

KEY CHALLENGES

The key challenges include improving the social and economic returns from infrastructure, better leveraging the private sector, through a better management of PPI, but also raising new financing for infrastructure. These, and the many underlying steps required are discussed in turn.

Improving the social and economic returns from infrastructure

Finding better ways to extend affordable service to the poor³³

Most countries employ considerable subsidies and other programs to promote service expansion, but too many people, especially among the poor, still lack basic services. Access rates have been improving, especially among the poor. But growth rates are slow: on current trends providing safe water to more than 90 percent of the region's population may take another 15 or 20 years. Speeding up service provision to the poor does not necessarily require additional state resources. Rather, more effective use of existing funds is needed, particularly in the case of subsidies. (Mexico, for example, already spends nearly 1 percent of GDP on poorly targeted power subsidies).

For policy purposes it is important to identify whether a household is without a service because this is not available in the community or because it is not affordable or convenient. Expanding coverage requires supply-side interventions, while demand-side measures may be more appropriate for making services affordable and accessible. In Guatemala, for example, around 60 percent of households in the first income decile lived in communities with access to the electricity grid (Estache, Foster and Wodon). But only 30 percent of these households actually use electricity, just half of those that could, suggesting that affordability and other demand-side issues are the main factors preventing connection.

Private operators may have little incentive to expand coverage into poor or rural areas. The true cost of providing service to rural or poor customers is likely to be higher than the tariffs they pay. Extending infrastructure to remote or geographically challenging areas is more technically challenging and therefore expensive. There are higher commercial risks and billing costs associated with recovering revenues from customers with limited ability to pay. Revenues per connection are likely to be lower, as the poor tend to consume less (although for water, the correlation between income and consumption may actually be fairly weak, according to Komives et al., 2005). Note however that the incentives to expand may be different for incumbent providers than for new comers to the industry, which may have a different cost structure and more of a need to expand the client base.

Well designed service obligations and connection targets can ensure that private operators do expand coverage. Governments in LAC have frequently included universal service obligations (USOs) in concessions and other contracts. However, these have often been vaguely worded or impracticable. Limitations in the coverage of the network may make fulfilling the obligation a physical impossibility in the short term. And even in communities already linked to the network, prohibitive connection charges may render a service irrelevant. There is therefore a need for USOs to be clearly specified, including how the obligation is to be financed when consumers lack the ability to pay. Connection targets, if well designed, are often clearer in defining the numbers and groups of customers to be served. But they can only be met if

³³ This section draws heavily on Estache, Foster and Wodon (2002), except where other sources are cited.

customers take up the service, which they may not, due to high connection charges or because, for example, they do not appreciate the wider social benefits of connecting to a sewerage system.

Output-based aid can also be an effective instrument. Several countries in the region have developed programs to deliver subsidies to the private sector to expand networks to rural communities. Concessions are typically awarded to private sector operators on the basis of competitive bidding for the minimum subsidy required per connection, beneath a preset ceiling. Most of the subsidy is usually paid only when services are delivered. Chile has used minimum subsidy concessions since 1994 to expand electricity and public telephone services to rural communities. Peru has such a program for rural payphones, while Guatemala does for electricity. A recent initiative in Paraguay (Box 7) seeks to use output-based aid subsidies to extend water service, the first time such an approach has been used for rural and small town water sector investment. More generally, output based aid is critical for the development of PPPs to improve service to poor households – particularly with credit enhancement to cover the risk of non-payment by government agencies.

Allowing cheaper technologies and a range of service levels can also reduce the costs associated with network expansion, as well as making services more affordable. The key is to avoid prescribing single quality standards, specific technologies, or exclusivity rights to the main operator within the legal and regulatory framework instituted at the time of sector reform. Small operators that receive output-based subsidies in both Chile and Paraguay have had some flexibility regarding the technology used. And in Bolivia, the (much larger) private concessionaire in La Paz and El Alto was allowed to introduce a low-cost technology to make water and sewerage connections more affordable to low-income households, using volunteer community labor to install the system. As a result, the cost of installing water and sewerage systems each fell by about 40 percent. The total savings in connection charges are equivalent to 80 percent of household monthly income of \$122 in poor neighborhoods.

Box 7: Pilot program to use output-based aid for expanding water coverage in Paraguay

Paraguay's *aguateros* -small private water companies- form an important part of the water sector, serving about 9 percent of the total population (or about 17 percent of those with piped water supply.) The companies, which average around 300 connections but may have as many as 3,000, have constructed piped water systems without state funding over the last 20 years, mainly in peri-urban Asunción. A new World Bank-funded initiative seeks to attract *aguateros* and construction firms active in the water sector to unserved rural areas and small towns by providing an output-based aid subsidy, awarded through competitive bidding.

Under the pilot program, communities (through water users associations) contract private operators to build and operate water supply systems under ten-year permits. The subsidy was fixed at US\$150 per connection (much less than the total public subsidy required for new rural connections to the state water utility). Operators bid for the lowest connection charge for new customers. The government's rural water agency SENASA manages the construction phase and acts as an arbiter between the community and the operator during the operational phase. The winning bidder of the first phase, to operate four systems, was awarded a contract in August 2002. A second bidding phase was opened for three towns more in 2004.

Source: adapted from Drees et al (2004)

The cross-subsidization schemes commonly employed to promote affordability have often been badly designed. As discussed above, the cross-subsidization schemes that many utilities employ in LAC tend to target badly, benefiting too many of the non-poor and not enough of the

poor. Indeed, Komives et al. (2005) find that IBTs and volume-differentiated tariffs –the most common forms of cross-subsidization, and of subsidies to utility customers in general–tend to have a regressive impact not just in LAC but worldwide. And while these systems should have the advantage, for governments, of not requiring state funding, as richer customers should be paying more to subsidize the lower rates paid by the poor, average tariff levels have usually been so low that significant state support has been necessary. Such schemes may also provide contrary incentives to operators, for whom it is not worth expanding coverage into poor areas if they may not charge enough to recoup costs.

Changing the tariff structure and the groups to which it applies can better target the poor. Modifying the structure of existing tariffs, (for example by reducing the size of the first subsidized block of an IBT) will slightly improve the targeting performance. However, a progressive distribution is only really possible when a significant proportion of households are not subsidized, which would require a major drop in the consumption thresholds below which many utilities currently subsidize. And this still rests on the assumption that low-income groups do in fact consume less, which is not always clearly the case. A more effective alternative may be to introduce some degree of administrative selection into subsidy allocation. Means-tested subsidies, as used for water subsidies in Chile and Paraguay, have distributed benefits progressively, as has geographic targeting in Colombia, although to a lesser extent. (Komives et al 2005). However, they are more complex administratively as well as costlier. Clearly however, an attempt can be made to piggy back on means testing systems where they already exist.

However, overhauling or abandoning consumption subsidies is likely to be politically difficult. Because most existing electricity and water subsidies tend to benefit too many people, any serious effort to redirect, reduce or eliminate subsidies is likely to raise the bills paid by a significant part of the population, including among the non-poor. This will be unpopular, despite the potential benefits of putting utilities on a better financial footing, including improved service quality and eased fiscal pressure.

Connection subsidies can be an efficient way to help the poor. Consumption subsidies deliver no benefits to unconnected households. As a result, connection subsidies may be a preferable alternative especially in areas where water and electricity services are available but take-up is low. Targeted connection subsidies to households are rare in LAC. But subsidies to utilities (whether explicit or hidden) often reduce initial charges to well below the actual cost for all customers, which has much the same effect, but is a less efficient use of resources in welfare terms, as much of the benefit goes to the non-poor. As with consumption subsidies, means testing (and sometimes geographic targeting) helps improve the targeting performance of connection subsidies. Komives et al. (2005) conclude that the long-term benefits of connection subsidies generally exceed the cost of the connection, largely because networked water and especially electricity tend to be cheaper than the alternatives.

Financing arrangements can also make it easier for low-income groups to pay for connections and services. Many low-income groups lack the savings to pay for connections upfront, and have limited access to credit. Providing credit facilities in tandem with network expansion programs or requiring operators to divide charges into several installments can make connections more attainable. In Colombia, for example, the law requires that connection costs for customers from lower socio-economic groups be spread over three years. Such a system has the advantage of lower financing costs, as the utilities' cost of capital is likely to be much lower than that of poorer customers. And the lack of collateral of many low-income customers need not be an obstacle to borrowing, as the utility can use the threat of service disconnection to enforce loan repayment. Similarly, large and infrequent service bills may be difficult to pay. More frequent

billing, flexible payment plans, pre-payment of services (such as through electricity meters) are among the means of facilitating service.

Improving public infrastructure spending efficiency

Decentralization and participatory planning can make infrastructure spending more responsive to local needs, but only if carefully implemented. Involving stakeholders and final users in the prioritization of infrastructure investments should have the advantage both of tailoring provision to the needs and priorities of particular communities and of encouraging greater “ownership” of the projects. A successful example can be seen in the Peru Rural Roads projects (Box 8). However, increasing the number of players can add to conflicts of interest between government levels, users and taxpayers, which can result in excessive spending or misallocation of resources across districts, as well as making accountability more difficult to enforce. The effectiveness of decentralization and of community-based initiatives therefore depends crucially on an enabling institutional environment. This requires, among other elements, government commitment and much stronger accountability of leaders external to local communities than is often the case in many developing countries.³⁴

Regional approaches can help small countries reduce costs and improve reliability of services. In the case of electricity, prices tend to decrease with size of plants (although size certainly does not fully explain prices) and interconnection can help improve reliability (both of demand and of supply). This was the rationale behind the Central American Interconnection System (SIEPAC) which allowed for the creation of a wholesale electric power market and a regional grid.³⁵ Another option that has been discussed in the context of the Caribbean is regional procurement agencies (Jha 2005).

In many countries, more resources should be spent on maintenance, to make up for past neglect. In LAC as in other developing regions, the maintenance of existing infrastructure has been neglected in favor of starting new, highly visible projects. This is very costly (in addition to having a detrimental effect on the quality of the network). A well-maintained road should last 10 to 15 years before requiring resurfacing, but a lack of maintenance can cause severe deterioration requiring resurfacing in as little as five years. There is a strong case for countries in the region to secure budgetary resources for maintenance, as has been done, for example, through the road fund model, financed by earmarked taxes, in El Salvador and other countries

Reallocating funds from new projects to maintenance could have positive outcomes for GDP in LAC. There is considerable evidence that maintenance has a higher economic return than new public investment, as described by Rioja (2003.) He calculated that reallocating resources worth 1 percent of GDP from total public investment, to roughly double infrastructure maintenance in seven major Latin American countries would have increased GDP by 1.9 percent. (The figure is based on an Easterly and Rebelo (1993) estimate that total public investment in the seven countries was around 6 percent of GDP).

³⁴ These are the conclusions of Estache (2004) from a review of recent literature on decentralization and community-based initiatives.

³⁵ In the case of Caribbean islands where such a system would not work, and it is uneconomical to unbundled vertically, an alternative is to remove exclusivity over new capacity and allow for self generation (Jha 2005).

Public spending efficiency can be much improved through more predictable flows and aggressive procurement practices. Unreliable resources make it difficult to manage an efficient maintenance program. It also makes investments much more costly as disruptions in payment may result in stop and go investment programs. In addition, Governments usually end up paying more than the private sector for the same goods and services – and this applies to infrastructure. An aggressive procurement or competition agency monitoring the behavior of Governments when they contract the private sector can substantially reduce collusion among vendors or corruption in general.³⁶

More use can be made of small-scale local providers and cheaper technologies. Technological advances, such as the development of inexpensive water systems and solar and other electricity generators facilitate small-scale local provision of some services. Micro-enterprises have also been successfully used to “micro-privatize” infrastructure services, including routine road maintenance, in Guatemala, Colombia, Ecuador, and Nicaragua. In the Peru Rural Roads Projects, gravel was chosen over more expensive paving, for road rehabilitation, and local micro-enterprises have been contracted to do the work needed. Similar projects have also been implemented in other countries. In Nicaragua, roads have been resurfaced using concrete blocks (“adoquines”), which are cheaper than regular paving, but are durable and effective.

³⁶ Competition authorities can help avoid (or at least reduce) collusion agreements in bidding processes - for example in a road rehabilitation and maintenance scheme bid out to the private sector and funded by the government. To be effective, competition authorities should be involved early on in the bidding process and should have enough resources and powers to access the information needed to identify the existence of collusion.

Box 8: Peru Rural Roads Projects

Three quarters of Peru's rural population live in poverty, two-thirds of them in extreme poverty. In the rural parts of the Andean mountains, the isolation of the poor caused by non-existent or very inefficient transport infrastructure limits access to local markets, schools and health centers. Since 1995, the Peruvian authorities have successfully designed, and are now implementing, an innovative approach to road management in the poorest areas of rural Peru, with the help of the World Bank and the IADB. The Second Rural Roads Project (US\$50 million World Bank loan approved at the end of 2001) has built on the successes of the first project, expanding its scope and furthering reforms.

The two projects have firstly aimed at empowering the rural poor in the process of selecting those rural roads that should be rehabilitated. About one hundred provincial participatory road plans have been prepared through the organization of community workshops. These plans prioritize among road segments to identify the ones that are most critical to the needs of the poor and most likely to help spur productive activities. The project has been considering all the main transport modes of the rural poor: rural roads as well as pedestrian paths for the extreme poor and even fluvial transport for the communities living in the Amazonian regions. A "local development window" was also created to help identify productive activities that became feasible, thanks to the improvement of transport conditions.

Building on the ongoing decentralization reforms in Peru, the management of rural roads has been progressively handed over to provincial municipalities, along with the corresponding budgetary resources and technical expertise. In all, 38 provincial road institutes have been created, under the authority of provincial road boards which include all the mayors from the province. These institutes contract out the maintenance of the roads to micro-enterprises, created by men and women from the poorest rural communities. This approach has improved the efficiency of maintenance activities and also contributed to developing entrepreneurial capacity in rural areas, as well as reducing poverty. More than 500 micro-enterprises have been created, representing 5,700 employment opportunities for poor men and women (30 percent of the workers are women).

By 2005, 13,000 km of rural roads have been rehabilitated under the projects and are receiving adequate routine maintenance contracted out to micro-enterprises. The technology used for road rehabilitation (gravel roads) was about a quarter of the cost of other alternatives like paved roads and is now considered by communities as a sustainable and cost-effective alternative.

In 2005, the mid-term evaluation of the Second Rural Road Project highlighted the improvement in transport conditions as well as its impact on access to schools and health centers, agricultural productivity and rural income. A better trend in poverty and extreme poverty indicators was also observed in the project zones, compared to the other areas not covered. This effect on poverty is expected to become stronger over time.

Managing PPI better

Getting the sequencing of reform and PPI right

PPI has often not worked well if it has come too early, before adequate legal and institutional frameworks were in place. There is an inherent difficulty here, in that establishing regulatory credibility takes time, and is not simply a matter of setting up the institutions needed. In Colombia, for example, regulation is not bad but still there are many inefficient water companies, for example. Regulation is too new to be trusted and the track record of independent decisions made by the newly created institutions is meager.

Sector restructuring should advance as far as possible prior to concession awards. This provides an opportunity for overhauling and reorganizing the sector, something which becomes much more difficult once private investors have come in, and property rights been established. Sector laws can be an effective way to establish a coherent overall framework for a particular sector, by establishing a clear distribution of functions and responsibilities.

Painful reforms are best implemented well before privatization. There are many cases in LAC where the tariff hikes and job losses implied by reform and reduced subsidies have come to be associated by the public with the move to private ownership. For private involvement to gain public support it is essential that governments make such changes clearly ahead of the concession, and are careful to manage public relations so as to present PPI as neither responsible for ill effects, without creating false expectations.

*A stronger state role: new forms of Public-Private Partnership*³⁷

In the basic version of public private partnerships (PPP), the government contracts with the private sector to deliver services on its behalf. A private sector firm, selected competitively, is created to deliver these services, which often involves building new infrastructure. The firm has to build, operate, maintain, and finance the asset and provide the service for the long term (often 25-30 years) in exchange for recurrent payments from the public sector. At the end of the contractual period the operation of the asset reverts to the public sector. This arrangement will deliver “value for money” if some stringent institutional conditions prevail. First, a credible fiscal space must exist to ensure that government payments are made on time and in full. Second, the judiciary system and dispute resolution mechanisms in place must be solid to deter opportunistic behavior from the contracting parties once the contest has been awarded.

Fiscal and judicial weakness can undermine this basic model in LAC. The two conditions just laid out are difficult to meet in most Latin American countries. Experience suggests that where the judiciary is weak, strategic investors optimize the combined value of project profits plus the expected value of what could be obtained by beating 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 the region.

To address these problems, a taxonomy of different forms of PPP can be developed and applied on a case-by-case basis. The appropriate model will depend on the fiscal situation of the sector, the degree of contract enforcement and the stand-alone profitability of the project. We can give three examples of PPP forms that may work better than the above-mentioned basic version: (i) profit -sharing may work when the project is highly profitable, but courts cannot be relied upon to protect property rights of private operators (by sharing in the profits, the government has no incentives to expropriate from the investor); (ii) the civil works scheme can be applied when both project profitability and contract enforcement are low, but fiscal space is ample; and (iii) the use of concessions supplemented by exclusive land use rights may fit well for road projects when there is no fiscal space and the project is not profitable, but the courts are credible.

In the case of small countries, regional approaches may help attract higher quality operators as well as reap some economies of scale. C&W is the telephone operator across the West Indies, and although there is not much evidence of economies of scale in telecom, the

³⁷ This section was contributed by Juan Benavides.

regional approach is likely to help the smaller islands get more interest. This approach has not yet been tested in the water sector, but may also be of interest (Jha 2005).

Improving award processes and the design of concessions³⁸

Concessions should be awarded through transparent, competitive processes, with bidding criteria carefully chosen. Direct adjudication and bilateral negotiation to award contracts should be avoided if possible. A single criterion for bidding is usually better, as the use of multiple criteria is less transparent and more susceptible to manipulation, corruption and being contested by losers. Contracts, particularly in the water sector and for toll roads, have most often been awarded either for the lowest proposed tariff or through a points system combining a technical evaluation and the proposed tariff. However, both of these are deficient. Tariffs do not provide a firm basis for a concession because they are usually subject to periodic modification anyway. And technical proposals are unlikely to remain relevant or appropriate of the whole of long concession, and their evaluation is to some degree subjective. It may therefore be preferable to fix tariff levels in advance, along with clear rules on readjustment, and award the concession to the qualified bidder prepared to pay the highest concession payments, or accept the lowest subsidy where the service is loss-making. Pre-qualification processes can be used to eliminate bidders without adequate technical proposals or experience.

Improving concession design will discourage frivolous renegotiation, improve sector performance and identify and allocate risks better. Renegotiation will sometimes be necessary. However, contracts should clearly state the events that would trigger renegotiation, with guidelines about the process and outcomes of renegotiation. Contracts should also specify the events that would lead to tariff adjustments and the extent of the adjustments. The issue of risks is addressed in the next section.

Concession contracts should clearly specify the information to be disclosed periodically. Since the late 1970s, economic theory has been understood by economists as a game between the regulator and the firm in which information – or rather the asymmetry of information between the two sides - plays a key role.³⁹ And while price-cap regulation was initially hailed by many practitioners as a mechanism to free them from the need to rely on detailed information from regulated companies this false perception is rapidly vanishing. The unavoidable need for a reliable information system that allows regulators to fulfill their complex objectives is becoming even clearer (Rodriguez, Schirf, and Groom 2005). Effective regulation requires good, standardized information about the operations of the regulated firm, including on costs, revenues, prices, investments and performance and output indicators. However, contracts have too often been vague about the requirements in this regard, and the data generated has too often been flexibly presented or been of poor quality.

An adequate regulatory accounting system is fundamental, to produce the reliable, standardized and useful information that regulators need to fulfill their duties adequately. Concession contracts should clearly specify the regulatory accounting norms and definitions to be applied. Regulatory accounting should address common questionable practices. These include: excessive management fees (often equivalent to half the firm's net profits), contracting

³⁸ This section draws heavily on Guasch (2004.)

³⁹ For a summary of key theories see Rodriguez, Schirf, Groom (2005).

subsidiaries or related companies to provide services or equipment at above-market prices; inflating investment proceeds; transferring accumulated profits or capital from other areas into the regulated capital base; and valuing privatized assets at replacement cost. However, combating such distortions is extremely difficult, even in OECD countries. Guasch (2004) argues that applying strict regulatory accounting to 1991-1992 reported results would raise the return on capital from 9.7% to 22.5% for UK electricity distributors, and from 0.9% to 18.3% for that countries water service companies.

Managing and allocating risks better⁴⁰

Governments need to focus on improving the risk-return ratio of investment projects to attract private investment, but must be careful with the undertakings they make. For while some guarantees may be needed to attract private investors, governments must be wary both of taking on too much risk and of promising excessive compensation if guarantees are triggered. This requires that contracts need to better identify and allocate the different risks involved. Risk allocation has a major impact on the cost of capital and tariff levels. The two principles guiding risk allocation should be that: (i) the party that is responsible or has more control over the risk factor should bear the risk; and (ii) the party that is more able to bear the risk (less risk-averse) should do so (Guasch 2004).

Project financing generally requires risk protection instruments to make the risk-return ratio attractive to investors in such projects. Project financing structures carry higher risk as lending is provided against the anticipated cash-flows of the project only, with no (or limited) recourse to the project sponsors. And while investors in developing country infrastructure projects have been willing to accept greater risks in order to achieve higher returns, there are some forms of risk that private investors have been reluctant to bear, as they cannot manage them well and significant potential losses may be involved. Table 8 summarizes the main risks present in a typical infrastructure project, and identifies who has usually borne them, and what arrangements or instruments have been used to allocate those risks. However, arrangements have differed between countries and sectors.

Private investors and borrowers are increasingly requiring that regulatory and exchange rate risks, in particular, be transferred to host governments or other third parties. When a government takes on such risks through guarantees or other structures, lenders and investors become exposed to its sovereign risk and the credit rating this implies. This may be unacceptable to international and even local investors, who may be heavily exposed to sovereign risk already, as is the case with many Latin American pension funds and insurance companies as these often invest mostly in government securities. In such situations, guarantees from third parties, including multilateral institutions, are likely to be needed to diversify exposure. This explains why, even in an investment grade country such as Chile, the use of third party guarantees/insurance has been required in most road concessions to cover certain project risks. Such guarantees may also offer the advantage of raising the project's credit rating above the country ceiling.

⁴⁰ This remainder of this section is based on Sirtaine (2005.)

Table 8: Main project risks in emerging market infrastructure

<i>Risk:</i>	<i>Description of risk:</i>	<i>Risk usually borne by:</i>	<i>Instrument to allocate risk:</i>
Construction	Risk of construction cost overrun or delay.	Private sector	Project contract
Operational	Risk of operational cost overrun, substandard operational performance, etc.	Private sector	Project contract
Force majeure	Risk of a natural disaster, etc.	Private sector	Insurance, project contract
Commercial	Risk of insufficient demand, private supplier/purchaser contracts not being honored, etc.	Private sector (sometimes host country partly)	Project contract (sometimes minimum revenue guarantee)
Financial	Risk of interest rate fluctuations, funding risks, etc	Private sector	Project contract, financial structuring
Political	Risk of expropriation, revocation of permits, asset confiscation, currency inconvertibility or non transferability, war, riots, etc.	Host country or third party guarantor	Political risk guarantee or insurance
Regulatory	Risk of changes in laws and regulations, tariff setting rules, taxation, and of public supplier/purchaser contracts not being honored, etc	Host country or third party guarantor	Project contract, partial risk guarantee
Exchange rate	Risk of currency devaluation / depreciation	Host country (sometimes private sector)	Project contract, foreign exchange guarantee, or structured financing.

Source: Sirtaine (2005.)

Enhancing the capacity of regulators and other institutions⁴¹

Stronger regulation can reduce renegotiation and improve sector performance. Where regulatory capacity is weak, highly detailed but more rigid contracts may be appropriate, which require more frequent renegotiation. The absence of an effective regulator may also tempt governments or private operators to behave opportunistically. Effective regulation is critical to good performance wherever industries, whether privately or publicly owned, are monopolistic, and therefore not disciplined by competition.

Reducing regulatory uncertainty can lower concessionaires' cost of capital, which translates into lower required returns on investments. But establishing regulatory credibility takes not just reforms but also time for confidence in new frameworks to be established. But it can bring significant benefits, through allowing lower levels of tariffs or subsidies, as well as higher proceeds to governments from concession awards.

Regulatory frameworks are stronger if they are grounded in laws. There are many examples of governments, particularly incoming administrations, attempting to change existing concessions and regulatory frameworks, often for political rather than technical reasons. Such efforts significantly increase regulatory risk, translating into higher tariffs or lower transfer values. Argentina (water), Bolivia (various sectors), Brazil (water, electricity), Panama (electricity), and Peru (various sectors) are among the countries in which such outcomes have occurred, interfering with budgets, salary scales and the like. However, if regulatory frameworks and agencies are established in laws, rather than decrees, contracts or administrative procedures, they are much more difficult to interfere with.

Regulatory bodies should be independent. To ensure decision-making autonomy from operators, consumer groups and the government, regulatory agencies should have formal

⁴¹ This section and the following one are largely based on Guasch (2004)

detachment from the corresponding ministry, as well as sufficient financial capacity and autonomy. The operating budget should not be assigned as part of the general government budget, but should instead come from a levy on the regulated industry, usually ranging from 0.5 percent to 2 percent of the companies' gross revenues. Terms should not coincide with the election cycle, and regulators should only be removable from office for duly proven neglect, noncompliance, conflicts of interest or immorality.

Accountability is also essential. This requires transparency requirements, open decision-making and publication of decisions and justification for those. Regular public reporting should include information on appeals of regulators' decisions, performance scrutiny by public audit offices, budget scrutiny by the state legislature, and removal from office for misconduct or incapacity. Institutionalizing public hearings and consultation processes will also promote accountability.

Regulatory agencies require competent staffing. Regulatory board members should have appropriate technical expertise, without being engaged in other activities that would represent a conflict of interests. Salaries should be high enough to attract outstanding professionals, even if this means exceeding usual public-sector pay scales.

Small countries can benefit from regional approaches. ECTEL, the Eastern Caribbean Telecommunication authority, is an excellent example of how to promote effective regulation despite limited national capacity (Jha 2005). This model could productively be extended to water and electricity. Within the Caribbean there is ample scope for information sharing and benchmarking across the region's ports, airports and water and electricity utilities. This could be coordinated by the organization of Caribbean Utility Regulators (World Bank 2005b).

There is a need in many countries for capacity-building in ministries and local governments. Ministries need to have the ability to develop sector policy as well as understand, shape and oversee the complex legal, financial and technical aspects of concessions, including risk management. This is especially the case for the regional and municipal authorities that control an increasing share of infrastructure, with advancing decentralization, but which usually have more limited resources and institutional capabilities than national governments. It is also particularly important that competition and antitrust agencies be strengthened in many countries.

The importance of stronger public institutions has increased with the relative growth of concessions and (particularly) PPPs. As well as leaving governments with more residual responsibility, control and influence than asset sales, concessions and PPPs also require a more extensive regulatory role. This is due to the more extensive conditions and obligations involved, which makes the presence of an adequate institutional framework all the more important.

Choosing the right regulatory regime

Past mistakes should inform the design of future concessions. While price caps may have appeared preferable, as they promote efficiency and do not depend so crucially on the quality of accounting and other information provided, they have not been a great success in practice, amid the high-risk, weak-governance environments of many LAC countries. Hybrid – or, in certain cases, rate-of-return - regimes may therefore be preferable, despite the lower efficiency incentives these provide.

Price-cap systems, which create incentives for efficiency in the provision of services, were widely embraced in Latin America. Among more than 1,000 concessions in the LAC region in 1985-2000, 56 percent were regulated under a price cap regime, 20 percent under rate-of-return legislation, and 24 percent under a hybrid system (Guasch 2004). This was in preference to traditional regulation systems, which sought to limit the monopoly profits that firms could make, primarily through rate-of-return regulation. In rate-of-return systems, the regulator sets prices at a level that will cover the firm's operating expenses and capital costs. Besides providing few performance incentives, such systems rely heavily on the quality and accuracy of firms' accounting data, and are susceptible to manipulations of this. Price caps limit the prices that utilities may charge but not their earnings, although the level may be set so as to generate a reasonable return to a model efficient company.

The choice of regime has a significant effect on performance, with price-caps achieving the best results. Estache and Rossi (2004) found that the type of regime under which they operate had a significant impact on the labor productivity of private electricity distributors in Latin America from 1994 to 2001. Those operating under price-cap or hybrid schemes (discussed below) used respectively, about 55% and 25% less labor to produce the same bundle of output, given the capital input, than public firms. Those operating under rate-of-return regulation scored about the same as public firms.

However, price-cap regimes have proved riskier for concessionaires and many have been renegotiated. The higher risk level (because profits are not guaranteed), translates into a higher cost of capital. Frequent renegotiation (discussed above) has undermined these regimes. When renegotiated, such systems have usually been replaced by hybrid arrangements. The newer designs often recognize that some of the cost categories will enjoy automatic or trigger-driven pass-through to users. The specific share of the costs enjoying automatic pass-through (and the degree to which this weakens efficiency incentives) varies across sectors but is largely dominated by activities subject to exchange risks (e.g. imported inputs and foreign debt service) or activities subject to negotiated long-term arrangements (e.g. labor contracts).

Price-caps have not achieved the results expected by users. Efficiency gains have been largely captured by governments or firms, rather than shared with users through lower tariffs. And users have in fact been penalized doubly, relative to rate-of-return regimes, as the higher cost of capital translates into higher tariffs. And renegotiation, as discussed above, has tended to go against consumers, through the lower investment levels and higher tariffs often agreed.

Raising new finance for infrastructure

The scope for further funding through user charge⁴²s

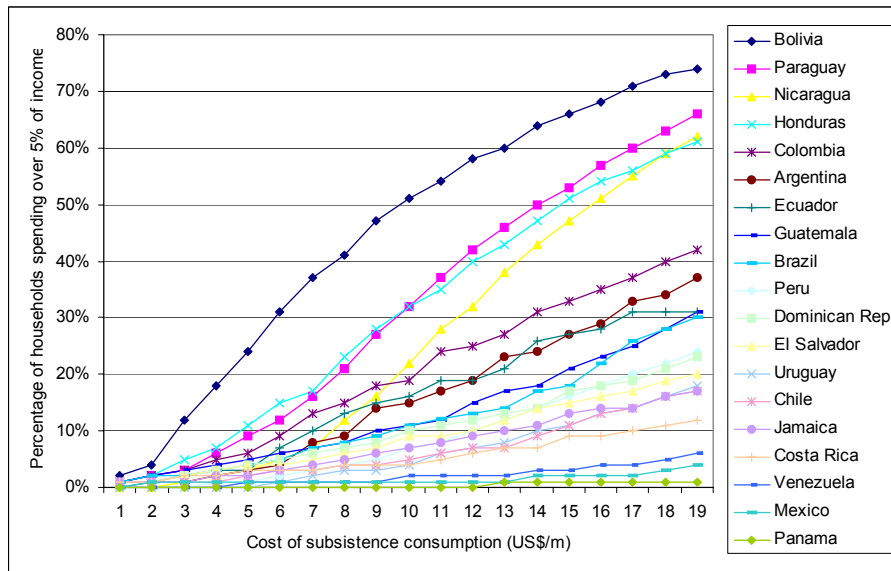
The possibilities for full cost recovery vary across infrastructure sectors and sub sectors. For infrastructure with strong public good characteristics such as rural roads user charges are not a feasible financing mechanism. Only in the telecommunications sector is full cost recovery through user charges not only possible but actually the norm in Latin America. This largely explains why private investment has been easier to attract, and also why governments have sometimes been unwilling to divest "cash cow" companies. For water and electricity, cost

⁴² This section is based on Foster and Yepes (2005)

recovery is technically feasible and economically attractive, but has been difficult, politically and practically, to achieve.

Except in a few countries, affordability does not appear a serious constraint, indicating that there is still room to raise tariffs toward cost recovery levels in LAC. Foster and Yepes (2004) find that only a small segment of the population in Latin America (less than 20 percent) faces genuine affordability problems in paying cost recovery tariffs. The percentage of each country's urban population that would need to spend more than an affordability threshold of 5 percent of income on a utility bill was calculated for different cost levels, on the basis of household income data (Figure 10).⁴³ In low-income countries, such as Bolivia, Honduras and Nicaragua and Paraguay reaching cost recovery tariffs would represent a significant affordability problem, as a utility bill of around \$10 per month is already a substantial burden for 30-50 percent of urban households. But in upper middle income countries such as Mexico and Venezuela less than 10 percent of the population would appear to face genuine problems of affordability at any of the levels considered.

Figure 10: Urban households facing affordability problems by country

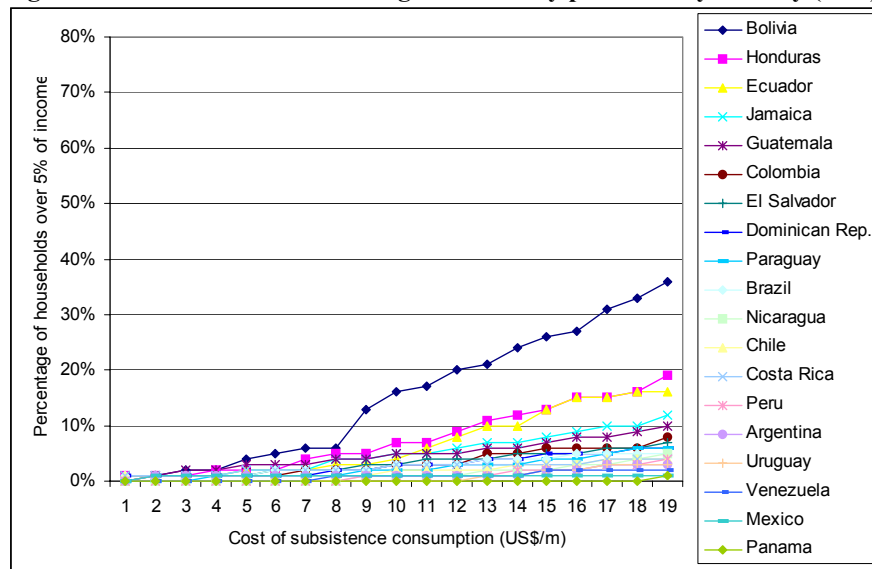


Source: Foster and Yepes (2004)

Affordability is more of a problem when imports weigh heavily in the costs of service provision. In most Latin American countries, the provision of utility services is largely driven by local costs, so it may be more appropriate to consider affordability of subsistence bills in international dollar terms reflecting purchasing power parity, or PPP (Figure 11.) The cost structure of electricity and water services comprises both tradable components, which are better assessed in US dollars, and non-tradable ones. The exact balance between the two is likely to depend on the size and income level of the country. Either way, the majority of households do not face affordability problems.

⁴³ This threshold is often used for water affordability in Latin America, and household survey data suggests that the poorest quintile of households rarely spend more than this level. No comparable benchmark exists for electricity, but household surveys indicate that the bottom quintile rarely spends more than 6-8 percent of income on electricity.

Figure 11: Urban households facing affordability problems by country (PPP)



Source: Foster and Yepes (2005)

In either case, affordability problems in Latin America are much more limited than those in other regions with greater prevalence of poverty. When expressed in current US\$ terms, the affordability problem is much more severe in Asia and Sub-Saharan Africa. Whereas only 10 percent of Latin American households would face affordability problems with utility bills at US\$10 per month, around 35 percent of East Asian households and 55 percent of Indian and African households would face affordability problems at the same reference level. Nevertheless, when the same exercise is repeated in PPP terms, the extent of the affordability problem is reduced and the divergences between regions narrow.

Raising tariffs to cost recovery levels would only have a noticeable effect on poverty incidence in a few countries in the region. By raising the cost of essential services, tariff hikes effectively reduce real income, drawing more people under the poverty line, or exacerbating existing poverty. But further analysis of household income by Foster and Yepes (2004) shows that doubling utility bills from US\$3 to US\$6 or US\$6 to US\$12 – two scenarios that might apply in Latin America - does not have a major impact on the region's poverty indices.⁴⁴ The exceptions are countries such as Bolivia and Guatemala, where the headcount poverty rate could rise two percentage points.

⁴⁴ Poverty gap, headcount ratio or FGT index. The headcount ratio measures the percentage of the population under the poverty line; the poverty gap measures the average percentage deviation of the income (expenditure) of those under the poverty line from the level represented by the poverty line; and the FGT index measures the average squared percentage deviation of the income (expenditure) of those under the poverty line from the level represented by the poverty line.

*Improving risk coverage, to attract back private investors*⁴⁵

To attract both private investors and lenders, changes will be required to traditional project structures and financing, to offer more risk protection where appropriate. Recent crises in emerging markets and the mixed record of infrastructure projects in LAC have made international private investors more risk averse (as discussed above). Such investors typically now apply stricter investment criteria (higher country risk premiums and lower investment concentrations per country), and seek to minimize exposure to currency and government-related risks. They are also increasingly likely to require that government undertakings be backstopped by multilateral agencies or other third parties. The precise risk coverage required to attract institutional investors will depend on each country's circumstances and on each project's characteristics. The higher the political uncertainty, the weaker the regulatory framework, the more volatile the currency, the greater will be the need for political, regulatory and foreign exchange protection respectively. However, governments should be wary of covering risks that are not under their control.

The best way to tackle the problem of currency risk is to draw funding from local sources. Revenues from infrastructure projects are typically in local currency, while private financing must often be serviced in dollars or other foreign currency, a mismatch that represents a significant source of risk. The obvious solution to this is to develop local markets and debt instruments, to generate more sources of funding. (This issue is considered in more depth in the following section.) This process is advancing well in the region, but local funding capacity continues to be limited in the meantime, especially in relation to the enormous financing needs of large infrastructure projects. To address the continuing issue of currency risk on infrastructure investments, multilateral institutions can offer various instruments.

Some local currency funding may be available through IFIs. The IFC offers local currency loans and hedging products to private sponsors investing in developing markets, while the IBRD can offer local currency loans in a number of developing country currencies to governments for investments through public-private partnerships. The IADB is also offering local currency loans to governments in the region, notably Mexico (2004) and Colombia (2005.) However, local currency financing by IFIs is largely dependent on the existence of fairly well established currency swap markets. And the paradox here is that where those exist, such as in Mexico, Brazil and Chile, there is likely to be less need for IFI interventions.

Financing structures can also protect against foreign exchange risks, but effective instruments are still not readily available in LAC. Where local financing capacity is insufficient – where markets are too small or underdeveloped, as in Bolivia, Paraguay or Uruguay, or where the project is particularly large, such as Peru's Camisea – instruments can be used to mitigate foreign exchange risk for private sector players (financiers and sponsors). However, few instruments of this kind are in use, and development banks could do more to develop these instruments. One interesting example is the Liquidity Facility developed by OPIC in 2001 to protect bondholders against foreign exchange risks in an energy distribution project in Brazil (Box 9). The structure, which has not been used again, still has some flaws: in particular, it may not work in cases of extreme foreign exchange shocks. Providing liquidity to the project company would still be of great relief as it would allow operations to continue, although if tariffs are not ultimately adjusted to the new exchange rate, the project company will still not be in a

⁴⁵ This section draws from Sirtaine (2005), with input from Ellis Juan and Jamal Saghir

position to repay its loans. Overall however, it appears as if this liquidity facility may have been a one-off exercise.

Despite their shortcomings, financing structures of this type potentially offer substantial benefits: i) the credit profile of the project company is improved through a significant reduction in the risk of default or renegotiation of the project contract; (ii) the project rating is not constrained by the sovereign ceiling, which may allow the project longer tenor financing at cheaper cost; (iii) linking the project's output prices to the local inflation rate rather than the US dollar exchange rate avoids price shocks for consumers of the basic services provided by infrastructure projects and enhances long-term sector stability; (iv) the financial situation and local currency rating of the output purchaser(s) is not burdened with contractual commitments to purchase the project's output at prices indexed to the dollar; and (v) the cost of the foreign exchange facility is much less than that of a currency swap (in the rare instances in which such swaps are available for a sufficiently long tenor).

Box 9: OPIC's Liquidity Facility to protect bonds in the AES Tiête project, Brazil, from foreign exchange risk

OPIC's Liquidity Facility, developed in 2001, works as a guarantee against foreign exchange risks. It is based on a revolving credit line that becomes available to the project company if a depreciation of the Brazilian Real makes the issuer unable to meet its debt service obligations. A US\$30 million foreign exchange liquidity facility supports a US\$300 million financing.

The coverage in effect establishes a floor in US dollar terms for the company's revenues (earned in local currency). Claims are to be paid when the borrower's revenues are below the floor value, at which point level they would be insufficient to permit payment of scheduled debt service. Coverage is structured to isolate currency risks from operational risks.

The claim is met in the form of a loan subordinated only to the project's senior lenders, with an interest rate that reflects the subordinated nature of the claim. Senior lenders remain exposed to all operational risks. (A pro-forma calculation is performed to determine the extent to which the revenue shortfall is due to currency movements, which give rise to a claim under the devaluation coverage, as opposed to negative operational results, which do not.)

The structure was very well received by rating agencies and institutional investors. AES Tiête became the first electric power project to achieve an investment grade rating in a sub-investment grade country, its bond issue was successfully placed at the longest tenor ever achieved by a Brazilian corporate issuer, and priced to yield 237bps less than Brazilian sovereign debt. That it received a better rating and was placed at a lower yield than sovereign instruments illustrates that the bond was perceived as less risky than other investments in the country, a signal that credit analysts believed that the project had indeed been largely insulated from Brazil's macroeconomic risk.

Source: Sirtaine (2005)

Partial Risk Guarantees (PRGs) from multilateral institutions can protect lenders or bond holders against other perceived risks, providing the credit enhancement that project companies require to raise adequate financing. One such guarantee is the PRG provided by the IFC for a 2003 bond issue by Colombia's Sociedad Acueducto, Alcantarillado y Aseo de Barranquilla (Box 10). Partial Credit Guarantees (PCGs) have also been used extensively by the IFC and IADB to support issuance of long-term local currency bonds in LAC. The credit enhancement provided by such guarantees significantly reduces the cost of debt issued to finance infrastructure projects in LAC, as well as allowing longer tenors, through providing higher credit ratings. And such ratings can open up local capital markets, and a broader range of financial investors, to infrastructure project companies.

Governments can facilitate the access of private infrastructure investors to PRGs by establishing wholesaling facilities for these instruments. A pioneering example of such a mechanism is the Partial Risk Guarantee Facility (PRGF) established in Peru in April 2005 to issue World Bank PRGs in support of Peru's large infrastructure concession program. It aims to maximize the attractiveness of Peru's future infrastructure projects to private investors by protecting private project debt (both bonds and loans) from political and regulatory risk and backstopping government obligations under these PPPs, thus reducing the public contribution required for such projects. World Bank PRGs issued through the facility are set to make financing for infrastructure companies cheaper, longer term, and broader based (in terms of its source.) By encouraging bond issuance and expanding the range of highly rated investment available to institutional investors, the PRGF should also contribute to the development of the local capital market.

Box 10: IFC partial risk guarantee for bond issue by Triple A, Colombia

In 1993, the Sociedad Acueducto, Alcantarillado y Aseo de Barranquilla (Triple A) was awarded a 20-year concession, later extended to 2033, to provide water, sewerage, and solid waste services to the city of Barranquilla, the fourth largest city in Colombia. This concession required the company to extend water and sewerage services in the southwest of the city, which connected 350,000 low-income inhabitants to the network. These investments, through the Suroccidente project, were first financed through short-term and foreign currency debt, which created serious mismatches of maturity and currency on the project company's balance sheet.

In 2003, Triple A wanted to strengthen and stabilize its financial position, so it sought credit enhancement by the IFC to improve the credit rating of a proposed bond issue and allow a bond maturity of up to ten years in the local capital market. The enhancement was in the form of a PRG up to a maximum of 25 percent of the principal amount of the bond issue of US\$63mn equivalent. The bonds were rated AAA on the national rating scale by both Duff and Phelps of Colombia and BRC Investor Services, a three-notch increase over the company's corporate rating. The issue was fully subscribed by over fifteen domestic institutional investors. It was the first bond issue by a Colombian corporate rated below double-A and clearly contributed to the development of the domestic capital market in Colombia.

Drawing more from local capital markets

Most private investment in infrastructure in LAC has come from abroad. In seeking private participation, governments in LAC have focused on attracting foreign investment, largely because underdeveloped domestic capital markets have been unable to generate the significant amounts of long-term capital that major infrastructure projects have required. However, as international investors continue to be reluctant to enter or extend their involvement in Latin America's infrastructure, governments need to tap other financing sources. This is particularly true for smaller-scale projects – including many administered by island states or local authorities in larger countries - that are rarely of interest to international companies. As discussed above, local financing may also be preferable to international investment as it sidesteps the currency risk that can add significantly to the cost of capital of infrastructure projects in LAC by matching the currency of assets (revenue generation) with liabilities.

Local capital markets can potentially provide much more funding, particularly through channeling pension fund resources. Local capital markets remain small in most countries of the region, while savings rates in Latin America have traditionally been low, especially compared

with Asian competitors. But the recent growth across the region of private pension funds - as well as insurance companies, investment funds and other institutional investors - has created a pool of resources that infrastructure projects could tap more. Many institutional investors in LAC have high liquidity levels, and large holdings of government debt and foreign securities, reflecting in part the dearth of attractive local investment alternatives. Domestic institutional investors are often seeking to diversify their portfolios away from sovereign exposure, but have low-risk investment profiles. Infrastructure projects can appeal to them provided the risks are well mitigated, for example through the multilateral guarantees facilities discussed above, and exposures to the government are transferred to third parties. If they can broaden the range of attractive domestic investment options, infrastructure projects offer a way for countries to reduce foreign savings (capital flight), a serious issue in LAC.

Greater efforts are needed to develop the instruments and markets needed to channel local savings into infrastructure investments. Infrastructure bonds should be developed that ideally have long tenors, are denominated in local currency, carry a fixed coupon rate and have limited recourse to sponsors. Instruments such as guarantee facilities, as discussed above, can make local bonds more marketable, as discussed above. Developing foreign exchange derivatives (swaps and forward-related products) will also facilitate funding from abroad.

Bond issues, particularly domestic ones, have played a minor but increasing role in project financing in LAC. Most project finance debt has traditionally come from syndicated bank loans, despite some advantages of debt sales through the capital markets. The total value of infrastructure bond issuance in emerging markets averaged just US\$5 billion a year between 1996 and 2001, or just 6 percent of total infrastructure issuance. However, the value of these emerging markets issues grew at a compounded annual growth rate (CAGR) of 38 percent during the period, against 45 percent for developed markets. Of the 45 new issuers among emerging market infrastructure companies in the period, only 13 were from Latin America.

Chile has been the exception to this, as infrastructure concessions have tapped local debt markets for much of their financing. From 1996 to 2003, infrastructure bonds issued in Chile averaged about US\$1 billion a year, more than half the country's total issuance. However, most of the bonds were issued by established energy corporations, with very few from project companies. When Chilean project companies have attracted significant capital market participation, they have generally benefited from a government minimum revenue guarantee and in some cases a foreign exchange guarantee. In addition, political and regulatory risks had been insured in nearly all cases by a multilateral institution (such as the IDB) or private insurers (such as MBIA). Many of the resources mobilized have come from local pension funds, as discussed in Box 11.

Box 11: Tapping pension funds through bond sales, to finance infrastructure in Chile

To increase investment in infrastructure in the early 1990s, Chile's government introduced a concession program to attract private capital into the transport sector, for roads and highways, bridges, tunnels, and airports. The program has managed to attract over US\$3.6 billion of private investment into infrastructure.

Chile became the first Latin American country to allow pension funds to invest in infrastructure projects. In 1981, Chile had replaced its bankrupt pay-as-you-go retirement system with a fully funded system of individual retirement accounts managed by the private sector. By 2001, more than 95 percent of Chilean workers had joined the system; the pension funds have accumulated \$36 billion in assets; and the average real rate of return has been 10.9 percent per year.⁴⁶ Initially, pension funds were legally constrained from investing infrastructure projects. The lack of investment grade bonds or other financial instruments issued by concession companies was also an obstacle.

In order to facilitate investments from pension funds and insurance companies legal changes to financial and infrastructure regulations were introduced between 1995 and 1996. These reforms, among other things, opened the door for pension funds and insurance companies to invest in bonds without history. As a result of these reforms, a new long-term financial instrument, the Infrastructure Bond, was created. The typical infrastructure bond offering is a 20-year fixed rate bond denominated in Unidades de Fomentos (UFs) – an inflation-adjusted unit of account used in Chile with a AAA local rating and a monoline guarantee. The bonds are sold exclusively to local private investors, including local pension funds and have been oversubscribed in each instance. Of the 16 toll road concessions awarded, 11 have opted to fund through infrastructure bonds, 3 have financed through bank loans and 2 concessions have not yet decided their financing structure.

The development of the infrastructure bond market was assisted by Chile's 1995 achievement of an "A-" credit rating, which created an opportunity for monoline insurance of bond issuances. In November 1998, the consortium handling the upgrade of the Talca-Chillan stretch of the nation's main thoroughfare, Route 5, issued the first US\$150 million in infrastructure bonds. By mid-2002, a total of US\$963 million of infrastructure bonds had been issued in five offerings. The concession program is now being expanded to fund private investment in jails and urban infrastructure.⁴⁷

Source: Jha (2004)

The case for more public investment in infrastructure

Resource needs are significant although they vary according to the goal set. As discussed earlier, for Latin America to reach the infrastructure per capita level of Korea would require investing 4% to 6% of GDP per year over 20 years. About 2% of GDP should suffice for the more modest goal of responding to expected growth in demand from firms and individuals and achieving universal service for water, sanitation and electricity over 10 years. These are lower bound estimates of expenditure needs, however, as they don't include maintenance (which would require an additional 1% of GDP), rehabilitation (which is likely to be substantial but for which we don't have detailed information) or urban transport, ports and airports. Appendix II discusses expenditure needs in more detail.

⁴⁶ For more statistical information on the Chilean system, see the official website of the Superintendencia de AFPs, the Chilean government regulator of the private pension system, at <http://www.safp.cl>.

⁴⁷ <http://www.iadb.org/exr/bs/0603/JDominguez.ppt>

Even if user charges are increased and the private sector brought back in, public investment will still be needed in infrastructure. As discussed above there are limits to user charges, especially in water, most roads and to a lesser extent power. As such, even if the private sector is involved directly or through public-private partnerships, public funding of these sectors will still be needed. Lastly, even in 1998, the peak of private investments in infrastructure, the total value of projects involving private participation (including public commitments) amounted to only about 1.7% of GDP. And in 2003 it was about 0.9% of GDP.

A critical issue is how to generate the fiscal space for such investment. A number of Latin American countries are saddled with serious debt burdens, and those that are not are wary of adopting expansionary policies for fear of a return to fiscal and financial instability. In addition, many countries suffer from great expenditure rigidities leaving very little room to cope with cyclical shocks or to expand investment. In Brazil, for example, over 90 percent of total federal spending is non-discretionary (including wages, transfers to regional governments, interest payments, pensions, and spending on other entitlement social programs.) Rigidities are also high at the sub-national level.

Slashing investment is not an efficient way of controlling expenditures, although it is politically easier. Cuts in investment have long term growth impacts and therefore affect long term solvency as governments' future fiscal revenues are reduced. It is therefore not appropriate to apply the same debt rule to productive and unproductive expenditures (Servén 2005). Of course, not all investments are productive (and not all current expenditures are unproductive) but fiscal rules that apply the same principles to investments and other expenditures will only reinforce the natural bias to cut investments over more politically sensitive expenditures (such as pensions and salaries).

Proposals for increasing fiscal space include the use of alternative rules, an option that has not been endorsed by the IMF. Alternative fiscal rules include the “golden rule” which is used in the UK and which states that over the economic cycle, the government is to borrow only to finance capital and not current expenditures. Another example, used in New Zealand, is “net present value of wealth” accounting which looks at the solvency of the overall public sector. Neither is a panacea however: the first can encourage creative accounting; and the other is complex in its application.⁴⁸ More critically, the IMF, in its board paper on the topic, has categorically rejected the use of these alternative rules.

Other options include allowing exceptions for particular investments, but these are unlikely to be significant. The IMF had suggested looking at various options. One possibility was to exclude commercially run public enterprises from fiscal accounts so as to free them from borrowing ceilings. However, it was found that this would actually reduce fiscal space given that profitable public enterprises are typically used as fiscal cash cows. Another option was to improve the treatment of PPPs to include or exclude them from public accounts as appropriate. Closer analysis showed that better accounting for PPPs would in fact result in reduced fiscal space as more (rather than less) contingent liabilities would be uncovered. A final idea was to make an exception, when calculating fiscal ceilings, for projects financed by multilateral institutions, with the argument that these are more likely to lead to productive investments. While the argument may have merit, total multilateral flows to LAC are less than 1% of GDP and the majority are for non-infrastructure spending, so they are unlikely to solve the problem of fiscal space.

⁴⁸ We are grateful to Luis Servén for his insights on this topic.

The debate continues, as governments in the region need to increase investments. In the longer term, some countries (for example in Central America) with low tax-to-GDP ratios may have the option of raising revenues, but others need to address the issue of expenditure rigidity. In the case of Brazil, where taxes are now a whopping 35% of GDP, an analysis of alternative fiscal rules for infrastructure financing finds that increasing taxes would offset the growth and welfare benefits of increased infrastructure investments. The growth and welfare enhancing scenario is clearly that of a reallocation of consumption expenditures in favor of investments (Ferreira and Nascimento 2005) In addition, the IMF and other institutions are placing more emphasis on the quality of fiscal adjustment. In the shorter term, improvement in the efficiency of public investments may yield some space. Fundamentally, however, governments are left with the need to make politically difficult decisions about the allocation of expenditures.

Improving local governments’ access to funding⁴⁹

Local governments’ access to private capital depends critically on their credit-worthiness. No amount of credit enhancement or financial engineering can substitute for a sound legal, institutional and regulatory intergovernmental fiscal framework. Factors that often reduce the creditworthiness of local bodies include an inadequate accounting and risk management framework for asset-liability management, lack of autonomous authority to set realistic tax-rates and tariffs or user charges for the basic services they provide and inflexibility in wage structures and hiring-firing policies. Box 12 below provides Fitch Ratings best and worst practices with rating value in terms of the financial management of sub-sovereign bodies. This provides a useful checklist of financial management reforms that local governments can pursue.

Box 12: Best and worst practices with significant rating value for Fitch

Best practices	Worst practices
Cash reserve policy /working capital reserves /budgetary cushions.	Cash basis accounting.
Multiyear financial forecasting.	Qualified audit opinion for material weakness.
Monthly or quarterly financial reporting and monitoring.	Deficit financing for two of last five years.
Contingency planning policies.	Debt retirement speed.
Policies regarding nonrecurring revenue.	Unfunded accrued pension liability.
Depreciation of fixed assets.	Short-term borrowing growing significantly faster than annual spending
Debt affordability reviews and policies.	Debt reprogramming that defers a small share of current debt service.
Pay-as-you go capital finding policies.	Over reliance on nonrecurring revenue.
Debt retirement speed.	Aggressive investment policy for operating funds.
Five-year capital improvement plan integrating operating costs.	Pension contribution deferral in the current budget year.
	Budgetary impasse beyond legal completion date.
	Lack of capital improvement plan.
	Excess borrowing from related entitles, with no capacity to repay in near future.

Source: Fitch Ratings

A major impediment to the development of sub-national credit markets is the moral hazard of a federal government bailout. But implementing a credible no-bail-out policy is easier said than done. Inman (2003) points out that it took about 70 years - and the refusal to bail out eight

⁴⁹ This section is based on a contribution from Abhas Jha with additional inputs from Sirtaine (2005).

defaulting states and the Territory of Florida in the 1840s - for the principle of hard budget constraints for US states and local governments to be generally accepted. Mexico and South Africa have both formulated rules whereby the federal government does not guarantee sub-sovereign debt. In the case of Mexico, the capital risk weighting of bank loans to local governments is linked to local credit ratings. South Africa has established a Municipal Financial Emergency Authority for technical assistance, resources and legal remedies to local governments in distress (Weist 2002). A related legal issue is the need for orderly bankruptcy/ work-out procedures as well as a time-bound procedure for foreclosure. In 1995, Hungary introduced a US style Chapter-11 type bankruptcy procedure to regulate debt clearance procedures in case of default by local governments. Since the law was introduced, eight small cities went through the procedure, and are now in stable financial condition (Noel 2000).

Local and regional governments face additional obstacles when trying to access capital market financing. Weaknesses in the fiscal decentralization framework often limits local government autonomy, imposing large shares of mandated expenditures and limiting freedom to set their own tax rates. Deficiencies in the legal and regulatory framework for sub-national bond issues, such as differential regulatory and tax treatment of sub-national bank lending compared to bond issues, may lead to regulatory arbitrage and distortions in market competition. Similarly, an uneven playing field in sub-national finances may be created by the existence of state managed (and usually subsidized) credit lines and can hamper the emergence of a private sub-national bond market. Finally, most countries in the region have insufficient sub-national bond enhancement instruments.

Structural reforms are needed but, in the meantime, several mechanisms can facilitate access to infrastructure bond markets and other funding for local governments' infrastructure investments. Long-term efforts to ensure sub-national entities have greater access to financial markets require capacity building, governance advisory, regulatory and legal reforms. But, to assist funding in current conditions, multilateral institutions, such as the IBRD, have various instruments allowing countries to borrow, for on-lending to sub-national infrastructure projects for instance, in local currencies. These include: currency conversion options in fixed spread loans, currency swaps and rolling forward. Other instruments, such as the World Bank's municipal fund that provides financing and credit enhancement to sub-national public sector entities, can open up financing alternatives for local infrastructure, even without sovereign support. Its objective is to act as a catalyst to enhance capacity and creditworthiness without central government guarantees.

Pooling credit risk of small and medium local governments offers great potential for enhanced access to infrastructure finance. A common method of credit risk pooling is to set up bond bank that sells its own securities and on-lends the proceeds to local governments. A common feature of all bond banks is that they rely on their member municipal governments to repay their issued debt but also provide a number of credit enhancements to lower the overall cost of borrowing. In Denmark (KommuneKredit) and Sweden (Kommuninvest i Sverige Aktiebolag), the bond bank debt is secured by the obligation of member municipalities to pay the debt, in case an individual member defaults. Japan's Finance Corporation for Municipal Enterprises, Norway's Norges Kommunalbank, and Finland's Municipality Finance Plc are other examples of such pooling mechanisms (Moody's 2001).

Policy-makers can do much to strengthen municipal primary and secondary bond markets. Close to 50% of total US municipal bond issues (75% of BBB, A, or better) are covered by bond insurance (El Daher 1997). Policy makers could consider setting up a bond insurance facility (either in the private or public sector) to facilitate small issuers, considered less creditworthy, to

access the domestic markets for high investment grade debt. Leigland (1997) lists several measures to promote the secondary market in sub-sovereign debt. Among direct measures, countries are exploring ways to facilitate the listing of bonds on domestic stock exchanges and to encourage the development of pre-indication posting or other municipal finance information systems similar to those used in the US to support placement and sales function (e.g. Blue List and Munifax). Amongst indirect measures, removing minimum holding requirements by institutional investors for government securities, including municipal bonds eliminates the bias toward private placement inherent in the system and increases the incentive of institutional investors for trading. Municipal assets are an often underused and overlooked source for enhancement of municipal bonds. Municipalities in China and Poland have used public land as collateral for raising money and then successfully disposing of the assets at higher prices on completion of the project.

The experience with Municipal Development Funds has been mixed. More than 60 countries have set up specialized financial intermediaries or municipal development funds for raising capital to on-lend to sub-national governments. However, very few MDFs have evolved into market-oriented suppliers of credit capable of mobilizing private sector savings (Peterson 1996). Some common features of many successful MDFs (e.g. MUFIS in the Czech Republic and FINDETER in Colombia) include the transfer of credit risk to the private sector, “unbundling” functions like payment collections and credit analysis to specialized private sector firms, separating subsidies from lending and providing technical assistance and capacity building for project preparation. A successful – if unconventional -example of a fund that focuses on capacity building in municipalities is Paracidade in Brazil (Box 13).

Box 13: Paranacidade: Linking municipal finance to capacity building

The state of Parana in the south of Brazil is one of the fastest urbanizing states with 78% of its 9 million people living in 399 municipalities. The municipalities are grouped into 18 regional municipal associations, which are autonomous juridical entities, each electing a regional mayor from amongst the mayors of the member municipalities. Despite such rapid urban growth the state has successfully managed the process of urban development through an innovative institutional structure for managing the process of urban growth called Paranacidade.

Paranacidade was set up in 1996 as a “non-profit corporate legal entity of public interest, classified as Autonomous Social Service,” which operates under contract to the state to provide “institutional and technical services to municipalities in Paraná and to collect and invest financial resources in the state urban and regional development process.” It operates in a highly decentralized manner with one central office and five regional offices with a very small and highly qualified staff of about 100.

Paranacidade manages the Fundo Estadual de Desenvolvimento Urbano-State Urban Development Fund (FDU). The FDU makes loans to municipalities with tenors ranging from 8 years for urban infrastructure to 10 years for social infrastructure. It charges a lower than market rate including a 3.5 percent spread over its inflation adjusted cost of borrowing and in the process absorbs the foreign exchange risk. The Fund is made up of the repayment by the municipalities of the first two World Bank projects, Pram and PEDU. In 1988, the state government decided to repay the World Bank out of its own funds and use the repayments coming from the municipalities to set up the Fund. The assets of the Fund today are US\$330 million dollars. The delinquency rate is zero because of stringent debt absorptive capacity criteria for municipalities that are set by the Federal government and also because the state value added tax is intercepted as a guarantee for the loans. Value added tax transfers to the municipalities are escrowed and the bank automatically repays the Fund.

One of the key factors behind the success of Paranacidade has been its support for capacity building for municipalities. It has helped the municipal associations to evolve from political organizations to providers of key technical inputs to municipalities. The associations were outfitted with a small body of technical staff to provide support to municipalities unable to hire specialized personnel on account of their size, or because of scant resources. The urban program further extended these new functions of the associations enabling them to analyze projects valued up to \$200,000, monitor the bidding process, and follow up on works. The association receives a fee for these services. To strengthen the municipalities a broad range of projects have been developed including: tax codes, cadastres, land use plan reviews, hardware and software purchases and cartographic databases. Paranacidade also provides various municipal training programs. The associations’ technical staff was trained in project analysis, bidding process, works supervision, borrowing capacity determination, and tax system. The municipalities that already received the cartographic databases were trained in how to use them. Paranacidade has also set up an independent technical audit unit to verify the quality of the works and the accuracy of the measurements and to develop a follow up and monitoring program (SAM) to handle a copious amount of data. All of the associations are now online and connected to the system, and they are transferring information to the database. This makes it possible to track in real time the status of any work, service, or good acquired under the urban program.

Source: Dunin (2000)

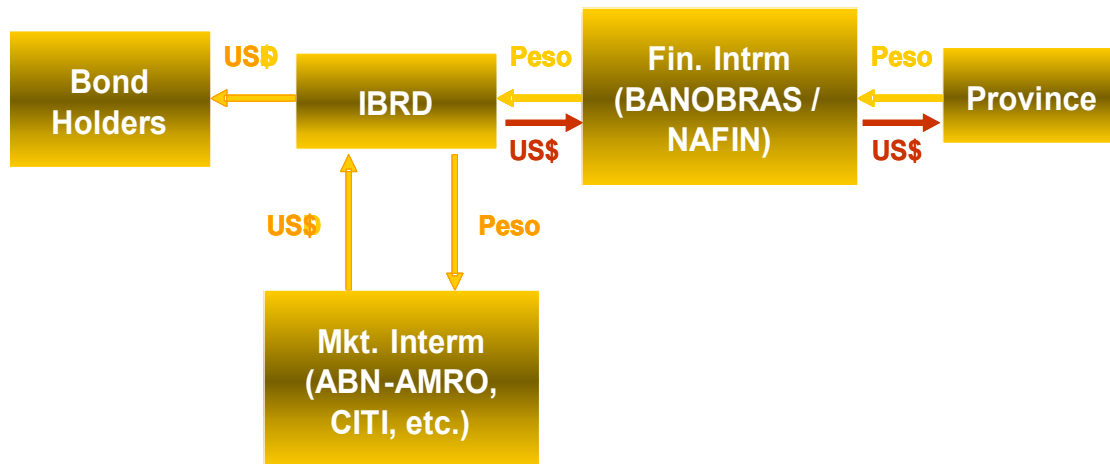
Increased local currency financing and better mitigation of foreign exchange risk will be important for enhanced access to capital for sub-nationals. Sub-nationals often lack capacity to manage and mitigate foreign exchange risk. The macroeconomic fragility and external debt overhang of the 1990s has left federal ministries of finance wary of taking on any additional foreign currency denominated debt even more so the contingent claims of sub-national government debt. However local currency debt in Latin America is characterized by short tenors, volatile interest rates and an absence of deep and liquid secondary markets.

Box 14: Local currency financing for Mexico sub-national infrastructure needs

Mexico's Decentralized Infrastructure Reform and Development Project established a facility with IBRD financing of USD 108 million to finance local governments' infrastructure investments in local currency, while passing on the foreign exchange risk to private banks. The facility resembles a line of credit in dollars, to be drawn down, serviced and repaid in pesos. The transaction has a maturity of 18 years, with a three-year grace period, and was structured as follows (and as illustrated in the diagram below):

1. IBRD lends money to two local intermediary banks (Mexico's law requires states to borrow in local currency only and directly from local entities), Banobras and Nafin, for on-lending to states;
2. When the Mexican government submits a request to withdraw funds from the loan (for on-lending to a province), the World Bank Treasury executes, with a market counterparty, an amortizing US dollar (USD) - Mexican Peso (MXP) swap for the same maturity as the loan;
3. The Mexican pesos are then disbursed to Mexico, who then services and repays the amount withdrawn in Pesos;

The pricing charged to Mexico depends on the pricing that IBRD gets from the market at the time each swap transaction takes place; the currency risk is taken by private market players. The funds can be used by creditworthy local governments to finance financially viable projects.



Source: Sirtaine (2005)

Recent developments have improved the outlook for access to finance by sub-national governments. The maturing of the domestic pension fund industry and other institutional investors has created a sophisticated investor class looking for local currency debt instruments all along the yield curve. Sub-nationals offer such investors an opportunity to diversify their portfolio. Countries like Mexico have taken tangible steps to improve their legal and regulatory framework for securitization which mitigates interest rate and credit risk-thus opening up demand from investors previously not interested in simple debt offerings from sub-nationals. Credit enhancements by international financial institutions, such as local currency partial credit guarantees, will further deepen local currency debt markets. Box 14 presents an innovative structure employed in Mexico, to finance local governments infrastructure needs in local currency, while passing on the foreign exchange risk to banks.