

Reforms and Infrastructure Regulation in Brazil: The experience of ANTT and Antaq

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There is an increasing interest regarding the Brazilian regulation experience, but the large majority of this recent and incipient literature has been focusing on the cases of the telecommunications (Anatel), electricity (Aneel) and oil & gas (ANP). This paper analyzes some issues concerning the experiences of ANTT (railways and roads) and Antaq (harbors), mainly due to their importance to the country's international trade performance. In reality, the article scrutinizes the Brazilian regulation experience as a whole and pays special attention to the ANTT and Antaq's trajectories, by stressing the following features: the original conception and coordination; the heritage of bureaucratic personnel; the political influence; the budget evolution; and the performance of regulated companies.

Key Words: Regulation, Brazil, Infrastructure, Transport.

Introduction

The investments in infrastructure sectors, such as telecommunications, electricity, transports and oil & gas are usually considered as a crucial factor to foster countries' economic growth. In the last two decades, for instance, many nations have promoted important changes in infrastructure sectors as a way to increase their efficiency. It is understood that this process was started in the 1980s, comprising not only developed countries (United States and United Kingdom, for example), but also emerging nations (Latin America, in the 1990s).

The so-called "infrastructure reform" was strongly based on the privatization of the State-Owned Enterprises (SOEs). As a consequence, it was observed an acceleration of private-owned companies' market share in the utilities, like telecommunications and electricity. According to Pinto Jr. & Fiani (2002, pp. 533-534), in general, this reform consisted of six crucial aspects: a) the de-verticalization regarding the productive chain for infrastructure activities; b) the introduction of competition in different segments; c) the openness to access the network by other firms; d) the establishment of new contractual forms; e) the privatization; f) the implementation of new mechanisms for regulation and the creation of new regulatory institutions.

As far as the phase in which a public monopoly in infrastructure sectors overcame, significant changes seem to be needed in terms of regulatory framework. Indeed, new institutional mechanisms were required to be developed in order to deal with new kind of relationships between the State and the private-owned firms. However, this transition is definitely not an easy task for the State. In the particular case of developing countries, a lot of attention should be paid to "quality" of the privatization, which is related to the transparency and to a reliable and stable institutional framework. Otherwise, the goal to attract more investments to these key activities will be hardly reached.

Concerning the Brazilian experience, the discussion about infrastructure sector reform could not be dissociated from the macroeconomic agenda, in which the fiscal

crisis has played a prominent role. Generally speaking, Brazil paradoxically had (and continue to has) a large tax burden, on one hand, and a low capacity of State's investment in infrastructure, on the other hand. In this context, the privatization was understood as a solution to circumvent the fiscal fragility that characterized the Brazilian State.

Brazil engaged in a very aggressive privatization program during the 1990s, which was entitled "Programa Nacional de Desestatização". The State sold initially its participation in manufacturing companies (i.e., steel, fertilizer and petrochemicals) and, afterwards, in the infrastructure activities (telecommunications and electricity). Regarding the infrastructure, the public sector removed itself from the productive function – losing ownership control in the public utility firms – and began to act more intensively as a regulatory agent.

Mainly as a consequence of the attempt to solve the fiscal problem in a hurry, not necessarily a sectorial regulatory agency was established before the privatization. In the most cases, these agencies were set up simultaneously or even after the privatization, which naturally has posed addition problems for the regulation. Furthermore, the run a regulatory agency *per se* is a difficult job, because traditionally it intents to reach different goals, such as to increase the quality of services, to promote the universalization, to enlarge productivity, to guarantee the transfer to consumers of part of the efficiency improvement.

In fact, the regulation reform in Brazil began in 1995, when it was promulgated the "Law of Concessions" that affected mainly the telecommunications and the electricity sectors. Immediately after the issue of this Law, it was observed a reduction of control and restrictions that used to block the participation of private-owned (domestic and international) enterprises in these businesses. However, this movement was not enough to attract private investors, due to the risks associated with the lack of a minimum regulatory framework. In order words, additional challenges for the State were erected.

Bearing this context in mind, this article wants to answer the following question: how the Brazilian new-born regulatory system can be evaluated, in general and in the

specific case of the transport? Nevertheless, it can be said that there are many possibilities to tackle the mentioned issue. One possibility is to stress the performance of the regulatory agency *per se*, in terms of efforts/inputs (the evolution of budget and number of employees) or in terms of outcomes/outputs (number and value of fines, imposed and collected). Moreover, a survey can be conducted with regulated companies, business associations and the regulatory agencies properly, aiming to understand the perception of regulatory agency's technical capability, the degree of political interference, the degree of capture in relation to the regulated companies and so on. Other option is to highlight the performance of the regulated enterprises, in particular concerning investments and efficiency indexes as well as the price trajectory. Considering that are several avenues of research to be explored, this paper recognizes that a partial approach has been developed. Concerning methodology, only publicly available information is utilized, which includes the review of the academic literature, the annual reports and websites from the regulatory agencies, and the news published in the leading Brazilian newspapers and business magazines.

Besides this short introduction, the article is divided into three other sections. The first one is dedicated to the review of the literature covering the Brazilian experience of regulation in the most prominent sectors: telecommunications, electricity and oil & gas. The second section is the crucial part of it, since it analyzes the experiences of transport regulatory agencies in Brazil. The final section summarizes the main findings of the paper.

1. The Brazilian Regulatory Experience

1.1. A General Overview

According to Pires & Goldstein (2001, p. 7), the international trend concerning the regulatory governance reform has been the creation of the independent regulatory authorities with defined competences. They play a prominent role in terms of decisions related to tariffs, barriers to enter, quality of service, universalization and interlink of networks. Their competences are generally defined by Laws. Looking at the Brazilian experience, Pinheiro (2003, p. 1) concludes that:

“Following international practice, infrastructure regulatory reform involved the separation of commercial, regulatory and policy activities. State-owned enterprises continued to be responsible for commercial activities, but were restructured, often through privatization. As the new regulatory model stressed the introduction of competition, privatization was often accompanied by the vertical and/or horizontal breakup of state-owned enterprises and the end of barriers to new private entry”.

Nevertheless, it seems that there are some important differences among regulatory agencies in Brazil that should be stressed. At least, three criteria can be utilized to segregate these disparities: a) the date of establishment; b) the nature of the agency; c) the type of competition in force.

Regarding the first issue, according to Martins (2004), quoted by Peci (2004), it is possible to distinguish three generations of regulatory agencies in Brazil. The first generation was characterized by the set-up of three regulatory agencies related to infrastructure sectors in the period 1995-1998: “Agência Nacional de Energia Elétrica” (Aneel), “Agência Nacional de Telecomunicações” (Anatel) and “Agência Nacional de Petróleo e Gás Natural (ANP)”. They are responsible for electricity, telecommunication and oil & gas sectors, respectively (see Table 1).

Table 1
Regulatory Agencies in Brazil

| Regulatory Agency | Competence | Law |
|---|---------------------|--------------------------------------|
| Agência Nacional de Energia Elétrica (Aneel) | Electricity | 9.427 (Dec. 26 th 1996) |
| Agência Nacional de Telecomunicações (Anatel) | Telecommunication | 9.472 (Jul. 16 th 1997) |
| Agência Nacional do Petróleo (ANP) | Oil & Gas | 9.478 (Aug. 6 th 1997) |
| Agência Nacional de Vigilância Sanitária (Anvisa) | Health Surveillance | 9.782 (Jan, 26 th 1999) |
| Agência Nacional de Saúde Suplementar (ANS) | Health Insurance | 9.961 (Jan 28 th 2000) |
| Agência Nacional de Transportes Terrestres (ANTT) | Railway and Road | 10.233 (June 5 th 2001) |
| Agência Nacional de Transportes Aquaviários (Antaq) | Harbor | 10.233 (June 5 th 2001) |
| Agência Nacional de Cinema (Ancine) | Movie Industry | PM 2228 (Sept. 6 th 2001) |

Source: Own elaboration

A second generation was verified in the period 1999-2000, when were established “Agência Nacional de Vigilância Sanitária” (Anvisa), “Agência Nacional de Saúde Suplementar” (ANS) and “Agência Nacional de Água” (ANA). Anvisa’s main competences are: a) to coordinate the National System of Health Surveillance; b) to establish norms and standards regarding restrictions on contaminants, toxic waste, disinfectants, heavy metals and other materials that constitute a health risk. ANS is in charge to supervise “supplementary health assistance”, which in practice means that it monitors the private-owned health insurance companies. ANA’s mission is related to the use of water and to the implementation of the National System of Hydro Resources.

In the period 2001-2003, three additional regulatory agencies were established: “Agência Nacional de Transportes Terrestres (ANTT)”, “Agência Nacional de Transportes Aquaviários (Antaq)” and “Agência Nacional de Cinema (Ancine)”. This can be interpreted as the third generation, although there substantial differences among them. Ancine is dedicated to foster the movie industry in Brazil, whereas ANTT and Antaq are related to the transport regulation. In the particular case of Ancine, it was not create as by Law, but by a “Provisory Measure”, which is a project proposed by the government that is ratified by the Congress in a short-period time, otherwise it loses its legality.

Concerning the nature of regulatory agency, Salgado (2003, p. 32) points out that the widespread use of the term “regulatory agencies” in Brazil ends up hiding one important distinction. According to the author, it is wise to differentiate the State Agencies, which regulate the offer of public services through the application of specific legislation, from Governmental Agencies (or Executive Agencies), which follow government’s guidelines. In other words, State Agencies want to regulate services in a quite independent way, at least theoretically, both from the government and from the regulated companies. Conversely, Governmental Agencies should implement the government’s decision. Keeping this distinction in mind, Aneel, Anatel, ANP, ANTT and Antaq are considered as State Agencies, while Anvisa, ANS, ANA and Ancine are understood as Governmental Agencies.

On the subject of the competition type, Rigolon (1997) stresses four issues: a) privatization; b) competition for the market (concessions and leasing); c) competition in the market; d) competition by substitute products or services. The later is truly important to energy and transport sectors. Natural gas, oil, coal and water are substitutes in the electric energy production. Another example of competition by substitute is the rail transport as alternative for the road and water transport. It is appropriated to distinguish between “competition for the market” and “competition in the market”. Concerning the first possibility, it comprises the concessions of public services and the leasing. The competition happens before the signature of the contract, not being allowed the direct competition in the market. In the concession, the private-owned company takes the responsibility for the investments, which is not the case in the leasing. The competition in the market can be a result of liberalization, de-verticalization or the sale of multiple concessions. Obviously, the four types are not necessarily excluding among them.

Table 2 shows the application of Rigolon’s contribution to the Brazilian infrastructure regulation. In reality, privatization was not mentioned in the Table 2 because it can be combined with any of the other three types of competition. Broadly speaking, at the first stage, the bulk of infrastructure was in the hands of the Brazilian State, via SOEs: Eletrobrás was responsible for electricity; Telebrás, for telecommunications; Petrobrás, for oil & gas; Rede Ferroviária Federal (RFFSA) for railway; Portobrás, for harbors. As a consequence of privatization, de-regulation and liberalization, two main

models were developed. The first one was based on a monopoly in a specific market, as an outcome from the competition for the market and competition by substitute. This is observed in electricity distribution, railway, road and harbor. The second model was underpinned on the competition improvement in the market, which was verified in the telecommunication and oil's experiences.

Table 2
Infrastructure Competition in Brazil

| Initial Situation | Alternatives of Industrial Structure | Alternatives of Competition | Brazil's Experience |
|----------------------------|---|---|---|
| Integrated Public Monopoly | Monopoly in Specific Markets | <ul style="list-style-type: none"> • Competition for the market (Concessions or Leasing) • Competition by substitute products or services | <ul style="list-style-type: none"> • Electricity Distribution • Railway • Road • Harbor |
| | Competition | <ul style="list-style-type: none"> • Market competition, with newcomers | <ul style="list-style-type: none"> • Telecommunications • Oil |

Source: based on Rigolon (1997, p.128)

After this general overview of the regulation system in Brazil, it seems useful to look at the situation of each different infrastructure sector. In the rest of this section, the experiences of telecommunications, electricity and oil & gas are briefly examined.

1.2. Telecommunications (Anatel)

In the 1980s and 1990s the privatization and liberalization of the telecommunications occurred in many countries. In the United States, for instance, this process started in 1984 with the end of the monopoly exercised by AT&T. The reform was concluded in 1996, when the Communication Law was promulgated. In the United Kingdom, this reform began in 1981, when British Telecomm was privatized. In both cases, the

reform took a long time, lasting more than twelve years. Nonetheless, the telecommunication reform in Brazil was carried out in a short period, due to the fact that in seven years (1995-2002), all commercial activities were transferred to the private sector.

The telecommunication reform in Brazil started in 1995, when a Constitutional Amendment authorized the investment of private-owned companies. Moreover, in 1997, the sector's regulatory framework was approved in the form of the "General Telecommunications Law", when Anatel – the Brazilian telecommunication regulatory agency – was created. The objectives of this Law were to promote competition and to define the rules for concessions, considering that they should be non-exclusive. Additionally, the cross-subsidies that used to have between local and long-distance services were eliminated. This process culminated in 1998, when Telebrás was privatized, via the sale of thirteen subsidiaries (one long-distance carrier, three fixed-phone and nine mobile-phone companies).

The main objectives of the privatization of Telebrás' were to promote competition, to increase regulatory efficiency by the reduction of asymmetric information, and to expand investments. Regarding the second issue, if the government had decided to sell Telebrás as whole, a technique of privatization that was adopted in other countries such as Mexico, the asymmetric information between the regulated company and regulatory agency would be higher. Concerning investments, in general, and in its impacts on universalization, in particular, Pinheiro (2003, p. 4) points out that: *"The concession contracts, signed in 1998, required an expansion in the number of fixed lines from 15.3 million to 50 million, and in the number of cellular lines from 4.0 million to 26.2 million, respectively, in ten years."*

After the privatization of Telebrás, another set of regulatory changes was promoted. Some of these steps were contained in the "General Plan" that determined the guidelines for: a) fixed lines services; b) interlink between networks; c) universalization, including, for example, the determination that all localities with more than 100 inhabitants should have one fixed line as of December 2005; d) the quality level of the services.

Since its creation in 1997, Anatel is engaged in fostering competition in the market. Thus, in the period 2001-2003, new concessions for mobile telecommunication (Bands C, D and E) were sold and, consequently, an impressive number of newcomers entered this market. As a general rule, Anatel established pro-newcomers policies aiming to reduce the incumbents' market power. The results of this transformation affected the industrial structure dramatically, as well as the performance of companies and the quality of services. Pinheiro (2003, p. 4) summarizes as follows:

“In 2000, two years after privatization, the number of fixed lines had already reached 35.0 million and that of cellular phones 21.5 million, almost doubling the combined number of lines. By mid 2002 the regulatory reform process in the telecom sector was greatly advanced, with a large increase in supply and a fullblown competitive environment was in place. In June 2002, the number of installed fixed line phones had reached 45.1 million, with 38.2 million in use. The number of mobile phones, in turn, reached 35.3 million in January 2003, with 36.6 percent of them operated by companies other than those resulting from the spin-off of Telebrás.”

Differently from Aneel and ANP, Anatel has the right to analyze jointly with “Conselho Administrativo de Defesa Econômica” (CADE) the antitrust cases in Brazil. For instance, in 2002, it took part in the case involving Embratel and Intelig against Telemar, Brasil Telecom and Telesp. The first ones alleged that the second ones were subsidizing long calls via discriminatory prices in the interconnection services. The orientation of Anatel is that the negotiations need to occur preferentially among the companies; thus, the regulatory agency will only arbitrate when these negotiations failed. Nevertheless, the interconnection rights are an extremely complex issue, because it involved the backbones access of the large distances operators, to the data transmission and Internet services (Pires & Goldstein, 2001, p. 20).

1.3. Oil & Gás (ANP)

In 1995, a Constitutional Amendment determined the end of Petrobrás' oil monopoly in Brazil. The decision opened the opportunity to the private-owned companies to explore oil in the country. Two years later, the Law 9.748 established the "Conselho Nacional de Política Energética" (CNPE), an organ related to the Brazilian Ministry for Energy and Mining. Its goal was to develop the regulatory environment in Brazil. In 1997, the so-called "Oil Law" was promulgated, aiming to define strategies for the oil & gas sector and, in a lesser extend, for new type of energetic sources. This Law determined the creation of ANP with the goal to implement a competitive model for the oil & gas sector (or at least to foster competition in it).

Pinto Jr. & Fiani (2003, pp. 541-542) observes that the ANP's regulatory responsibilities are defined in Law 9.748 as follows:

"1. to implement an oil & gas national policy; 2. to control directly or via agreement all activities of the oil industry; 3. to promote bidding for oil fields, in order to consolidate the entry process of new companies; 4. to structure and to control royalties and other governmental participations; 5. to establish the criteria for transportation and commercialization of oil & gas; 6. to establish the regulation regarding the access to oilducts; 7. to make sure that good practices are employed to promote the rational use of oil & gas and to protect the environment; 8. to support a data base and to diffuse geologic information; 9. to guarantee the offer of derivatives to all parts of the country; 10. to protect the consumers' interests related to price, quality and availability."

It can be argued that ANP, on the paper, has both financial and decision-making autonomies. However, in reality it faces a difficult situation, due to the high degree of verticalization carried out by Petrobrás, which continues to dominate the oil market in Brazil, despite the efforts made to liberalize it. Traditionally, the oil sector can be divided into three production stages: upstream (exploration and production), middle stream (transportation and refine) and downstream (distribution and sales). Petrobrás is definitely the largest oil producer in Brazil. Furthermore, it dominates the middle

stream. Petrobrás manages all the infrastructure of the oil terminals and plumbing systems. In the case of imported oil, by third enterprises, they need to use Petrobrás' installations. Petrobrás also largely dominated the refining phase and it controls the largest gas distribution company in Brazil. It should be remembered that differently to what occurred in the telecommunication sector, Petrobrás continues to be a SOE.

Even though, in 1999, ANP accomplished the first auction for the exploration and production of oil in Brazil. Since then, ANP has been organized annually an action to sell the rights to explore oil and gas in Brazil. These auctions have allowed that multinational enterprises entered in the Brazilian oil & gas exploration market, such as Agip, Exxon Mobil, Royal Dutch Shell and Texaco. This liberalization seems to deliver limited results in terms of competition in the Brazilian oil market, which continues strongly controlled by Petrobrás.

In relation to the natural gas sector, Pires & Goldstein (2001, p. 11) considers that the natural gas segment is still in its early stages. Nevertheless, Petrobrás controls all segments of the productive chain, except for the downstream segment, in which the local State companies, several with equity participation of Petrobrás, exercise a regional monopoly.

1.4. Electricity (Aneel)

The electricity sector reform began in 1992, when Light and Escelsa were included in the National Privatization Program. In 1995, this process was reinforced with the promulgation of the "Law of Concessions", which determined the rules to start the bidding, general conditions for concessions and the tariffs determination. This Law made possible the industrial transformation as it allowed the participation of private-owned companies in the sector.

Traditionally, the electricity sector is divided into four different activities: generation, transmission, distribution and commercialization. The discussion about electricity sector privatization was much based on the premise that generation and commercialization activities were potentially competitive, but the transmission and

distribution businesses constitute natural monopolies. Moreover, the fiscal crisis principle was also present. Therefore, the privatization was viewed as a way to reduce the public expenses too. Since some distribution electricity companies were privatized, it demanded the development of new regulatory institutions.

To reach a consensus among economists are considered a rare phenomenon, if any. However, in the particular case of Brazilian regulatory model for electricity, at least Rigolon (1997), Pires & Goldstein (2001), Salgado (2003) and Pinheiro (2003) all agree that a major problem was derived from the fact that the government did not establish the regulatory rules before the beginning of the privatization process. Moreover, the privatization was incomplete, due to fact that some large generation electricity companies have not been privatized.

Indeed, it was only in 1996, that the Aneel was created, while the privatization has initiated four year previously. Besides Aneel, the Brazilian regulatory electricity model was based also on the “Operador Nacional do Sistema” (ONS). The ONS’ functions were defined as to plan the operations and to execute the centralization of the electricity generation. This institution was supposed to settle on the process for the transmission network enlargement, but these activities were in practice more coordinated by the government itself. Nevertheless, the national electricity rationing in 2001 showed that there were something wrong with the model developed.

Pinheiro (2003, p. 16) stresses that private investment in Brazil has also been discouraged by poor intra-sector as well as inter-sector coordination. Concerning the first issue, in the case of the electricity, according to the author, there is still no clear separation between the functions of the various agencies involved (Aneel, ONS, Ministry for Energy and Mining and the Eletrobrás). In relation to the second one, the coordination among Aneel, ANP, ANA (the water sector regulator) and Ibama (the environmental protection agency) is still weak. In the same direction, Pires & Goldstein (2001, p. 37) point out that a major characteristic of the Brazilian regulatory system is exactly the insufficient coordination among the different agencies. According to these authors, there are three other problems regarding the Brazilian regulatory experience: a) the vague stance of the responsibilities for each agency; b) the lack of effectiveness in the decisions; c) the inappropriate contracts and rules.

2. The Brazilian Transport Regulatory Experience

The transport sector reform in Brazil has followed, generally speaking, the same guidelines that were observed in electricity, oil & gas and telecommunications sectors. Indeed, the reform of the transportation sector started in the 1990s aiming to transfer to the private-owned firms the maintenance of the railways and roads and the operations of the harbors. In this sense, it should be stressed that the transport regulatory model in Brazil is much less analyzed *vis-à-vis* the mentioned sectors. In our point of view, this is quite understandable situation, for three main aspects.

Firstly, the academic literature is focused on the experiences of ANP, Anatel and Aneel. All of them can be considered as the first generation of regulatory agencies in Brazil. Conversely, ANTT and Antaq can be understood as part of the third generation.

Secondly, significant disparities were verified in terms of privatization revenues. Differently from what happened with the telecommunications and electricity sector, the privatization of the transport sector didn't involve the sale of assets (except for goods of low value), but the sale of the right of exploration of those assets. Pinheiro (2003, p. 14) observes that the privatization (concession) of transportation facilities generated revenues of US\$ 2.3 billion, against a replacement value for the assets transferred to private investors estimated to mount to US\$ 36 billion, just for harbors and railways. In contrast, privatization revenues in telecommunications and electricity totaled US\$ 30.5 billion and US\$ 24.7 billion, respectively.

Thirdly, important differences in terms of budget and number of employees are observed too. In 2004, for instance, the budget of ANP was 19 and 60 times higher than ones of ANTT and Antaq, respectively. Regarding the number of employees, Anatel counted with 1,486 people, ANP with 657, ANTT with 483, Aneel with 325 and Antaq with 143 (Oliveira *et alii*, 2004).

The three mentioned differences – shorter time of existence, lower privatization revenues and smaller budget and number of employees – seem enough to

understand the reasons associated with the little attention that has been paid for the experiences of ANTT and Antaq. Someone might consider the hypothesis that this situation is merely an evidence of the lack of importance of these two regulatory agencies. Nonetheless, it is believed that this possibility should be discarded, because ANTT and Antaq can (or at least they should) contribute for the improvement of the operational conditions of the railways, roads and harbors. Therefore, these two regulatory agencies can influence (positively or negatively) the competitiveness of the Brazilian products destined to the foreign market, as well as in the inverse trade flow. Additionally, considering the need to increase the volume of the Brazilian exports, the analysis of the experiences of ANTT and of Antaq seems extremely appropriated.

In order to analyze ANTT and Antaq's cases, five features were selected: the original conception and coordination; the heritage of bureaucratic personnel; the political influence; the budget evolution; and the performance of regulated companies.

2.1. Conception and Coordination

The first feature to be stressed is that two different regulatory agencies related to the transport sector were created in Brazil in 2001: "Agencia Nacional de Transportes Terrestres" (ANTT) and "Agencia Nacional de Transportes Aquaviários" (Antaq). In reality, both are determined to be set-up by the same Law (10.233), promulgated in June 2001. However, the original project, which was conceived by the government and sent to the Congress, considered just one regulatory agency that would be responsible for all transportation modals.

However, in "Camera dos Deputations" (that can be understood as a Low Chamber of Congress), a substitute project was proposed by Mr. Eliseu Resend, a former Brazilian Ministry of Transport, that contained some important changes. The most important alteration was to slip into two regulatory agencies, which was justified at that time by the fact that this would make easier to pay the appropriated attention to the harbor regulation. It is understood that Federal Representatives from the State of

Rio de Janeiro had defended this position, mainly as a consequence of the lobby exercised by the shipbuilders installed in the mentioned State. Nevertheless, the proposed and afterwards effective division was not a consensus among the business associations. Indeed, the division was criticized at least by two institutions, “Confederação Nacional da Indústria” (CNI) and “Associação Brasileira da Infra-estrutura e Indústrias de Base”. In fact, CNI are among the most important business associations in Brazil. The critics are focused on the difficulties that might arise to articulate the transport inter-modality (Prates, 2001). In other words, the division would put addition problems regarding co-ordination between regulatory agencies.

As already mentioned, one of the most remarkable negative characteristics in the emerging regulation experience in Brazil is the lack of coordination among agencies. In May 2005, Mr. Wilen Mantelli, the president of “Associação Brasileira dos Terminais Portuários” (ABTP), which represents the private-owned firms that own or run harbors in Brazil, declared that it was an absurd that there is just one entrance to the Santos Harbor, the country’s largest port. According to him:

"(...) if there would be a port policy [in Brazil], it could be discussed a way to improve the railway system until the harbor. This would imply a faster load and unload, due to fact that it would reduce the trucks' utilization. But, if the Agência Nacional de Transportes Terrestres (ANTT) and Agência Nacional de Transportes Aquaviários (Antaq) can not agree between them, what can be done?" (Carvalho, 2005).

If the lack of coordination is frequently observed in the Brazilian regulatory experience as a whole, in the particular case of the transport, a large responsibility to this situation derived from the slip of competences into two different regulatory agencies instead of just one as originally conceived.

As similar to the experience of electricity, the timing of the creation of the transport regulatory agencies were far from the ideal. Just to remember, ANTT and Antaq were established in 2001. However, the auctions made to sell the rights to use the railway networks of RFFSA were accomplished in 1996, five years before the set-up of ANTT. In the case of harbors, the situation is even worst, because the harbor

institutional reform in Brazil began with the promulgation of Law 8.630, the so-called “Law for Harbor Modernization”, in February 1993.

2.2. The Heritage of Bureaucratic Personnel

As a consequence of the establishment of ANTT and Antaq, the “Departamento Nacional de Estradas de Rodagem” (DNER), which frequently was associated with corruption cases, was extinguished in 2001. Besides DNER, other institutions linked to the Ministry of Transport were also closed and were substituted by the “Departamento Nacional de Infra-estrutura em Transporte” (Denit). According to Prates (2001), all the employees from the extinguished organs would be reemployed by the new structure: the two regulatory agencies and Denit. This is a kind of decision that delivers advantages and disadvantages simultaneously. It is positive in the sense that it allowed that the learning, the knowledge about the regulated sector did not lose as a consequence of the reform. Additionally, it could mitigate problems regarding public servants’ labor rights. On the other hand, it is negative due to fact that it serves as a way to heritage the bureaucratic personnel with a heavy State intervention mind oriented. Thus, it can be argued that a new regulatory agency can be better erected with people that did not share the previous way of dealing with infrastructure business.

Looking at the Antaq’s experience, its annual report of 2003 mentioned that in accordance with to the Law 10.233, its management can admit personnel without employment tenure that came from “Empresa Brasileira de Planejamento de Transportes” (Geipot), “Companhia Docas do Rio de Janeiro” (CDRJ), RFFSA and Ministry of Transport. This people were already working at Antaq and were just waiting for its formal appointment. In 2003, considering a total of 196 jobs, 63 (or 32%) came from Geipot and 29 (15%) from CDRJ. Additional 12 (6%) came from Ministry of Transport and 16 (8%) from other governmental institutions. In reality, only 26 (13%) were nominee for a commissioned jobs for which is unnecessary to have governmental links, 19 (10%) were under temporary job contracts and only 30 (15%) were contracted by Antaq itself.

It is important to stress that the heritage of bureaucratic personnel was observed in other regulatory agencies' experiences too. In the case of electricity, Pires & Goldstein (2001, p. 24) points out that the majority of Aneel's top manager used to be in charge of the prominent positions in "Departamento Nacional de Água e Energia Elétrica" (Dnaee). According to the authors, this situation gives a signal to the private investors that the regulation's crucial aspects continued to be related to technical, legal and operational issues and not to the creation of economic incentives needed to form a truly competitive market.

2.3. Political Influence

Maybe the most controversial issue regarding the role and the performance of a regulatory agency is its effective independence from the State, on one hand, and for the regulated companies' interests, on the other.

Oliveira *et alii* (2004) show a very interesting exercise in order to evaluate the so-called "Independence Index" (II) of the regulatory agencies in Brazil. It consists of the sum of seven attributes: the decision process; the budget autonomy; the nomination process; the leader's technical specialization; the leader stability; the possibility of interference on the part of the direct administration in the procedures; and the enforcement capability. The "Independence Index" can vary from zero to seven. According to the authors, Anatel's outcome reaches 5.5, followed by Aneel and ANP with 5.0 each, and Antaq and ANTT with 4.5 each. Thus, Antaq and ANTT performances are a little bit worse than their peers. Their comparative weaknesses are concentrated in two items: the possibility of interference on the part of the direct administration in the procedures and the enforcement capability.

A second interest item is related to the duration of the mandates. Again according to Oliveira *et alii* (2004, p. 130):

“(...) a fixed mandate for agency directors helped to prevent them from being influenced by political pressures and to fulfill the objectives set by the legislation that created the regulatory agency. Mandates are fixed and, in general, the period is the same or less than the term of office of the President. More specifically, regulatory agency director mandates may be 4 years (ANEEL, ANP, ANTT and ANTAQ) or 5 years (ANATEL) without there being any apparent reason for the differences. It is argued that the possibility of repeated mandates for ANTT and ANTAQ directors would affect their independence, since there might be an incentive to a director to be conciliatory in relation to the government to obtain another mandate”.

Therefore, in the particular case of ANTT and Antaq, there is the possibility that a director can have one re-appointment, which can be considered as a negative characteristic in comparison with Aneel, ANP and Anatel.

Another possibility to analyze this issue is by the investigation of the director's political connections. In the case of the ANTT, the divergence between directors that were indicated in the previous government and the ones that were nominated by the current government seems to be substantial. According to Sobral (2005), it is understood the one group of directors is formed by Mr. José Alexandre Resende and Mr. Noboru Ofugi. Both were indicated during Cardoso administration. Mr. Resende, who is ANTT's general director and also son of Mr. Eliseu Resende, has mandate until 2008. Mr. Ofugi was re-indicated this year, for additional mandate. The opposite group is composed for the following directors: Mr. Gregório de Souza Rabelo Neto, Mr. José Airton Cirilo and Mr. Francisco de Oliveira. They were approved to ANTT's board last year, already in Lula's administration, with the indications from “Partidos dos Trabalhadores” (PT) and “Partido do Movimento Democrático Brasileiro” (PMDB). Mr. Cirilo, for instance was PT's candidate for the State of Ceará in 2002, but he was not elected. Mr. Rabelo Neto and Mr. Oliveira both were indicated by the PMDB.

The peak of the dispute among the two groups at first sight happened in mid August 2005, when Mr. Rabelo Neto, Mr. Cirilo and Mr. Oliveira approved a "united

notification" impeding Mr. Resende to name or to discharge employees for ANTT's trust positions (manager and assistances) in the States. They also accused Mr. Resende of doing the distribution of the actions "in an addressed way", without the accomplishment of a draw in the presence of all directors (Sobral, 2005).

2.4. Budget

It is understood that the budget is very important to the regulatory agency regarding its financial independence, which naturally dominates the whole decision-making process. However, to analyze how a given regulatory agency is affected by budget constraints is a hard task anywhere. In the particular case of Brazil, two additional factors make this examination even more difficult. As a general rule, in the last years in an attempt to deal with fiscal crisis, typically the government reduces the budget execution. In second place, since the regulatory agencies are so young, the annual available data is consequently restricted.

Bearing these difficulties in mind, the Table 3 shows the evolution of selected regulatory agencies' budget, in the period 1998-2004. It can be observed that ANP increased substantially its budget, whereas Anatel and Aneel showed an involution. In the case of ANTT, a sharp decline was verified in 2003 in comparison with the previous year, while a non-despicable cut happened to Antaq in the same year. The data is already deflated, in order to adjust to the 2004 level. Considering Antaq and ANTT jointly, their share in the total budget of the five infrastructure regulatory agencies examined reduced from 7.3% in 2002 to 4.3% in 2004.

Table 3: Budget of Selected Brazilian Regulatory Agencies
(in R\$ '000, at 2004 price level)

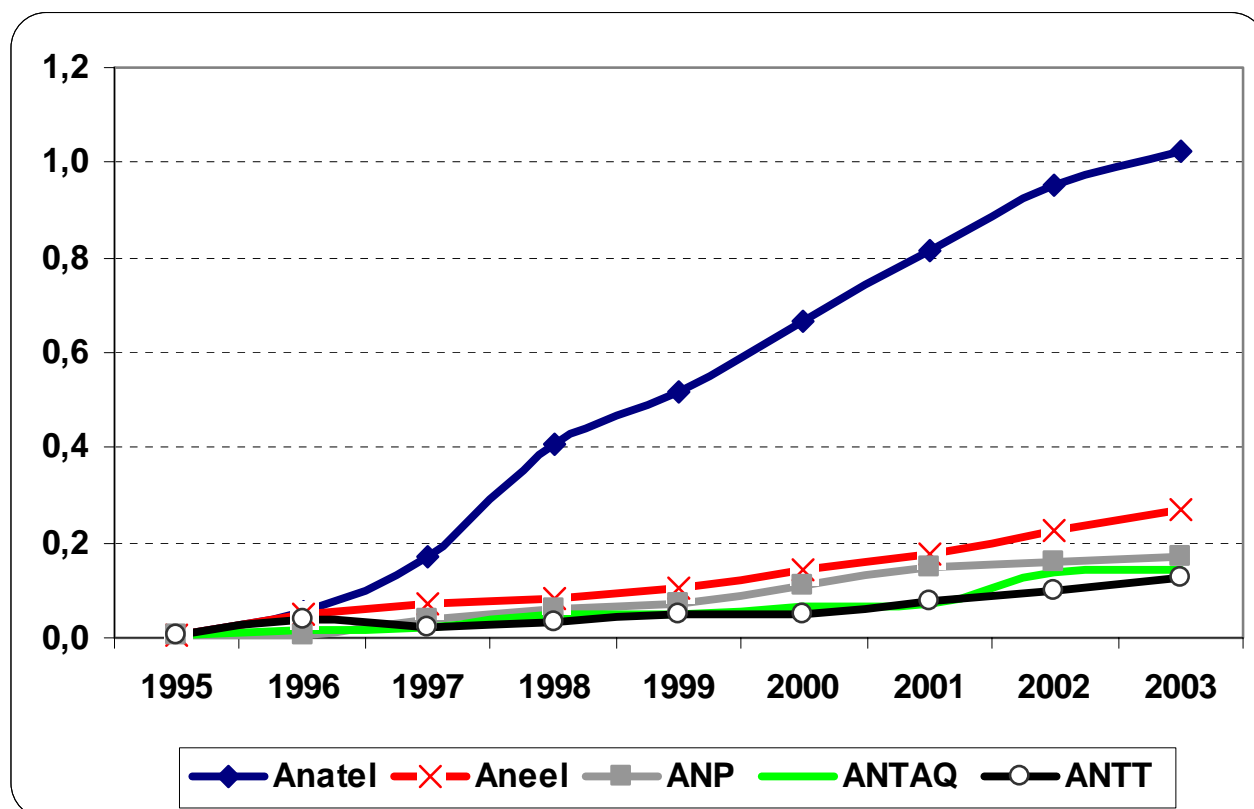
| | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|--------|-----------|---------|---------|-----------|-----------|-----------|-----------|
| ANP | 422,183 | 318,851 | 434,870 | 874,917 | 1,420,919 | 1,680,931 | 2,189,439 |
| Anatel | 1,058,991 | 839,396 | 825,389 | 1,032,965 | 1,228,723 | 754,665 | 823,483 |
| Aneel | 406,102 | 322,381 | 323,602 | 393,247 | 303,129 | 240,076 | 219,041 |
| ANTT | | | | | 188,659 | 109,403 | 108,720 |
| Antaq | | | | | 44,340 | 35,549 | 35,892 |

Source: Oliveira *et alii* (2004)

2.5. Performance of Regulated Companies

Besides the analysis of the regulatory agency *per se*, another possibility is to scrutinize the evolution of regulated companies' performance. Oliveira *et alii* (2004) estimate the so-called "Effectiveness Index", which is calculated as combination of price index and investment index. The results obtained by the authors are quite interesting and are reproduced in Graph 1. According to them, the best performance was achieved by telecommunication companies. In second place, but extremely far from the telecommunication firms, appeared the electricity enterprises, followed by oil & gas, harbor and terrestrial transport, respectively. Somehow, this empirical evidence ratifies the common sense that the telecommunication shows the better results considering the regulated sectors in Brazil. On the other hand, the companies regulated by ANTT demonstrate the worst outcomes. It is interesting to stress that not necessarily the performance of the regulated company is correlated with the regulatory agency's budget. The dissociation is clear observed in the case of ANP.

Graph 1
Effectiveness Index of Selected Brazilian Regulatory Agencies, 1995-2003



Source: Oliveira *et alii* (2004, p. 138)

One complaint that might be addressed to Oliveira *et alii* (2004)'s methodology. It seems quite unfair to adopt the same base for comparison among sectors that experienced the development of the regulatory reform with substantial lag. Indeed, it should be stressed that ANTT and Antaq is newer than Aneel, ANP and Anatel. If somebody accepted 2001 as the base of comparison, the outcome would be totally different. The improvement in the "Effectiveness Index" in 2003 against 2001 level reached: 100% for the companies regulated by Antaq; 65% by ANTT; 56% by Aneel; 26% by Anatel; and 14% by ANP.

The result of "Effectiveness Index" can be disaggregated into two sub-indexes: price and investment. The situation of the firms regulated by Antaq, in period 2001-2003, improved 152% in terms of prices and 41% regarding investments. In the experience of ANTT, the numbers are 73% and -19%, respectively. The later number is quite

disappointing, due to the fact that one of the most important motivations of the regulatory reform in Brazil was to foster sectorial investments.

3. Final Remarks

This article's goal is to examine the Brazilian regulation experience as a whole, with special emphasis conceded to ANTT and Antaq's cases. Little attention has been paid to them comparatively to Aneel, Anatel and ANP's experiences, most probably as a consequence of three factors: shorter time of existence, lower privatization revenues and smaller budget and number of employees. In order to analyze ANTT and Antaq, five main features are scrutinized: the original conception and coordination; the heritage of bureaucratic personnel; the political influence; the budget evolution; and the performance of regulated companies.

Although ANTT and Antaq can be considered the "younger cousins" regarding regulatory agencies in Brazil, in fact they have much in common with Aneel, Anatel and ANP. As similar to other experiences, the two transport regulator agencies in Brazil face problem in terms of coordination. However, in this particular case, this negative result is an obvious corollary of the fact that differently from the original project, it was decided to split competences into two regulatory agencies to deal with transport.

Similar to the electricity's experience, the timing was also unsatisfactory, because the beginning of the reform was earlier than the establishment of the regulatory agency. The auctions made to sell the rights to use the railway networks of RFFSA happened in 1996, five years before the creation of ANTT. Concerning harbors, the institutional reform in Brazil started in 1993 and Antaq was set-up in 2001. Again similar to the electricity's case, at least Antaq has inherited bureaucratic personnel from extinguished governmental organs. The perception of continuity is definitely disappointing in term of signaling to a new model of institutional framework.

Regarding political independence, in particular in terms of the possibility to be re-appointed, this possibility is opened only to the directors of ANTT and Antaq, while is prohibited to the ones of Aneel, ANP and Anatel. This can be interpreted as a negative difference for the transport regulatory agencies in Brazil, since it may incentive a less independently position from the government by a director, in order to obtain a second mandate.

However, maybe the more sensitive issue related to the political influence is the political indication. In the case of ANTT, it is observed that two groups of directors have formed within the regulatory agency, one formed by directors indicated in the former administration, the remaining by directors selected by the current administration. Due to the fact that the divergences between these two groups gained headlines in the newspapers, the degree of conflicts should be necessarily high. In reality, this situation should be more frequent than it can be observed and documented by researchers.

Concerning the budget's evolution, in the experience of ANTT, a strong involution was observed in 2003 in comparison with the previous year, while a non-despicable cut was verified to Antaq in the same year. Considering Antaq and ANTT together, their share in the total budget of the five infrastructure regulatory agencies examined diminished from 7.3% in 2002 to 4.3% in 2004.

In terms of the performance of regulated companies, a mixed result was found. If 1995 is considered as the base of comparison, the "Effectiveness Index", which is calculated as combination of price index and investment index, the worst results came from companies regulated by ANTT. On the other hand, if 2001 is accepted as the base, the better outcomes are observed to firms regulated by Antaq and ANTT.

Bearing in mind this context, it can be concluded that ANTT and Antaq are quite similar to ANP, Aneel and Anatel's trajectory, both for positive and negative aspects. In this direction, one might conclude that during the conception of the "third generation" regulatory agencies in Brazil, little has learnt with the previous experiences. Nevertheless, a deeper research should be done aiming to capture more peculiarities among these regulatory agencies in order to oriented public

policies, in particular due to fact that since April 2004, a project to draw the “General Law of Regulatory Agencies” has been under discussion in the Brazilian Congress. Another interesting theme of future research deals with the impacts of ANTT and Antaq on the Brazilian export performance.

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