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Issue No. 208, December 2003

ROAD CONCESSIONS IN LATIN AMERICA: ACHIEVEMENTS AND CHALLENGES

Concessions have become an important mechanism in Latin America for attracting financing and private management to the highway sector. Highways are one of the areas of transport infrastructure in which this concept in long-term investment in road conservation and management has been widely applied and the concession-holder's costs are recouped through tolls and other complementary mechanisms.

After a brisk start in the 1990s, the pattern of road concessions has proved to be less dynamic in the current decade. Nevertheless, highway concessions have expanded significantly and now account for 1% of the total inter-city road network.

The international seminar entitled "Concessions for the provision of transport infrastructure: challenges for Latin America" was organized jointly by the Economic Commission for Latin America and the Caribbean (ECLAC) and the Agency for the Promotion of Private Investment of Peru (PROINVERSION) and held in Lima, Peru, on 13 and 14 November 2003. The agenda and papers presented may be viewed at our web site <http://www.cepal.cl/transporte>

This edition of the Bulletin gives an overview of the situation of road concessions in the region and their principal characteristics. For further information, contact trans@eclac.cl.

1. Overview of road concessions in Latin America

Up to the first half of 2003, a total of 35,112 kilometres of roadways (243 concessions) were contracted out in 13 countries of Latin America. Of this total, 450 kilometres are urban, forming part of 15 concessions in 7 cities in 5 countries, while 42 concessions are bridges and tunnels, which including their access routes encompass 24 kilometres of roadway.

Since there are 3.5 million kilometres of inter-city routes in the region, 1% of them have been contracted out. The scope of the concession process varies considerably from one country to another: some have used this mechanism extensively while others have not yet ventured in this

direction (Table 1).

Table 1: Road concessions in Latin America in June 2003

Country	Number	Special	Total (km)	Inter-city (km)	% of the inter-city system
Argentina	32	7	10 799	10 589	1.7
Brazil	36	2	9 709	9 664	0.6
Chile	24	5	2 440	2 289	2.9
Ecuador	6	1	1 312	1 300	3.0
Colombia	15	--	2 399	2 399	2.1
Costa Rica	1	--	86	86	0.2
Guatemala	1	--	23	23	0.2
Mexico	115	41	6 027	6 027	1.8
Panama	2	--	104	104	1.0
Paraguay	1	--	140	140	0.2
Peru	2	--	289	289	0.4
Dominican Rep.	3	1	212	180	0.9
Uruguay	5		1 572	1 572	2.7
Total	243	57	35 112	34 662	1.0

Source: Own preparation on the basis of information from the respective countries.

* Special: included in total figures; refers to bridges and tunnels, plus their access routes or urban segments.

With the exception of Chile and Uruguay, concession activities have not occurred steadily over time; in some countries they have been sporadic, while there are others that have still not awarded road concessions.

2. Decline in the award of concessions in recent years

Prior to 1989, there were a few road concessions, but in that year an intense process of invitations to tender was launched. More than 170 concessions date back to the period 1989-1999, which means an average of 15 per year, although there were years in which this figure was exceeded by a long shot.

After the strong increase referred to above, the rate of bidding for concessions declined coming to a virtual stand-still in various countries. Between 2000 and 2002, 11 annual concessions were awarded (1,602 kilometres). Nevertheless, 13 of the concessions (1,853 kilometres) were not open to competitive bidding but awarded directly. That is, in these three years, there have been an average of 7 invitations to tender per year, implying a reduction to less than half in comparison with the 1990s (Table 2).

Table 2: Concessions granted annually in different periods

	Annual total		Invitation to tender	
	No.	km.	No.	km.
Average 1989-1999	15	2 680	nd	nd
Average 2000-2002	11	1 602	7	984

2000	12	1 907	7	1 594
2001	10	2 159	6	709
2002	12	740	8	650

Source: Own preparation on the basis of information of the respective countries

na: not available

The decline in new road concessions is attributable to two main factors:

- The aftereffects of the depressed economic conditions that affected the different countries in the region to a greater or lesser degree in the last few years. This had an adverse effect on transport growth rates, which were very low or even negative, which discouraged investment in roadways;
- some countries have experienced domestic political difficulties, which resulted in a postponement of decision-making, and
- the relative unavailability of capital for investment in the region, owing in part to the foregoing factors; this has led to a rise in interest rates and has raised the threshold for profitability of contracts or even made lenders dismiss the idea of loans in the road sector.

The combination of the foregoing factors has made prospective new concessions less attractive or unprofitable. In addition,

- in several countries, such as Chile, Colombia, Ecuador and Uruguay, road segments were judged more attractive because of the higher traffic rates;
- there are countries that have given little thought to the possibility of franchising out highways, and
- the difficulties encountered in some mass concession processes have made the authorities of the region more cautious. Concessions have failed in several countries or have faced serious difficulties which have obliged the State to incur unforeseen expenditure or to exceed the budgeted figure.

3. Conditions for leasing out highways

Leasing out a route is feasible provided that outflows are at least equal to inflows, both expressed in net present value. In other words, the investment and other costs incurred throughout the period of the concession must be recoverable. These include the corporate profit that may be realized through tolls and other inflows from the management of the project, in addition to any State subsidies and other contributions. The following are the important factors for achieving this type of equilibrium:

- (a) On the **toll income** side, the volume of initial transit, its future pattern, the amount of the toll and the duration of the contract. The amount of tolls should not exceed the savings of the users by virtue of the existence of the concession or their willingness to pay. This means that barring exceptions, tolls in Latin America are limited for cars to amounts between 1 and 2 cents for maintenance and between 2 and 4 cents for new roads. Heavy vehicles pay amounts that are normally expressed as multiples of the basic rate.

The rate of increase in traffic is strongly influenced by the increase in the economy, which has fluctuations and introduces a factor of uncertainty in the inflows. Concessions are usually granted for extended periods; however, it must be borne in mind that periods beyond 20 years add amounts that are less relevant to the net present value.

(b) On the **cost** side, the total amount to be spent on investment, maintenance and operation and the relevant rate of interest of the funds used by the concession-holder. The amount of investment and other expenses is influenced by the type of project envisaged, with at least two possible categories being identified: (i) upgrades and expansions and (ii) maintenance and rehabilitation.

(c) The **relevant rate of interest** for the investor, which is made up of (i) the desired rate of interest on the equity investment (between 20% and 30% of the initial investment), which is equal to what can be obtained in alternative investments, and (ii) the interest rate to be paid for the loans received, which, if they are of international origin, as is often the case, are influenced by country risk perception. The importance of the rate cannot be overemphasized. For example, in the case of uniform annual servicing of a debt contracted for 20 years at a rate of 12% per year, it is only possible to pay a loan equivalent to 88% of the amount that would be possible if the rate were 10%; at a rate of 15% per year, the loan would be reduced to 74% of the amount feasible if the rate were 10%. Conversely, if the amount borrowed is the same, the annual payment is respectively 1.14 times (with a rate of 12%) or 1.36 times (with a rate of 15%) more than if the rate were 10% per year. If the rate goes up to 12% or 13%, the annual payment goes up by 6.3%. Thus, apparently small rate variations can make the difference between a feasible venture and an unfeasible one.

The situation of each project must be analysed thoroughly on a case by case basis. The different factors that have an influence must be combined appropriately, in order to establish financially and technically viable concessions. The type of operation on the road (construction, rehabilitation and/or maintenance) must be a function of the volume of traffic and its projected development; in turn, the amount of the toll must be fixed at rates that do not scare away users.

It seems incorrect to treat a specific project without reference to country risk; however, its own risk can be defined and, therefore, the rate of interest of the loan through the award of certain guarantees that protect the concession-holder against factors outside of his control. Thus, minimal annual income guarantees have emerged or the possibility of handing over as a guarantee the future toll income. On the other hand, in most cases, it is not reasonable, but even counter-productive to guarantee the amount of the initial investment, since the concession-holder is in a better condition to manage it than the State.

4. Potential for awarding concessions

The combination of factors mentioned above determines certain thresholds for granting road concessions. World Bank Studies (see Irigoyen, J.L., World Bank (2002), <http://www.iadb.org/ppp/files/documents/IMV/IMV-VIA/BM-Toolkit5%20-%20Irigoyen-Sept16.ppt>) indicate that for the usual conditions in Latin America, the initial requirement may be 8,000 vehicles per day for improvements and 3,500 vehicles for long-term maintenance, which includes the necessary reinforcement of the road surface. Obviously, it is not a matter of strict limits but of average conditions in the light of the situation prevailing in the countries and accumulated

experience. In practice, countries with a lower rate of risk can finance higher cost projects or those that handle lower levels of traffic.

The ranges indicated suggest that each country has a certain number of kilometres of roads which can be franchised out. If the proposal is for the concession-holder's management to cover all the medium-term requirements for the road (maintenance, resurfacing, expansions and other standard upgrades), the potential for franchising out without subsidies will be between 2% and 3% of the total length, including all types of roadways of the inter-city system. Considering only the asphalted roads, the potential is of the order of 20%. It proves more complicated to estimate the potential as a percentage of the national or trunk system, understood as the principal roadways that permit a general internal link of the territory, given that the criteria for making the classification vary considerably from country to country; however, it may be estimated at between 10% and 30%.

A concession is a means of attracting investment and private management, which offers potential for improving road conditions, especially in terms of maintenance, which is not always fulfilled to the proper extent. The scope of concessions may be extended subject to the following conditions:

- if concession-holders succeed in obtaining access to relatively low interest rates, based on a definition of the risks of the project;
- if the amount of the investment is reduced for example by resorting to less stringent technical standards;
- if basic tolls are set at over US 2 cents per kilometre and
- if State contributions are applied as subsidies for the contract. This option would mean a lower contribution on the part of the State than would have been necessary without the concession.

Since concessions account for 1% of the total inter-city network in Latin America, clearly there is still considerable scope for expansion. The existing number of kilometres could easily be doubled, although the situation varies considerably from one country to another. Some which have franchised out a large portion of their potential can go ahead with this process, although not intensively; however, in most countries, the options are significant. In any event, it is always possible to identify additional concessions and as the traffic increases, others may be added.

5. Considerations for promoting concessions

Successful and growing ventures as well as others that have not borne fruit or have posed problems have served to identify a combination of factors that should be taken into consideration in efforts to promote road concessions. These are summed up below:

(a) **Concession** policy: the first and essential condition is to have a policy governing the award of concessions, which should be based on the recognition that the advantages it will bring outweigh the disadvantages. The existing processes are the outcome of a strong determination and impetus coming from the highest decision-making spheres.

(b) **Identification of roads that may be franchised out:** based on knowledge of the current volume of traffic, the approximate cost of investments, in accordance with the type of work

required on each lane, the relevant interest rate, the range of tolls that can be charged and a realistic rate of growth, it is feasible to determine whether the costs can be recovered within a reasonable time frame. Nevertheless, each project that can be franchised out must be subjected to a specific study to confirm its feasibility. For this purpose, the values of the variables at stake and their probable ranges of variation must be projected, both referring to the outflows and inflows. Each project must be properly structured and sound in itself and not just a written expression of wishful thinking.

(c) **Joint fiscal financing necessary in some projects:** this has already been commented on as an option for extending the range of concessions.

(d) **Guarantees considered sufficient for investors:** an appropriate risk distribution between the State and the concession-holder is key for success. Some measures that help to lessen factors of uncertainty were mentioned in section 3.

(e) **Providing for contingent liabilities:** one of the risks that the State is subjected to is the possible need to respond when conditions arise that trigger guarantees. The possible options are (i) prolonging the duration of the concession for a period such that the income obtained in net present value is equal to the amount of the guarantee, (ii) increasing the amount of the tolls in order to obtain the same effect, and (iii) paying out money. Whatever the mechanism chosen, an estimate must be made of the liabilities that the State is accepting instead of assuming that once the time comes, it will be necessary to respond to them and then see how things work out. These commitments should be quantified in terms of the probability of their occurrence and be duly registered.

(f) **Appropriate legal framework:** it is essential to have legislation which makes it possible to hand over concessions and which regulates everything concerning it to this process. Countries usually have legislation that authorizes the grant of transport infrastructure concessions. However, unless several contracts have been granted, it is highly probable that changes will be necessary to facilitate the process or even make it viable.

(g) **Knowledge and know-how about concessions:** concessions are an area that present unusual complexities in public works. They involve not only the design, construction and maintenance of public works, which would be a predominantly technical engineering field, but also other aspects, such as financial management of the procurement and repayment of loans, management of demand (number of vehicles that use the infrastructure), the setting of tolls to maximize income, concern for road safety, services to users, together with the whole range of legal aspects that the above implies – and the list goes on. The process would be facilitated by the transfer of knowledge or technical assistance on the part of those that have had experience with concessions, since they have had to solve problems and cope with concrete circumstances that are difficult to predict at the theoretical level.

Latin America has an interesting potential for moving ahead with road concessions. Whether it steps up the process or not, or continues or not, clearly, the decision has to be taken by each country. In the same way, each country must decide whether to rely on its own knowledge or to request technical assistance from those that have already gained experience.