losses, the depreciation of the local currency against the euro will always have an adverse impact on the accounts of the Spanish parent, in terms of both flows (profits) and stocks (investment value). On the second of the two concerns of Spanish investors, experience shows that markets overreact to financial news<sup>4</sup> in such a way that the adverse impact of financial and political crises in Latin America on Spanish companies investing there is much greater than the real economic effect.

It is therefore hardly surprising that in answer to the question about what actions or policies would help reactivate Spanish investment in infrastructure projects in Latin America, a large majority of those interviewed replied that good macroeconomic and fiscal management would be more helpful than anything else.

### *Small Market Size*

Many of the companies interviewed made it clear that they would only commit themselves to investment projects in infrastructure if the size of the market and growth prospects of host countries were of a "critical size" that enabled them to cover inherent fixed costs on all investments (general costs and management attention). This lack of critical size led the companies interviewed (other than those in the oil and gas sector and various electricity companies) to express little interest in Central America and other small countries like Ecuador, Bolivia, and Paraguay.

A number of electricity companies with investments in Central America gave considerable importance to the creation of an interconnecting distribution network that would enable them to match occasional excesses of supply in one country with unmet demand in others.

## Risks by Sector

### *Transport*

In the case of highways, the most common risk is demand volatility. If traffic forecasts do not play out (for instance as a result of a recession or due to excessive optimism in the initial estimates), the economic balance in a concession may be endangered. Demand volatility is particularly high in emerging economies; if the risk premium rises, it may be necessary to charge unsustainably high tariffs. To mitigate such risks, investors require mechanisms to ensure sufficient flexibility to address such situations, should they arise, without putting the public interest at risk. One such mechanism, applied in Chile, is described below.

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4. Both Barberis and Thaler (2002) and Shefrin (2002) examine irrationality in financial markets.

In countries with security and terrorism problems (especially in rural areas) tollbooths are very vulnerable to hold-ups by violent groups or even to being blown up. Also, tolls are sometimes evaded by the use of illegal detours over country roads in ways that are difficult for the concessionaire to avoid.

In ports, one risk mentioned in the interviews is that the volume of commerce may be less than expected because of the opening up of new ports not envisaged at the time the first ones were privatized (a similar sort of risk is associated with road projects with the construction of alternative free routes). The risk is higher when the new or previously unplanned competing port is state-owned and can charge tariffs that cover only maintenance costs, not the repayment of investment funds.

### *Electricity*

In conventional electricity generation, the experience of Spanish investors shows that foreign generators often have had to compete with local generators that are ill disposed to a climate of competition. The preponderance of hydroelectricity in the generating mix, in conjunction with the erratic nature of rainfall, adds a specific sort of risk factor in this sector, which can be offset by long-term purchasing contracts between the generators and their free customers and distributors.

In the renewable energy sector, the firms interviewed made it clear that in most countries there was no stable regulatory framework with credible medium- and long-term incentives to help ensure project profitability. However, they say that if Spanish industries subject to limits on CO<sub>2</sub> emissions imposed by recent European Union legislation decide to make use of the Clean Development Mechanism (for instance, carbon funds) contemplated by the Kyoto Protocol, there would be a large portfolio of clean development projects in Latin America, especially in countries like Costa Rica, Mexico, Peru, and Brazil.

The risks associated with the transport of electricity are perceived as moderate. It is the distribution companies—the “face” of the industry as far as the consumer is concerned—that, based on the interviews, appear more vulnerable to institutional and regulatory risk and to the danger that the authorities might make them shoulder the full weight of the crisis. Frequently, authorities insist on additional investments to extend coverage of the service when there is an insufficient inflow due in part to tariffs not being adjusted to meet such obligations. Furthermore, energy theft and illegal connections are common, and there is a culture of not paying for the service; indeed, in some countries, intermediaries have emerged specializing in supplying electricity from illegal connections. These problems are only made worse because of legal and political difficulties that prevent the distributors from demanding payment from consumers who are in arrears or else cutting supply. Often, tariff collectors encounter potential danger on entering certain neighborhoods.

### *Oil and Gas*

The firms interviewed said that when investment is concentrated in one phase of the value chain (for instance in refining or retail distribution) they are particularly vulnerable to regulatory and institutional risk, since the authorities take steps that make such sectors assume the full weight of a crisis. Where investment is vertically integrated (in other words, it cov-

ers exploration, production, refining, and distribution or marketing) it is better protected from such risks. An apparent obstacle in some countries is the set of restrictions imposed on occasion by local entities and associations on the development of distribution networks by foreign companies, to the benefit of local suppliers.

### *Telecommunications*

A special sort of risk in this sector is the manipulation of *open access* by industry incumbents. One such example is the setting of the interconnection charge between fixed line and cellular telephony. The level of this charge may benefit or harm one or the other, and there is always the risk that the regulatory authorities will take into account the nationality of the incumbent operator in each segment and try to favor local ones. For example, once a fixed-line telephone network is constructed, authorities then reduce tariffs drastically, including the tariff payable on calls from mobile phones. The reduction in the price of fixed line telephony will cause, in the short term (and to the satisfaction of the authorities), the rapid development of cellular telephony.

Such a sharp reduction in prices will have two immediate consequences. First, it will generate bottlenecks in the basic infrastructure that will render longer-term development of mobile telephony unsustainable. And second, it will endanger the fulfillment of obligations imposed by the authorities on the operators of fixed-line telephony to provide a universal service. When the fixed-line telephony operator is local, the opposite risk may arise; that is, the interconnection charge could be set so high that the development of mobile telephony is seriously impaired.

### *Water and Sanitation*

In the water sector, the specific problems highlighted by those interviewed were similar to those of the electricity distribution industry, though aggravated by two factors: the lack of a payment culture is even more evident than in the case of electricity; and service provision falls under the authority of local governments. In general, the authorities always try to increase service coverage at the expense of the private operator, without taking into account that the marginal cost of expanding the basic supply network to suburban communities tends to be very high and that, in the absence of public subsidy, it involves a very high tariff that is difficult for low-income sectors to afford.

With regard to sewerage and its treatment, the companies interviewed pointed out that the authorities' obvious desire to increase the treatment of sewage clashed with public resistance from citizens over the payment of the tariffs necessary for such services to be financed from private investment. They conclude, therefore, that a significant increase in sewage treatment would require a system of public subsidies that would be difficult to pay for out of public funds in the short run.

### *Solid Waste Collection*

Since they were not required to make large investments, the Spanish companies involved in waste collection frequently encountered fierce competition from local operators. In their opinion, some of these operators indulged in unfair competitive practices by not paying their



taxes and other legal obligations and exerting political pressure on local councilors. This has led some Spanish firms to focus on sectors requiring higher capital investments (for instance solid waste disposal sites subject to sanitary and environmental controls). Those interviewed made clear that on occasion the environmental standards were applied in discriminatory ways to the disadvantage of foreign firms.

## Views on the Role of International Organizations

The views of those interviewed on the role that multilateral financial institutions (the International Monetary Fund, the World Bank, and the Inter-American Development Bank) could play in mitigating and managing such risks varied widely. Some of the firms interviewed recognized the positive role played by the IDB. These included firms that had faced regulatory and institutional problems that were resolved thanks, in part, to the support of such institutions. Many firms interviewed also pointed out the critical role that multilateral institutions should play in mitigating risks (for example, exchange rate risk) and in the public financing of certain types of social infrastructure (for example, water and sewerage systems) that, experience suggests, are difficult to finance through private enterprise.

At the same time as these favorable comments, the interviews frequently reveal disappointment among many Spanish firms about the role played by international institutions. For instance, it was pointed out that during times of crisis, as in Argentina in recent years, multilateral organizations, especially the IMF, tend not to take into account large foreign firms with investments in infrastructure, whereas they consult closely with banks whose investment in these countries amounts to much less. Moreover, those interviewed asserted that in cases of acute conflict, multilateral institutions tended to “line up with the government.” They attributed this to the fact that these governments are their shareholders and to the concern of international institutions to protect their own financial interests.

Multilateral banks’ preferred lender status as well as the privileged relations they enjoy with governments limit the capacity of international institutions to support private foreign companies and to mitigate the regulatory and institutional risks that such companies must bear. For this reason some companies have used provisions in bilateral investment treaties and have lodged complaints against government decisions with the International Centre for Settlement of Investment Disputes (ICSID) at the World Bank. However, they wonder how the international financial organizations will react if, in the future, the decisions made favor the companies yet the governments then decide not to honor them.

## PERCEPTIONS OF SPECIFIC COUNTRIES

Although the interviews were geared to identifying institutional and regulatory obstacles and risks at the regional level, they also revealed significant differences in risk perceptions between countries. Though far from exhaustive, this section brings together the more noteworthy strengths and risks perceived in different countries.

### Argentina

The impact of the crisis that began in 2001, the emergency measures adopted, and the delays in renegotiating contracts have had a traumatic effect, not just on the Spanish firms most di-

rectly affected, but on all foreign companies with a presence in Latin America. The freezing of nominal prices for gas and electricity is producing two serious problems. The first of these is that new investments in productive capacity, transport, and distribution have come to a standstill. Even though the situation may change as new investment incentives are offered, any new plant or deposits will take three or four years to come on stream. This means that in the medium term there might be energy shortages and even major blackouts.

The second problem is the huge rate of industrial consumption of gas, given the unexpected subsidy for energy consumption. This rapid growth in demand will help use up current reserves and accelerate supply shortages. The subsidy for industrial energy is not necessary to protect low-income consumers because Argentina already has so-called “social tariffs” to protect them. In general, the recent crisis in Argentina has made clear the limited degree of autonomy enjoyed by the judiciary vis-à-vis the executive.

## Brazil

Without exception, the companies interviewed underlined the fact that Brazil is not homogenous as a destination for investment in infrastructure. The states of São Paulo and Rio de Janeiro are much more attractive than the rest of the country. Among Brazil’s attractions, they emphasize: the huge size of the economy and its growth potential (although it requires major investment to reach its critical mass); the long-term finance offered in local currency (reais) for priority investments through the National Development Bank (BNDES); and the great prestige and professionalism of the electricity regulator (ANEL), which has shown a capacity to deal equitably with all companies in the sector and has encouraged competition in bidding procedures, acting with flexibility in the prequalification stages.

In the investors’ opinion, one of the main weaknesses of Brazil’s infrastructure investment climate is so-called “judicial activism.” This shows up in the tendency of many judges, at the request of individuals and firms, to issue judicial rulings with immediate effect (*liminares*) that have a negative impact on service companies. For instance, a Brazilian industrial firm can obtain a *liminar* with relative ease, thus preventing the supplier of electricity from charging the tariff for the electricity it uses. Or, a judicial ruling may unexpectedly annul the indexation clause of a service tariff and insist, for the benefit of consumers, that the reference index established (for instance a wholesale price index that reflects changes in the real exchange rate) be replaced by another (for instance, a domestic consumer price index).

Nearly all of those interviewed pointed to the difficulty discerning where the jurisdiction of state authorities ends and that of federal authorities begins (they frequently overlap, especially on environmental matters). They stress the slowness and complexity of the legal procedures of environmental bodies, which delay the construction of electricity lines (usually, bids for construction begin before environmental permits are obtained). They also point to the high degree of trade protectionism, which makes the import of equipment for certain infrastructure projects particularly burdensome, especially in the alternative energy sector.

In the energy sector, the erratic nature of rainfall (in good years hydroelectric energy caters to 90 percent of demand) means, according to those interviewed, that in years of plentiful rain the authorities are tempted not to comply with price and minimum demand commitments (take-or-pay clauses, power purchase agreements) that they made in times of drought

in order to stimulate investment in new fuel-fired generating capacity. The new regulatory framework for electricity—to reward potency in thermal plants—could open up new perspectives for investment in electricity generating. Electricity firms are analyzing the new norms with great attention since they could have a decisive effect on investment decisions.

Finally, investors perceive a laxity in environmental regulations with respect to oil refining, enabling Petrobras to produce a heavier, cheaper fuel whose low price reduces gas consumption.

## Colombia

Colombia, together with Chile, is one of the countries where institutional development is most highly valued by Spanish companies. Unfortunately, the lack of security and risks associated with kidnapping constitute a decisively negative factor that has led many to rule out new investments or to reduce their presence in Colombia to a minimum, limiting it to Bogota and other major cities.

The companies interviewed praise the high quality of the public administration and the justice system in Colombia; a well-qualified labor market; the existence of a peso-denominated long-term bond market, based on institutional demand for such securities derived from pension funds; and respect for contractual commitments on the part of large municipalities, even where there have been successive changes of mayors. The companies interviewed have special praise for the different companies that come under the municipality of Bogota. They provide a good example in charging for public services (for instance solid waste collection, where 98 percent of users pay for the service).

Such high praise, however, is limited to major cities (Bogota and Cali); levels of non-payment elsewhere are high, especially along the Atlantic coast. The diversity and unevenness in terms of risk and social conditions in Colombia create difficulties, since when it comes to setting levels for tariffs and subsidies the regulatory authorities do not give sufficient consideration to these factors.

## Chile

Most of those interviewed agreed that Chile was one of the best countries in which to invest in infrastructure in Latin America. Among its strengths, they pointed to the clarity and stability of its regulatory frameworks, the degree of professionalism and quality of its central administration and regulatory agencies, as well as its trustworthy judicial system (even in cases against Chilean firms and public entities). Chile is one of the few Latin American countries where one can obtain long-term finance in local currency, which is key to reducing exchange-rate risk in infrastructure projects (for instance toll highways).

A number of companies emphasized that for specific services (for example, water), Chile has a model system of direct subsidies to low-income consumers, based on their income and limited to certain upper consumption limits. Since public subsidies are partial and are conditional on the consumer paying that part of the charge for which he is responsible and registered, the public support system has engendered a “culture of payment” nationwide, such that few refuse to pay.

The negative factors identified by the firms interviewed include the relatively small size of the country (15 million inhabitants) with a fairly modest per capita income, which means that Chile sometimes does not reach the “critical size” required to attract investment. Its dependence on Argentina for the supply of gas means that it is exposed to the same risk of a foreseeable collapse, due to the policy of freezing tariffs. The artificial lowering of tariffs for fixed-line telephony, which has greatly stimulated the development of cellular phones, poses a threat to the development of the industry as a whole. Finally, Chilean municipal governance is a far cry from the standards of the state sector as a whole. A number of those interviewed recounted bad experiences of payment delays and biased interpretations of contracts with municipal authorities.

## Mexico

Mexico is especially attractive for Spanish investors because of its size and its growing institutional maturity, even though those interviewed pointed to sluggish implementation of the reforms. Among the most positive aspects mentioned were the large size of the market and its growth potential. Also applauded were the clarity of the regulatory codes, the good reputation enjoyed by regulatory institutions, respect for long-term electricity purchasing agreements, and a good reputation for paying for services (notably highway tolls) enhanced by the physical and cultural proximity of the United States. They also pointed to the maturity of local financial markets that, along with the strong presence of Spanish banking, makes it easier for Spanish companies to raise finance for infrastructure projects.

Among the main weaknesses are high levels of energy protection (written into the Constitution itself) that hinder private sector participation in the electricity sector. There have definitely been attempts to mitigate this severe drawback, for example through so-called *autoproducción* arrangements by which large industrial companies acquire electricity from generators in which they have a share. However, some legislators have questioned the constitutionality of this. In telecommunications, the large regulatory bureaucracy and interconnection system favor the fixed-line operator (TELMEX), which appears to have created major difficulties for some international cell phone companies in Mexico.

Another difficulty raised by those interviewed is the slow speed at which the ministerial bureaucracy works and its dependence on political decisions by government. They also see a risk in the attempts by the authorities to meddle in the internal management of concessionaires in areas such as investment planning, management appointments, and policy toward dividends.

At the municipal level, experience is more mixed. Some firms say that they have had a positive experience with municipal governments. Others complain that the frequent replacement of councilors means that the new ones fail to follow through on the commitments made by their predecessors.

Finally, despite the problems of lack of security (especially in Mexico City), investors see good prospects for increased Spanish investment in Mexico, especially in plants to reconvert liquid natural gas from Bolivia and in water supply and sewerage. Even so, the real investment possibilities in water and sewerage will hinge on the decisions made by municipalities and states to bring the private sector into running such services.

## The Dominican Republic

The experience of Unión Fenosa (which at the insistence of the government negotiated its own departure from the country) has had a powerful impact on all Spanish companies, and shows the serious regulatory and institutional risks facing all foreign companies.

Paradoxically, the country provides good conditions for generating electricity (in the case of wind energy, the abundance of wind, tariff exemptions on imported equipment, and the dependence on oil). Yet such advantages are offset by the risk of electricity distributors not paying for the energy they are supplied.

## The Central American Countries

In Central America, Spanish companies have shown interest in the electricity sector. They say, however, that investments in generating should form part of a regional market with a supra-national system of regulation that guarantees the free flow of electricity between countries. It is for this reason that they place much faith in the System for Electrical Interconnection of the Countries of Central America (SIEPAC), which, despite many setbacks, may now be on the road to becoming reality. Building this market would introduce competition into electricity generation in each country, hitherto dominated by local investors hostile to the entry of foreign competitors.

The experiences of Spanish firms in energy distribution in Guatemala have been good. Some of those interviewed praised the mechanism designed by the authorities to prioritize rural electrification without pushing tariffs lower. The scheme is based on putting income from the sale of electricity companies into a trust and using this money to promote a program of widespread rural electrification. Experience in Nicaragua has been less satisfactory. Contrary to what was anticipated from the tariff framework, there has been a tariff freeze. Indeed, the authorities there have declared a moratorium on collecting debts for past consumption.

## Other Andean Countries

Spanish companies have few infrastructure investments in Bolivia, Ecuador, and Venezuela. Those interviewed expressed little interest in undertaking investment in these countries in the near future, given their perceptions of the high political and regulatory risks involved.

In the case of Bolivia, a number of those interviewed stressed the high political risk, the lack of social cohesion, and public hostility to tariff increases. However, experiences in electricity transmission have been favorable. Furthermore, some of those interviewed saw opportunities in investing in gas exploration if the country is willing to accept the building of a gas pipeline through Chile.

Those interviewed were aware of the favorable conditions for investment in hydrocarbons in Ecuador. However, investors perceive a lack of interest on the part of the government and public hostility toward private sector participation in infrastructure services.

In Venezuela, investors believe that political instability, the freezing of tariffs, and additional wage and exchange-rate controls are undermining the smooth running of the economy.

Those interviewed thought that political risk with respect to infrastructure investments in Peru, although not absent, was less than in some of the other Andean countries we have mentioned. However, the traumatic experiences of Telefónica have given rise to serious suspicions on the part of all Spanish companies. In early 2003, there were attempts to declare unconstitutional the collection of subscription charges from consumers. In addition, free access to fixed telephony was awarded to cell companies, and there were attacks on the Telefónica's phone boxes and other installations. Another concern is the capacity of Congress to impeach specific ministers, which operates as an incentive for them to do nothing, and Congress's inclination to adopt populist policies (for instance limiting the interest on bad debts to 3 percent).

## **SOME POSITIVE RISK MITIGATION MECHANISMS**

During the course of the interviews positive experiences were brought up which, if replicated in other countries, could help improve the investment climate in the region as a whole. Some of these are now presented.

### **A Top Official to Help Resolve Disputes with the Private Sector**

From the outset of his presidential term, President Uribe of Colombia gave one of his top officials (*Alto Consejero*) the responsibility of improving the government's relationship with the private sector. This official has gained a well-deserved reputation among Colombian companies, both national and foreign-owned, for his ability to amicably resolve private sector complaints.

The efficacy of the *Alto Consejero* is attributable to:

- The fact that he is directly answerable to the President. This empowers him to deal with other public officials effectively, acting as a facilitator in conflict resolution, especially where two or more departments or public institutions are involved.
- His priority is to resolve practical problems quickly. The decisions taken by the *Alto Consejero* are not always welcomed by the companies affected, but they are always afforded a hearing and can be sure that when a matter is passed to him for consideration he always makes a decision.
- The conciliatory nature in his work, always seeking to match the public interest with the legitimate complaints and issues raised by the private sector. The observed degree of neutrality gives foreign companies confidence that decisions taken will not discriminate against them in relation to Colombian companies.

Experience shows that the timely intervention of the *Alto Consejero* in dispute resolution has reduced litigation and contributed to create a positive investment climate. The informal methods of the *Alto Consejero* become a second-best solution, given the weak performance of the legal system in its dispute resolution function.

## Mechanism for Covering Exchange Rate Fluctuations in Local Currency

The Chilean government offers concessionaires with dollar-denominated debt a scheme to hedge against exchange-rate risk. Some Chilean concession contracts are not denominated in pesos, but in a unit of account called *unidad de fomento*, or UF. The UF's exchange rate to the peso is calculated on a daily basis. This exchange rate is based on inflation in the last two months, so that the real purchasing power of one UF remains the same, but it fluctuates in value relative to the peso. This has the effect of indexing a part of the concession income to inflation, moving it out of nominal (inflationary) peso space into real (inflation-protected) UF space.

But for all this, the UF is just a conversion factor to pesos. Since the UF is therefore a “currency” without inflation, the risk of its depreciation over the long term against the dollar is minimal, or even negative. Although moderate, dollar inflation is positive, and this reduces the long-term risk borne by the government, of offering coverage, while helping those with concessions protect themselves from fluctuations over the short and medium term.

Coverage involves firms paying an initial premium, around 1 percent of the sum guaranteed. The contract for coverage only takes effect when the fluctuations in the real exchange rate exceed 10 percent. It is possible to agree on a narrower fluctuation band, but at the cost of a higher premium. The system is symmetrical. In the event of an appreciation of the Chilean peso above the 10 percent limit, it is the concessionaire who has to make payment to the Chilean government. Strictly speaking, this is no a pure exchange-rate insurance scheme, but a “collar” (combining a cap and a floor).

## Income Distribution Mechanism

The Chilean government has developed an Income Distribution Mechanism (MDI), which the Public Works Ministry offers in all operating concessions by means of additional agreements to the concession contracts. The purpose of the MDI is to resolve the problem caused by reductions in traffic on highway concessions. It modifies a concession contract in the following ways:

The concession changes from having a fixed to a variable length. The concession ends when the income derived reaches a guaranteed level. Income is discounted at a rate of 9.5 percent. If income grows more slowly than expected, the duration of the concession is lengthened. If it grows faster than expected, the concession is shortened. To be allowed to use the MDI, a concessionaire must make new investments equivalent to 8 percent of the present value of the guaranteed income. The guaranteed level is calculated on the basis of 5 percent annual growth rate from the 2002 level until the end of the original concession. If traffic flows increases less than 5 percent, the concessionaire is given the option to raise the tariff by 5 percent a year, up to a cumulative rate of 25 percent.

The MDI contributes to project stability in two ways. First, it guarantees payment of the debt, even under low traffic scenarios, since the concession is extended so as to guarantee a volume of future flows. Second, it reduces volatility in the return to the shareholder, prac-

tically eliminating the possibility of capital loss, albeit at the cost of limiting profitability (because of the obligation to make new investments).

## LESSONS LEARNED

Although not an exhaustive listing, the main conclusions that can be drawn from the opinions expressed by the firms interviewed can be summarized as follows:

- Spanish companies are aware that there is widespread public disillusionment among citizens and political leaders in many Latin American countries about the results of the privatizing of basic service companies.
- A substantial number believe that in many Latin American countries the conditions do not exist for universal access to be funded by private enterprise. In those countries where the risk is highest, the rates of return demanded by the shareholders of foreign investors mean that tariffs have to be set at politically unviable and unsustainable levels.
- Private sector financing of the investment necessary to increase service coverage substantially is particularly problematic in the water and sanitation sector. This is because of the size of the investment required and the lack of a culture of payment for such services.
- In the great majority of countries, the investment needed to make certain basic services universal has to be financed (at least in part) from public sector funds or donations from third parties.
- Subsidies are needed for low-income consumers to provide them access to basic services. Such subsidies, which can involve serious management problems, need to be introduced in such a way as to promote a payment culture.
- The great majority of those firms interviewed rule out making investments in countries where there are major problems of lack of personal security or political instability.
- The size of the economy in some countries is seen as an obstacle to investing in infrastructure. Greater integration and regulatory harmonization, especially in Central America, is seen as a way of achieving the “critical size” for investment to become viable.

The four conditions for investment in infrastructure most frequently demanded by the companies interviewed are:

- Political stability and juridical security so as to guarantee the enforcement of contracts and respect for the principle of economic/financial equilibrium in multiyear investment projects.
- Macroeconomic stability, so that decisions can be made in a predictable economic context.
- Public acceptance of tariff payment for provision of basic services.
- Financial markets that generate long-term capital in local currency at reasonable rates of interest or, alternatively, mechanisms for covering against exchange rate risk. Many of those interviewed believe that multilateral institutions and public banks can play a



decisive role in improving credit availability and long-term finance, and in mitigating project risks.

In order to offset the regulatory and institutional risks that confront infrastructure investment in Latin America, it might be helpful to create a regionwide organization with the necessary powers to promote speedy and amicable resolution of investor-state disputes.<sup>5</sup>

## Final Observations

Risk-taking is inherent to business activity. But the size and the length of the maturity of investments in infrastructure services may make such risks particularly onerous. One of these—regulatory risk—hinges not only on imponderables but also on the capacity and willingness of the authorities and citizens to respect the rules agreed upon once the investments are in place. The experience of Spanish companies in Latin America shows that the realism with which the authorities and firms undertake investments, the stability of the regulatory framework, the establishment of mechanisms to reduce financial risks and, finally, the efficient division of responsibilities among private enterprise, governments, and international organizations are essential conditions for resolving the serious lack of basic infrastructure that Latin America still suffers.

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5. The *Alto Consejero* in Colombia, whose job is to resolve conflicts with the private sector, is considered an appropriate model by the investors interviewed.

**Annex 4-1. Spanish Investment in Figures\*** (Data to December 2002)

<b>Electricity</b>	<b>Net book value of investments (millions of euros)</b>	<b>Net book value of investments/ group stock capitalization (%)</b>
Endsea	3,265	27.5
Unión Fenosa	1,745	45.4
Iberdroia	1,450	12.0
Red Eléctrica	52	4.0
<b>Gas and Oil</b>		
Repsol YPF	12,375	80.4
Gas Natural	1,500	18.5
<b>Construction</b>		
OHL	166	46.4
Dragados	344	12.3
ACS	80	4.1
Ferrovial	272	8.0
<b>Water and Sewerage</b>		
FCC/Proactiva	80	2.9
Aguas Barcelona	558	41.1
<b>Telecommunications</b>		
Telefónica	32,649	79.3
Telefónica Móviles	5,329	19.8
<b>Other</b>		
Guascor	25	32.1
Abengoa	30	5.9

\* Net book value or, in the case of quoted companies, market value. Note that the totals do not necessarily fully reflect the investment effort undertaken by companies, since they are less than the volumes of historically accumulated investment.

*Source:* W. Chislett (2002) on the basis of estimates by BCSH Bolsa and the author's own calculations.

**Annex 4-2. Spanish Companies Interviewed**

Company	Interviewee	Position
Abengoa	Antonio Merino	Structured Finance
	Antonio Frías	Head Southern Cone
Aguas de Barcelona	José Vila	CEO
Endesa	Luis Rivera	Chairman of the Board
FCC/Proactive	Marcos García	Financial Director
Ferrovial Infraestructuras	Juan Béjar	CEO
Gamesa	Jorge Cortina	International Managing Dir.
	Alberto Vaidés	Financial Director
	Gerardo Fernández	International Planning
Guascor	Enrique Ranedo	Vice-president
Iberdrola	Iñigo Oriol	Director Corp. Governance America
OHL Concesiones	Juan Villar Mir	President
Red Eléctrica Internacional	Luis Ballester	General Director
Repsol	Enrique Lubián	Director Gas Business Develop.
	Andrés Méndez	Director New Business Develop.
Telefónica	Luis Lada	Director General Regulation
	José María Álvares-Pallete	President Telefónica Internacional
	Jesús Mallol Nieto	Advisor to the Board
	Juan Antonio Mielgo	Manager Macroeconomic Analysis
Unión Fenosa	José María Arraiza	Secretary-General Regulation
	Pedro Mejía	Director Institutional Relations
Urbaser/Dragados	Angel Luis Bracho	International Director Administration and Finance

# FIVE

## Public-Private Partnerships: Delivering Better Infrastructure Services

*Stephen Harris\**

### INTRODUCTION

In the last decade the United Kingdom has made innovations in the delivery of its public services by using the financial, design, operation and management skills of the private sector. Relying on the lessons learned as a result of its revolutionary privatization experience in the early 1980s, the UK has developed a program of public-private partnerships (PPP) to deliver a wide range of services to the public.

The UK model of public-private partnerships, originally known as the Private Finance Initiative (PFI) in Britain, is a process whereby the public sector contracts with the private sector to deliver services on its behalf. A private sector firm is created to deliver these services, which often involves building new infrastructure (such as a road or hospital). The firm is responsible for building, operating, maintaining, and financing the asset and providing the service for the long term (often 25-30 years) in exchange for regular payments from the public sector, which are structured in such a way as to ensure high-quality service provision for *the whole life of the contract*. At the end of the contractual period the operation of the asset reverts to the public sector.

Many of the techniques and processes used in delivering a PPP program are not new. Non-recourse project finance was developed in the oil and gas industry to fund projects off the balance sheet. As we shall see, the practice of a government granting a concession to a private sector operator is hundreds of years old. Yet, in the last few years, the UK experience of nearly 700 projects has meant that interest in public-private partnerships has mushroomed, with over 80 countries around the world either embarking on or considering a PPP program of their own.

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\* International Financial Services London (IFSL), London.

This chapter looks at the defining characteristics of public-private partnerships, their benefits, and some common criticisms of the process. It also examines how countries, such as those in Latin America, can best develop their own public-private partnership programs from the policy perspective of a government looking to use PPP to deliver some of its infrastructure requirements. The chapter ends with a discussion of implementation issues, providing recommendations and raising some caveats.

## THE BENEFITS AND CRITICISMS OF PUBLIC-PRIVATE PARTNERSHIPS

### Why do Governments Need to Involve the Private Sector?

#### *Customer Demand*

In the last decade the public has got used to companies becoming more customer- focused, particularly in the retail sector. This is partly as a result of the increased worldwide use of the Internet. Pioneering Internet retailers, such as Amazon, needed to differentiate themselves from existing conventional rivals. They did this by emphasizing value for money and speed of delivery. Consumers now expect the delivery of goods within a few days, not weeks as before, and they expect better value for money. The same is true of privately delivered services in infrastructure. By involving the private sector in ways ranging from outsourcing through to full privatization, competition at procurement and/or delivery has increased. As a result expectations of other public services have increased (and could be disappointed). The solution to this problem is to bring in the private sector to take advantage of the skills they have developed in meeting customer needs, developing value for money, and working in partnership with the public sector to provide better services for the citizen.

#### *Fiscal Pressure*

Governments around the world are facing the same dilemma. How to meet these rising popular expectations for better public services, both for social services such as schools, hospitals, and prisons, and for infrastructure services such as roads, bridges, railways, and utilities. This is at a time when, increasingly, government deficits have to be kept down. The pressure on public finances is intense, especially in a period of slow economic growth and depressed tax revenues. It is a dilemma that in the past might have been solved by cutting public spending and, in particular, capital spending. In addition, there is the rising pressure for funds to renew, maintain, and operate the existing infrastructure. Competition for such funding is often intense, not just between infrastructure projects but also with the many other demands on public sector finance.

In most administrations the capital, maintenance and operations budgets are separate. In times of fiscal pressure maintenance budgets (“nice to have”) are often easy areas to cut to relieve pressure on operational budgets (“must have”). It is a very shortsighted strategy which is, nonetheless, all too common. This is especially true given the short-term planning processes involved in most public sector spending institutions where the tyranny of the annual budget takes precedence over a long-term strategic approach. Very soon there is not only no money available for new infrastructure but there is no money available to maintain existing infrastructure, which then deteriorates even more until it becomes essentially unfit

for use, adding pressure to the demands for new infrastructure. This is why the construction, operation, and maintenance of infrastructure must be seen as a unit. To provide funds for the building of new infrastructure without making funds available for its operation and maintenance only delays financing problems, it does not solve them. This, for example, is why it is critical for EU accession countries to look to a PPP solution for their infrastructure needs rather than rely on EU handouts, which only gives them new infrastructure they cannot maintain.

Delivery of quality services that provide value for money through public-private partnerships encourages a long-term approach to the creation and management of public-sector assets. Achieving value for money in the provision of a service requires that full account be taken of the risks and costs over a long timescale as opposed to focusing on short-term capital expenditure. Quality services can be sustained over many years at the lowest long-run economic cost. *PPP, however, is not a magic bullet*: it must be stressed that, while it can have the benefit of relieving short-term pressure on the public finances, it is not as some governments think, “free” infrastructure; neither does it involve skewing public finances or evading responsibility for the proper governance of the assets.

## The Role of Government in Delivering Services

Although budgetary constraints have played a part in encouraging many countries to explore public-private partnership solutions, governments such as The Netherlands have adopted PPP-type structures primarily to promote efficient procurement practices and, importantly, to reform the public sector. One of the points commonly made by opponents of public-private partnerships is that it is the government’s job to deliver services to its citizens and that the private sector, being motivated by profit, cannot have the best interests of citizens at heart. However, the provision of many services by government is a comparatively recent development. A hundred and fifty years ago many services, such as transportation, health, and education were delivered by the private sector. Governments took over this role in order to deliver services equally to citizens, irrespective of, for example, their ability to pay or their geographical location.

This raises the question: what is the role of government? In our view, the role of government is to set policy and regulate that policy. If that policy is that all its citizens receive free education its role is only to ensure that happens. The actual delivery of that policy, that service, is best done by those parties most able to do so and, given the pressures on finances, delivered given best value for money for its citizens. Indeed, if this approach is taken to its logical conclusion there is no need for the teachers themselves to be employed by the state. The state’s role is just to ensure that teaching is delivered to the quality levels its sets. This is why the process is called “public-private partnership.” The partnership is based on each partner concentrating on activities that best suit its respective skills. For the public sector the key skill is to procure services that are consistent with long-term policy priorities, while for the private sector the key is to deliver those services at the most efficient cost for the citizen.

## What is PPP? Problems of Definition

The expression “public-private partnerships” is widely used, but often it is not clearly defined. This can be confusing, as for some people PPP may include only a narrow range of

project types while for others it may encompass the whole spectrum of approaches, from privatization through the contracting out of services and revenue-sharing partnership arrangement to pure non-recourse project finance. Governments stretching the definition for political reasons can cause further confusion. The UK Labour government, for example, includes projects that are essentially partial –privatizations in its definition of public-private partnerships. However, the exact definition of PPP is not as important as ensuring that both sides of a dialogue understand what they are both talking about.

However, the recent worldwide increase in interest in public-private partnerships can be traced back to the experience over the last ten years in the United Kingdom with the development and refinement of the UK model (originally known as the Private Finance Initiative, PFI). Some countries that claim to have PPP projects are merely using the private sector to deliver certain functions in a rather limited way. While technically falling under the broadest definition of PPP these schemes do not enable the full range of benefits to be achieved. The full benefits of public-private partnerships can only be enjoyed when there is in place a structured program driven by the desire to promote efficiency, value for money, and put the needs of the citizen first.

### *The Evolution of the PPP Concept in the UK*

The Private Finance Initiative emerged in the United Kingdom as a result of previous government initiatives. It became the third stage of a process that began with privatization and competitive tendering. Privatization involves placing the ownership and operation of a state-owned enterprise into the hands of the private sector. Since this process was launched in the early 1980s, the introduction of private sector skills and management expertise, along with the financial discipline of market forces, have helped to create huge forces for positive change in sectors such as telecommunications and water.

Competitive tendering arose in the 1980s as a way of reducing the costs of providing ancillary services that support core public service delivery, such as teaching and clinical services, and of creating a mixed economy of suppliers to the public sector. Those private sector operators that were adjudged to be able to provide the required service more efficiently were awarded the contract. As a result, the private sector became heavily involved in services that were previously delivered by the state, such as refuse collection, cleaning, and catering. This was followed by the evolution from separate design and build contracts to integrated design and building. The Private Finance Initiative became the next logical step, bringing together design, build, finance, and operation.

The Private Finance Initiative was first launched by the Conservative government in 1992 when the rules that previously restricted the use of private capital for funding public assets were abolished. It was a culmination of a number of attempts to find better ways for government and the private sector to work together in the delivery of public services. This was motivated initially by the pressures on government expenditure caused by the European Union Maastricht convergence criteria, which focus on the limited abilities of governments to fund capital expenditure. However, the current Labour government emphasizes that the prime objective of the United Kingdom's public private partnership program is the delivery of better public sector services with the best long-term value for money, and not any form of off-balance-sheet accounting treatment. In fact, 58 percent of the United Kingdom's PPP

liabilities are actually on the government's balance sheet (although these figures include the huge London Underground PPPs, without these more would be off-balance-sheet than on; see HM Treasury, 2003).

When the current Labour government came to power in 1997, it reviewed deals in progress as well as the lessons learned from the experience, and adopted the basic process as a fundamental piece of government policy for all government departments. It created the Treasury Taskforce to develop and promulgate a common approach to ensure that the best practice was available across all departments. This structured approach is critical to the success of a large-scale PPP program. The UK had PPP projects (such as the Skye Road Bridge) before the PFI was introduced in 1992, but it was only with its institutionalization that public-private partnerships became a viable common procurement practice.

### *The Difference between PPP and Privatization*

Critics of public-private partnerships argue that it is just privatization (a process with pejorative connotations in some places) “by the back door” and, as we have seen, some definitions place privatization at one end of a range with conventional procurement at the other end and PFI-type public-private partnerships in the middle. It is important to realize that there are, however, fundamental differences between the two approaches. Privatization is about taking an existing state-owned business, ideally reorganizing it to make it attractive for sale, and then dropping it—some would say dumping it—into the private sector. Done properly, with an accurate assessment of the size of the assets concerned, a clear objective as to the purpose of the privatization (which, it is hoped, would be efficiency gains rather than just raising government revenues), and sensible pricing to develop competition, this process can produce very positive results for the government and the consumer.

However, many governments, particularly in the developing world, understandably are concerned about the loss of national assets to a (probably) foreign-owned private sector. Essentially, the public sector loses control of the asset to the private sector except for a certain amount of regulatory control over items such as customer tariffs.

Public-private partnerships are an entirely different approach to delivering services to or on behalf of the public sector. The effect of a typical PPP structure is usually to create a single stand-alone business, financed and operated by the private sector. The purpose is to create the asset and then deliver a service to the public sector client, in return for payment commensurate with the service levels provided. Rather than taking the existing delivery mechanism and transplanting it into a wholly different operating environment, as in privatization, the PPP process takes the service delivery back to the basics and begins by defining the services to be delivered specified only in terms of the outputs to be achieved. The key is to specify the output of the service required and to allow the private sector to determine which inputs are required, including infrastructure and skills, to achieve that specified output. Because it is the public sector specifying the required output of the private sector it retains a great deal of control over the standards and type of service to be delivered in a way that a privatization arrangement does not.

In addition, a privatization is, to all intents and purposes, a permanent arrangement, whereas a PPP contract is for an agreed and finite time period. Full operational control and owner-



ship reverts to the public sector at the end of the contract term. This temporary nature of the agreement and the degree of control enjoyed by the public sector fundamentally differentiate public-private partnerships from privatization. It is also important to note that there is no need to transfer title of the asset to the private sector. The state owns the asset throughout the process; there is no “loss” of national assets. It is generally true, therefore, that PPP is more likely to be suitable for stand-alone projects while privatization is more likely to be suitable for large utilities. However, it is important to remember that roles formerly carried out by state employees are now likely to be carried out by private sector employees (although they may be state staff seconded to the private sector operator) and there will be job losses. In the United Kingdom, one of the original drivers for public-private partnerships was, after all, to reduce the size of the public sector. This factor alone causes some to see the process as a “soft privatization”; these are criticisms that governments seeking to begin a PPP program will have to address.

### *Public-Private Partnerships and Concessions*

The concept of government giving a private company a concession to operate something on the government’s behalf has been around for hundreds of years; one of the first named projects being what is now the Canal du Midi, constructed in France in the sixteenth century. There is even evidence for concessions in Gallo-Roman times. Public-private partnerships are a form of concession, of course. However there is an essential difference between a “design, build, finance, operate” PPP, such as the UK Private Finance Initiative, and a simple water or power concession. In the latter case the concessionaire is exposed to real revenue risk; his only source of income is the tariffs he charges to the user. Under a pure public-private partnership the public authority pays the concessionaire on a regular basis under what is called a “unitary payment.” There may or may not be the opportunity for additional revenue from user charges (such as the fare box), but, in essence, it is the government making a payment for usage or availability. In fact, recent PPP light rail projects in the UK have demonstrated over-optimistic fare-box projections resulting in a market unwillingness to take this sort of revenue risk and instead demanding an availability-type payment.

It is this factor that makes public-private partnerships appropriate for those projects where there are few, if any, opportunities for third-party revenue, such as schools, hospitals, and other social projects. This factor ensured its development in the UK where such services are traditionally free to the user. While one of the early arguments for public-private partnerships was the opportunity to generate additional revenue from the asset (e.g., building a well-equipped school gymnasium which could be operated as a private health club outside school hours), the actual opportunities for this sort of revenue and its quantum have been limited.

### *Characteristics of Public-Private Partnerships*

PPP is a concept involving the public and private sectors working in cooperation and partnership to provide infrastructure and services. Instead of the public sector procuring a capital asset by paying for it in full up front, it creates a single stand-alone business financed and operated by the private sector but where all the risks involved have been allocated between the public and private sectors on the basis of each partner’s ability to manage and control those risks. The sole purpose of this business is to provide a service to a single customer—the

public-sector client—in return for a payment. These services often involve building new infrastructure (such as a road, bridge, school, or hospital). The firm is responsible for designing, building, operating, maintaining, and financing the asset and providing the service for the long term (often 25 years) in exchange for regular payments from the public sector.

The payment mechanism created under this arrangement means that the services are paid for as they are consumed, but the quantum of payment is carefully linked to the quality and quantity of service delivered. Properly implemented, the payment mechanism aligns the interests of the service provider with the public sector organization to whom the services are to be delivered in that any consistent lapses in the quality or consistency of the services jeopardizes the funder's ability to be repaid safely. In essence, the bank financing the project becomes the public sector's greatest ally.

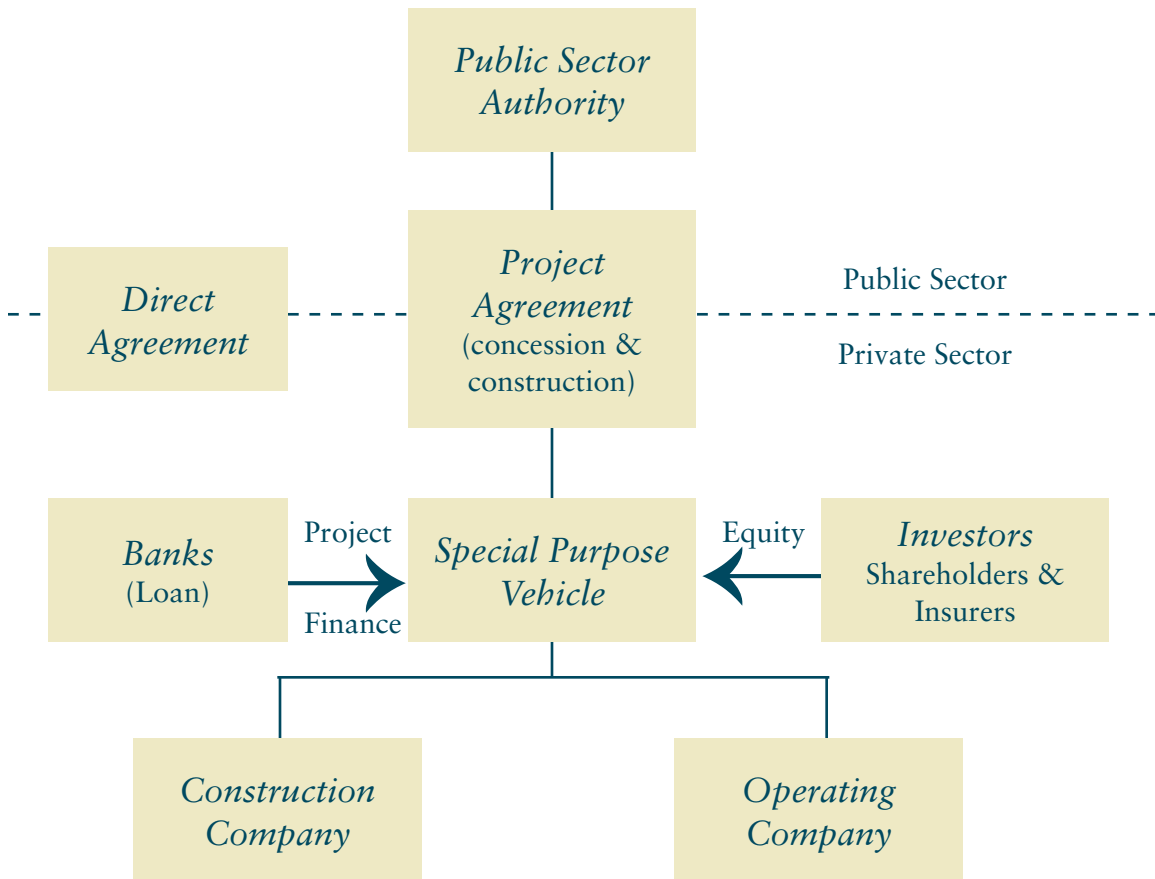
Public-private partnerships (unlike privatizations) are contractual relationships. It is this contract that is at the heart of the PPP relationship, containing all the duties and obligations of the parties. In these contracts the public sector defines the type and level of service it wants from the private sector. If the private business does not deliver, it is, in effect, in breach of contractual terms and, as a result, may not, for example, receive the full contract payment. In the same way, a properly constructed contract containing appropriate termination clauses negates the necessity for government guarantees. In some BOT concessions around the world the concessionaire has been unable to deliver the promised service (perhaps because of over-optimistic revenue forecasts). As a result, the government has had to bail the concessionaire out, under some form of guarantee.

It is not surprising, therefore, that governments are wary of what they see to be similar arrangements under a public-private partnership. However, the danger of giving government guarantees is that it does not provide sufficient incentive for the private sector to get their sums right and deliver the contracted service. In essence, it does not transfer sufficient risk to the private sector.

The main contractual elements of a PPP are listed below; the key aspects of a typical project structure are shown in figure 5-1. The new business that is often created as a “special purpose vehicle” (SPV) is similar to any other start-up in that it involves a number of key agreements and contracts.

- The *concession agreement* governs the supply of services by the new business to the public-sector user and would include service level agreements and the payment mechanism.
- The *construction agreement* will usually be a fixed price, turnkey contract over a specified period, in which the contractor assumes all construction risks.
- The *facilities management contracts* for operational and maintenance services will usually be subcontracted by the new business, often from subsidiary companies of the parent shareholders. The private sector then bears most of the risk of providing these support services.
- Shareholders' *loan and insurance agreements* relate to the financing provided by equity and debt, the latter from either bank loans or bonds from institutions, while cover for insurable risks is borne by the insurance market.

Figure 5-1. Typical PPP Project Structure



Source: PricewaterhouseCoopers.

- The *direct agreement* regulates the relationship between the public sector and the lenders, as the loan agreement is financed by the cash flows arising from the supply of the service.

The key is to focus on service delivery, rather than merely building infrastructure. There is no point in building new infrastructure if no thought is given to how the maintenance and operation of this infrastructure will be funded over the life of the asset. PPP are typically long-term contracts, usually lasting 25 to 30 years. This means that the private sector contractor has to provide the service and maintain the asset (such as a school) to the same standard for the whole life of the project. It is this whole-life costing approach that provides the value for money in the long term. Under a PPP the private operator does not get paid until the asset is delivered so that any cost overrun or delay has to be borne by him. This will be examined in more detail later. In addition, as we have seen, payments can be reduced or withheld completely for inadequate performance as measured against the service standards set by the public sector. In some cases penalties can actually be paid back to the public sector for poor performance with termination of the contract the ultimate sanction.

Public-private partnerships work best when the private sector has opportunities to innovate at the design stage, as there is not so much leeway for innovation if a design has already been agreed upon. It is obviously easier to maintain and operate an asset for the long term if the organization operating it is also responsible for designing it in the most efficient way.

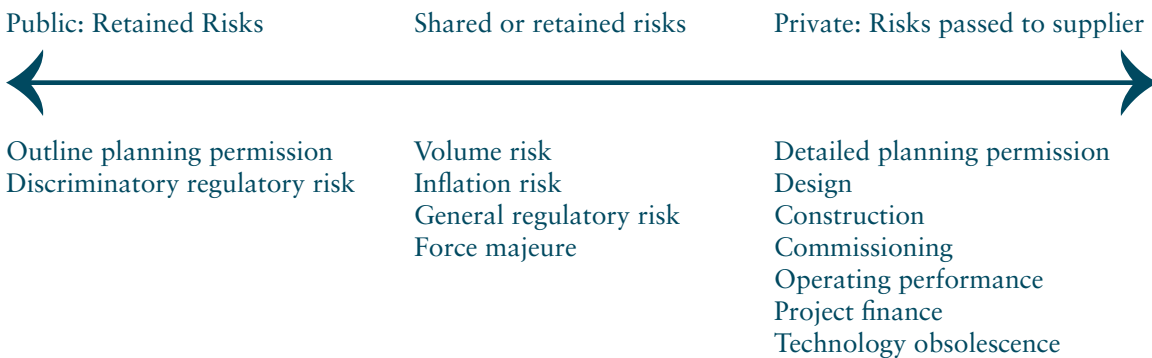
The involvement of the private sector in providing schools, hospitals, and prisons has led to revolutionary changes in design because the operator consults extensively with users about their requirements rather than just using a traditional “out of the box” design.

In the United Kingdom, the public sector initially tried to transfer as much risk as possible to the private sector. This was unrealistic because it would lead private sector bidders to either quote an unrealistically high risk premium or, alternatively, refuse to accept the risk altogether. Parties are unwilling to accept risk that they cannot control. The aim, therefore, is to optimize risk transfer, not maximize it. Unlike a privatization, at the end of the contract period control of the asset reverts to the public sector, which can either let it out under another contract or retain future operation themselves. As indicated in figure 5-2, the essence of public-private partnerships is that the partners take an appropriate share of risk.

Both the public and private sectors have to get away from previous adversarial attitudes toward one another. Instilling an atmosphere of cooperation rather than confrontation is critical. To accomplish this, sensible dispute resolution procedures can be helpful, as can be a flexible attitude toward dealing with minor failures of service delivery, particularly at the early stages of the contractual term. This will help build a more positive relationship. The aim should be for a win-win scenario for all concerned.

**Figure 5-2.** Risk Allocation in PPP

*“Risks should be allocated to the party best able to manage them”*



Source: PricewaterhouseCoopers.

## The Benefits of Public-Private Partnerships

### *Value for Money*

Value for money is usually the principal justification for choosing to go the PPP route. The role of the private sector is to provide the public services required. In doing so, it should maximize the utilization of innovative design, the best construction methods and materials with quality control, together with the latest and most up-to-date efficient operating systems and the best maintenance support, with the lowest lifecycle costs. The objective is to offer a public service that affords “value for money.” In other words, a more efficient, lower cost, reliable public service than that of a comparable public service provided by the public sector. In cases where it is clear that, for whatever reason, the public sector can run a better or more reliable service than the private sector at the same or a lower cost, the service should remain in the public sector. Public services should only be provided by the private sector in cases where “value for money” is clearly demonstrated.

Public-private partnerships encourage a long-term approach to the creation and management of public sector assets. Achieving value for money in the provision of a service requires that full account be taken of the risks and costs over a long timescale as opposed to focusing on short-term capital expenditure. Quality services can then be sustained over many years at the lowest long-run economic cost. One of the consequences of delivering an increasing amount of a country’s spending through public-private partnerships is that the taxpayers’ money can be made to go further and deliver greater economic benefits to the nation as a whole. PPPs can also help increase competitiveness.

“Value for money” is not synonymous with “cheaper,” although that may well be the case. Value for money is possible even when more is spent than in a conventionally procured solution if the result is a far superior service. A public sector comparator can be used in order to measure the cost of an equivalent project. These are not foolproof measures and can only be used as a benchmark to aid in decision-making rather than as a pass/fail test, but it does introduce some discipline into the difficult process of identifying how much the provision of a service actually costs.

### *Construction Performance*

Delays and cost overruns were common in the UK under the old style of procurement. These additional costs had to be borne by the public sector, thereby damaging its ability to commission additional projects and, more importantly, restricting the funds available for ongoing operation and maintenance. Under PPP and credible contract enforcement, cost overruns have to be borne by the private sector contractor/operator.

### *Delivering to Time*

Two recent reports<sup>1</sup> showed that under the UK’s PFI program 88 percent of the projects in the HM Treasury sample and 76 percent of those in the National Audit Office (NAO) sam-

ple were delivered on time. This compares with earlier NAO research into non-PFI construction times in a sample of 66 projects that showed only 30 percent were delivered on time. The prisons and roads projects surveyed were all delivered on time, and late delivery was rare in schools, hospitals, and defense projects. It was more likely in the bridges and light railway projects included in the sample; in the latter case, planning difficulties were likely to be a feature in densely populated urban areas. Of the 9 (out of 37) projects delivered late under the NAO sample, 6 were completed within two months of the deadline, and only 3 were more than two months late.

The private sector has a major incentive under PPP to complete the new assets on schedule because the public sector does not begin to pay for the asset until it is built *and operational*, that is, when the associated services are being delivered. Under PPP this process may be facilitated if specifications are worked out in greater detail and cost and time targets are set later in the procurement process than under conventional procurement.

### *Delivering to Budget*

A similar gap between PFI and non-PFI projects was found in the studies with regard to delivering to budget. In both Treasury and NAO PFI samples, 79 percent of projects were delivered on time against 27 percent in the non-PFI sample. Moreover, PFI projects where contract prices were increased were entirely due to changes in user requirements.

### *Operational Performance*

The PPP process means that operational cost overruns as well as construction cost overruns are much less likely. There are three main reasons for this:

- Synergies from combining design, construction, and operation ensure that the private sector focuses on the whole life costs of the asset over the project life cycle because those responsible for the building of an asset are also responsible for its long-term maintenance and operation.
- Private sector management techniques and staffing levels.
- Economies of scale in support functions over a number of different projects and contracts covering more than just the responsibilities of one spending department. For example: a company providing refuse collection services for a number of different municipal authorities only needs one vehicle maintenance facility as opposed to each authority having its own.

As many PFI schemes are still in their early years of long-term agreements of up to 30 years, a full assessment of the operational performance of the Private Finance Initiative will only be possible at a much later stage. Nevertheless, the 2003 Treasury study of 61 projects and a separate 2001 NAO study of 98 projects have provided initial indications of overall project performance through seeking the views of public sector PFI managers on, respectively, achievement of expectations and value for money. In response to the question in the Treasury study of how far “overall performance of the private sector partner” was “matching up to expectations at the time of the contract close,” over three-quarters of public sector clients described performance of the project as “as expected” or “better,” including a

quarter who said performance was “far surpassing” their expectations. Among the quarter of respondents who were less satisfied, 18 percent said that performance was “less than expected” and 6 percent said it was “much less than expected.” These results were in line with the 2001 National Audit Office sample that focused on the perceptions of public sector authorities on the value for money provided by PFI schemes. This revealed that 81 percent of authorities thought that value for money was at least satisfactory, a further 15 percent saying that value for money was marginal, and 4 percent saying that it was poor.

### *Strengthening of National Infrastructure*

The aspects of public-private partnerships that encourage innovation and efficiency can also enhance the quality and quantity of basic infrastructure such as water, wastewater, energy supply, telecommunications and transport. They can also be widely applied to other public services such as hospitals, schools, government accommodation/real estate, defense and prisons. A PPP program also enables the construction of buildings and provision of services, which *would not otherwise be available* due to the ability of the public sector to pay for both construction and operational costs over a long period of time. There is no longer the problem of finding a large sum initially to construct the project.

This has meant an increase in the build *quality* of infrastructure as the company building it also has to maintain it for 25 to 30 years. In the past, contractors, who won their tender on the basis of lowest cost, could simply walk away from the project leaving the public sector to fix defects and carry out maintenance. In many cases they did not, leading to the all-too-common deterioration of the infrastructure. There have been reports in the UK press of some early public-private partnership projects where construction quality was not up to standard. The critical thing to remember in such cases, however, is that the private sector operator is responsible for getting those buildings back up to standard at *no additional cost to the public sector*.

In addition, public-private partnerships are producing better-designed infrastructure. In the recent NAO study industry experts took the view that consortiums in British PFI projects were investing in good design and construction at the start of the contract. This allowed them to achieve both better quality buildings and reductions in maintenance costs, while maintaining the assets to the standards agreed in the contract. More emphasis was also being placed on the aesthetic aspects of design than had been the case in earlier projects. This finding was reinforced in a 2003 report from the Commission for Architecture and the Built Environment (CABE) that concluded that the PFI had matured and was capable of delivering high quality public buildings.

### *Innovation and Spread of Best Practice*

The expertise and experience of the private sector encourages innovation, resulting not only in reduced costs, shorter delivery times, and improvement in the functional design and construction processes, but also better facility management and operational processes. Public sector bodies in the United Kingdom are using the lessons they have learned on PPP projects to improve their processes, customer service, and procurement techniques even in non-PPP areas, facilitating the spread of best practice within public services.

### *Development of a New Business Sector*

Public-private partnerships have created a new business sector in Europe of firms experienced in building and operating these types of projects. Countries adopting PPP have often used foreign advisors initially but have soon developed their own skills and are now competing on the international stage for business in third countries.

### **Common Criticisms of PPP**

#### *Public Finance Is Always Cheaper than Private Finance*

Determining value for money is not just about comparing interest rates. Although private financing is typically 1 to 3 percent higher than public finance, the gap has been narrowing. Moreover, financing construction costs average only one third of the total cost of the projects. Additional costs of borrowing are more than offset by the fact that the private sector takes on risks that would have otherwise been the responsibility of the public sector in areas such as building time and cost overruns, and by its more efficient operational practices and use of resources. PPP is able to achieve value for money because these savings over the whole life of assets and service provision outweigh any additional margin on financing costs.

#### *PFI Is Bad for Public Sector Staff*

##### *Whose Terms and Conditions of Service Are Threatened*

In the United Kingdom, staff concerns have largely been addressed through guidance on the need to disclose information, consult staff, and provide comparable pensions. Also, staff terms and conditions are preserved by TUPE (Transfer of Undertakings Protection of Employment) Regulations. Many former public sector staff find their employment conditions and prospects enhanced following their transfer to the private sector. There is no doubt, however, that in some cases there will be redundancies as a result of PPP. The loss of these public sector jobs in what may be over-manned departments must be offset against the benefit of better services provided to the public. Should the taxpayer really be subsidizing inefficient government staffing levels?

#### *PFI Leads the Public Sector to Disguise Open-ended Liabilities and Lose Control Over Them*

The public sector's exposure to liabilities becomes less open-ended because payments made under PFI contracts are relatively predictable and the true costs of financing and operating an asset are fully exposed. It is important for governments to develop a mechanism whereby they monitor and publish future PPP commitments to prevent spending departments from overreaching. This is why a central government body with overall responsibility for a PPP program is important (see below).

#### *The Public Sector Is Restricting its Flexibility Regarding Future Expenditures*

This is no less true than for traditional public sector procurement. The concession contracts usually have provisions such as benchmarking and market testing that enable the public



sector to benefit from the emergence of improved methods of delivery for relevant services. Far from restricting choice for the public sector, PPP enables it to plan the use its resources rather than just scrabbling for funding as part of an annual budget process. Additionally, it is unlikely that PPP will become such a dominant form of procurement that it ousts traditional forms, as it is unsuitable for some areas.

*PPP Projects Are Expensive to Procure  
Because of the High Cost of Formulating Bids and Advisors*

Early PPP projects were costly to procure. However, the use of standardized procedures and contract forms reduces these costs considerably. PPP procurements do involve more technical work than conventional procurement and, for this reason, they may not be suitable for very small projects. The UK Treasury has recently instructed that public-private partnerships should not be used for projects costing less than £20million, although smaller projects than this have been undertaken in the UK and elsewhere.

*PPP Projects Can Only Be Undertaken by Large Multinational Firms  
Leaving No Opportunities for Local Enterprises*

International PPP contractor/operators subcontract most of the activity involved to smaller firms. Many large UK construction firms no longer undertake any actual construction themselves but just manage projects being undertaken by subcontractors. There are plenty of opportunities for firms of all sizes to be involved in PPP projects.

## **GUIDANCE FOR COUNTRIES EMBARKING ON A PPP PROGRAM**

### **Key Factors Critical to the Success of a PPP Project<sup>2</sup>**

The key factors for the success of a public-private partnership project include an effective procurement process, effective management and transfer of risk, clear specification of outputs, affordability, an appropriate rate of return for the private sector, standardization, and the contract structure and payment mechanisms. Each of these critical factors is discussed briefly below.

*Effective Procurement Process:* The public authorities need to put in place a structured transparent process to which the private sector can commit itself with confidence. The PPP process, like any commercial contract, works through a series of stages. This involves the development of the business case, selection of bidders, short listing, negotiations, the award of the contract, financial close, and the commencement of the service. The process requires inputs from technical, financial, and legal experts, and the full range of experience is often not available within the public sector.

*Effective Management and Transfer of Risk:* This starts with the identification and valuation of risks, which then need to be suitably allocated between the public and private sectors if a project is to be successfully structured. To maintain value for money, risks should be allocated to the parties best able to manage them.

2. This section draws from International Financial Services London (IFSL), 2003.

*Clear Specification of Outputs:* It is crucial that the outputs that will be required of the particular service be clearly defined at the outset.

*Affordability:* All PPP projects have to be affordable by the public sector. The test is whether the procuring public sector authority can afford the cost of the ongoing liability over the lifetime of the contract. If a project is judged not to be affordable, then the scope of the project may have to be reduced.

*Appropriate Rate of Return for the Private Sector:* While governments have a monopoly in dispensing PPP projects they need to demonstrate a sure touch in assessing the return that is required by the private sector in order to take responsibility for the risk. If expected returns from a project are too low, bidders will divert their skills and resources to other more attractive projects in different countries and jurisdictions.

*Standardization:* Some element of standardization in the way PPP projects are structured can help to reduce costs and ensure a more efficient procurement process. However, the differing characteristics or unique aspects of some PPP projects may make standardization hard to achieve.

*Contract Structure and Payment Mechanisms:* A clearly defined contract structure (as presented under *Characteristics of Public-Private Partnerships*) with appropriate agreements and payment mechanisms is essential.

## Capacity Building and Political Management Needs

### *Champions and Critics*

Pro-PPP champions are needed at the political, civil service, and private sector level. It is important for the proponents of public-private partnerships to ensure that all interested parties are involved in discussions at an early stage. The single most important element for a successful PPP program is high-level political support. Without it, the program will go nowhere. The need for political will to push these projects forward cannot be overstated. There is worldwide competition for advisory expertise, operators, and capital for PPP projects. Bidders, banks, and investors will only go to those countries where they see a well thought out, clear-cut, and non-discriminatory process in place. The hardest thing to get out of politicians is realistic objectives for their PPP programs. Is it saving money, furthering public sector reform, building a new business sector? There are many different drivers and politicians need to demonstrate a clear vision.

Politicians need to provide political leadership, promote cultural change, explain and defend the policy, and broker compromises to reflect political reality. One of the problems often encountered is political nervousness. This is not at all surprising. Public-private partnerships can seem like a very radical policy. A minister may need a lot of convincing as to the vote-winning potential of a policy that appears to deliver results only over such an extended time period. It is the job of the political champion to make sure this happens; otherwise, there will not be broad enough support in the government to take the process forward.

The political champion should ideally be the premier, president or some other senior, high-profile minister (ideally the finance minister), otherwise the chances of getting the political

consensus needed are limited. There is no country in the world that has a serious PPP program as a result of the initiative of the civil service or private sector. In addition, investors will be more comfortable with countries where the political opposition is basically convinced by PPP as well. No one will invest in projects in a country where they believe that if the opposition gains power all contracts will be reneged upon.

### *Public Sector Concerns*

Loss of jobs is the main concern of civil servants. While there is anecdotal evidence that some workers transferring to the private sector have more opportunities (IT workers, for example), in some countries low-skilled workers earn more in the public sector than their private sector equivalents. The fact of the matter is that many public sector entities are over-manned and there will be job losses. Government proponents of public-private partnerships need to be up-front about this. Distrust of the private sector is also a big factor in opposition to PPP. Many civil servants see the private sector as the enemy, totally motivated by profit. There is nothing wrong with profits, however and assets would have been built by profit-making companies even under conventional procurement. In fact, there are fewer opportunities for excess profiteering in areas such as construction because building costs are fixed. Under conventional procurement construction companies win tenders by being the lowest bidder and then expect to make money by relying on charging high rates for the inevitable change requirements presented by a public sector that had not thought out the project properly. Finally, profit is not automatic. The private sector is being paid a premium for taking on risk. If it gets its math wrong it can lose money with no recourse to getting more from the public sector.

Also, an atmosphere may be created in which the public sector feels that it is seen as inferior, leading to more resentment. PPP is about each partner bringing what it is best at to the mix to produce better service for the public. The better service element (which is why most people join the public sector in the first place) should be emphasized. The real need is to move from a self-perpetuating public *sector* ethos to a public *service* ethos. This will involve significant amounts of training. While many people fear change, public sector workers are less likely than those in the private sector to be trained or rewarded for taking risks and experiencing regular change.

Finally, there are very real concerns about learning new skills, particularly for those involved in procurement that have to learn how to plan strategically for the future, create output specifications, negotiate with the private sector, etc. Knowledge and understanding of public-private partnerships should be disseminated as widely as possible and should not reside in a small unit in the finance ministry, for example. In the United Kingdom, the PPP unit was tasked with training 5,000 public sector employees in the policy and practice of PPP. Public servants who build up experience in managing PPP projects must be used as a resource for other projects and not, as happened in some ministries in the UK, be transferred to another job where their experience is never used again.

### *Private Sector Concerns*

It is generally assumed that the public sector needs to be convinced of the benefits of public-private partnerships. However, in many countries, it is the private sector that harbors

doubt about the idea. Private companies can question the long-term ability of governments to make the required payments, especially in developing countries and when dealing with municipal governments. They often expect government guarantees, which goes against the notion of real risk transfer. They need to be persuaded about the value of properly structured termination payments. Private sectors fears that there will be business for local firms in public-private partnerships also need to be addressed. In many countries it is the construction industry that often takes the lead as a private sector champion of PPP and it is useful for government to involve construction associations at an early stage.

### *The Press, Unions, and the Public*

Opponents of public-private partnerships will rely on the national, regional, and local press extensively to sway public opinion against these arrangements. Thus, proponents of PPP should make a concerted effort to be the first to brief the press properly on what is a complex matter in order to foster an informed debate.. Unions also need to be engaged early on given their concerns about the pay and working conditions of their members.

The public's view of public-private partnerships is largely dependent on how well the press and the unions are briefed by both the proponents and opponents of PPP. Proponents of PPP must ensure that common perceptions regarding the public and private sectors are addressed. For example, it is generally assumed that the only way the private sector can make money is by cutting costs, which will inevitably lead to inferior levels of service. It is also generally assumed that the public sector delivers services efficiently and cost effectively. Proponents of PPP must show that, in many cases, the public sector does not have an accurate notion of the real costs of providing services and that, often, taxpayers are paying more for the services than they would if they were offered by the private sector. Another common confusion is over concessions. The public erroneously supposes that turning the provision of services over to a concessionaire will automatically imply that services that were provided free of charge by the public sector will no longer be free.

## **IMPLEMENTATION ISSUES**

### **A PPP Task Force**

Some countries (Latvia, Mexico, and Japan for example) have formed private sector-initiated PPP associations. Membership is open to any company with an interest in developing public-private partnerships and to representatives from interested central, regional, and municipal government agencies. This provides a particularly useful forum for governments to develop their PPP strategy in conjunction with interested stakeholders. Within government there needs to be a person or body tasked with getting the whole process moving. This is a full-time job and cannot be done by someone who has additional responsibilities. Eventually this will lead to the formation of a PPP unit. Most countries that have successfully developed a significant PPP program have established central units or task forces that usually report to the Treasury or finance ministry.

The role of the central task force is to take responsibility for consulting with all concerned and creating policies to resolve legal, technical, commercial, and perhaps even philosophical

issues that may arise. In addition, in the UK, Ireland, and elsewhere PPP teams were created in key ministries to increase the resources available to handle projects and to take responsibility for all practical matters in that sector. It is important that these follow a common approach as laid out by the central unit to avoid the unnecessary duplication of effort in developing processes or contracts.

Ideally the PPP unit or task force should have two aspects:

- A policy side (probably public sector employees), which can help sweep aside obstacles to private finance in the existing administrative structures.
- A project side consisting of private sector transactors with a mix of the relevant skills, such as lawyers, bankers, consultants, project managers, property specialists, IT specialists, etc. The real reason for the success of PPP in the United Kingdom was the development by the central task force of common processes and contractual documentation.

It is important that the PPP unit have responsibility for the entire PPP program; ideally, it should have some form of prioritization role, including a veto. This is why setting up the PPP unit in the finance ministry makes sense. Experience has shown that when the unit is set up in another ministry commissioning ministries may ignore it and develop their own procedures and projects. In addition, the central government must ensure that subordinate regional and municipal governments do not establish their own processes that may run counter to central policies. This will discourage investors.

## Advisors

PPP is a complex policy to introduce. It often necessitates changes in primary legislation, a radically different approach to procurement, the development of methodologies to produce output-based specifications, examination of the real costs of public sector activity, and the development of new and more detailed contracts. Governments wishing to pursue PPP as a serious policy option need to realize that they are going to have to invest in it up-front and use the best possible advisors who have actual experience with PPP deals. Given the high level political support it requires, it seems pointless to economize on the delivery mechanism.

## Structural and Legal Issues

Ensuring a clear legal structure confirming the ability of the public sector authorities to contract out their roles to the private sector is critical. In the United Kingdom, the process was well under way in certain sectors before it was realized that the authorities concerned lacked the legal ability to sign the contracts. Primary legislation was necessary to address this shortcoming. The existence of a concession law, for example, can make projects more attractive to financiers as the private sector cannot take the risk that the public sector lacks the authority to transfer obligations.

Other structural issues which will need to be addressed include tax treatment (particularly value added tax where exemptions may exist for public sector contracts but not private sector ones), the ability of political institutions to implement reform, the lack of sophistication of domestic capital markets, and the ability of either users or the government to pay for the cost of the new investment.

## Prioritization

When the Private Financing Initiative was launched in the United Kingdom in 1992, the government said that no project could go ahead unless it had been fully considered as a PFI project. The result of this was an unmanageable flow of projects that required central government review, resulting in frustration and disillusionment and slowing down the implementation of the PFI process. In the early stages, it is important to prioritize projects of a PPP program and to focus on key sectors. The government should be responsible for identifying the sectors to be developed first.

Most governments have a long list of projects that they would like to push forward but which are constrained by lack of resources (both finance and experienced individuals to guide the projects forward). Priority “pathfinder” projects can be identified from this list (perhaps one from each sector) that will literally find the path for this project and future projects in this and other sectors. To manage expectations, all concerned (the government officials, the bidders, and the financing institutions) should be made aware that it is a pathfinder project and as such will probably take longer than everyone would wish. The project acts as the catalyst to resolve policy and legal issues that were not foreseen when the enabling legislation was put in place. Consideration should be given to offering some form of incentives to the private sector to help build the market (such as tax incentives or reimbursement of some bid costs). Completing nominated pathfinders successfully builds confidence within the country and with the international PPP market.

## Attracting Private Sector Interest in a PPP Program

Over 70 countries around the world are interested in public-private partnerships. Thus, simply announcing a PPP program is not enough to attract investment. The international market is looking for:

- *Deal flow*: a reasonable number of potential projects in the pipeline to make investing time and money in building understanding of the local environment worthwhile.
- *Bankability*: unless projects are bankable the international financial community will not invest in them. PPP cannot make an unbankable project a good investment.
- *Good credit ratings*: for the country or (even more critical) the municipal or regional government concerned.
- *Familiar contractual and legal structures*: An international model is developing. Trying to do something radically different from this will jeopardize the chance of developing international interest.
- *A committed and structured approach from the public sector*: Is there a central PPP task force? Does it have control over projects originating from all ministries, regional governments, and municipalities? PPP investors do not want to deal with competing structures and approaches in one country.
- *Manageable political sensitivities*: Given the sensitive nature of private sector provision of some services (such as health and education), the private sector will want reassurance that the client is able to manage this element of the process.

- *Local capability:* Is there an experienced construction industry, banking market, good law firms and service companies?
- *Strong local financial structures:* Ideally there should be a long-term finance market or, at least, the potential to develop one. In the UK, banks originally would only lend 12 to 14 years maximum, but now are quite happy to lend for 30 years or more. Indeed, a PPP program can be a great stimulus to a long-term financial market.
- *Projects that offer scope for innovation in design:* If the private sector is to add value and reduce cost or increase quality, they must be capable of providing innovation in design, particularly in obtaining synergy between design and operations.

## Suitable Sectors

A PPP approach is suitable for any sector where it is possible to develop a service based on an output specification. In the UK, sectors have included: health (hospitals and clinics), education (schools and university accommodation), justice (prisons and courthouses), transport (light rail, roads, bridges), utilities (water, waste disposal, and street-lighting), social housing, defense (training simulators, sea and land tank transporters) and government buildings. The only sector where the experience has been more difficult (and where the UK government has recommended that no more projects take place) is in information technology. This is for a number of reasons, but includes:

- The speed of change in the sector, making it difficult to define effective long-term outputs.
- The high level of integration of IT into other business systems makes it difficult to delineate areas of responsibility and effectively allocate risk.
- The nature of the capital investment, with IT project costs dominated by operating costs, not up-front investment.

However, not everyone in the United Kingdom's PPP market agrees with the government's guidance and believes that, if properly managed, PPP can have a role in IT projects.

## Role of the Banks

An over-concentration on finance may detract from an appreciation of the real value of public-private partnerships, which is about better procurement, reforming the public sector, and delivering better services to the public. These factors are largely unaffected by the financing method and, indeed, it would be quite possible to use a PPP structure, focusing on the delivery of output-based services with all the finance being provided by the government. The role of banks (rather than the source of finance) is important in some areas of PPP, however. Given their interest, role, and skills, banks may assist governments in their analysis and control of PPP projects. The majority of PPP projects are financed by banks or other financing institutions, and as such, they will be regularly monitored by these organizations. Before agreeing to lend money to a PPP project the banks will insist on an independent confirmation of all the technical, environmental, economic, and commercial studies on the project.

With a PPP, they will expect frequent and regular reports on the project's progress. This will include a review carried out every three or six months with forward-looking financial ratios to check on how well the project is doing. These reviews will analyze the cash flow

of the project to determine how well it can cover its obligations to service and repay debt, as well as meet the essential costs of running the project. If the project is not demonstrating the strength that is required in these ratios, then the banks will expect early action to restore the project to good health. This is an important benefit for the public sector as the financing institutions will be as keen as it is to ensure that the project succeeds. They will also ensure that they have “step in” rights to enable them to take prompt remedial action when a projected problem is identified.

## Time

A PPP policy is a long-term solution. It has taken the United Kingdom ten years since the Private Financing Initiative was established as the country’s policy. Now projects can be done more quickly and much more effectively, yet they cannot be done instantaneously. There needs to be a clear recognition of the amount of time that it will take the public sector to develop these policies and expectations need to be managed accordingly. It is not possible to start a PPP process and sign the deal six months later. A real PPP project is going to deliver long-term value for money; it takes time because part of what is being done is to invest in the effort to understand those long-term objectives and risks for both the public and private sectors.

## Recommendations and Caveats

In countries where (i) the bureaus in charge of handling private participation are competent, (ii) public funding is credible and (iii) the risk of expropriation is low, a PPP program is likely to deliver the efficiency gains that have been enumerated here. If these conditions prevail, the recommendations to embark in a PPP program are straightforward: attain high-level political commitment; identify public and private sector “champions”; involve high-quality private firms; ensure the relevant legal framework; undertake bankable projects with scope for innovation in design; focus on realistic risk transfer to the private sector; and address public concerns. Some Latin American countries, such as Chile and Mexico, have already embarked on PPP programs and Brazil is currently introducing legislation to do so.

Regarding the first two conditions mentioned above to establish public-private partnerships, the experience in developed PPP markets such as the UK, Ireland and The Netherlands shows that the administrative skills and fiscal discipline that are needed by a government to manage such a program are as stringent as those required to handle pure concession schemes. Developing countries must be aware that PPP is not a substitute for weak institutions. Regarding the third condition, which may be critical in the more vulnerable countries, the probability of contract renegotiation and disputes when using PPP may not reduce vis-à-vis the deployment of conventional procurement if governments are tempted to default their payment to the private partners and the courts are unable to enforce contracts.

Some commentators have noted that in countries where the rule of law is ineffectual, private investors must rely on self-enforcing arrangements with the public sector to avoid expropriation. As Antonio Vives points out in the first chapter, the sharing of profits between private contractors and the government in such circumstances diminishes the expropriation threat and becomes a *de facto* PPP where the main objective is the protection of private property rights. Agreements of this type address strategic benefits (rather than the value for money



rationale of classical PPP). These agreements may entail efficiency losses to accommodate the public sector in key project decisions. If those losses facilitate investment by private parties in good infrastructure projects whenever the alternative is doing nothing, they are worth being evaluated.

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# SIX

## The Fiscal Implications of Infrastructure Development: Policy Recommendations for Latin America and the Caribbean

*Remy Cohen and Marco Percoco\**

### INTRODUCTION

This chapter discusses how infrastructure spending and fiscal policy impact one another, and puts forth a policy proposal for Latin America. There is a growing concern about the role of public infrastructure in economic development. The approach to this issue taken by various authors set the context for the approach taken here.

In analyzing investment trends in Latin America in the manuscript entitled “Macroeconomic Dimensions of Infrastructure in Latin America,” Calderón and Servén (2003) observe a widening “infrastructure gap” between the Latin American countries and other successful developing countries in all the sectors they examined: telecommunications, power, and transport. They also show that the gap emerged and widened in the 1980s and 1990s<sup>1</sup> when fiscal adjustments in the region were largely carried out by decreasing public infrastructure investment. In many countries, changes in the primary surplus as a share of GDP were due largely to the contraction of public investment in infrastructure. Calderón and Servén (2003) highlight the relationship between infrastructure investment and improvements in economic performance in terms of growth, international competitiveness, and poverty reduction in Latin America.

Calderón, Easterly, and Servén (2003b) show that there is limited evidence to support the argument that public spending in infrastructure will be replaced by private investment. This, in turn, means that the fall in public investment is not fully explained by the entry of the private sector in some industries. In fact, there is little evidence that private investment in

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1. The sole exception was the telecommunications sector. This seems to be a relevant point especially if one considers the strategic importance of the industry in enhancing country competitiveness (Cronin et al., 1991).

infrastructure increased after the liberalization of infrastructure sectors, while higher private infrastructure spending is associated with more public expenditure in infrastructure.

This is also implied in the work of Estache et al. (2003), where the entry of the private sector (via public-private partnerships, PPP) in the newly opened markets for public utilities generates an increase in public investment and, very surprisingly, a contraction in recurrent public expenditure. Unfortunately, we do not have any evidence on the cross effect of PPP in public utilities on public investment. In addition to these findings, their paper shows that infrastructure may lead to better income distribution; in particular the more quality and investment in the economy the lower the poverty rate.<sup>2</sup> In addition, the infrastructure gap has been reflected in a GDP growth differential between Latin America and East Asia of about one-fifth over the last 20 years—nearly one percent per year.

The rest of this chapter reviews the theory of fiscal illusions (which provides a plausible explanation for the lack of competitiveness in Latin America); provides an analysis of the recent experience in infrastructure procurement in the region; and proposes some policy recommendations.

## FISCAL ILLUSIONS AND THE LATIN AMERICAN COMPETITIVENESS GAP

In the past 20 years, following the debt crises and the public sector borrowing constraints faced by many emerging and developed countries, most infrastructure investment was delayed or cancelled (Guasch et al., 2002; Harris et al., 2003). To fill the gap, legislation was passed to attract foreign and local private investors to support the infrastructure development programs that could not be implemented through traditional public finance funding. In addition, governments were required to maintain fiscal discipline in order to meet macroeconomic objectives of fiscal stability. As a result, new public investment was severely curtailed, as was investment in required maintenance on existing assets, resulting in a decrease or deterioration in the amount and quality of the infrastructure stock in the region.

The impact of the reduction in public investment on the lack of competitiveness in Latin America and the consequent worsening of the fiscal deficit have been studied in Easterly (2001) and Calderón et al. (2003a, b), both of which develop a theoretical framework to explain what is called a “fiscal illusion.” In particular, fiscal adjustment can be thought of as an illusion when it lowers the budget deficit but leaves government net worth unchanged. Easterly (2001) shows that, under certain conditions, a government will lower the conventional deficit while leaving its path of net worth unchanged, and when required to lower its debt accumulation the government will lower its asset accumulation or increase its hidden liability accumulation by an equal amount.

In such a case, fiscal adjustment is an illusion; that is, cutting public investments, operations and maintenance expenditure, and other spending on “productive public capital” will have a detrimental impact on the future path of economic growth and then the future situation of public finances. This suggests that Latin America’s current lack of competitiveness with

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2. On this point, see also the manuscript entitled “Measuring the Fiscal Efficiency Distribution Trade-Offs in Argentina’s Utilities Privatization” by Benítez, Chisari and Estache (2000) and Calderón and Chong (2001).

respect to other developing countries could be thought of as a result of the contraction of public investment over the past two decades. Fiscal illusion in Latin America was actually exacerbated by the need to meet the external constraints of adjustment programs, the extensive use of off-balance-sheet financing, and the use of contingent liabilities to foster infrastructure investment with no pressure on current budget expenditures.<sup>3</sup>

## **INCENTIVE CONTRACTS: EXPERIENCE AND SOME RECOMMENDATIONS**

### **Concessions and Renegotiation**

In recent decades, as traditional public finance mechanisms could not be used due to fiscal imbalances, external constraints, and volatile capital flows, many countries carried out reforms to attract private investment for infrastructure programs. The involvement of the private sector was accompanied by large privatization programs aimed at reducing a country's public debt but, by the same token, dismantling monopolistic positions and improving efficiency in certain economic sectors. Under this new scenario, government would become market regulator and purchaser of certain goods and services which could be more efficiently managed and delivered by the private sector, possibly at the same or lower cost for the users. Private agents would then be free to decide what project to implement and under what conditions, under the overall government investment program.<sup>4</sup>

According to this view, project financing could, in principle, fill the gap in infrastructure investment by creating financial mechanisms based primarily on a project's expected cash flow. Latin America is one region that has adopted project finance techniques very actively, while promoting the legislative changes required to attract foreign and local investors. However, the outcome has been mixed, as the institutional and regulatory framework remained too weak and too dependent on political decision-making. Certain sectors (e.g., telecommunications) met with greater success than others (e.g., transportation, water).

Most infrastructure projects have been developed under concession arrangements. These arrangements have worked well provided that the legal environment is supportive and well structured to deal with events such as cost overruns, renegotiation, or contract cancellation. Moreover, the tariffs or prices that infrastructure users must pay should be sufficiently flexible to assure revenues to remunerate the capital invested and repay project indebtedness. Independent regulatory agencies were set up to oversee and review tariffs. Yet most agencies were not sufficiently independent and were relying too much on the political inputs (which were dependent on the election cycle), and most contractors, concessionaires or investors were settling controversies on these issues directly with the government rather than with the regulator, weakening its position and its enforcement capability.

Over the past 15 years, pursuing public-private partnerships has been an active policy instrument for inviting the private sector to develop projects under an agreement with the public sector. The basic principle of a workable PPP solution is based on reasonable risk

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3. There is a growing body of literature on contingent liabilities risk and its implications for fiscal stability. See Mody (2000); Polackova (1998a; 1998b).
  4. See the manuscript entitled "Partenariato Pubblico Privato e Sviluppo delle Infrastrutture in Italia." Ministry of Economy of Italy by R. Cohen (2003).

transfer from the public to the private sector, accompanied by greater efficiency in the operation and management of the activities transferred to the private sector. The main reasons for the rapid and widespread development of PPP structures were the impossibility of financing infrastructure projects from state budgets; time and cost overruns created by traditional contracting; and poor public performance in operation, management, and maintenance.

By calling on the private sector to become involved in the construction, financing, and operation of projects, governments were trying to achieve the many benefits indicated in Chapter 5. Experience, particularly in the United Kingdom, shows that there have been many types of partnerships, ranging from complete transfer of the asset to the private sector, to concessions under user-fee or availability-charges arrangements, to structures where the asset is returned to the government at the end of the construction period and then leased back to the private sector for the operation and maintenance period. A common feature that is emerging (particularly in certain sectors such as transportation, water, and healthcare) is that ownership of the asset is no longer considered a key element in the financing process; rather, lenders look at the operation and maintenance of the asset as the primary source for the project to generate cash flow. This is why lenders concentrate a major part of their due diligence in project financing on analyzing the financial standing and operational track record of the asset operators.

In the new framework, the public administration becomes market regulator and purchaser of goods and services produced by a project, subject to quality and efficiency. This latter point, by removing demand risk from the overall risk assessment of the project, allows for sophisticated financing techniques, such as securitization, and helps reduce a project's financing costs. Given the government involvement, it was necessary to establish a reference benchmark (the *public sector comparator* and *value for money*) to evaluate the benefit of a private financing methodology compared to traditional government procurement. The experience of the United Kingdom with the Private Financing Initiative (PFI) has been positive for certain sectors (roads, healthcare), while other sectors (education, railways, air traffic control) were criticized. Besides, the UK government constantly monitors PFI developments and is responsive to required changes in legislation, procedures, and financing techniques.

Under PPP-type concessions, particularly in the transportation and water sectors, tariffs are subject to a price cap regulation and project success is dependent on the development of demand. Price cap regulation was introduced in Latin America as a way to attract private investment, develop projects, and gain in efficiency. Without getting into the details of price cap regulation, recent studies (Estache, Guasch and Trujillo, 2003) demonstrated that in Latin American countries 30 percent of projects were renegotiated; the percentage increases to 54.7 percent and 74.4 percent if we limit the survey to the transportation and water sectors, respectively. The percentage changes for projects under a rate of return or a combination of price cap and rate of return.

A further explanation of renegotiation behavior could be traced back to the conflict of interest inherent in the concession arrangement. Consider, for instance, the development of a toll road. The concessionaire's main shareholders are usually a construction company to build the road and an operating company to operate the road and/or other entities that may have a direct or indirect interest in the project. The conflict of interest between the concessionaire and the contractor is clear and the equity injection of the concessionaire cannot be

considered true equity as it is captured under the construction contract. The same applies to the operator who, being a shareholder, operates the infrastructure for the whole period of the concession, without the possibility of any change, unless gross negligence or severe underperformance occurs.

Support for this explanation can be found in the studies by Estache, Guasch and Trujillo (2002), Guasch, Laffont and Straub (2002), and Laffont (2001) in which they look at the timing of concession renegotiations: it ranges from 2.2 to 4.5 years, which means, considering the type of projects surveyed, roughly at the end of the construction period or very early in the operation period. This suggests that once the contractor has finished his job, he has little incentive to continue with the project if there is a slight change in the economics of the concession, and he will look for a way out either through renegotiation or by selling his equity to another investor. The typical BOT-type of concession has been criticized, and alternative methods of financing have been suggested to minimize opportunistic behavior, whether by the concessionaire or the government (Trujillo et al., 1997).

## Managing Public-Private Partnerships

### *Managing Subsidies*

When a project requires massive funding (in terms of both money transfers and services) it might be better for the project if the monies were given to financial vehicles, for better accountancy and transparency. It is not optimal to let the private sector borrow under indirect guarantees or subsidies paid by the government. It is better to have the government set up its own financial vehicles or entities to which all the rights and cash flows as well as public subsidies are assigned, for borrowing costs will be lower. These types of vehicles should exist until all their liabilities are fully paid in the interest of the infrastructure users and the taxpayers; moreover, they should have flexible maturity profiles to absorb demand risks.<sup>5</sup>

### *Asymmetric Information and Risk-sharing Between Public and Private Parties*

The role of asymmetric information as between the public administration and the private sector has major fiscal implications.<sup>6</sup> In a BOT-type concession, the private concessionaire—also in charge of design, construction, and operation—has more information about project costs, risks, and legal solutions than the public sector awarding counterpart. As discussed in detail elsewhere (García et al., 2003), risk-sharing is endogenous, and allocation of risk depends on the contractual position and bargaining power of the two parties. Very seldom does one observe in reality the textbook recommendation that risk be allocated to the party better-suited to bear it. The hidden issue here is that without a proper project specification and bidding process by the public sector, the private agent tends to bundle the project risk and drive the infrastructure price upwards; the price remains high during the negotiation

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5. The establishment of a government-supported financial special purpose vehicle is a building block of the unbundled models described in Trujillo et al. (1997).

6. See the manuscript entitled “The Economics of Project Finance,” Bocconi University, by Cohen and Per-coco (2003).

phase, when the private sector winner tends to shift back to the public sector risks that were factored into his bidding price. Asking the private agent to assume too many risks, such as design, construction, financing, and operation, tends to inflate investment costs. This implies higher tariffs to users, higher operating subsidies if required, and a higher potential exposure of the public sector should some of its contingent or direct liabilities become callable.

When considering concession risks and risk-sharing between the public sector and private agents, governments could build flexibility into concession maturity, which should be a function of the change in the demand, while also using other techniques such as the least present value of revenues (Engel et al., 2001), where the concession terminates when that value is reached by the concessionaire. In these cases, off-balance-sheet vehicles would allow for greater flexibility, monitoring, and management of project risks. Moreover, managing the implicit contingent liabilities gets easier and more transparent. In addition, renegotiations of contractual obligations, liquidity facilities, and unexpectedly high cash flows will result in higher project benefits through the reduction of debts or the lowering of tariffs.

### *Role of the Legal Framework*

Legislation usually changes to improve the operation of the law. However, if there are too many changes in a short time, lenders and investors start wondering when the next change will come and will take a “wait and see” attitude to see if they can get more benefit, or they will disregard a certain investment if they fear that a future negative change in the law may have a detrimental impact on project financial performance.

## **THE INTERPLAY BETWEEN FISCAL AND INFRASTRUCTURE POLICIES**

In this section we discuss some policy implications of the issues addressed above. In particular, we outline the creation of an entity or agency specially delegated to handle infrastructure investment (hereinafter the “Agency”) and the reform of capital budgeting and accounting. The creation of such an Agency, with off-balance-sheet entities, may accelerate the rate of investment in infrastructure, whenever certain indispensable policy definitions are properly worked out.

### **The Value of an Agency for Infrastructure Investment**

Special Purpose Vehicles (SPV) are the building blocks of project finance as they enhance, among others, project feasibility, risk identification, and segregation of cash flows. Such vehicles have been contemplated in several legislations and are also used for specific financing mechanisms such as securitization of future revenues. The proper functioning of such vehicles may require contingent obligations from the public sector on issues such as demand shortfall, refinancing possibilities, true sale of the revenues, or other receivables. Usually these vehicles are set up by the private sector sponsors, but could be set up in a more efficient way (lower borrowing and transaction costs) by the public sector in projects that foresee availability charges or leasing payments by the public administration, and/or large capital grants.

In addition to project-specific SPV, there is a growing debate on the usefulness of off-balance-sheet vehicles or entities, owned by the government but not consolidated in the public sector accounts, to promote investment projects; they are established to bypass external budget constraints (Maastricht Treaty, IMF/World Bank adjustment programs) and foster capital investment expenditures.<sup>7</sup> Also entailed are issues related to fiscal illusions and contingent liabilities: if a country has not established a record of fiscal prudence and guarantee management, the introduction of such entities by themselves might not imply that real changes for infrastructure procurement are occurring. These vehicles could be useful and more easily implemented than a redefinition of accounting principles and capital expenditure recording in national budgets. When properly established and managed, these vehicles could solve some of the fiscal illusions issues by bringing more transparency to the investment process; identifying more precisely project costs (including maintenance and depreciation), risk, and returns; monitoring endogenous events underlying the triggering of the contingent liabilities; and assuring greater accountability of managers' decision-making.

In 2002, the Italian government created "Infrastrutture SpA" (ISPA), an investment company wholly owned by the Treasury Department but governed under the civil code as a private company. The purpose of the company is to foster investments strategic to Italy's development that cannot be accommodated under the budget, due to the EU debt/GDP constraints. The company may receive a government guarantee for its funding; however, it is not an automatic mechanism. Guarantees will depend on the project being funded, therefore the management of ISPA must carefully consider a project's capability to repay its indebtedness and remunerate the invested capital. The government has appointed its management and directors.

Setting up such companies may help accelerate infrastructure investment if the company is properly governed. Only projects that have a positive rate of return should be considered and, were contingent guarantees required, the company management should monitor the underlying foundation of the project to avoid triggering the guarantee; the possibility of recourse to the government guarantee will reduce the financial costs of projects. Furthermore, projects and companies will be subject to the continuous scrutiny of the rating agencies in order to arrive at a rating of the company based on its project portfolio. In the 2004 Italian budget "Cassa Depositi e Prestiti" (CdP), a shareholder of ISPA, has been transformed in a joint-stock company owned by the Treasury and other institutional investors (bank foundations), and received a mission to finance infrastructure projects in addition to current funding for municipalities.

The state ownership of CdP and ISPA will allow for longer maturity funding based on the project profile, at a lower rate than the private sector. Certainly the government will incur contingent liabilities, but as the project is under entities operating as private corporations, it is likely that the monitoring and risk management of those liabilities could be better performed than under traditional public debt management rules. Allocating projects to a separate entity allows for greater transparency of project costs; and by avoiding the commingling

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7. Blanchard and Giavazzi (2004) provide an interesting framework for the use of a specific agency to modify the public budget and meet the very strict requirements of the Maastricht Treaty with no impact on public investment.



of cash flows from different government projects, it gives lenders greater reassurance they will be repaid.

The Agency delegated to run and finance public investment in infrastructure needs to combine many ingredients if it is to deliver, each of which is now discussed in turn.

### *Political Support*

The Agency should be organized mindful of the government's long-term objectives for infrastructure development. Taxpayers should know why the agency is formed, what its operating costs are, and how the country benefits from its establishment, and the cost of failure.<sup>8</sup> The Agency should be independent, though, from political interference.

### *Government Coordination*

Central governments and local administrations should cooperate to outline a national contingent obligations list on a yearly level to be used as an attachment to the budget, or, if the present value of expected losses deriving from contingent liabilities is computed, incorporated in the budget and monitored and reviewed each year.<sup>9</sup> Particular importance should be given to the autonomy of local administrations, as an excess of local contingent guarantees could be devastating at the national level if not properly monitored and managed. Placing a ceiling or limit on the issuance of such guarantees could be imposed by the central government or negotiated with the central government in relation to the infrastructure program to be implemented and the financial return for such implementation (likelihood of the guarantee being called). The Agency should review government programs and verify their compliance with the underlying contractual obligations. If, for instance, a tariff increase is required to maintain the financial viability of a public transportation system, the Agency should require that the administration allow such a measure or design alternative measures, to keep the guarantee from being called.<sup>10</sup>

### *Risk Management*

The Agency should assist the local administrations and central government in defining their risk profile and tolerance by setting up appropriate risk-management techniques<sup>11</sup> to assess anticipated losses under their contingent liabilities. Setting up reserve provisions for stress scenarios should also be envisaged, but should be continuously reviewed, and the adequacy of the reserves in the yearly budget should reflect this dynamic review. A review of different contractual obligations under different policy options should enable policymakers, for instance, on a cost/benefit or financial analysis basis, to maintain the contingent guarantees as compared to alternatives such as direct subsidies or repurchasing the asset. Certainly

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8. This requirement could also mitigate some of credibility problems of fiscal policies in Latin America, such as those described above.

9. On this point see also the section on the reform of public accounting and budgeting.

10. Note that this is one reason why political support is a crucial issue.

11. See Currie (1999), Currie and Velandia (1999), and the manuscript entitled "Sovereign Financial Guarantees" by T. Magnusson (1999) from the Swedish National Debt Office, for analyzes of modern portfolio management techniques in relation to contingent liabilities.

adopting reserve funds may imply the abandonment or postponement of other investment expenditures, but this is the price of avoiding undue and unexpected pressure on budget finances, which will ultimately result in a curtailing of expenditures.

### *Information*

Disclosure of information on the public investment program in all the phases of design, bidding, construction, and operation is essential to get taxpayer support and to minimize the increased costs deriving from the asymmetry of information as between the public and private sectors.<sup>12</sup> Moreover, such scrutiny will enable taxpayers and the administration to assess the probability of liabilities being called and the usefulness and adequacy of the measures required to avoid such a call on the contingent guarantee. At the end of the day, information disclosure should help reduce investment costs and benefit infrastructure users.

### *Adequate Staff*

The Agency should be supported by qualified technical, legal, and financial staff to assist local administrations, SOEs, and the central government in analyzing project proposals and determining whether contractual obligations comply with the long-run fiscal objectives of the administration. Particular attention should be given to the project design and the design documents to be bid. Appropriate design is a key element to minimize project costs and cost overruns. In addition, the legal documentation requires careful consideration in order to reduce legal costs and minimize opportunistic behavior under the contracts.

### *Public-Private Partnership*

The Agency should help design the proper framework for an efficient public-private partnership, where risks are effectively allocated to those who control them, and ensuring that the transfer of risk is not accompanied by the transfer of public sector inefficiencies.<sup>13</sup> The Agency should also set up procedures and benchmarks for the PPP options versus alternative public financing.

### *Institutional, Legal and Judicial Adjustments*

A project financing and/or PPP framework will work with an appropriate institutional, legal, and judicial framework in place. The greater the extent to which such a system is in place, the fewer the guarantees that will be required of the public sector in project implementation. Guarantees should not be free, but the beneficiary should pay for them in order to reduce the amount due if the guarantee is called. The Agency should help ensure that those prerequisites are in place, or help implement them.

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12. A sound body of literature has been growing in recent years on the impact of asymmetric information on project profitability and business conduct of concessionaire. See Cohen and Percoco (2003), Guasch et al. (2002), and Laffont (2001).

13. On this point see also the section on incentive contracts above.

### *Public Funds*

In several countries, the government sets subsidies or provides grants to meet part of the project costs. The Agency should help ensure the adequacy of the public funding to the current requirements of the project once it is ready for bidding. Project design, regulatory approvals, environmental clearances, etc., may take years from when the preliminary project cost assessment was made and the amount of public subsidy approved for that particular project specification. After several years, once the project is out for bidding, public funds may no longer be adequate to the project costs and therefore the amount of private financing needed may be greater than anticipated, making it impossible to go ahead with the project unless more public funds are made available or tariff increases are allowed to cover the greater exposure of the private sector. The use of public funds as subordinated debt should be considered to allow the flow back to government at the very end of a project's life.

### *Infrastructure Investment Agencies*

One of the reasons for delays in starting investment projects is the failure to properly define the financial package under the project financing agreement. The Agency could sponsor the creation of infrastructure funds to cope with the lack of project equity as well as to provide for other project specifications such as feasibility studies, engineering studies, and review of maintenance programs on existing infrastructure assets. Equity infrastructure funds for new projects could solve the undercapitalization of some projects and inject true equity in the project, avoiding the misleading equity provided by concessionaires, contractors, or operators. Certainly this will entail a thorough evaluation of whether the project offers an attractive equity return, while also setting up clearer procedures in the event of contract renegotiation, to avoid the conflictive behavior characteristic of renegotiations with concessionaires or contractors.

The Agency could sponsor a type of infrastructure fund that invests in existing assets: such funds offer a way out for project sponsors once the construction phase concludes and project operations prove profitable. They may also contribute to cross-subsidize new projects. In addition to infrastructure funds, there is a need to attract public capital for feasibility studies, preliminary design, preparation of bidding documentation, and specification of maintenance requirements. If the administrations can tap into these types of funds, project costs and risks will be better specified and controlled; accordingly, the awarded price will be lower.

While it is clear that contingent guarantees are useful, one must reduce the “fiscal overhang” implicit in those guarantees. The amount of the guarantees at stake could be defined once simulations have been done on alternative scenarios of project development (anticipating the fact that liabilities can be endogenously triggered). As we believe that keeping contingent guarantees from being called depends on proper project cost assessment *ex ante*, and project monitoring *ex post*, the Agency should identify and record the contingent liabilities arising from local or central government commitments; calculate where possible the expected losses using private sector risk management tools such as options, hedging techniques, or econometric models; and calculate expected losses, incorporating them in the national or local budget.

Using a dynamic monitoring system enables policymakers as well as local and central administrators to keep from reaching the point at which a guarantee is triggered by taking the appropriate policy actions (for instance, changing ticket price in a public transit project). Otherwise they should assume the full political implications of their behavior. In other words, contingent guarantees in infrastructure investments are endogenous to the system and could be properly managed through suitable design, supervision, continuous monitoring, and regulation of public administration programs. We would place special emphasis on “continuous monitoring,” for very often, once a project is up and running, the public administration tends to disregard its operational supervision.

In addition, the Agency should give technical assistance to local administration and central government entities on detailed design, project costs, and implementation programs. Technical, financial, and legal know-how as well as advanced design are essential to keep to a minimum, cost increases stemming from asymmetric information as between the public and private sectors in all phases of the project cycle. Reducing asymmetric information will lower investment costs. The Agency should review the project economics (costs, return, etc.) and technical considerations (design) and suggest the appropriate funding techniques, that is, from the budget, through a public-private partnership, or through long-term funding of government investment vehicles.

## Capital Accounting and Budgeting Reform

The creation of an Agency delegated to public investment in infrastructure would be optimal if associated with a reform in public capital accounting and budgeting (CAB). In fact, as shown in Blanchard and Giavazzi (2004), such an Agency will result as a de facto separation between capital spending and recurrent public expenditure, thus a complete reform of public balance sheets, as suggested in Easterly (2001), would be recommended especially for infrastructure (or, in general, public assets) already in the portfolio and needing merely to be managed and valued.

The ideal public sector balance sheet we have in mind should have the following characteristics: improved information, separate plans for current and capital spending, capital charging, national asset registry, and identification and quantification of fiscal risks deriving from contingent liabilities.

*Improved information:* Adequate information about the real economic situation of public finances is useful for assuring effective fiscal policy. In particular, if we assume the ISA accounting rules also operate in a public context, assets should be accounted for at their current values.<sup>14</sup>

*Separate plans for current and capital spending:* The separation between investment and recurrent expenditure should reflect their different economic significance, consistent with fiscal discipline.<sup>15</sup>

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14. As stated in Tanzi and Prakash (2000), a number of governments recognize just the assets with an unambiguously established value. However, in recent years, several governments have made an attempt to account for the monetary value of public assets, such as Australia, New Zealand, the UK, and the United States.

15. It should be noted that the difficulties in dividing the two categories should not be considered a valid argument against the logical separation and correct calculation of the fiscal deficit. For a complete review of the cons see Buti, Eijffinger and Franco (2002), while a review of the pros can be found in Blanchard and Giavazzi (2004).

*Capital charging:* Charging departments for the public assets they actually use will result in a more efficient allocation of resources inside the public administration. This, in turn, will change the internal financial equilibrium, making it more efficient in terms of (economic and financial) cost rationalization.

*National asset registry:* The registry of public assets is obviously important in reforming public balance sheets, because it prepares the ground for a correct CAB and provides information on possible management of government assets for PPP. In addition, it would help rating agencies (see above on ISPA) and extend accrual accounting to include the use of capital charges.

*Identification and quantification of fiscal risks deriving from contingent liabilities:* The risks from infrastructure investment and the consequent contingent liabilities (in terms of implicit or explicit public guarantees) should be clearly stated in the public balance sheets, and quantified by calculating the expected loss.

The introduction of resource accounting actually applies the financial reporting practices of the private sector to the central government. Capital accounts should be accruals accounts, capturing the full cost of resources consumed during the reporting period, including capital costs as measured by depreciation and the opportunity cost of capital. They are similar to those prepared for private sector companies, but with two additional features: a statement showing use of public assets (particularly relevant for identifying the most productive potential uses of the assets); and a statement analyzing spending by objective.

Fiscal discipline is not only consistent with CAB, but reflects the same underlying accrual principles. In particular, both are designed to achieve a more rational framework for planning and managing investment. Accordingly, and to ensure that the reforms reinforce one another, CAB should be implemented to support “fiscal constraint.” A key feature of CAB is that the focus of decision-making for capital is over its lifetime, through capital charges, rather than only when purchased. This puts capital costs on a “level playing field” with current costs. Making managers more aware of the assets they employ encourages good maintenance and provides incentives to optimize use.

In contrast, under the current budgeting framework of most developing and industrial countries, identifying the cost in full in the year of acquisition but not depreciating or recognizing subsequent opportunity cost will result in an initial bias against capital spending (if no external constraints apply), and no ongoing incentive to manage capital properly once purchased.

Concerns with the fiscal risk deriving from contingent liabilities suggest adopting management measures such as (Polackova, 1998a; 1998b): assessing fiscal performance beyond the budget and debt; determining government’s optimal risk exposure and relative reserves; monitoring risks and regulating eventual renegotiation; and calculating expected value of loss using quantitative methods and case studies.

In addition, the costs and benefits of setting up a monoline facility backed by the multilateral lending agencies should be valued. Monoline insurers have entered the European Market and are also active in some Asian and Latin American countries. A monoline backed by the multilateral lending agencies would enable various projects to tap the capital markets—at a

cost. It would also give investors reassurances of great transparency and continuous scrutiny of project development, while giving the guarantors the ability to step into the projects in the event that the monoline insurance is triggered.

## CONCLUDING OBSERVATIONS

The descriptions of the issues outlined above show the need to establish control mechanisms to reduce the impact of government contingent liabilities on a country's fiscal stability program. At the same time, the need to increase country net worth by new investment and investments in maintenance of existing assets is becoming a growing field of research and concern for many governments in both developing and developed countries. Externally imposed constraints under current budget definitions prevent the allocation of needed public expenditures for infrastructure, and favor the search for off-budget vehicles and the increasing use of contingent liabilities (e.g., government guarantees).

Not recording contingent liabilities in annual budgets—albeit a two-edged sword—is preferred by governments as a way to supporting investment in infrastructure, over direct subsidies or other means that are politically more expensive and under the scrutiny of public opinion. As discussed, contingent liabilities may be explicit or implicit. In explicit contingent liabilities, the liability will be triggered if certain future events occur or fail to occur. Implicit contingencies are based on the perception that government will not or cannot back out of certain obligations in the event of a major disaster, such as an earthquake, but also financial crises involving failures or bankruptcy of banks and major corporations (for instance the Enron or Parmalat cases). For the latter type of implicit contingency, very little can be done other than setting up proper rules of corporate governance and sound regulation and supervision of banking and the financial markets. The government needs to adopt credible policy actions to show the market that the government is not backing bailouts of private corporations, banks, or local administrations. Building credibility in this area takes time, and is no easy task given the political implications of such actions.

The types of liabilities most relevant to infrastructure investments are endogenous to the system and based primarily on avoiding demand shortfalls, regulatory risks, exchange and inflation risks as well as other project-specific risks. These types of risk can be covered and the expected losses, if the liabilities come due, can be calculated by simulating different probability scenarios.

We suggest assessing the creation of a politically independent entity (which we have called “the Agency”), which should help local administrations and central governments identify project risks, evaluate project costs and design, and examine their compatibility with government funds approved and with the investment program of the local or central administration. Such an Agency could address issues such as the correct funding mechanisms for the project, and the cost and benefit of the proposed solution (e.g., under a public-private partnership arrangement or using budgetary funds or government borrowing).

The second task of the Agency should be to lay out a series of monitoring guidelines and procedures for project selection and implementation. A continuous monitoring system aiming at assessing the compatibility of project realization and performance with the admin-

istration's investment program and objectives. Continuous monitoring will mean keeping closer tabs on the events leading to the triggering of the contingent guarantees. The Agency can be a key reference point for both government macroeconomic actions (for instance decisions on devaluation have a major impact on contingent liabilities tied to exchange rates or tariffs, if indexed to a foreign currency) and project-specific actions (e.g., implementing an urban transportation policy that will make it possible to sustain the required demand for a transportation project).

Such agencies cannot be created overnight: they require special assistance and funding to ensure they are properly structured. We believe that the multilateral lending agencies should be involved directly or through outside consultants. As we note in this paper, there is a need to reduce information asymmetries between the public administration and the private sector; such efforts need technical, financial and legal expertise if they are to succeed. Particularly relevant is the definition of the legal context under which the public administration enters into infrastructure contracts with the private sector. The private sector has more money than the public sector to hire lawyers to structure contracts that, in case of renegotiation or cancellation, end up favoring the private sector.<sup>16</sup> In England, under the PFI program, government has set out detailed procedures (from bid submission to contract signing). Contracts tend to be standardized, avoiding excessive changes by the private sector, and above all minimizing legal costs around a given project financing initiative.

The multilateral lending agencies could help redesign budgetary reform to allow for public expenditures in infrastructure, maintaining fiscal stability without jeopardizing the country's long-term growth objectives. Indeed, the recent debate in the European Union has been on how to derogate the Maastricht stability pact, while allowing for measures to stimulate the lagging infrastructure sector. The suggested solutions are based on (i) creating special vehicles that could borrow, and (ii) controlling the proposed EU infrastructure program in addition to the funds available by each national budget. The European Investment Bank has been empowered to structure such a framework and to use its borrowing capacity to fill the financing gap on the EU priority list of infrastructure projects, particularly supranational projects. There is a subtle wish for the private sector to come in to fill the financing gap and add its efficiency and entrepreneurial know-how to accelerate project implementation. There is no evidence that the private sector will in fact come in before a proper definition of the timing of the project comes into force, and until there is a clear picture of the public money available.

Most of the supranational projects require substantial public finance contributions: there is no well-defined model to finance supranational projects, as they may involve different legal frameworks, ranging from private concessions to competitive contracting under a public concession. For large supranational projects it is recommended that the countries involved set up a supranational corporation (SNC) and contribute to its equity in proportion to the expected benefit from the project in each country (see Conthe, Mañueco and Nogueira, 2003). Additional equity contributions may be raised from local entities that will benefit from the project indirectly. We do not see equity participation of private investors at this stage, nor do we believe that the equity capital market is a viable solution for complex

projects (remember the Eurotunnel experience!). It is better to float the company once the project is completed and a profitable operation has started. In this way initial country investment will get a greater return.

The multilateral lending agencies could participate as debt providers or catalysts to attract institutional money via equity-linked debt or via the development of long-term infrastructure funds. In addition, the multilaterals could coordinate the countries' agencies to ensure that the contingent liabilities taken in by the national governments in respect to the SNC are consistent with each country's long-term fiscal stability program. If such "agencies" are not yet set up, the multilaterals could assume that role or create their own supervisory agency specifically to advise on the construction and monitor the implementation of the supranational projects, while supervising the accountability and transparency of the supranational corporation. In this sense that body should be politically independent, with a board including independent directors to assure appropriate corporate governance. The supranational corporation will be the project concessionaire and will initially be in charge, possibly with the assistance of the multilaterals, of designing the project framework, obtaining all required authorizations, and preparing the bidding documentation. Then it will contract out the construction and/or the operation (unless the project is directly operated by it). Financing complementary to the funds committed or raised from public finance and the multilaterals will come from the use of Financial Special Purpose Vehicles to which the project revenues and guarantees will be assigned.

In order to raise finance, the agency should follow on the development of alternative financing techniques ranging from securitizing future revenues and sponsoring infrastructure funds, to cross-subsidizing existing assets (for instance the New York transit system is heavily subsidized by the toll collections at the Triborough Bridge). In Latin American supranational projects there is room for cross subsidies, using tolls or earmarked taxes for developing a given project. Experience in the U.S. tax-exempt municipal and revenue bond markets shows the extensive use of securitization of future revenues and revenues from cross subsidies to finance local infrastructure projects.<sup>17</sup> Most of the issues in revenue bonds are done via development authorities or agencies with no taxing power: the issue is rated and sold to the market based on the underlying project's expected profitability. The rate of default on revenue bonds has been quite low, also because the agencies or authorities closely monitored project implementation and performance and the rating on the bond is given to the underlying project's capacity to service the debt obligation. A monoline sponsored insurance company should be considered to facilitate project financing and implementation.

A related issue, also involving the solvency of developing countries, is the valuation of existing government assets. These assets are recorded in the national accounts at historical costs, but their identification and market valuation, could boost the country's net worth. Moreover, these assets could be used for other purposes, such as to capitalize the above-mentioned international monoline insurance company, or to cross-subsidize priority projects. Recently the Italian government has set up a special company, Patrimonio SpA, to identify and value

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17. The interesting possibility of deploying hydroelectric power generation rents (currently used mostly to subsidize median voter consumption) should be explored to fund the expansion of service coverage in Latin American countries.



government-owned real estate and other public assets. In the same vein, one should consider the launching of several securitization issues in the real estate and other government receivables areas, to reduce the debt/GDP ratio, but also to start a privatization and valuation of assets, which under public ownership and management were underperforming as compared to private sector market practice.

The implementation of an agency for enhancing and monitoring infrastructure projects may require a phased strategy. We suggest starting with a sample of potential liabilities above a certain threshold and confined to specific sectors. The country should verify whether the fiscal adjustment path is consistent with the possible losses arising from the triggering of a guarantee. A sample exercise could begin with a small local government provided that there are enough available data. Alternatively, a sample could be taken of a country projects financed or co-financed by the multilateral lending agencies: data should be readily available on the country's external adjustment constraints, if any, as well as information on whether the contract contained contingent liabilities and whether they have been called could be easily designed and used to simulate how those liabilities affected or did not affect the country's fiscal adjustment and growth prospects.

As budgetary reform will take some time, we believe that decisions on using off-budget vehicles or entities to finance infrastructure investments should be made on a case-by-case basis and with utmost caution. The concentration of project-related contingent liabilities under a single vehicle would facilitate control, monitoring, and evaluation of such liabilities for prudential fiscal policy management. However, certain conditions must apply:

- Political pressures should be managed and internalized to minimize future interference with the project.
- Management of the vehicle should decide which project to finance and set the level of profitability required based on the nature of the project (level of social content).
- Avoidance of crowding out of private financing: the vehicle should be seen as a complement to public and private financing, particularly to supply funding in the long tail of the financing. The private sector should not see the vehicle as a substitute for private financing or as a surrogate for public funds. Management attitude and political behavior are determinant for avoiding the perception of such a situation.
- Transparency in project selection and financing.
- Independent board of directors to ensure suitable corporate governance.
- Management accountability and remuneration criteria.

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