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Latin American Transport Sector Reforms: Experiences and Lessons¹

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Latin American Transport Sector Reforms

We now have over a decade of experience with regard to alternative approaches to private participation in transport operations and infrastructure in Latin America. At the beginning of the 1990s, virtually all of the region's railways were under public ownership and control. Ten years later, there were only a few, small publicly operated railways. Seaports generally have been concessioned under alternative models. Most airlines have been privatized and airport concessions of varying types have been put in place throughout the region. Toll roads have been developed or extended with varying degrees of success.

Policy initiatives to mobilize private financing and participation of the private sector have been achieved with considerable success. Between 1990-1999, cumulative long-term international private capital flows to developing countries (excluding foreign direct investment) amounted to over USD 150 billion. Latin America attracted the largest share of any region, about USD60 billion. In addition, Latin America and the Caribbean undertook about USD220 billion of private infrastructure projects/concessions/investments, of which about USD130 billion - USD140 billion involved divestitures of former public infrastructure.

The record of the past decade has shown that is possible, even during recurrent emerging market crises, to mobilize private finance. But the larger question remains as to whether this mobilization was accomplished "on whatever terms necessary", resulting in an uneven distribution of benefits and ambiguous results with respect to social welfare.² Moreover, the project financing instruments used also have the incentive to promote integrated, monopolistic market structures either to maximize proceeds to the government or to increase the rate of return to the concessionaire.

This paper reviews the region's transport experience, emphasizing lessons learned and their implications for the next generation of transport projects. Section I describes the background and motivations that helped produce reform efforts. Section II describes principal results for each mode. Section III describes different organizational forms used to structure private participation, emphasizing the development of concessions. Section IV discusses concessions and regulatory risk. Section V analyzes the determinants of transport concession performance. Section VI describes concession renegotiations. Section VII draws lessons from this experience for the next generation of transport projects in Latin America.

I. Motivation for Reform: Why Did It Happen?

Much reform occurred because there was no other choice. As Lou Thompson has written about railways, "It would be satisfying to report that logic and reason prevailed - that the Governments involved looked carefully at their railways, realized that they were falling into irrelevance and disrepair, and decided to fix the problem using carefully designed

² One example is Mexico's toll road program, that ended costing the taxpayers over US\$10 billion, with the state assuming control of most of the newly built motorways, along with significant liabilities.

strategies taking effect over a number of years. But what appears to have happened is that a series of economic crises in the 1980s removed the ability of most Governments to fund their railway losses (which in some cases involved hundreds of millions of US dollars annually, and upwards of 0.8% of GDP)."³

Other modes of transport faced similar situations. State-owned airlines lost huge amounts of money, while airports and seaports required substantial ongoing subsidies for operating expenses, especially labor. These operating needs severely limited the Government's ability to fund urgently needed investments for capital-starved public enterprises, inevitably resulting in poor service and inefficiency that had consequences for competitiveness, economic development, and equity (since the poorest groups often suffered the worst services). Competing needs for investment in the social sectors—education, health, social assistance—made the opportunity costs of public investment in infrastructure very large. Also, the understanding, in this era of globalization, of the significant impact of infrastructure-transport in particular—on economic growth and poverty, increased the urgency of finding a solution to the steady deterioration of the infrastructure stock and quality of service⁴. In short, deficient sector performance and the need for investment forced consideration of alternatives to the traditional model of public provision of infrastructure services.

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

An expanded private sector role in transport was very much part of a general trend toward increasing the role of the private sector in the delivery of all types of services. This led to a shifting of the burden of proof prevailing at the beginning of the 1990s where advocates of change bore the burden, to a point later in the decade in which those advocating the status quo bore the burden: from "Why?" to "Why Not?"⁵

II. Sectoral Lessons

This section provides some general comments on the experience of private participation in transport infrastructure in each mode. This subject is covered in much detail

³ L. Thompson, "Private Investment in Railways: Experience from South and North America, Africa, and New Zealand," mimeo, World Bank, September 2001.

⁴ See C. Calderon and L. Servén, "The Output Cost of Latin America Infrastructure Gap", mimeo, World Bank (2002), and D. Canning, "Infrastructure Contribution to Aggregate Output", Policy Research Paper 2246, World Bank, (1999), for an evaluation of the significant impact of infrastructure on economic growth.

⁵ L. Thompson, "Private Investment in Railways: Experience from South and North America, Africa, and New Zealand," mimeo, World Bank, September 2001, pp. 1-2.

elsewhere, and is presented here as background to later sections on determinants of sector and concession performance.⁶

Roads

1. Latin American toll road initiatives have been targeted where traffic is greatest - in major metropolitan areas and along key intercity corridors. This private investment has produced some successes but many failures. After more than a decade of concerted effort, experience has not matched expectations. Many plans remain on the drawing board years later.

2. Three key problems are apparent. First, governments have not defined their policy, especially with respect to network planning. Concessions have too often had an ad hoc character, leaving bottlenecks or uncompleted complementary facilities. Second, excessively optimistic traffic forecasts, led to the expectation that toll roads in the more dense corridors to be profitable without government support, but that has not proven to be the case. Third, introduction and adjustment of tariffs has very difficult politically.

3. The introduction of private construction, maintenance, and management of roads has produced better results where there was adequate competition for these contracts and good regulatory oversight. Management contracts, Rehabilitate-Operate-Transfer (ROT) concessions, and operating contracts have proven more successful than BOT structures.

Ports

1. There has been a great deal of success here, in part because ports, compared with other transport infrastructure, generally have had more of a history of private sector participation. However, port efficiency in Latin America and Caribbean remain deficient.⁷

2. The “landlord model” has come to be considered the best structure for promoting private sector participation in ports. Under this approach, the state (or a designated master concessionaire) subcontracts various port activities, such as crane operation, stevedoring, dredging, etc. This approach has been most attractive because of its ability to incorporate different types of private participation. Associated leasing contracts can be

⁶ For accessible but still more detailed discussions of transport operations and infrastructure by mode, see M. Kerf et al., *Concessions for Infrastructure*, (Washington: Joint publication of World Bank and Inter-American Development Bank), 1998; F. Basanes, E. Uribe, and R. Willig, eds., *Can Privatization Deliver? Infrastructure for Latin America*, (Washington: Inter-American Development Bank, 1999); A. Estache and J. Strong, eds., *Regulatory Issues in the Privatization of Transport in Developing Economies*, mimeo, December 2000; A. Estache and G. de Rus, *Privatization and Regulation of Transport Infrastructure*, (Washington: World Bank, 2000); and the Asian Development Bank series *Developing Best Practices for Promoting Private Sector Investment in Infrastructure*, (separate volumes for ports, aviation, roads, water, and power), published in 2000.

⁷ On a scale from 7-best to 1-worst, port efficiency in that region ranks at 2.90, much below North America (6.35), Middle East (4.93), East Asia(4.66), East and South Africa (4.63), North Africa (3.72), and East Europe (3.28) This is according to the Global Competitiveness Report (1999) rankings.

relatively short-term with respect to port facilities, allowing for reorganization and flexible capacity management.

3. When a port is not financially viable on a stand-alone basis, structuring of "packages" of profitable and unprofitable ports with implicit or explicit cross-subsidy has proven difficult and costly to implement and even harder to regulate.

4. Access issues and charges are becoming important policy concerns. Vertical integration within the transport chain has not been often addressed in concession contracts and is beginning to become an issue in Peru, Colombia and Chile. In principle, this issues is easier to handle within the concession contract, *ex ante*, or less easily through competition policies *ex post*.

Airports

1. Private participation in airports has produced improvements in financial performance and in the quality of service. Turnkey master concessions using a landlord model have been most successful.

2. In some countries, airports have been "cherry-picked", as the financially strongest airports have been concessioned. In Bolivia and Colombia, this approach has saddled the government with problems of how to pay for the rest of the civil aviation system - especially in the costly areas of safety, security, and air navigation. Even when operating costs of civil aviation have been covered, investment capital has been insufficient.

3. As in ports, "packages" of airports have proven difficult to structure and sustain. Having a single concessionaire for the airport system has created problems with incentives for investment and performance. Management contracts and negative concessions (minimum subsidy) have shown promise as alternative organizational approaches in smaller airports. These practices also help create a public sense that private participation can benefit those outside of the capital city.

Railways

1. Railway restructuring and reform has taken place in most Latin American countries, with the most extensive changes in Mexico, Brazil, Argentina and Peru.

2. Sectoral restructuring along geographic lines has worked better than separation of infrastructure from operations. The linkages between infrastructure and operations have created incentives for concessionaires to define and address high priority investment needs to reduce bottlenecks and to improve operating results.

3. After years of decline, traffic has stabilized or grown, labor productivity has increased markedly, and financial performance generally has improved.

4. Access issues and regional integration are surfacing as next generation issues. Balancing concession network interconnections without creating cartels is a significant issue for some commodities and for competition policy - although road freight transport continues to provide important competitive discipline for many types of goods that move by rail.

III. Alternative Options for Infrastructure Services

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

Successful concessioning of transport infrastructure has required a host of complementary activities. Sector restructuring almost always was required. This generally took two forms. First, putting the sector on a commercial basis frequently required a change in organizational status. For example, airport concessions typically required transfer from the transport ministry to public enterprise status. Second, sector reforms also frequently required the unbundling of activities-vertical and horizontal-, such as the separation port terminals and of activities at ports or the separation of airport services from air navigation activities, or the geographical breakdown of the railroad network or separation of track jurisdiction from railway service operations.

Given the (quasi) natural monopoly of a number of the segment operations in the transport sector, the transfer from public to private status or to private participation also required a new system of regulatory oversight, including new legal instruments, organizations, and - most importantly- a shift in perspective from the "government as owner-operator" to the "government as a monitor regulator and enabler".⁸ In addition, complementary reforms often were needed in the areas of contract law with regard to concessions, competition policy, and labor and social welfare policy.⁹

Why were concessions used rather than outright privatization? In many cases, there were legal or constitutional impediments to privatization, including the definition of state assets or a prevailing view that certain activities or infrastructure was of such strategic importance that they must remain in public ownership (although not necessarily in public operation or management.). Since these facilities or services were imbued with a high degree of public interest and visibility, the social and political impact of outright privatization was sometimes seen as unacceptable.

⁸ See J. Strong, J. Meyer, C. Harral, and G. Smith, *Moving to Market: Restructuring Transport in the Former Soviet Union*, (Cambridge: Harvard Institute for International Development/Harvard University Press, 1996), chapter 10, pp. 193-214.

⁹ See M. Kerf et al., *Concessions for Infrastructure*, (Washington: Joint publication of World Bank and Inter-American Development Bank), 1998.

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

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

IV. Concessions and Regulatory Risk

Regulation of infrastructure operations brings inherent risks as a result of:

- its complexity
- the temptation to use it for political objectives
- the limited capacity of regulators
- the need to balance discretion vis-à-vis flexibility in regulatory framework
- the need for efficiency in performance and marshalling of investment (since these activities generally face shortages of capital investment or maintenance)

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

These risks go beyond those that arise in the “normal” course of regulation, such as tariff reviews or technical definitions of asset valuation and realized investment levels. Other risk factors include unilateral or arbitrary changes in agreed (either explicitly or implicitly) terms of operation; reversals in interpretation of ambiguous regulatory or

contract clauses; changes in the regulatory framework. Moreover, concession processes that contained incomplete and uncertain remedies or conflict resolution procedures magnified all of these risks.

Much attention has been paid to the degree to which concession contracts are enabled under constitutional, contract, and/or commercial law. However, merely having legal structures and institutions in place without an enforcement incentive and orientation leads to opportunism and exploitation in the short run and a tendency to treat such issues as mere "window-dressing" in later concessions. As Laffont (2001) has shown conceptually and has proven true in many settings, the probability of renegotiation decreases with the level and effectiveness of enforcement measures.¹⁰ There is an ongoing need not only the development of legal and regulatory institutions, but ones that are seen as credible as well. In settings in which concessions are new, the importance and visibility of the first enforcement decision can hardly be understated. The reputation effect is critical in driving behavior and incentives of operators of subsequent concessions.

One such example of regulatory risk is illustrative. In Brazil, the nationwide toll road concessions overseen by the national roads authority DNER was subject to ongoing revisions in 1997-1999. Changing interpretations of contract terms led to an ongoing series of adjustments to maintain "financial equilibrium" clauses guaranteeing a minimum IRR for both toll roads and for the water sector. Brazil's Parana toll road was faced with a unilateral 50% reduction in the tariff that had been agreed in the concession contract.

- Reviews of transport infrastructure projects suggest that investors and sponsors take these regulatory risks into account in determining whether on not to bid, and in the terms of the bid itself. As one sponsor commented,

"The investor's evaluation of the company's future performance depends almost entirely on the rules of the game, that is, the regulatory conditions under which the company will operate. The regulatory scheme under which the new owners will operate is, in fact, shaped in part by the companies that are bidding. Before these companies present their qualifications to bid, and during the bidding process, company representatives usually meet with the government to discuss and negotiate the regulatory rules, and how they would be applied. Companies that find the rules unacceptable do not bid."¹¹

Interviews with private participants in transport infrastructure projects indicate that investment scenarios commonly incorporate regulatory factors of higher costs, lost or deferred revenues on the order of 10-15% of the project. In some cases, lenders and sponsors have explicitly built "regulatory risk premia" into their financial models. Even in case where the cost or revenue forecasts are adjusted, both approached translate into an impact of between 2% and 6% increase in the cost of capital (the required rate of return).

¹⁰ See J-J. Laffont, "Enforcement, Regulation, and Development," mimeo, June 12, 2001.

¹¹ Confidential interview with project sponsor, December 1999.

Depending on the specific transport project, this higher cost of capital translates into lower upfront or ongoing canons to the government or in higher prices to users. In a significant non-transport example, it has been estimated that water companies in Brazil face a cost of capital that is up to 5% higher than the electricity sector in Brazil, as a result of a legal uncertainty about the rights—who has them—to grant water concessions. This 5% differential translates into a 35% decrease in sales prices for concessions or, equivalently, a 25% increase in water tariff.¹²

V. Determinants of Transport Concession Performance

The World Bank has undertaken a long-term study of infrastructure concession performance worldwide.¹³ The study covers approximately 1,600 concessions in telecom, water, power, and transport. Of the 1,600 concessions, approximately 1,000 are from Latin America and the Caribbean, including 273 transport concessions. Most of the concessions are from the 1989-2000 period. In addition, reviews of private participation in transport in Brazil, Argentina, Peru, Bolivia, Mexico, and the Dominican Republic have been undertaken, as well as project reviews in Panama, Colombia, and Chile.

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

The most common problems in transport concessions in Latin America have been:

- Poor concession design
- Imperfect and overly optimistic service usage predictions
- Imprecise and ambiguous contract clauses and regulatory rules
- Ex- post changes of the rules of the process
- Inconsistent interpretation of the concession clauses
- Opportunistic behavior by operators and/or the government following the concession award

These problems can be classified into four groups:

- Pre-concession issues;
- Concession design issues;

¹² J.L. Guasch, “Contract Renegotiation,” mimeo, June 2001.

¹³ This section is based on the World Bank’s Private Sector Development project on concession performance, led by one of the authors (Guasch). A summary of preliminary research results is drawn from J.L. Guasch, “Contract Renegotiation”, Policy Research Paper, World Bank, June 2001. More complete information is found at the World Bank’s web site <http://econ.worldbank.org>, under topics of Private Sector Development and Infrastructure. Working papers also can be found at the Publications section of the web site of the World Bank Institute, www.worldbank.org/wbi.

- Concession award issues;
- Regulatory issues.

Pre-Concession Issues

1. A general problem is the disregard of the underlying political economy of the transaction. In some cases, there is a sense that concessions were being pursued due to political philosophy or electoral politics. There was relatively little effort spent on explaining to stakeholders, including the public, the reasons, motivations, and expected benefits behind proposed concessions. The result was a distrust of the process by the public and a sense that any benefits went only to a few.
2. A lack of awareness about labor rationalization issues. If labor severance, buyout, and restructuring programs were not in place as part of the concession process, the concession was much more likely to fail. This lack of such labor redundancy planning led to major delays and problems in Brazil, Guatemala, Honduras and Peru port concessions. The concession process needs to explicitly address labor redundancy and adjustment plans.
3. Improper sectoral restructuring prior to the concession and not imposing open access policies. The pre-concession phase offers a unique opportunity to shape market structure (both horizontally and vertically) to facilitate new entry, competition, and regulation prior to the concession. This has been a common problem in other infrastructure sectors, including Chilean and Guatemalan electricity sectors and most countries in telecoms. Some of these issues were apparent in the case of the development of airport concessions that created financing problems for smaller airports that were not concessioned. Other issues arose in liberalization of airline sectors, where incumbent airlines often retained control over gates or ground handling that allowed them to behave in predatory fashion toward new entrants.
4. The absence of either prior rebalancing of tariffs or a time schedule for that purpose. In many, if not most case, prices for state-run transport infrastructure services were not sufficient to cover recapitalization needs. Increases in these prices post-concession were then often seen as profiteering. In some case, such as toll roads in Brazil, tariff increases were only permitted once road improvement had been made. Higher tolls were thus associated with higher quality services.
5. Excessively optimistic demand forecasts. Toll roads in Mexico, Argentina, and Brazil have all suffered from this problem. The reasons for such forecast errors include inadequate attention given to income or GDP elasticity relative to price elasticity; the willingness of travelers to continue to use free alternatives; the reluctance of truckers to save travel time but run risks of more vigorous enforcement of operating regulations. In addition, many of the bidders believed that they could propose low-ball bids and then renegotiate when demand failed to materialize. In addition, traffic or revenue guarantees reduced incentives for the private sector to be conservative in forecasting, while public officials failed to understand or did not care about the contingent liability exposure.

6. The lack of transport network planning. In the design or specification of transport concessions, concession definitions have often been driven by "what will sell" rather than what creates the most efficient transport system. Intermodal projects have been few, and linkages between concessions, other than a few road and rail systems, have only limited interaction. Moreover, the fact that each concession may have widely differing objectives and incentives make integration of these concessions even harder.

Concession Design Issues

1. Inadequate prequalification screening. This can result in failed concessions or bids that are not realistic.

2. Using means as opposed to outcomes as requirements for operators. Performance targets, such as investment triggers, help manage capacity provision and help ensure that overinvestment does not occur. This was a major problem everywhere, for example in Peruvian port concessions and in most of Bolivia's transport capitalization program, where investment rather than improved performance, was the primary instrument used. Later, when concessionaires saw that the capacity needed to serve demand was well below investment pledges, they either sought to renegotiate or merely cancelled or deferred the program.

3. Ambiguous conflict resolution procedures and vague or imprecise terminology for conditions for renegotiation or termination of the concession. Even minor changes in Brazilian toll road investment planning led to an ongoing series of negotiations and adjustments in contract terms. This convinced at least some observers, especially the press, of a lack of transparency and of collusion among concessionaires, with complicity by the government.

4. Little or no evaluation of the extent or cost of universal service obligations. While this has proven a severe problem in telecoms and water, it has been an issue in how to provide service to the poor in some urban transport concessions, including Argentina.

5. Improper use of guarantees. In Mexico, the toll road program's traffic and revenue guarantees created incentives for prospective concessionaires to bid extremely unrealistic short durations in order to win the concession. In Colombia, the hypothecation of landing fees and the traffic guarantee to finance the a new runway at Bogotá resulted in weakening the ability of the Government to extend further concessions and to generate enough revenues to cover the operating and capital needs of the rest of the civil aviation sector.

6. Changing several of the concession terms after the launching of the award process. This occurred in the case of Peruvian ports in which both evaluation criteria and canon payment terms were adjusted after discussion with prospective bidders. This led to a perception that the bidders had too much influence over the process.

7. No provision of incentives for expanding the network if needed. This has been the case in Mexican, Brazilian, and Argentine railways, so that bottlenecks and congestion reduce both concession value and social welfare. This problem could be reduced if investment triggers were link to performance indicators, as noted previously.

8. Guaranteed financial equilibrium clauses without reference to efficient costs. This is a form of guarantee of the concession's internal rate of return. In Brazil's road and transport concessions, the extent, frequency, and conditions for review and adjustment to maintain financial returns were not well specified, and as a result have been repeatedly invoked.

Concession Award Issues

1. Multiple award criteria leading to wasteful rent-seeking, opportunities for corruption, and arbitrary selection of winners. Airport concessions in Costa Rica and in the Dominican Republic are examples. Simpler technical and financial bids have proven more durable and are more likely to be perceived as fair by the public and by other bidders.

2. Questionable choice of single criteria for award. This was the case in Mexican toll roads, which used shortest concession duration. It also characterized water concessions in Argentina, which utilized the largest tariff discount. Minimum price on tariff structure has proven problematic for virtually all water concessions, and for transport concessions in which capital spending had been long deferred.

3. Use of single lump sum transfers to Government, as opposed to yearly canon payments or a lump sum but disbursed in annual installments through a trust or escrow account. In design, the canon payments were commonly intended to help finance other aspects of the transport sector, but in most cases, lump sum payments were used to cover general budget shortfalls. In contrast, an annuity structure helps create a sense of ownership by subsequent governmental administrations.

4. Choosing fiscal objectives rather than efficiency objectives in concession awards. This provided short-term budget help, but may lead to capacity shortfalls or inferior operating performance. This has been widely true in Caribbean telecom concessions, but has also characterized concessions of major international airports.

Regulatory Issues

1. Lack of independence of regulatory agencies. Argentine, Mexico, Brazil transport concessions have been subject to a host of economic and political pressures.

2. Efforts to set up sectoral regulatory agencies, rather than multisectoral bodies, have been widespread in Latin America. This has made it harder to hire and keep qualified staff, and to build enough institutional status and power to be effective.

3. The political economy of regulatory reform has been a persistent issue.¹⁴ Making the concession as attractive as possible has led to charges that social welfare consideration as non-existent. Politicization of regulatory bodies through the appointment process has been widespread. This creates incentives for significant ministerial or populist influences. The degree to which regulatory processes are seen as mechanisms for state capture or industry control will undermine public support. The result is a perception - not unfounded in some cases - that infrastructure concessions attempt "to privatize the benefits while socializing the risks."
4. Lack of appropriate compensation instruments or policies in the cases of government amending concessions unilaterally. This situation characterized both the Parana toll road in Brazil and the La Guayra toll road in Venezuela, in which tariff adjustment were mandated without a clear process for redress.
5. Vague network access clauses complicate liberalization and reduce potential competition. This has been true in Brazilian port concessions, in which significant shippers control particular facilities and intermodal connections.
6. Inability of the regulatory body to credibly commit to non-frivolous renegotiation. This regulatory weakness, which is different from contract design problems, results in excessive opportunities for renegotiation. This ongoing issue has plagued rail and road sectors in both Argentina and Mexico.
7. Failure to incorporate strong information requirements in the concession contract. In Peru, this lack of timely information has made it difficult for OSITRAN to monitor transport concession performance.
8. Failure to impose proper accounting standards on concessions, which undermines attempt to align tariffs with costs at the standard quinquennial tariff reviews and to monitor financial equilibrium clauses, costs, and rate of return criteria.
9. Lack of clarity on jurisdictional status among competition authorities and regulatory bodies. Conflicts between competition agencies and regulators have been especially strong in Mexican aviation with respect to linkages between Aeromexico and Mexicana. In Brazil, CADE, the competition agency, has investigated access issues related to port concessions even though access is an issue addressed in the concession contracts and in the regulatory framework.

¹⁴ For a discussion of this issue in the context of "transaction costs politics", see J. Benavides, "Political Economy of the (De)Regulatory Reforms in the Power Sector.

VI. The Effect of Concession and Regulatory Problems: Renegotiation¹⁵

How frequently have concessions been renegotiated? The last decade of experience in transport concessions leads to one inescapable conclusion: renegotiation is the norm rather than the exception. In the sample, and across all sectors, about 44% of all concessions are renegotiated, with 85% of these (38% of the total) within four years of award. There appears to be a strong linkage between the degree of real or potential competitiveness of the sector and the incidence of renegotiation: telecoms and energy sectors have had a lower incidence of renegotiation compared to transport, water, and sewage. In transport, renegotiation occurred in 57% of the cases, 79% of which happened within the first four years of award (45% of total). (These percentages will likely become even greater, as the large number of concessions put in place in 1989-2000 will be passing through this four-year horizon in the next two years.) The average time until renegotiation is 3.1 years, and that is for concessions granted for a period of 20-30 years.

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

All involved parties - government, creditors, and sponsors, have sought renegotiations. Examples exist of Governments seeking to re-do concession contracts due to changes in priorities, changes in political power, or opportunism given the sunk cost nature of most transport infrastructure. On the other side, sponsors/concessionaires have sought renegotiation to deal with macroeconomic and macrofinancial shocks, overly optimistic demand forecasts that led to lower cash flows and in many cases reduced needs for investments pledged as part of the concession agreement. There also is some evidence of low-balling bidding strategies, in some cases supported by collusion among bidders, suggesting that the sense of urgency and the perception that the Government “wanted to get a deal done” gave an incentive to bidders to adopt a strategy of “buy in, then get well-through renegotiation” that has long plagued military procurement elsewhere. The source of some renegotiations is unclear, either because it was disputed or mutually agreed.

¹⁵ For the theoretical development of that argument see J. L. Guasch, , A. Kartacheva and L. Quesada, “Contract Renegotiations on Concession in Latin America and Caribbean Region: An Economic Analysis and Empirical Implications”, mimeo, The World Bank (2001), and for the empirical analysis see J.L. Guasch, “ Renegotiation of Concession Contracts: An Empirical Evaluation”, mimeo, The World Bank, (2002).

What factors are associated with a higher probability of renegotiation in the transport sector?

1. *Award criteria.* Concessions awarded on the basis of minimum tariff were renegotiated 71% of the time; up-front, lump-sum canon payment awards only 31% of the time; annual canon payments 20% of the time. The tariff-based awards faced renegotiations sought by Governments (because tolls or toll adjustments were deemed “too high”), or by sponsors who found that revenues were inadequate (due in most cases to overestimates of traffic volumes and inadequate attention given to income and/or GDP elasticity). This issue has been particularly difficult to manage in the case of trucking, in which demand forecasts and estimated toll elasticities have been overly optimistic due mainly to factors such as who benefits from time and cost savings (drivers versus companies) and due to toll roads’ more stringent oversight of size, weight, and safety regulations, and policing of contraband goods¹⁶.
2. *Nature of the concession agreement.* The longer the duration of the concession the less likely changes will be sought. Concessions where specific activities were mandated in the contract faced renegotiation 78% of the time, while those concessions which contained operating and investment performance standards were renegotiated in only 15% of the cases. The existence of a pre-specified investment obligation increases the likelihood of renegotiation. One of the strongest conclusions is that investment programs in concessions should not be mandated but rather driven by operating and performance “triggers.” Such metrics can and should also be established for safety, environmental, and access dimensions of transport infrastructure.
3. *Regulatory framework.* In many cases, the regulatory institutions and procedures were not in place at the time of contract award. In 72% of these cases, contracts were renegotiated as actual regulatory behavior diverged from the conceptual framework in the agreement. When regulation was in place at the beginning, only 19% of the contracts were renegotiated.
4. *Autonomy of Regulatory Agency.* Also important is the perceived enforceability of the concession contract itself, both in the credibility of its legal status and in the possibility of judicial enforcement. In sum, having a credible regulatory body-autonomous from the Ministry- in place decreases the probability of renegotiation by 40%-50%.

¹⁶ See E. Engle, R. Fischer and A. Galetovich, "Licitación de Carreteras en Chile", *Estudios Públicos* 61, (1996), pp. 5-37; E. Engle, R. Fischer and A. Galetovich, "¿Cómo licitar una concesión vial urbana?" *Estudios Públicos* 67, (1997), pp. 177-214; T. Irwin, M. Klein, G. Perry, and M. Thobani (eds.), "Infrastructure Financing and Government Guarantees", in *Dealing with Public Risk in Private Infrastructure*, (Washington: The World Bank, 1997); and in E. Engle, R. Fischer and A. Galetovich (2001), "Least-Present-Value Revenue Auction and Highway Franchising", *Journal of Political Economy* 109 (5), (October 2001), pp. 993-1020.

- *Legal framework.* The stronger the legal grounding (constitution, law, decree, administrative rule) was, the lower the probability of renegotiation. When the regulatory system is imbedded in the general law, renegotiation is only about half as likely compared to regulation spelled out only in the concession contract (45% versus 85%). In general, the key seems to be the ease of which either party can unilaterally amend the regulatory system, either through decree (as was the case with Peru) or administrative discretion.
- *Rate of return vs. price cap regulation.* Rate of return regulation resulted in reworking the contract in 30% of the cases, while 77% of price cap structures were revised. While price cap may provide greater incentives for cost control and efficiency, the stability of rate of return regulation is due (in part) to the ability of concessionaires to adjust the amount of investment downward (upward) if the revenues and profits from the operation are less than (more than) that required to achieve a minimally-acceptable return. This result reflects the impact of risk allocation on the renegotiation incidence. Rate of return regulation transfer or allocates most of the risk to the government, while for price cap regulation is the operator the main bearer of the risk.
- *Spillover and reputation effects for countries and sectors.* A history of prior renegotiations increases the likelihood of renegotiations in other sectors. It also increases the likelihood of further rounds of renegotiation. Spillover effects extend beyond sectors, as experiences in other infrastructure sectors are positively correlated with transport even when there are sector-specific regulatory bodies. For example, difficulties encountered in the electricity concession in the Dominican Republic made it more difficult to develop regulatory oversight in the transport sector.
- *Other significant factors.* The presence of a local or national (versus a foreign) operator increases the probability of renegotiation by 10% to 25%, although renegotiations involving foreign sponsors or consortia tend to take much longer to resolve. The greater the number of bidders, the more likely renegotiation will be sought. It seems that while more bidders should provide more information about contract design and regulatory issues, this effect appears to be more than offset by the problem of “the winner’s curse” (paying too much and seeking redress subsequently). Moreover, the operators hold expectations of the likelihood of renegotiations and of their own ability to renegotiate. These factors are the essential drivers for low balling bid strategies.

VI. The Next Generation: Transnational Projects and Issues

1. The reforms of Latin American transport infrastructure have focused on managing operational and financial problems of countries, sectoral ministries and public enterprises. Planning and regional integration aspects have rarely been considered. A coherent and sustainable strategy to address transport access and affordability for the poor has been lacking in most countries and needs to be developed as well.

2. As concessions have developed, issues of traffic flows and transport network planning have become more important, both nationally and transborder. These efforts can best be supported at a multilateral level by focusing on further trade liberalization. Reduction of transaction and corruption costs of border crossings still remain the biggest impediment to seamless transport connections within Latin America. It is typically very difficult to forecast traffic demand in such projects without a full trade model incorporating the hidden costs of border crossings.
3. Private participation in transport infrastructure in Latin American now has a significant, if not dominant role. Multilateral institutions should support initiatives by these participants to think about, craft, and work towards linkages with each other. This will require a supportive environment with respect to transborder linkages between national concessions, etc. In short, the private incentives that served to improve performance are also likely to serve a valuable role in planning major corridor initiatives.
4. Most Latin American countries are lagging behind the developing and fostering of multimodality approach to the transport sector. Ever more so, to reduce transport and logistic costs and improve quality of service, the emergency of multimodal operators is key. Countries need to facilitate that development, enacting multimodality laws, addressing the key insurance-that addresses transferring of merchandise across modes-and the development of multimodal and logistics terminals. Logistic costs remain excessively large in the Latin American Region, between two and three times those of OECD countries. Those costs impact particularly traded goods and for countries which have a made exports a key driver of growth and development is essential the lowering of logistic costs.¹⁷
5. There is a lack of an integrated regulatory approach, often as a consequence of the lack of the integrated network vision. Most countries have separate units or agencies to oversee and regulate the various transport modes. That is an ill-advised position that hampers effective regulations and creates unneeded fiefdoms and conflicts. The position should be that of having a single regulatory agency to oversee and regulate all modes of transport. Examples and pioneers of that position are Bolivia and Peru.
6. There have been very few successful transnational infrastructure projects that were developed as such. Rather, the most successful efforts have involved linking existing network components and then addressing specific, targeted projects to upgrade segments or to expand access to existing corridors. Other than such targeted projects, it is likely that large-scale transborder transport initiatives will require not only multilateral financial support, but also the development of multi-country guarantee instruments with respect to policy and sectoral reforms and operations. Some of the major innovations in risk management in the past decade have been partial risk and policy guarantees by

¹⁷ For an assessment of logistics costs in Latin America see, J. Luis Guasch and J. Kogan, "Inventories in Developing Countries: Levels and Determinants, a Red Flag on Competitiveness and Growth", Policy Research Discussion Paper 2552, The World Bank, (2001), and J. L. Guasch, "Logistic Costs in the Latin American Region", mimeo, The World Bank, (2002)

multilateral institutions. These innovations need to be pushed into multi-country structures. This is a huge challenge given long traditions of national instruments.

7. There is a need for a coherent strategy for the financing of transport projects which are not fully financially viable by the private sector. The transport services that are fully financially viable by operating fees, tolls or tariffs are very limited in most countries and a number of them have been concessioned. That leaves a large number of transport services, which are not fully financially viable and renders their concessioning to the private sector questionable. They include smaller airports, ports, secondary and rural roads etc. If improvements are to be made in the operation of those services, the government will have to provide, with some form of financial instrument, the gap to make the concession viable. A strategy for the selection of the appropriate financial instruments needs to be developed.

8. The role of states and local governments in affecting the success of transnational projects should not be underestimated. The difficulties of federal/state relations in infrastructure projects also can serve as lessons for transnational projects. Disagreements between states and the federal government about priorities, contributions, and the level of support can doom projects even though their transnational aspects are brought into account. While bilateral project agreements are easier to form, they tend to be less durable than multilateral agreements - once the latter become established and tested at least once. Established multilateral agreements seem more durable because of the greater collective loss that might be sustained and the less idiosyncratic dispute resolution mechanisms that are put in place. But as one lender told us, the difficulty of agreement increases by the square of the number of parties involved!