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## Latin America's Infrastructure Experience: Policy Gaps and the Poor

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A central conclusion of studies on infrastructure privatization in Latin America is that the poor will eventually gain via increased access.<sup>1</sup> However, when infrastructure services are turned over to private owners, the poor can lose in many ways over the short term. Reforms can result in losses for the poor, as opposed to the nonpoor. Reducing the major policy gaps that can create such losses, while maintaining the economic gains from privatization, is the main topic of this chapter. The gaps discussed include

- lack of care in documenting the initial conditions of public services before their reform, including the degree of regressivity that previously characterized the financing of service delivery;
- lack of a much needed distinction between access and affordability;
- failure to account for the weakness of safety nets during the difficult transitions associated with reform;
- failure to recognize the distortions caused by all levels of government in using these sectors as tax handles;

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1. See McKenzie and Mookherjee (chapter 2), as well as other chapters in this volume.

- failure to recognize that effective regulation is needed to achieve fair outcomes that benefit the poorest; and
- insufficient appreciation of the political commitment required to ensure that reforms benefit all segments of the population.

Any complete assessment of the effects of the 1990s privatization experience on income distribution, as well as any restructuring of policies and practices to minimize risks of negative social effects, should include the above-mentioned points.

## Current Knowledge Base

The current state of knowledge on linkages between infrastructure reform and the poor is a combination of results from three empirical research areas:<sup>2</sup>

- establishing linkages between infrastructure and growth,
- studying the effects of infrastructure on welfare of the poor,<sup>3</sup> and
- documenting the linkage between infrastructure reform and improved access to infrastructure—from safe water and sanitation, to transportation, telecommunications, and electricity.<sup>4</sup>

The combined message from these three research fields is that infrastructure is good for growth; since growth is good for poverty reduction, infrastructure is good for poverty reduction. Moreover, the literature shows that policy changes that improve the level and quality of infrastructure in developing countries positively affect health and education indicators.<sup>5</sup> The literature also shows that these improvements matter most to the poorest; hence, the importance of measuring the effects of the 1990s infrastructure-privatization experience across income groups. The explicit linkages between infrastructure reforms and changes in poverty rates and income distribution, however, have not yet been systematically analyzed. Only recently—mainly in Latin America—have studies attempted to assess

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2. Certain theoretical areas provide important insights into the efficiency-equity trade-offs of policy options for such instruments as regulatory mechanisms design, including the design of universal service obligations. However, this discussion is beyond the scope of this chapter. For a survey, see Laffont (2003).

3. The most often quoted, and still relevant, resource on this is the World Bank's 1994 *World Development Report*.

4. This third area, the most recent, includes several studies presented at the 2003 conference, *The Distributional Consequences of Privatization*.

5. See Brenneman (2002) for a recent survey.

and measure these linkages.<sup>6</sup> This section reviews major results emerging from these various research areas and concludes with an initial assessment of the policy gaps.

Empirical literature on infrastructure and growth in Latin America shows the extent to which infrastructure promotes growth in this region.<sup>7</sup> For example, Baffes and Shah (1998) show that the elasticity of output to infrastructure is about 0.14–0.16 in Bolivia, Colombia, Mexico, and Venezuela—that is, a 1 percent increase in the stock of infrastructure is associated with an additional 0.14 to 0.16 percentage points increase in the growth rate. For Brazil, Ferreira (1996) finds an elasticity between 0.34 and 1.12, depending on the discount rate used. Research also shows the role infrastructure plays in facilitating the growth convergence of regions, allowing the poorest to catch up with the wealthiest. For example, evidence from Argentina and Brazil shows that improved access to sanitation and roads is a significant determinant of convergence for the poorest regions (Estache and Fay 1995).

Linkages between access to infrastructure and well-being of the poorest have been less covered. The work undertaken on health and educational achievements has been based largely on event studies or anecdotes. In recent years, the rapidly growing body of literature increasingly indicates that improved access to all types of infrastructure can have positive social effects among the poorest, including reduced child mortality and higher educational achievements. Leipziger, Fay, and Yepes (2002) suggest, based on a sample of 73 countries, that a 10 percent improvement in a country's infrastructure index can lead to a 5 percent reduction in child mortality, a 3.7 percent reduction in infant mortality, and a 7.8 percent reduction in the maternal mortality ratio, controlling by income effect and differentials in access to health services. For an extremely poor country, such as the Central African Republic, a general expansion of infrastructure of 10 percent could annually help to save nine children under five years of age (who currently die for each 1,000 live births) and nearly 100 mothers (per each 100,000 live births).<sup>8</sup>

From the viewpoint of social analysts, the drawback of many of these studies is that they focus on the effects of infrastructure investments (or stock levels) on growth in general, and only rarely on income levels or

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6. Two recent exceptions (in addition to McKenzie and Mookherjee [chapter 2] and other chapters in this volume) are Estache, Foster, and Wodon (2002) and Ugaz and Waddoms Price (2003).

7. Disagreements among academics are based on technical, econometrics grounds (de la Fuente 2000).

8. The effectiveness of this intervention would have to be compared with the cost of an equivalent intervention in the health or education sector. Leipziger, Fay, and Yepes' point, however, is that this type of calculation is needed in order to understand which sector can deliver the "biggest bang for the buck."

income level per income class. The effects on income level per income class are needed to assess quantitatively the income distribution effects of reform.<sup>9</sup> Galiani, Gertler, and Schargrotsky (2002) provide an alternative, effective bridge linking changes in access resulting from reform and social effects on the poorest. Because of the simplicity and strength of its message, their study has quickly become one of the most often quoted in the privatization literature. Galiani, Gertler, and Schargrotsky show, for example, that child mortality caused by waterborne diseases fell 5 to 9 percent in the 30 Argentine localities where water services were privatized, with the strongest benefit—more than a 25 percent decline—occurring in the poorest neighborhoods.

Considered collectively, these studies are insufficient to settle the too often ideological debate over the full social effects of privatization. Partial and sometimes anecdotal assessments of specific experiences are important; however, they should be complemented by a more systematic, cross-country approach to assessing the winners and losers of reform and privatization, and, hence, their distributional consequences. Despite the solid contributions of the other chapters in this volume, they contain gaps in terms of identifying ways in which the poor can lose from reform. Offering suggestions on how to identify and, more importantly, close these gaps is the main goal of the sections that follow.

## Importance of Initial Conditions

History textbooks currently used in the high schools of major cities in Brazil, Argentina, Bolivia, and Chile provide interesting insights into the emotional biases of the privatization debate.<sup>10</sup> An informal review of these textbooks suggests that, in all of these countries, the collective memory—approximated by what the educational systems want to teach the next generation—largely ignores many of the dimensions of the basic living conditions of the 1970–80s. The texts focus on the dramatic political changes that occurred in the region, but provide little coverage of the economic history, and even less of the poor quality of public services that previously prevailed. Yet, when they were introduced at the end of the 1980s, infrastructure reforms were relatively easy to sell politically because the majority of voters were fed up with the poor quality and rationed nature of most public services. Most of these countries could no longer afford investment and maintenance costs for their infrastructure networks, which explains why service quality was poor to begin with and was expected to further deteriorate.

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9. Until recently, Chisari, Estache, and Romero (1999) and Navajas (2000) were the only studies that addressed this issue quantitatively.

10. For a larger survey, see Birdsall and Nellis (chapter 1).

While effective tariff levels (taking into account large shares of unpaid bills) appeared low, power outages and water shortages were the expected norm in many regions of these countries. Few today recall the 5- to 10-year waiting period to acquire a residential, and sometimes a commercial, telephone, interminable delays in obtaining repairs and services, and the high costs of bribes paid to utility officials to jump the line and obtain—and maintain—connections. In many of these countries, lack of safe, reliable public transportation strongly contributed to increased use of private modes of transport. It was within this context that many reforms were initially welcomed—except by public-sector workers (and their families), who lost jobs and associated privileges, financed by taxes paid by the contemporary population, or bonds currently being repaid by the subsequent generation. The key point is that the standards applied today to assess the effects of reform are significantly higher than those used to gauge the delivery systems under which people were living in the early 1990s.

Today's critics also tend to forget that, to a certain extent, the regressivity of the current financing schemes was inherited from the prereform area. Consider the case of Colombia (Velez 1995). In 1992, 38 percent of all public-sector subsidies (including health, education, housing, and other public services) were, in fact, spent on utility services, representing 1.4 percent of GNP. Of these, 80 percent were spent in the electricity sector; the study found that these subsidies benefited mostly middle-income households. Indeed, many direct or cross-subsidy schemes typically used in Latin America were so poorly designed that they failed to reach the poor. Various studies have shown that as much as 60 to 80 percent of cross-subsidies were aimed at households well above the poverty threshold, while as much as 80 percent of poor households failed to benefit (Estache, Foster, and Wodon 2002).

The regressivity of the previous financing system reflected the reality that the poorest of the poor were often unconnected to utility services and, hence, were not positioned to benefit from direct or cross-subsidies. Before reform, the supply systems were already regressive. Indeed, middle- and upper-income groups had significantly greater chances of getting connected than did the poor. That regressivity is an inherited problem does not justify inertia in correcting it. However, because initial conditions matter, any assessment of privatization should carefully distinguish between inherited and additional regressivity caused by reforms, just as it should apply comparable standards to assess performance before and after reforms.

Finally, one should remember that context matters. In nearly all countries, privatization and infrastructure reforms are part of a wider reform agenda. Benitez, Chisari, and Estache (2003), for example, provide a test of the relative effects of privatization and credit-market restrictions as a reason for the increased unemployment observed in Argentina. The test suggests that most of the increase in unemployment can be attributed to credit

rationing, thereby calling into question a standard myth associated with privatization. To reiterate, it is important to differentiate the causes of observed events to assign credit and blame, thereby moving beyond emotional debates on the effects of reform.

## Private-Sector Participation

Just as important as the need to recognize the initial conditions is the need to bear in mind basic figures when attempting to assess the social effect of infrastructure privatization in Latin America. One frequently overlooked datum is the volume of foreign direct investment (FDI) brought in by new operators of many of these services.

Latin America recorded a massive \$361 billion in private infrastructure investment in 1990–2001 (with FDI peaking in 1998). Although this is the largest volume recorded for any region, it covered only about 25 to 33 percent of the region’s annual investment needs. Despite their enormity, these figures show that the private sector never assumed full responsibility for the financing requirements of the sector, even during the glory days of privatization. This sector has been and will remain one in which the public and private sectors must work together.

A crucial difference between the two forms of provision is that the state has the option to finance delivery through taxes, while private providers usually must recover their investments directly through user fees. Even rough calculations of what this cost recovery means from the perspective of the poorest may help provide a sense of where the social problem lies in any proposed reform.

On a per capita basis, the large FDI volume represents roughly 15 cents per person per year, which the operators want to recover.<sup>11</sup> One should recall that, during the 1990s, 15 to 20 percent of Latin Americans lived on less than a dollar a day. Asking them to allocate 15 percent of their meager daily income to the amortization of private investment (and probably they would have been required to pay more in order to finance the operational cost) would have been unreasonable. It should have been evident that this was a social issue deserving of policymakers’ attention through sector-specific regulatory design. Any failure of the regulatory regime or government to identify and finance the needs of the poorest would and did have a strong effect on the poor. However, these were, and still are, public-sector, not private-sector, failures.

Asking users to allocate more than 20 percent of their income for public services, with little tolerance for nonpayment of bills (which state-owned firms tended to tolerate) largely accounts for the negative perception among

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11. This figure, calculated by dividing the annual FDI volume by the population, roughly approximates what cost recovery will entail in the near future.

the poorest of the private sector. The question is this: Why was this outcome not perceived and predicted during the first half of the 1990s, when the reform process was launched? Part of the answer is that the negative reaction began to spread widely only after the Asian crisis, when unemployment increased significantly, along with a corresponding increase in the number of people living below the poverty line. These factors were combined with the return of increasingly binding fiscal constraints, which limited the public sector's ability to subsidize, and the failure of many family or neighborhood social networks that assisted the poorest. In such circumstances, the tension among private providers, the public sector, and users was bound to increase.

## Needs of the Poor: Getting the Facts Right

A prime political and financial challenge of liberalizing reform and privatization is to aim to ensure that, after privatization, access to infrastructure services improves, while affordability of services continues at least at preprivatization levels. Since needed increases in service quality and coverage often necessitate raising the average tariff level, affordability of privatized services for the poor is a core policy concern.<sup>12</sup> This is why the main regulatory challenge is to develop the technology and mode of service delivery that ensure affordability for low-income groups, while giving operators reasonable assurance of cost recovery.<sup>13</sup>

The Latin American experience suggests that policymakers have been less effective in addressing affordability than access. Many looked at overall affordability but focused on tariffs, ignoring the often prohibitively high connection costs for both electricity and water/sanitation. While ambitious targets for extending services to unserved populations were laudable, virtually all were predicated on full cost recovery. Early on, it was not sufficiently recognized that the often exorbitant connection charges were beyond the ability of the poor to pay. Thus, although services are now available in many more neighborhoods, the poorest segments of society often cannot afford to become connected. It is now known that access often entails substantial upfront, fixed costs, which are problematic for poor households that lack savings and ready access to credit. Future schemes must take this fact into account.

Most practitioners have their own horror stories from the 1990s illustrating that, from the perspective of poor households, affordability can pose a greater barrier than access to using services. For the Buenos Aires

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12. For example, on average, cost recovery in water and sanitation in the public sector was about 25 percent, according to the 1994 *World Development Report*.

13. For a full treatment of this question with illustrations, see Estache, Foster, and Wodon (2002).

water concession, for example, the connection charges initially allowed by the contract were up to \$600 for water and \$800 for sewerage, to be recovered over a 24-month period from households with monthly incomes of little more than \$200. For many, this meant allocating nearly 30 percent of their income to these charges, which was clearly unsustainable. To the government's credit, the fee was later incorporated into a more socially viable tariff structure, which entailed cross-subsidies from families with existing connections to newly connected families.

Impeding access forces poor, unconnected households to pay for inferior substitutes, such as tankered water or kerosene lamps, the per-unit energy cost of which is much higher than that paid by middle- and upper-income groups for use of formal utility services. Estimates for Guatemala and Honduras, for example, suggest that families with access to the formal network of electricity services can meet their basic energy needs 20 to 30 percent more cheaply than can households who lack access (Estache, Foster, and Wodon 2002). These observations suggest that resources channeled into subsidizing service tariffs could be better used by subsidizing connection charges.

Ultimately, this discussion points to the need to make better poverty diagnoses. The starting point in preparing a strategy or action plan aimed at addressing distributional issues within the context of privatization is to establish whether poor households genuinely cannot afford connection costs or a subsistence level of consumption once connected. Relatively straightforward indicators, using readily available sector statistics in combination with household survey data, can be applied to identify the relative importance of access and affordability.

Policymakers attempting to address the needs of the poor in infrastructure reform must answer three broad questions regarding the state of access:

- What is the level of service coverage among poor households?
- Is the problem of access caused primarily by demand- or supply-side factors?
- Can the poor afford the initial costs associated with connecting to the network?

A diagnostic of the state of affordability must answer the following questions:

- How much are the poor able to pay for utilities services?
- How much are the poor willing to pay for utilities services?
- Are the poor's utilities payment cycles synchronized with their income cycle?<sup>14</sup>

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14. Foster and Tre (2003) and Wodon and Ajwad (2002) provide good examples.

Assuming that the diagnostic reveals that the policymaker faces both access and affordability problems, but (as is nearly always the case) only limited fiscal resources are available to finance subsidies, the main question then becomes: How does one choose between access and consumption subsidies? The problem is solvable, but the optimal solution requires serious analytical work that few governments (or their advisors) have taken the time to undertake; few governments have made the effort to obtain good knowledge of the expenditure patterns of the poorest.<sup>15</sup> The simple starting point is that governments should subsidize goods that are consumed in larger proportion by the poor.

Household consumption surveys or living standard measurement surveys often fail to collect the relevant data, and do not adequately disaggregate even the limited good data they obtain. Many collect information only in urban areas, while the majority of poor people reside in rural areas. Subsidies end up being either overgenerous (because they benefit many nonpoor) or too harsh (because they exclude those most deserving of support). For example, recent surveys in Central and South America show that subsidies for water and urban transportation tend to have greater poverty-reduction potential than those for electricity and telephone services simply because the poor's share of total expenditures for water and urban transportation is larger than for electricity and telephone services.<sup>16</sup> Yet, as noted, relevant data on transportation are seldom collected.

## The Case for Infrastructure-Specific Safety Nets

Certain social problems associated with infrastructure reform, often pointed out by critics, are relatively predictable for policymakers who have done their homework. These include transition costs associated with formalization of illegal users (common with electricity and water reform) and inclusion of poor users in the customer basis of the profit-oriented private operators. If the effect of a reform process on the poor is a major source of concern, the first recommendation an economic advisor will usually give is to rely on the general welfare system—that is, stop burdening a supposedly productive enterprise with what are, ideally, the functions of general economic policy or a specialized government body or agency. This solution works when policy is sound and where a functioning welfare system is in place. However, this is usually not the case. Most social welfare systems in Latin America are procyclical in nature,

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15. For a more technical discussion, see Estache, Foster, and Wodon (2002).

16. See, for example, Siaens and Wodon (2003) for Bolivia and Makdissi and Wodon (2002) for Mexico.

which impedes their effectiveness during transitions. Moreover, most social safety nets fail to consider the costs of commercializing infrastructure.<sup>17</sup>

Since the welfare system is often unable to accomplish its expected role, it may make sense to consider a special program for the infrastructure poor. Indeed, one main lesson of the 1990s may be that introducing distributive considerations into an infrastructure reform process, perhaps by designing a special welfare program, is not only necessary for equity reasons, but may also be imperative for political reasons. The acceptability and long-term success of an infrastructure reform may depend on such a policy, even when strict welfare considerations may not justify it. The need for an infrastructure-specific social policy does not necessarily mean that a utility regulator designs or even administers the welfare program. On the contrary, such programs should be integrated into a government's general welfare and poverty alleviation policies, thereby maintaining coherence with complementary poverty-reduction efforts. Chile and Colombia have achieved this goal with their water subsidy scheme and residential utility subsidy, respectively.

A special-welfare infrastructure program can be used for multiple purposes; however, credible, sustained funding is critical in all cases. This can come from a variety of sources. First, governments can provide funds from general tax revenues. This is often the case of urban transportation and "negative concessions," such as those awarded for toll roads. Second, funding can come from charging certain customers or sets of customers a higher price than the cost of service, using the resources to cover the lower fee paid by the poor. While historically, this type of cross-subsidy was regressive, many ways have since been discovered for bolstering transparency and progressivity. Moreover, private utilities are likely to continue applying such cross-subsidies, since many governments cannot make credible commitments to finance subsidies from public funds. Third, a fund can be established whereby all companies must contribute according to a proportional rule (e.g., number of customers that each company serves or proportional to each company's revenue). Companies still charge customers a price/cost markup in order to pay for this contribution. Various Central American countries have adopted this approach for their telecommunications sectors. Deciding which type of funding is best depends, in part, on the efficiency, equity, and administrative costs associated with the distortions created by the general tax system (the cost of public funds).

In sum, effectiveness of designing the transition from public to private supply drives the distributional effects of the full reform package. The challenge is to avoid dogmatism (e.g., cross-subsidy versus the need to undergo the general welfare-system debate) and to be transparent and accountable about targeting and financing decisions made to mitigate the risks of undesirable social effects of reform.

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17. For more details, see Estache, Gomez-Lobo, and Leipziger (2001).

## Legacy of Regressive Taxation

An underestimated source of unfair distributional outcomes from reform is the transformation of the public-service sector into a major source of tax revenue for all government levels. When operated by the public sector, infrastructure services sometimes generated large revenue volumes for the level of government responsible for operating the service (even though this was often insufficient to cover all costs). Since privatization—at least in the case of utilities, but not always in the case of transportation—these sectors have increasingly become net cash cows for all government levels. In Argentina, for example, utilities generate about 1 percent of tax revenue for all levels of government, mostly from a 35 percent income tax and a 21 percent value-added tax (VAT) passed on to consumers. However, the effective tax rate that users pay is typically significantly higher than 21 percent because of municipal and provincial taxes. Indirect taxes on telecommunications and electricity can total more than 55 percent of the cost of service in certain large municipalities.

When assessing the effects of reform on tariffs, it is important to examine the evolution of tariffs with and without taxes. (This is also important when undertaking international tariff comparisons for similar services since tax burdens vary across countries.) The failure to make this distinction can hide the gains from reform. More importantly, the general complexity of the information processed by regulators may create situations in which private operators effectively share achieved efficiency gains with the government rather than users. This may be appropriate, but not when done through a regressive tax system. Moreover, the major tax instruments available to most subnational governments are indirect taxes, which tend to be regressive. Thus, the odds of having an enormous tax burden financed disproportionately by the poor are relatively high.

## Importance of Regulation

A principal reason for infrastructure privatization's lack of popularity is a perception that the quality-adjusted efficiency gains have not been distributed fairly. When this is the case, the remedy is, to a large extent, the responsibility of regulators—either as part of the ordinary or extraordinary reforms or within the context of tariff-structure design. The major distributional mandate of regulators is to assess the cost reductions achieved by operators and pass on a fair proportion of those gains to consumers as part of the scheduled tariff-revisions processes. In too many developing countries, and even in certain industrialized ones, the regulator may be too weak (that is, influenced by politicians and/or operators), or may simply be incompetent in delivering on this mandate. The basic efficiency gains

that should be eventually shared are typically not measured and, hence, seldom redistributed.<sup>18</sup> In sum, regulators are the crucial players in determining the perception of the equity of privatization because they largely determine the extent to which the poor get their fair share of the gains from reform (if they are working with appropriate legislation).

Chisari, Estache, and Romero (1999) support this conclusion in their review of privatization and regulation of Argentina's energy, telecommunications, and water sectors. Their analysis separates the benefits of privatization per se from those of effective regulation. Their findings shows that privatization yielded operational gains in the infrastructure sectors equivalent to 0.90 percent of GDP or 41 percent of the average expenditure on utility services. Effective regulation added gains amounting to 0.35 percent of GDP (16 percent of the average expenditure on utility services). Higher-income households gained more in absolute terms than did lower-income households; however, the benefits of effective regulation, as a proportion of existing expenditures on utility services, were highest for the lowest-income quintiles. The reason is that regulation acts as a mechanism for transferring rents from owners of capital to consumers of the service. Overall, according to the simulations, the Gini coefficient of income inequality drops significantly if regulation is effective.

Estache, Manacorda, and Valletti (2002) provide additional support by analyzing determinants of growth in Internet hosts and use in Latin America during the 1990s. Their study tested whether there was a diffusion of growth in Internet access and use and, if so, its main determinants. Given the concern that recent technological innovations are creating a digital divide between rich and poor countries and between rich and poor regions within countries, analysis of this phenomenon is clearly relevant to this discussion. As expected, Estache, Manacorda, and Valletti found that regulation aimed at facilitating sector entry boosted Internet diffusion. Interestingly, from an equity perspective, initial income distribution has been a determinant of the effectiveness of reform and the speed at which the poorest regions catch up with the richest. In terms of growth in Internet hosts, they found that a 10 percent fall in the Gini coefficient (that is, a 10 percent improvement in a standard measure of income distribution) led to a doubling of Internet diffusion—a dramatic result. Moreover, they found that a 10 percent deterioration in the Gini coefficient halved Internet diffusion. The key point is that linkages between reform and income distribution may be a two-way street, a fact often ignored in policy debates on reform.

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18. More precisely, the efficiency gains are distributed from the government, politicians, and managers of public enterprises to a new combination that includes these three groups, along with shareholders of the privatized regulated services. As a group, consumers get only a share of the cost savings in the form of tariff reductions if the regulators are fair.

## Conclusion

Macroeconomic context often matters more than infrastructure reforms, and it matters most to the poor. Employing the poor, replacing regressive tax systems with progressive ones, designing more effective welfare systems, and promoting local capital markets to reduce credit rationing and local sensitivities to international crises are all effective ways of ensuring that the poor enjoy access to the basic services they need and are often willing to pay for. In isolation, infrastructure reform can do little to fully offset macro-policy failures.

In addition, because macro policies take time to implement, transitional safety nets may be necessary to mitigate the adjustment costs imposed by infrastructure reforms. While decentralization may complicate the challenges of transition and reform, national governments cannot accomplish them alone. Jurisdiction of national reformers over certain tax decisions is limited, and subnational governments' choice of tax levels is a crucial determinant of rents distribution resulting from reform.

Regulating the remaining natural monopoly elements of an infrastructure sector is the main engine of the distributional effects of infrastructure reform. The specific design of regulation and the competence, independence, and skills of its implementation agency determine the extent to which the efficiency gains achieved by reform can be passed on to users.

Moreover, it is critical that regulators, tax reformers, and welfare-program designers carefully analyze the facts and assess the preexisting situation not only to explain the distributional effects of reform but, more importantly, to enable the design of new reforms. Current reformers must be more knowledgeable about the poor they seek to help. Once they know who the poor are and the specific ways in which they are poor, there is broader scope for win-win decisions in infrastructure reform and many beneficial ways in which both the public and private sectors can cooperate.

Finally, Latin America's experience underscores that all of these decisions are intensely and invariably political. Politicians must decide to "get the facts right," prioritize choices, and take action. If political support is lacking in any node of the decision tree, the reforms will, at best, leave income distribution unaltered or, at worst, make it more unfair, leaving the poor even worse off. The less transparent the reform process—the less accountable decision makers and other actors intervening in and interfering with the decision process are—the more likely reforms and marginal players, rather the actors guilty of the failures, will be blamed.

## References

- Baffes, J., and A. Shah. 1998. Productivity of Public Spending, Sectoral Allocation Choices and Economic Growth. *Economic Development and Cultural Change* 48, no. 2: 291–303.

- Benitez, D., O. Chisari, and A. Estache. 2003. Can the Gains from Argentina's Utilities Reform Offset Credit Shocks? In *Utility Privatization and Regulation: A Fair Deal for Consumers?* ed. C. Ugaz and C. Waddams Price. Northampton, MA: Edward Elgar.
- Birdsall, N., and J. Nellis. 2002. *Winners and Losers: Assessing the Distributional Impact of Privatization*. CGD Working Paper 6. Washington: Center for Global Development.
- Booth, D., L. Hanmer, and E. Lovell. 2000. *Poverty and Transport*. London: Overseas Development Institute.
- Brenneman, A. 2002. Infrastructure and Poverty Linkages: A Literature Review. The World Bank, Washington. Photocopy.
- Chisari, O., A. Estache, and C. Romero. 1999. Winners and Losers from the Privatization and Regulation of Utilities: Lessons from a General Equilibrium Model of Argentina. *The World Bank Economic Review* 13, no. 2: 357–78.
- de la Fuente, A. 2000. Growth and Infrastructure: A Survey. World Bank, Washington. Photocopy.
- Estache, A., A. Gomez-Lobo, and D. Leipziger. 2001. Utilities Privatization and the Poor: Lessons and Evidence from Latin America. *World Development* 29, no. 7: 1179–98.
- Estache, A., V. Foster, and Q. Wodon. 2002. *Accounting for Poverty in Infrastructure Reform: Learning from Latin America's Experience*. Studies in Development Series. Washington: World Bank Institute.
- Estache, A., M. Manacorda, and T. Valletti. 2002. Telecommunications Reform, Access Regulation and Internet Adoption in Latin America. *Economia* 2, no. 2 (Spring): 153–217.
- Ferreira, P. C. 1996. Investimento em infraestrutura no Brasil: fatos estilizados e relacoes de longo prazo. *Pesquisa e Planejamento Economico* 26, no. 2: 231–52.
- Foster, V., and J. P. Tre. 2003. Measuring the Impact of Energy Interventions on the Poor: An illustration from Guatemala. In *Infrastructure for Development: Private Solutions and the Poor*, ed. P. Brooke and T. Irwin. London: Private Provision of Infrastructure Advisory Facility (PPIAF), Department for International Development (DIFD), and World Bank.
- Galiani, S., P. Gertler, and E. Schargrotsky. 2002. Water for Life: The Impact of the Privatization of Water Services on Child Mortality. Universidad Torcuato di Tella, Argentina. Photocopy.
- Laffont, J. J. 2003. Regulation and Development. IDEI, Toulouse. Photocopy.
- Leipziger, D., M. Fay, and T. Yepes. 2002. The Importance of Infrastructure in Meeting MDGs. World Bank, Washington. Photocopy.
- Makdissi, P., and Q. Wodon. 2002. Consumption Dominance Curves: Testing for the Impact of Indirect Tax Reform on Poverty. *Economic Letters* 75: 227–35.
- Navajas. 2000. El impacto distributivo de los cambios en los precios relativos en la Argentina entre 1988–1998 y los efectos de las privatizaciones y la desregulacion economica. In *La Distribucion del Ingreso en la Argentina*. Buenos Aires: Fundación de Investigaciones Económicas Latinoamericanas.
- Siaens, C., and Q. Wodon. 2003. Food Subsidies and Consumption Inequality in Mexico. *Statistics/Estadística* 55: 164–65.
- Ugaz, C., and C. Waddams Price, eds. 2003. *Utility Privatization and Regulation: A Fair Deal for Consumers?* Northampton, MA: Edward Elgar.
- Velez, C. E. 1995. Gasto Social y Desigualdad: Logros y Extavios. Santa Fe de Bogota: Social Mission, National Planning Department.
- Wodon, Q., and I. Ajwad. 2002. Infrastructure Services and the Poor: Providing Connection or Consumption Subsidies? World Bank, Washington. Photocopy.
- World Bank. 1994. *World Development Report: Infrastructure for Development*. London: Oxford University Press.