

AN ANALYSIS OF PRESENT BRAZILIAN CONCESSION CONTRACTS: THE CASE OF HIGHWAYS OPERATION

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ABSTRACT

This paper presents an analysis of the present Brazilian laws related to the concession of public services. It takes into consideration the main objectives of a concession process, which is addressed to guarantee user satisfaction and economic attractiveness to operators.

It is based on a study of concession contracts concerning highways operation.

An important result from this analysis is the identification of drawbacks in the legislation related to concession contracts.

Recommendations, tested in a case study, are proposed to help all partakers (grantors, operators and users) to improve their performance in a concession environment.

Keywords: BOT, concessions, highways, legislation, privatisation, securitization

INTRODUCTION

Utility concession policies are introduced in order to provide a macroeconomic environment in which sectoral productivity patterns can be improved. To be successful, these policies must allow all partakers (grantors, operators and users) to reach their own goals.

The great challenge in building concession policies is to be able to accommodate those three different inherently opposite goals. This arrangement will only be possible by adopting specific legislation that can provide not only user satisfaction, as far as services are concerned, and operator profits but also the fulfillment of public utility policies so that feasible rules will be available whenever conflicting situations might arise.

Usually, users seek services of the best quality at the cheapest cost. The core of transferring public utilities from government to private corporations is exactly to improve their quality patterns. As for highway concessions, user expectations include pavement improvement, effective guiding and support systems, the availability of medical care, in addition to multiple stores and services along the highway, as well as the guarantee of safe trips. Nevertheless, as user perception related to the relationship between the quality of the services and the toll paid is weak, they usually feel they are paying too much for what they get.

On the other hand, the purpose of the private sector in managing and operating highways under state concessions is to reach an attractive expected return to investment ratio within acceptable risks, which is attained when traffic volume and authorized toll are taken into account.

The risk-profitability binomial will always depend on the macroeconomic situation, on financial and capital markets, as well as on the performance achieved in ongoing businesses of the kind. Under the current Brazilian economic state of affairs, the transfer of highway exploitation from government to private corporations is feasible when there is an expectation of rates of return from 16% up a year in real terms, with a payback period from 8 to 12 years, and in concession agreements ranging from 20 to 25 years.

The target of the grantor in starting highway concession programs is geared to a budget reduction referring to the maintenance and / or expansion of the installed highway network, as well as a profit in productivity while

rendering the utility, once regulatory agencies seek to assure that services follow the minimum requirements for preestablished quality standards.

Pinheiro (1994) estimated that only pavement maintenance of the federal highway network would require around R\$ 500 million a year¹. According to the DNER (Departamento Nacional de Estradas de Rodagem - National Highway Department), expanding the highway network involves about R\$ 600 thousand per kilometer. Considering the magnitude of those amounts, transferring the responsibility to the private sector will represent an expressive budget reduction.

THE BRAZILIAN LAW OF CONCESSIONS

The General Law of Concessions (num. 8,987) precisely states the guidelines to be followed by concession agents so that the individual goals of not only users but also the operator and grantor will be reached. Now, the chapters and articles of the above-mentioned law will be analyzed with respect to the compatibility of the goals of different partakers.

Chapter I - THE PRELIMINARY PROVISIONS - here are characterized: 1) the grantor: the Union, the States, the Federal District and Municipalities (Cities/ Towns) and all their transfer regimes, by means of bids, and of the formalization by means of a contract which establishes the obligations and rights of the three main elements, the grantor, operator and users; 2) the companies or consortiums qualified to bid; 3) grantor supervision; 4) the formalization of the concession agreement; 5) the publication of the invitation to bid.

In Chapter I, as for boosting private bidders, there are no constraints affecting either the creation of an attractive competitive environment or limiting user satisfaction.

Chapter II - SUITABLE SERVICE - is meant to establish the general standards for offering suitable service so as to fully attend to the user, with specific reference to the following requirements: regularity, continuity, efficiency, safety, updating, generality, politeness and the charging of toll compatible with the type of vehicle.

Here, due to the generality, no critical analysis can be carried out with respect to fostering the private sector to participate or promoting user satisfaction. These items depend on the specifics in each invitation to bid and on the different contractual clauses in each case.

Chapter III - USER RIGHTS AND OBLIGATIONS - Users should be understood as partners in the rendering of good quality-service. Thus, as far as contractual requirements follow the same guidelines, there will be no constraints in attaining the goals of offering service of good quality and attractiveness.

Chapter IV - TOLL POLICY - It foresees mechanisms for toll adjustment in order to sustain the economic-financial balance of the agreements. The toll may vary according to specific features and costs from catering to different user segments. It characterizes what attractive positioning means, without a priori stifling the quality of services offered.

Chapter V - THE BID - It is worth mentioning the following articles:

Art. 15. On judging the bid, one of the criteria below will have to be considered:

I - the lowest toll for the offered utility;

II - the highest bid when the grantor has to be paid for the grant;

III - a combination of the criteria listed above.

Art. 16. The grant will not be of an exclusive nature, except in case of justified technical or economic unfeasibility.

Art. 18. The invitation to bid will be elaborated by the grantor, according to general criteria and standards in the legislation dealing with bids and agreements.

¹, 1 US\$ = 1.923 R\$ (september 29,1999)

According to this article, the invitation to bid must include all the information necessary for the elaboration of a bid and give bidders the support to assume risks associated to the grant or not, having in mind their obligations towards both the grantor and users, and the income to be received for the service rendered.

Chapter VI - THE CONCESSION AGREEMENT. The concession agreement is the legal tool that regulates the obligations and rights of the grantor, operator and users when the grant becomes effective. This chapter deals with general standards for the relationship among the three elements, and it is not possible to make any critical comment as to its overall appropriateness. Possible criticism refers to the invitation to bid, concerning specific concession objects, which is the key note in the elaboration of the contract that renders the grant effective.

For the other chapters in the General Law of Concessions, VII - GRANTOR CHARGES, VIII - CONCESSIONAIRE CHARGES, IX - INTERVENTION, X - CONCESSION EXTINCTION, XI - PERMISSIONS, and XII - FINAL AND TRANSITORY CONSIDERATIONS, the same appreciation concerning previous chapters holds true. This means that, overall, there are no elements that lead to monopolistic practices. Thus, it is possible to affirm that, overall, the Law fulfills the principle of compatibility among the attractiveness to the private sector, the feasibility of offering users suitable service and the reduction in the State budget.

As for the capability to attract the private sector, the suitability of the Law has been empirically proved since highway concession bids have become interesting to several national and international groups.

As far as the guarantee of rendering suitable utilities is concerned, the Brazilian experience is still recent, which does not enable one to ensure the suitability of the Law for this case. Thus, the emphasis should be placed on elaborating and monitoring contracts.

This does not leave out the possibility of drawing up invitations to bid and concession agreements that benefit specific groups under specific circumstances. Nevertheless, this problem is not due to the general format of the Law, which is incapable of foreseeing and regulating all possible situations. This matter should be dealt with by the regulatory agencies for utilities.

The low quality of the utilities rendered by recently privatized power companies indicate the urgency of creating control tools for the efficient regulation and monitoring both of concession agreements and the offering of granted utilities.

Rigolon (1997) defines two important requirements for efficient regulation: the autonomy of regulatory agencies and their use of proper tools in order to foster the bid winner to strive for productivity in rendering the utility. Rigolon (1997) argues that the legal independence of a regulatory agency presupposes there are four dimensions to independence: decision-making, goals, tools and the financial area.

THE CONCEPA CASE

CONCEPA is the consortium which won the bid for the concession for operating the BR-290 Highway, which connects Porto Alegre with the coast of Rio Grande do Sul. The highway is 112 km long and it crosses seven municipalities of great socioeconomic relevance for the State of Rio Grande do Sul. Furthermore, the highway is the main route between the South and Southeast of Brazil to the countries in Mercosul. Twelve million vehicles per year cross the highway. The concession period is 20 years and it constitutes the first step in the program of federal highway concessions of the current Brazilian administration (PROCORFE).

In the concession agreement prevailing as of March, 1997, investments in pavement extension and improvement are foreseen, as well as the introduction of information and user-support systems, rescue and mobile ICUs, electronic panels, call boxes and intelligent service for toll collection. This structure should be in full operation by the fourth year of the concession. Moreover, there should be continuous maintenance and conservation of the highway and its systems during the whole concession period.

In the agreement, there are well defined quality parameters neither for each utility offered by the operator nor for pavement maintenance or traffic conditions. Total investments in highway recovery and improvements are about R\$ 116 million in the first four years of the concession and R\$ 29 million in the remaining 16 years. Operational, management and maintenance costs of the highway systems are estimated at R\$ 11 million per year during the whole concession period. By July 1999, investments in extensions and the introduction of systems are equivalent to 97% of the total foreseen in the concession period. Investments in emergency recovery, which were a prerequisite for toll collection, were made according to what was foreseen in the contract.

As investments were made, toll could be collected in three sites located in km 19, 78 and 110 of the highway. Toll collection was authorized on July 1997, when emergency construction in critical points of the highway was concluded. At present, the toll is R\$ 6.60 for those who travel all the way, which results in R\$ 0.029/ km, which is compatible with the average prevailing Brazilian toll in privatized federal highways, according to Ferreira (1997) and Piccinini (1996). The concession agreement foresees toll adjustment once a year, according to the fluctuation of the highway construction index, calculated by Fundação Getúlio Vargas.

The toll can still be adjusted if the economic-financial balance of the contract has been broken, owing to disturbances noncontrollable by the operator, usually related to the macroeconomic scenario. Obviously, variations in expected traffic volume are not included here. In spite of the behavior of the Brazilian economy in the period, surprisingly enough, the traffic volume measured in the first two years of the concession was an overwhelming success. The contract does not foresee any mechanism for toll adjustment for events of this type.

Even in the present Brazilian economic state of affairs, the economic results expected by operators are very attractive. The expected rate of return is about 32% a year in real terms, with a payback period of approximately 5 years. The rate of attractiveness decided by the operator is at 15% a year. The support capacity of the operation was simulated showing a high degree of safety for investments. A 9% decrease in traffic volume during the whole concession will lead to a rate of return of 15% a year and nine - year payback period. Likewise, a 32% increase in operational costs will lead economic indicators to a decrease of the same degree. Randomly generated fluctuations in inflation from 5% to 12% a year, produce a rate of return ranging from 29.4% to 29.8% a year, with a confidence level of 95%.

CONCEPA decided to construct its funding equation using securitization tools. The issue was formatted according to two different types of securities: private and public securities. The private securities are meant for private placement to CONCEPA stockholders and the others are meant to be floated in public offerings. The former were placed to cover emergency construction costs and the latter were floated to cover highway extension and technological upgrading costs. The program of paying in, covering charges and security redemption is shown below.

Table 1. Security issue program

Type	PAYMENT		REDEMPTION		EARNINGS		
	amount (R\$ thousand)	Period (year)	amount (R\$ thousand)	Period (year)	Variable (R\$ thousand)	Fixed (R\$ thousand)	Period (year)
EDEBs	2.000	1	30.000	20	348.383	30.000	1 - 20
	6.000	2					
	6.000	3					
	6.000	4					
	6.000	5					
	4.000	6					
SDEBs	26.000	2	3.714	5	341	3.135	2
	26.000	3	7.429	6	366	3.640	3
	26.000	4	11.143	7	369	7.280	4
			11.143	8	373	10.920	5
			11.143	9	377	10.400	6
			11.143	10	380	9.360	7
			11.143	11	384	7.800	8
			7.429	12	388	6.240	9
			3.714	13	392	4.680	10
					396	3.120	11
					400	1.560	12
					404	519	13

The earnings of public debentures are composed of two parts - a fixed interest rate of 14% a year, in addition to 3% equity on the gross income. Private debentures receive the total available operational result after all charges have been paid, including the earnings of public securities. The debenture volume floated on the market was totally assimilated, which indicates the economic quality of the investment in the concession and enabled it to solve its financial flow problems with a certain ease.

As far as the grantor's objectives are concerned (the Federal Government), it can be inferred that the budget reduction, as well as new investments on the highway, its management and maintenance, is quite expressive as can be seen in the table below:

Table 2. Federal government budget reduction

Type	Value (R\$ thousand)	Percentage
Emergencial investments	6.240	1,7%
Long term investments	139.120	37,7%
Operational costs	94.545	25,6%
Maintenance costs	129.491	35,1%
Total	369.396	

HIGHWAYS CONCESSION CONTRACTS: RECOMMENDATIONS

As we have mentioned previously, we consider that the General Law of Concessions prevailing in Brazil has been well devised in the sense that it safeguards both public and user interests without rendering its attractiveness unfeasible for private corporations to offer public utilities. However, special attention must be paid to devising specific concession agreements, for, in spite of the fact that the legislation suitably addresses the

guidelines regulating the role of the three main elements in the concession, it is still possible to produce concession agreements which benefit the interests of one element in detriment to the others.

Therefore, some vectors in the context of highway concession agreements will be emphasized since they can produce imbalance in the strive for each element to reach its goals. To avoid possible distortions of the kind we will attempt to follow some recommendations which will be pointed out later on. Still in this article, is a simulation of the application of these recommendations to the CONCEPA case and its impact on each element involved in the process.

As we understand it, the chief vectors causing problems in highway concession agreements in Brazil are related to:

- the characterization of suitable service is effected in a general way - highway concession agreements in Brazil are usually little objective in the description of the reference quality parameters for rendering each kind of public utility to the highway users;
- the compliance referring to the nonfulfillment of the investment schedule - sanctions and fees associated to the delay in the construction program foreseen in the contract are negligible with respect to the total investment required;
- the lack of mechanisms that enable the distribution of productivity gains - toll reduction is only foreseen if there are negative inflation rates; gains ensuing from innovations in operational processes or in revenue increase do not characterize economic-financial imbalance, which would enable toll reduction. Therefore, a breakdown of the economic-financial balance of the contract is always taken from the operator's point of view, resulting in toll increase to compensate for losses owing to macroeconomic disturbances.
- operator negligence in the demonstration of the structure of project finance - we believe that adequate conception of the financial equation to back up contractual investments is essential to the success of the concession process;
- the lack of a regulatory agency to monitor the fulfillment of provisions.

In view of this state of affairs, some recommendations can be provided in an attempt to contribute to a healthy environment for highway concessions in Brazil, such as:

1. The objective identification of parameters for characterizing what suitable service or quality means. Accordingly, besides the parameterization to indicate the quality of the pavement, of conditions of trafficability, of each bridge, and of information and support systems, there should also be the parameterization of quality indicators associated to the rendering of rescue services, emergency treatment and commercial activities on roadsides. The services or systems in the highway whose quality standards can be objectively measured, such as pavement, bridges, signalization, and lane design ought to be clearly specified in the concession agreement. The quality of medical services, user support, and toll collection facilities cannot always be measured by specific criteria. This being the case, the extensive offering of these services ought to be periodically assessed for continuous improvement;
2. The delay in the operator's fulfillment of provisions with respect to the period of making investments, whether in recovery, improvements or technological upgrading of highway systems ought to be severely punished. Financial punishment should be handled so as to immediately produce a fall in the indicators of economic quality expected under preestablished conditions in the reference scenario. Thus, a tool is created to assure the fulfillment of the provisions referring to investment programs. In the CONCEPA case, if the contractual fee concerning the nonfulfillment of the investment volume were of the same degree as the investment decrease, the effective estimated return rate would drop from 32% to 28% a year, which ought not to be considered a petty performance breakdown;

3. As far as productivity gains are concerned, base on Alencar (1998), we propose an adjustment in the method of price caps. Generally, the method of adjustment called price caps is treated mathematically as follows: let R_t be the permitted toll adjustment in a period t , I_{t-1} the inflation accrued since the previous readjustment and X_t the expected productivity growth until the next readjustment. For example, if the readjustment period is annual, expected productivity is equal to 3%, the toll can be adjusted up to $5\% - 3\% = 2\%$. Consequently, productivity gains are totally transferred to users, which penalizes operator competence and does not bolster productivity. However, if you consider a gain distribution factor between users and the operator, you can change the picture of inhibited productivity using the following formula: $R_t = ((1+I_{t-1})/(1+\alpha X_t))-1$. Where α is the gain distribution factor, ranging from 0 to 1. When $\alpha = 0$, it means that productivity gains will be totally absorbed by the operator. When $\alpha = 1$, it means that gains will be totally transferred to users. Positions between 0 and 1 indicate the distribution of gains. If this concept is applied to the CONCEPA case, considering an inflation of 5% per year, a productivity gain equivalent to 7% a year and $\alpha = 0.5$, it is possible to nominally increase the toll by 1.45%, which in terms of user purchasing power is actually an effective reduction and, even so, it is possible to attain an effective rate of return of roughly 34,5% a year if we project this productivity gain to the whole concession period;
4. The composition of this funding to make contractual investments ought to be included in the operator bid, in addition to being expressed in specific provisions of the concession agreement. Accordingly, the demonstration of the economic-financial feasibility of the concession can be better analyzed by the grantor. Moreover, we postulate that this kind of business will have better economic quality in so far as it is possible to build partnerships with investors aiming at aggregating capital and segregating risks in the concession environment. In fact, if the funding in the Concepa agreement were structured only with its own capital, the return rate obtained would be adjusted from effective 32% to 15% a year;
5. The last recommendation of practices to be incorporated to Brazilian highway concession agreements is to call attention to the need of an independent regulatory agency, which, on one hand would preserve the offering of utilities according to previously - established quality standards and, on the other, would create opportunities for attractiveness in the business.

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