HIGHWAYS CONCESSIONS – BRAZILIAN VIEW

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ABSTRACT

When comparing indicators of Brazilian paved roads and the country logistic cost with those of the other BRIC members and the OECD it is clearly perceived the need for investment, whether public or private, to facilitate the competitiveness of domestic products on the world market. The paved roads network is only 11% of the whole highways network in Brazil, whether in Russia, China and India these numbers represent 80.9%, 81.6% and 47.3% respectively.

The combination of 3 factors: the Brazil's economic development, the need for investment in infrastructure and the reduction by 90% in public investment in transport infrastructure over the past 40 years makes of fundamental importance the discussion about the viability of public private-partnership in the country, especially for propound alternatives for funding infrastructure to the state. It is responsibility of the state to choose self-sustainable assets that allow to the private initiative the necessary financial return for infrastructure project's viability.

In 1993 it was established by the Brazilian federal government the "Programa de Concessões de Rodovias Federais – PROCROFE", with 14.000km of highways concession that would be transferred to private initiative. In the first stage, in 1995, 5 set of roads segments were transfer totalling 766 km. In 2007, after nine years of discussions has been undertaken the auction of the first phase of the second stage, with 2,600 km of roads divided into 7 set of roads segments. In 2009, the federal government proposed the second phase of the second stage with 680km in 1 concession.

The scope of the Brazilian federal program also includes more than 6,500 km of highway concessions bringing some structural changes such as at the bidding design and the contract model, that have been previously used in the last two auctions, in 2007 and 2009.

The aim of this study is to analyze the factors influencing the participation of private investors in Brazil´s federal concessions under the economic and regulatory perspective. This motivation is justified by the difference in the number of participants in auctions: 29 groups in the first phase of the second stage and only 2 in the second phase of the second stage. Also, it had influence on the discounts that had up to 65% in the first phase of the second stage and 21% in the second phase of the second, compared to maximum tariff determined for each project by the regulatory agency.

Keywords: highways concessions; regulation; financial viability.

1. INTRODUCTION

In the course of history, mobility has been important to the economic and social development. One of the main factors of the Industrial Revolution, and at same time one of its major products was the transport fast and cheaper. Distances have been shortened and the world became smaller. Companies that for millennium have ignored each other, were suddenly put into contact. The relationships of trade, politics, economics, technology and many other issues have been deeply affected by the changes. Globalization and higher speeds of movement and communication led to the operation time substantially smaller, demanding answers faster and faster. In a globalized world, where the boundaries of business are very close, it is essential add to products the largest number of competitive advantages. It is necessary to confirm the relationships with customers and suppliers in the supply chain, to find tools that ensure an efficient and comprehensive management throughout the company's operations, from to receiving the inputs and raw materials to the shipment, distribution of finished products and their put on the market. The growing global trade plus the production spraying in countries (developed or not), makes that the efficiency of transport has influence on the performance of countries, making it necessary the provision of a structured network to lead to further integration, both inter-sectoral and regional levels in the whole productive structure.

The reliability of the infrastructure (highways) directly reflects the performance of the production chain. The transport operation takes place on this infrastructure, most of it property of the state. The transport companies, with their vehicles more sophisticated, the support services, as well as all industry indirectly affected, make using the infrastructure as a precondition of its existence. The inefficiency of any link in this chain means the inefficiency of all. The deterioration and obsolescence of infrastructure in Brazil can create serious obstacles to economic development, which is one of the main reasons for the almost negligible participation in global trade. It is estimated that logistics costs in Brazil represents 26% of the value of the goods and on the countries of the OECD this cost is only 9.5%, which demonstrates the strong impact of transport infrastructure on prices of Brazilian products compared with the world market (Guasch and Kogan, 2006). The deterioration is effect of the reduction of the volume of public investment on transport infrastructure from 1.8% of GDP in 1975 to 0.18% in 2006, putting at risk the performance of the chain (Velloso, 2007).

The twentieth century was marked by great scientific discoveries and revolutionary technological inventions, based on this. In Brazil and in the entire world, standards of live will increase. Some forecasts indicate an increase of five times in real income per capita in the world by 2050, suggesting an increase of six times in world production, mainly concentrated in the developing world. The twenty-first century should include an end to extreme poverty, improvements in the economic security of countries and stabilization of world population. Also should be developed sustainable system energy, land use and resources to avoid the most dangerous trends of climate change, species extinction and destruction of ecosystems.

Preserve an economic growth of around 5% a year is an ambitious goal by any standard. For a country like Brazil, with a limited domestic savings, it is a truly extraordinary effort. The investment rate should increase from the current 20% to about 23% of GDP (current prices), before based on the rise in domestic savings than by foreign savings.

More efficient systems of energy, logistic and communications should be created from a geo-economic perspective. Multimodal linkages should combine the key infrastructure components, such as transport, telecommunications and power generation / transmission on regional belts. The three main aspects of this infrastructure are: Macro-logistics, or the creation of a network for collection, storage, transportation, handling and distribution of goods on highways, railways and shipping routes, characterized the transport as a network system, with combinations sustainable between environmental and society; Telecommunications, or the daily number of exchanges between people and companies that will occur with the expansion of the telecommunications network; and energy, or the development of abundant energy resources.

Brazil could jump into the future if it knows how can use technological advances. The distance in the twenty-first century is not so important in commercial relations as the economic distance. In developing price system more efficient to sustain the flow of people, goods and ideas, Brazil could become more competitive comparing with more developed regions that have not a efficient systems. In considering the magnitude of investment needed in infrastructure, restrictions on the redistribution of spending by governments that can have not elevate the levels of taxation and costs together with the budget constraints, will necessary to Brazil use private financing to get better its infrastructure (World Bank, 2007).

2. CONCESSIONS OF PUBLIC SERVICES

The current wave of privatizations and concessions began in Chile after the 1973 military coup, which deposed President Salvador Allende. General Augusto Pinochet became President of the authoritarian regime and started the privatization process. The process started before United Kingdom, which has developed a strong privatization program leaded Prime Minister Margaret Thatcher (Murillo, 2001). By realizing that the 1980s were a “lost decade” to Latin American economies, the Washington Consensus in 1990, redefined the role of these countries in a globalized scenario by establishing a rigorous economic standard

that promoted economic liberalization and privatization of public services, among other measures (Machado, 2002).

Lastran (1998) indicates that economic reform in Brazil began in 1979 with the creation of the Secretaria do Controle das Empresas Estatais. On the government of President Joao Batista Figueiredo (1979-1985) was created the Departamento de Desestatização, initiating to the Programa de Desestatização in 1981-82. In the government of President Fernando Collor de Melo (1990-1992), was created the Programa Nacional de Desestatização (Lei Federal Nº. 8.031, 12/04/1990), with the following objectives, among others: reorganize the position of the State at the economy, reduce debt and allow the resumption of investment.

Privatization in Brazil started with the steel industry, petrochemical and fertilizer in the 1990s. The program presented successful cases and some failures. Telecommunications is a successful example, while natural gas was characterized by poorly designed contracts and inadequate access to pipelines (World Bank, 2007). After the infrastructure privatization program, concession of services were also introduced, such as in Germany, where concessions were awarded in granted parkings, logistics centres, prisons, hospitals, schools and administrative centres (Daube et al, 2007).

3. HIGHWAY CONCESSIONS IN BRAZIL

Brazil has 1.8 million km of highways, including those under the jurisdiction of the Federal Government, state and local governments, but only 11% are paved. Compared to the percentages of the other BRIC members, Brazil is at a disadvantage, because Russia has 80.9% of its highways paved, China has 81.6% and India 47.3% (CIA, 2009; World Bank, 2009).

The Indian government, after years of reluctance to private participation in developing infrastructure, noted poor infrastructure conditions was the weakness of the country, and the structuring of public-private partnerships (PPPs) could help to the mobilization of resources necessary for the country's development. To face this, India pursued a policy that is appropriate to the investor providing incentives for investment in large scale, while providing for appropriate checks and balances through transparency, competition and regulation (Postigo, 2008). Between 2000 and 2006 investment in PPPs in highways in India accounted for 19% of the total invested in concessions in the world, number that rose to 40% in 2006, totalling in that year US$ 4 billion (PPIAF, 2009). China, in the early 2000s, had only 20% of its roads paved However, the need for more and better roads led to the government, which had previously opposed the idea of private investment, to support the financing of highways through toll, developing policies for setting rates and tax exemptions (Senna and Michel, 2006; Postigo, 2008). Thus, between 2000 and 2006, 20% of the total invested in transportation projects through PPPs in the world was held in China. Currently, the country has a network of tolled roads with 20,000 km, beyond the largest market for PPP projects in developing countries can implement 6 to 9% of investments in roads through PPP (PPIAF, 2009).

The combination of 3 factors, the economic development of Brazil, the need for investment in infrastructure and a decline of 90% in public investment in infrastructure for transport over the past 40 years, makes the discussion about the viability of PPPs or concessions in the country very important, especially for presenting to state alternatives for funding infrastructure.

3.1 The Market

When transferring to the private initiative services of infrastructure the state involves three different levels: user, investors and the market regulator. The regulator is the person responsible for setting the market acting on the government and the investor. The investor is responsible to substitute the state in function of their efficiency and at the user is provided a service or infrastructure by paying a toll.

3.1.1 Regulatory Agency

Concessions of services and public infrastructure are natural monopolies meaning that there is the need for regulation to avoid the inefficiency of the monopoly, and to protect consumers from exploitation (Crew and Kleindorfer, 2002). Viscusi et al. (2000), state that an industry can be considered a natural monopoly if the production of goods or services by a single firm minimizes costs. However, as the monopolist is not price-taker, that is, not the market sets the price, his services will submit a higher price than if it were in a competitive market.

In the infrastructure market, regulation can be defined as a set of rules applied by the government or regulatory agency with the purpose of influencing demand and supply by restricting or facilitating specific behaviours (Senna and Michel, 2006). Thus, regulation must be focused on the points: to encourage and ensure the necessary investments to promote the welfare of consumers and users and increase economic efficiency (Pires and Piccinini, 1999). Di Pietro (1999) indicates that among the difficulties of the regulatory process, mainly in the infrastructure, is the fact that it is based on two contradictory ideas. On the one hand the concession is a service that must be performed in accordance with the public interest, under the authority of the state, however, this service is operated by a concessionaire with investor interests. The contradiction is by necessity to maintain public interest and economic-financial balance of the concessionaire during the contract period.

The increased complexity of the industry with the entry of the private sector, meant that the agencies need total independence from all stakeholders for that the regulator can ensure the protection of the welfare of society and mediating disputes between investors, consumers and government. The idea of independence implies autonomy, stable boards, staff expertise and transparency, as a clear definition of its functions and powers guaranteed by an existing regulatory framework (Pires and Piccinini, 1999).

3.1.2 Private Investor

For the government, to implement infrastructure projects implies benefits to ensure an increase in the welfare of society; but to the private sector, even in the provision of public services awarded, the focus is aimed at the return on investment. The necessity for investment in infrastructure, coupled with the lack of conditions of the same be done with public funding meant that fits to the private sector to provide financial conditions for the development of infrastructure in place to state, so getting a financial return.

Infrastructure projects require large amounts of financial resources, are usually exposed to risks, and can either be acceptable to some investors, as unacceptable to others. Thus, when considering the possibility of an investment, it is interesting to analyze the risk for the investor and/or decision maker in order to reduce the possibility of loss or failure. Furthermore, the risk level of a particular project may influence or be influenced by the cost of capital for its implementation. Brealey and Myers (2003) define the cost of capital as the expected return on an investment by analyzing project risk compared to other options of investment in the market. In the highway concessions, more specifically, the investor could face several risks, such as construction, demand, operation, environmental, economic, political and regulatory (Fishbein and Babbar, 1996; Grimsey and Lewis, 2002).

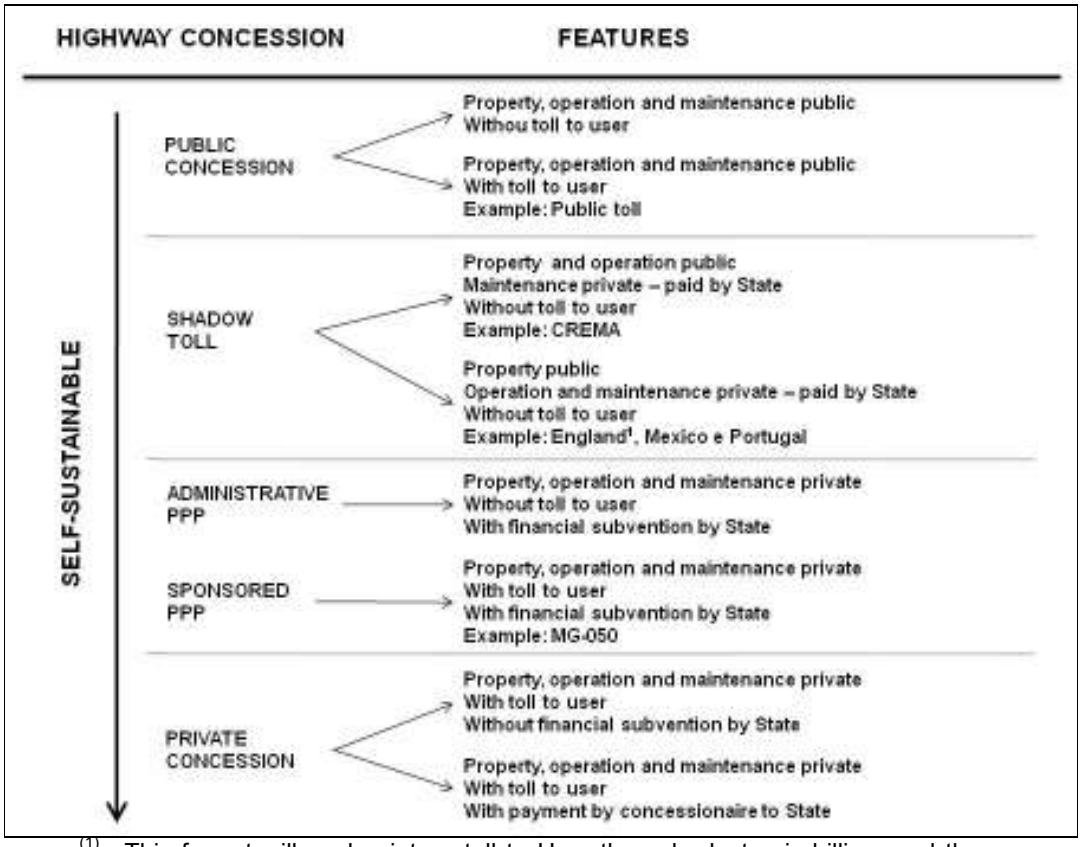
Projects evaluation from the standpoint of the investor considers risks and also considers financial indicators to estimate the profitability of the project to other possible investment. For Finnerty (1999) the steps for the project evaluation are similar to the decision on individual investment. Financial indicators such as net present value (NPV) of a project, its internal rate of return (IRR), or the minimum rate of attractiveness (MRA) are important for analyzing the financial viability of the project, however, an issue that has been discussed in the literature is the cost of capital for investment in infrastructure. The cost of capital reflects the opportunity cost of using the production factor capital, risk-adjusted project, that is, the remuneration that could be obtained by applying in projects with the same risks (Galesne et al. 1999). Galesne et al. (1999), indicate that the choice of the MRA should be correlated with the cost of capital. Thus, investors can avoid that resources are allocated to projects that have a lower profitability than other projects with similar risk, or are unsuccessful projects that show consistent profitability with the return demanded.

The use of Weighted Average Cost of Capital (WACC) is indicated by Finnerty (1999) as MRA, serving as base for the cost of capital. The WACC can be described in terms of financing rates and be represented as the average cost of the components of a package of funding to enable the project to be done (Neves da Silva, 2004).It should be noted that the cost of capital on a project may vary according to the profile of investors and the access that they may be cheaper finance (Oliveira, 2001).

3.2 CONCESSION MODELS

The planning of projects about public infrastructure with private participation has been possible due to various forms of partnership between the parties (Senna and Michel,

2006). In considering the various forms of public-private the literature has examined the feasibility of concessions, restricting themselves only to the models. Figure 1 briefly presents the possibility of toll roads in view of its self-sustainability.



(1) This format will evolve into a toll to User through electronic billing, and there will be a private or public company only responsible for collecting.

Figure 1: Self-sustainability of highway concessions (by the authors)

3.3 BRAZILIAN CASES

3.3.1 Rio Grande do Sul

The highway concession program developed in Rio Grande do Sul began in 1995 and was auctioned in 1998, by the Departmento Autônomo de Estradas e Rodagens (DAER), which aimed to promote a broad program of conservation and improvement of highways in the state. Despite the existence of a regulatory agency in the state - AGERGS, it is the DAER the supervision of road concessions. This regulatory structure is not the most appropriate, in view of the overlap of the government agencies and also for being the concession contracts under the influence of opportunistic government, since the regulator (DAER) is directly connected to it.

Rio Grande do Sul's model was based on the hub, which consists of a central point to which converge at least three highways with toll collection, building a cross-subsidy in which the roads with less traffic are held also by those who have larger volumes. In 1996, the hubs were located in 25% of the land of the state, in an area that includes approximately 50% of the population and GDP. This ensured that the traffic on the highways connecting commercial and industrial centers would be effective, including traffic between areas of agriculture for export and the port of Rio Grande, without relying on public funds (Senna and Michel, 2006). The toll was determined by the Government, and the winning bidder was the one who offered the largest network of highways to be served at the pole. 8 hubs were auctioned, as shown in Table 1, however, the pole of Santa Maria has not entered into operation and is currently under litigation.

Table 1: Auctioned Pole on Rio Grande do Sul (ABCR, 2009; DAER, 2009)

Hub	Concessionaire	Length	Period of Contract	Toll (2009)
Carazinho	Coviplan	250,4 km	15 years	R$ 0,0958/km
Caxias do Sul	Convias	173,7 km	15 years	R$ 0,1381/km
Gramado	Brita	144,9 km	15 years	R$ 0,1387/km
Lajeado	Sulvias	317,8 km	15 years	R$ 0,1133/km
Metropolitano	Metrovias	535,9 km	15 years	R$ 0,0447/km
Santa Cruz do Sul	Santa Cruz	208,0 km	15 years	R$ 0,0865/km
Santa Maria	Santa Maria	256,2 km	15 years	-
Vacaria	Rodosul	132,7 km	15 years	R$ 0,1356/km

The Santa Maria's hub is one example of the difficulties encountered in the implementation of the highway concessionaires in Rio Grande do Sul. In 1999, after taking the government, the governor Olivio Dutra has imposed a reduction in tariffs between 10 and 20% for cars and between 20 and 28% for trucks. Thus concessionaires were forced to file lawsuits in an attempt that the contracts were completed accurately, without the timely intervention of the government. In addition, pressure from users of part of Rio Grande do Sul made in 2001, through lawsuits, charges were paralyzed toll plazas belonging to hubs of Vacaria and Caxias do Sul These interventions, judicial and government on the concessions, and the use of escape routes in various hubs, raise the cost of Rio Grande do Sul's program involving financial problem in the concession contracts, and a negative image of concessions by the population.

3.3.2 Paraná

Paraná program, begun in 1997, aimed to restore and expand the highways connecting the major regional centers of production in the state, and it was a great effort of Paraná in improving infrastructure in order to attract companies and industries for the development of the state. A total of 6 set of roads segments were auctioned, as shown in table 2, where the criterion for determining the winner was the highest bidder in stretches of km of access, without raising the fare.

Table 2: Set of roads segments auctioned in Paraná (ABCR, 2009)

Concessionaire	Length	Period of Contract	Toll (2009)
Caminhos do Paraná	405,9 km	24 years	R$ 0,0879/km
Econorte	339,0 km	24 years	R$ 0,0943/km
Ecovia	175,1 km	24 years	R$ 0,0713/km
Rodonorte	567,9 km	24 years	R$ 0,0822/km
Rodovia das Cataratas	508,6 km	24 years	R$ 0,0768/km
Viapar	547,0 km	24 years	R$ 0,0747/km

After two months of the start of concessions in 1998, the Governor Jaime Lerner reduced tolls by 50%, unbalancing the contracts. Senna and Michael (2006), point out that thinking only in the short term, and to respond to momentary electoral issues, the same government that implemented the program has jeopardized an entire design focused on sustaining the provision of infrastructure. The new government, elected in 2002, as Governor Roberto Requião, radically opposed to highway concession, and one of its main banners during the campaign was the promise of changes in the concession agreements to reduce tolls, stressing extreme case in which the contracts would be cancelled (Serman, 2008). This opportunistic behaviour by the government in addition to damaging the image of private concessions in Parana reduces the viability of investments by private investors, given the fears of those on the fulfilment of contracts.

3.3.3 São Paulo

The state of São Paulo has the most comprehensive state program for highway concessions. Since 1998, 5,215 kilometres of highways have been transferred to private initiative (ARTESP, 2009). The objective of the government through concessions was to facilitate investment in road infrastructure through rehabilitation, expansion, maintenance, preservation and operation of self-sustaining highways, allowing the public investment in roads that are not viable for private investment.

The model adopted by the government of São Paulo, for the First Step, was based on costly concessions, in which the state sets the price of the toll to be charged to the user, investments and services to be performed by the concessionaire, in return, the concessionaire makes the payment of a fee or grant. The criterion for bidding was set to offer more grants to be paid to the state government of São Paulo. This first step was composed of 12 sections, with 3,500 km in total, as shown in Table 3.

In 2005, due to the necessity to balance the concession contracts in the light of changes in tax rates and bases of the PIS and COFINS, the occurrence of the ISS, not provided in the bidding, and the addition of new works and review of schedules investments, ARTESP, state regulatory agency, has promoted an extension of the concession for some roads (Serman, 2008). The only concession that they had not changed their terms were Autovias and Vianorte, for others concessionaires limits ranged from 1 year to 8 years and 8 months for an extension (and Soufen Toledo, 2007).

Table 3: Set of roads segments auctioned in São Paulo – 1st Step (ABCR, 2009; ARTESP, 2009)

Concessionaire	Length	Period of Contract	Toll (2009)
Autoban	316,7 km	20 years	R$ 0,1319/km
Autovias	317,0 km	20 years	R$ 0,0968/km
Centrovias	218,2 km	20 years	R$ 0,1209/km
Colinas	300,0 km	20 years	R$ 0,1633/km
Ecovias dos Imigrantes	177,0 km	20 years	R$ 0,1525/km
Intervias	375,7 km	28 years	R$ 0,0947/km
Renovias	345,6 km	20 years	R$ 0,1024/km
SPVias	517,0 km	20 years	R$ 0,1025/km
Tebe	155,9 km	20 years	R$ 0,0955/km
Triângulo do Sol	443,0 km	20 years	R$ 0,1130/km
Vianorte	236,6 km	20 years	R$ 0,1591/km
Viaoeste	168,0 km	20 years	R$ 0,1886/km

The second step of the program of concessions of São Paulo began with the bidding of the Mario Covas ring road - west segment, in march 2008. Using the model of costly concession, the government of São Paulo was able to obtain R$ 2 billion as the grant payable in 2 years by the concessionaire wins the bidding of the west, a value that will be used fully in the construction of south section of the ring road. In October 2008 was held the second stage of second step of the concession program, which presents 5 set of roads segments, totalling 1,715 kilometres of principal roads and 917 km of side roads, as indicated in Table 4. At this stage, through the award sets have been obtained by the government, for $ 4.2 billion to be paid in two years, and will likely support other investments related to infrastructure in the state of São Paulo. Please note that by being in a scenario of global financial crisis, the São Paulo government chose to request item as required in the process and eliminating a firm commitment of financing from a financial institution certifying that the viability of the proposal submitted by the bidders.

Table 4: Set of roads segments auctioned in São Paulo – 2nd Stage of 2nd Step (ABCR, 2009; ARTESP, 2009)

Concessionaire	Length		Period of Contract	Toll (2008)
	Principal Roads	Side Roads		
CART	444,0 km	389,8 km	30 years	R$ 0,0905/km
Ecopistas	142,0 km	-	30 years	R$ 0,0588/km
RodoAnel	32,0 km	-	30 years	R$ 0,4875/km
Rodovias do Tietê	415,0 km	201,8 km	30 years	R$ 0,0937/km
Rota das Bandeiras	297,0 km	81,4 km	30 years	R$ 0,1014/km
ViaRondon	417,0 km	243,8 km	30 years	R$ 0,0640/km

3.3.4 Federal Program

In the early 90's, through Portaria Nº. 10/93, was instituted the Programa de Concessões de Rodovias Federais - PROCROFE by which was designated as the regulator the Departamento Nacional de Estradas de Rodagem (DNER), representing the Ministry

of Transport (Senna and Michel, 2006). In 1995, the DNER bid the First Step of the Federal Program, with 5 set of roads segments, the concessions being free, allowing the government to carry out works in the roads granted without interfering in the toll. This first step had contracts with different period of contracts, as shown in Table 5, and also some considerations on the toll revision. In the first step these points are subject to toll revision, as long as agreed between the parties: the creation, alteration or elimination of taxes, the addition or deletion of charges in the Programa de Explorção da Rodovia (PER), revenue alternatives of the concessionaire, and substantial modifications, more or less, the prices of factors of production or the input of the major cost components considered in the toll.

Auctioned in 1998 by the state government of Rio Grande do Sul, the Pelotas' Hub regulation was transferred to the federal level in 2000, in according of the difficulty of deployment of the concessionaire. This resulted from opposite position to the highway concessions by the state government, then headed by the Governor Olivio Dutra. With the transfer, the period of contract that was previously 15 years was extended for more 10 years, and receive an increase of 2.33 years to solve the financial problem of the contract. The time between signing the contract in 1998 and the beginning of the concession in 2000, and the insertion of 72 km in total length of the pole were the facts causing the imbalance.

Table 5: 1st Step of Federal Program (ABCR, 2009; ANTT 2009)

Concessionaire	Length	Period of Contract	Toll (2009)
Concepa	121,0 km	20 years	R$ 0,0809/km
Concer	180,6 km	25 years	R$ 0,1196/km
CRT	142,5 km	25 years	R$ 0,1080/km[1]
Ecosul	623,4 km	27,33 years	R$ 0,0545/km
Nova Dutra	402,0 km	25 years	R$ 0,0830/km
Ponte S.A.	30,0 km[2]	20 years	R$ 0,1628/km

(1) Excluding blocking toll plazas.
(2) 26 km of road and more 4 km for access.

The Federal Program was implemented and regulated by the DNER until 2001, when it was approved Law Nº. 10,233 creating the Agência Nacional de Transportes Terrestres - ANTT whose main responsibility was to coordinate the highway concessions, regulating the market. This transfer of responsibility was related to the fact that DNER is a federal government institution, and therefore has a high possibility of capture by the government. Senna and Michel (2006) report that the regulatory agency tends to bypass decisions based solely on the political interests of short-term actions and not based on technical aspects.

In October 2007, after nine years of discussions between the various federals organs was auctioned the First Phase of Second Step of the Federal Program of Highway Concessions. Among the changes present in this agreement are: auction by the lower toll, internal rate of return of project 8.95% per year, risk of quantitative in works allocated to the concessionaire, quality control of services for intense monitoring, schedule of works to expand highway capacity depends on the volume of traffic, possibility to include auxiliary toll plazas to reducing leakage and reducing the rate of PIS and COFINS (ANTT, 2007). The auction carried out on the Bolsa de Valores de Sao Paulo (BOVESPA) was attended by 29

groups of national and international investors, who made their bid on 7 set of roads segments totalling 2.600km.The discount provided by the winners, compared with the proposed toll by ANTT, ranged from 27 to 65%, as shown in Table 6.

In order to implement the Second Phase of Second Step of the Federal Highway Concessions in January 2009 ANTT auctioned a set roads of segments including the highways BR-116, BR-324, BA-526 and BA-528, all in Bahia State with 680.6 kilometres. While retaining the same period of the First Phase, 25 years, this lot made some changes such as reducing the internal rate of return of the project to 8.50% per year, and the insertion of the marginal cash flow for the balance economic-financial contract when there are new investments that are not contained in the Programa de Exploração da Rodovia (PER).

Table 6: 1st Phase of 2nd Step of Federal Program (ABCR, 2009; ANTT, 2009)

Concessionaire	Extension	Period of Contract	Discount at Bid	Toll (2009)[1]
Autopista Fernão Dias	562,1 km	25 years	65,43 %	R$ 0,0156/km
Autopista Fluminense	320,1 km	25 years	40,95 %	R$ 0,0390/km
Autopista Litoral Sul	382,3km	25 years	62,67 %	R$ 0,0143/km
Autopista Planalto Sul	412,7 km	25 years	39,35 %	R$ 0,0327/km
Autopista Regis Bittencourt	401,6 km	25 years	49,20 %	R$ 0,0224/km
Rodovia do Aço	200,4 km	25 years	27,17 %	R$ 0,0479/km
Transbrasiliana	321,6 km	25 years	40,00 %	R$ 0,0323/km

(1) If all toll plazas was charging the toll.

The objective of insertion of the marginal cash flow is to reduce the impact of new investments in the toll for the entire concession period. Thus, for each investment that is not contained in the PER is compiling a new cash flow and as the discount rate for both revenue and costs to a log run interest rate (the Taxa de Juros de Longo Prazo - TJLP) plus 8% divided by target inflation set by the Comitê de Política Monetária do Banco Central (COPOM), a central bank committee for monetary policy..

In a climate of global financial instability, the auction was held on BOVESPA and had two groups bidders, presented in Table 7. According to Costa (2008), the federal program has already previously studied, 6.508km of highways to be granted to the private sector. These roads are located in the South (1.659km), Southeast (3.455km), Midwest (603km) and Northeast (791km), and are part of PROCROFE, which together with the federal highways already granted, in addition to federal highways delegated to states (2.775km) will provide to the infrastructure of the country about 14,000 km of roads maintained by the private sector.

Table 7: 2nd Phase of 2nd Step of Federal Program (Bovespa, 2009)

Bidders	Discount at Bid	Toll (2009)[1]
Consórcio Rodobahia	21,00 %	R$ 0,0199/km
Cia. Brasileira de Rodovias	10,10 %	R$ 0,0227/km

(1) Data-base: December, 2005

4. FINAL REMARKS

Efficiency of transport systems and reduction of economic distances are important factors in the growth of Brazilian economy. However the reduction of public investment in infrastructure has caused the country's growth occurs slowly. In view of this, and the examples that have occurred with China and India, it is important to discuss programs of private investment in infrastructure. This paper briefly presents the scenario of Brazilian highway concessions, which started in 1995, reporting features that are perceived by the market, whether from the perspective of the regulator and the investor, and in addition, some state programs and especially the federal program that after a long period of discussion has lots to bid road self-sustaining.

Due to the extension of PROCROFE, which provides for approximately 14,000 km of federal highways to private initiative, with 6,500 kilometres of these are yet to be auctioned, and structural changes at both the bidding and contract the last two federal auctions, in the years 2007 and 2009, make it interesting to conduct an analysis from the perspective of economic and regulatory factors influencing the participation of private investors in bids from federal highways. This fact is justified by the discrepancy in the number of participants in these auctions, 29 groups in the first phase of second step and only 2 in the second phase, and its influence in the provision of toll that had discounts of up to 65% in first phase and 21% in second phase, compared to maximum rate determined by ANTT.

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