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Hybrid governance structure between public company and private partners: the case of Infraero in the Brazilian airline sector

ESTRUTURA HÍBRIDA DE GOVERNANÇA ENTRE COMPANHIAS PÚBLICAS E PARCEIROS PRIVADOS: O CASO INFRAERO NO SETOR AERONÁUTICO BRASILEIRO

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Abstract
A public-private partnership (PPP) model has been adopted in Brazil for the modernization of its main national airports. Until 2017, the institutional setup imposed the public company *Infraero* to participate with 49% in the joint venture for the management of the airports subject to PPP. The remaining 51% shares belong to private companies, namely those that constitute the consortium group that won the correspondent public tender. This paper analyses this hybrid governance structure, including the main advantages and disadvantages, for both government and private parties, in maintaining a state-owned enterprise with a mandatory 49% share in the winner consortium. It focuses on five main aspects: access to knowledge; government influence on decisions, funding, and risk-sharing; cross subsidization and competition. The paper also summarizes its main findings and recommendations for future rounds of airport concessions in Brazil, in particular to underline overall inconveniences of the mandatory rule that imposes to *Infraero* a 49% share in all winner consortiums.

Keywords
Public-private partnership (PPP); state-owned enterprise; Brazilian market of airport management; institutional designs.

Resumo
O modelo de Parceria Público-Privada (PPP) foi adotado no Brasil para a modernização dos principais aeroportos do país. O novo desenho institucional exige que a empresa pública Infraero participe com 49% no consórcio responsável pela gestão dos aeroportos sujeitos à PPP. O restante dos 51% é detido por empresas privadas, participantes do consórcio vencedor da correspondente licitação. Este artigo analisa esta estrutura de governança híbrida, incluindo suas vantagens e desvantagens, para ambos o governo e as partes privadas, na opção de manter uma empresa pública com uma parcela obrigatória de 49% no empreendimento comum. Para tanto, foca-se que cinco aspectos centrais: acesso ao know-how*, influência governamental nas decisões, captação de recursos e compartilhamento de riscos, subsídios cruzados e concorrência. Ao final desta análise, o estudo busca sintetizar suas conclusões e elaborar recomendações para as próximas rodadas de concessão de aeroportos no Brasil, em particular para sinalizar os inconvenientes da regra mandatória que exige à Infraero participar com 49% de todos os consórcios vencedores.*

Palavras-chave
Parceria Público-Privada (PPP); empresas públicas; gestão de aeroportos no Brasil; desenhos institucionais.

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Introduction

Brazil has recently given up an exclusive state-owned model of airport management and adopted a mixed regime that admits public-private partnerships. The strategy was based on the concept of value for money (GRILO, 2008). It aims to modernize Brazilian airports and to reduce the "*Custo Brasil,*"[1] a major drawback to the country's economic development as highlighted by the head of the Brazilian Secretariat of Civil Aviation in 2014.[2] Under the former model, the Brazilian public company *Empresa Brasileira de Infraestrutura Aeroportuária (Infraero)* was responsible for the management of the main commercial airports dedicated to passengers and cargo. Since 2012, the management of nine of the main airports was transferred to public-private partnerships through concessions contracts.[3]

The model used for the modernization of the Brazilian airports during 2012-2014 is a form of public-private partnership, since it imposes to the public company *Infraero* a 49% share of the investments. Although *Infraero* does not control the management of the five airports subject to concessions, it remains as the most important single shareholder, with 49% of total shares of the new company responsible for its management and expansion. The other 51% belong to a consortium of private companies, namely those that constitute the winner group of the correspondent public tender.

The model is quite interesting as it forces a state-owned enterprise (SOE) to engage in almost 50% of a joint venture with private companies, without any prior commercial relationship.

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1 The expression "*Custo Brasil*" refers to the expensive commercial operation costs in the country, which makes Brazilian goods and services overpriced when compared to other countries.

2 Statement from Mr. Moreira Franco, Minister of Government at the Brazilian Secretariat of Civil Aviation. Available at: <www.valor.com.br/brasil/3648122/investimento-em-aeroportos-privados-reduz-custo-brasil-diz-ministro>. Access: July 2, 2016.

3 The first round of concessions took place in 2012 and it concerned three airports: the *Aeroporto Internacional de Brasília* in Brasília, *Aeroporto Internacional de Viracopos* in Campinas and *Aeroporto Internacional de São Paulo* in Guarulhos. The second round of concessions took place in 2014 and it concerned two additional airports: *Aeroporto Internacional do Galeão* in Rio de Janeiro and *Aeroporto Internacional Tancredo Neves (Cofins)* in Belo Horizonte. In 2017 four additional airports were subject to concession contracts: *Aeroporto Internacional de Fortaleza – Pinto Martins* in Fortaleza, *Aeroporto Internacional de Salvador - Luiz Eduardo Magalhães* in Salvador, *Aeroporto Internacional de Florianópolis - Hercílio Luz* in Florianópolis, and *Aeroporto Internacional de Porto Alegre - Salgado Filho* in Porto Alegre. In August 2017, the Brazilian government announced a new round of concessions. In October 2017, 13 airports were included in the National Program of Privatization (Programa Nacional de Desestatização), which will be offered in regional groups. The Northeast group will include the airports of Recife, Maceió, Aracaju, João Pessoa, Campina Grande and Juazeiro do Norte. The Center-West group will comprise the airports of Cuiabá, Sinop, Barra do Graças, Rondonópolis and Alta Floresta. The Southeast group will include the airports of Vitória and Macaé. One should note that a specific airport (*Aeroporto Internacional Governador Aluizio Alves*) located in the city of Natal was subject to a concession prior to all above, in which *Infraero* does not retain any shares.

Moreover, it imposes a corporate structure in which the SOE has no control on business management. Is this an efficient PPP model? What are the advantages and disadvantages, for both government and private parties, in maintaining a **SOE with a mandatory 49% share in the winner consortium**? What are the main trade-offs that may justify the adoption of such a **hybrid governance structure**?

On the one hand, those in favour of this model sustain that it enables *Infraero* to share experiences and gather knowledge with qualified companies in the business of airport management, considering that *Infraero* remains as the sole manager of dozens of other commercial airports in Brazil. On the other hand, the model results in high risk-taking as the SOE is forced to participate as an investor, with significant corporate shareholding, while deprived of participation in the decision-making processes. In any case, the specific contractual responsibilities of both public and private partners should be carefully examined in order to properly answer the questions raised.

When compared to concessions in other sectors of the economy, it seems to happen a recent shift in the Brazilian public policy towards public-private partnerships. In the 1990s, the main idea was to transfer the risk to private companies who would be in a better position to assess the risks and potential profits of the business to be explored. For instance, in a 1999 background paper for a course on transport privatization and regulation organized by the World Bank, Ofelia Betancor and Robert Rendeiro indicate that there was, at that time, a movement towards privatization of airport services (BETANCOR; RENDEIRO, 1999).

Nevertheless, the latest concession policies seem to indicate a preference to a shared-commitment relationship between private and public enterprises. To support this affirmation, one may notice that the oil market was opened to foreign investments in 1997, allowing private companies to develop oilfields in Brazil within a model based on a 100% private risk-taking. Although possible, the participation of public companies was not a requirement in this model of concession. However, it was not the case for the oil and gas exploitation in the pre-salt layers that took place in 2013, as it was imposed a mandatory 51% participation of the Brazilian SOE *Petrobras* in every project opened to private investors. A similar model was chosen for the airport concessions with the 49% compulsory participation of *Infraero*. Why should public money be invested in risky projects managed by private companies? It seems that important and tangible advantages should exist in order to compensate this trade-off.

In a nutshell, the actual gains of imposing *Infraero* the 49% share to are not quite clear in the choice to hold 49% of the shares in the new company responsible for the expansion and management of the five key Brazilian airports subject to concessions. It seems that a variety of contractual setups and corporate models could efficiently enable know-how gathering and experience sharing with none or little risk-taking to the beneficiary. The current model imposes a complex hybrid governance structure, which seems interesting to examine under an economic approach. The main question that will be addressed in this paper is **the key advantages and disadvantages of the hybrid governance structure that currently exists**

in Brazil for the management of its main airports. After a preliminary literature review, the Brazilian case will be analysed in a critical standpoint, in order to shed some light on the topic.

1 Literature review

Some authors say that "privatisation leads to efficient restructuring of firms" (BOYCKO; SHLEIFER; VISHNY, 1996). However, the use of the word "privatization", when applied to the Brazilian international airport cases, is highly disputable. Brazilian *Infraero* keeps a 49% share, but do not exercise any direct control over the management of airports during the contract. What is clear is that the Brazilian "privatized" airports are neither totally owned by private agents, nor maintained by the public sector. This leads to the so called hybrid form of corporate governance. An institutionalist approach by Willliamson (1999), based on the leans transaction costs, stipulates that "public bureaucracy, like other alternative modes of governance is well suited to some transactions and poorly suited to others" (WILLLIAMSON, 1999, p. 306). Also, the mixed form of corporative governance finds its spaces in the regulatory world.

The PPP model is not new and it was subject to many economic and law researches in the past few decades, as well as a viable and concrete choice of public measures in democratic governments. Estache and Saussier (2014) help to understand the concept. According to them, the PPPs:

> [...] are long-term contractual agreements between a private operator / company (or a consortium) and a public entity (both at the central or local level) under which a service is provided, generally with related investments. More precisely, PPPs can be defined as global contracts (bundling both investments and service provision) with delayed payments. (ESTACHE; SAUSSIER, 2014, p. 8).

The generic definition is attached to the theoretical advantage set up by Boycko, Shleifer and Vishny (1996): with the retreating of interference by the political power and cooperation between agents, risks can be transferred and shared. Moreover, the PPP can combine some of the private efficiencies, such as the more up-to-date technical and management knowledge of expert agents with the State's power of investment.

Furthermore, although the hypothetical advantages seem explicit, empirical studies do not gather solid conclusions about the benefits of the mixed type of governance control. This is due to the nature of contracts in any organizational form (HART, 2003). More precisely, "the unpredictability mainly stems from the incomplete nature of PPP contracts resulting from the fact that they do not specify what the contracting parties should do in every future situation" (ESTACHE; SAUSSIER, 2014, p. 8). In other words, if the world was based only on complete contracts, there would be no need for concern about the organizational form in each industry.

The framework to be chosen is an import tool for preventing problems of moral hazard and asymmetric information, allowing the policy maker to predict some of the agent's behavior (HART, 2003).

Some of the main issues concerning PPP designing can be described in the recent literature. Grilo (2008) points out the risks of optimism biases in project selection. The overestimation of demand generates a requirement of expensive safeguards, which diminishes the risk taking of the private agent. Another problem is that the aggregate performance of a highly effective PPP and of an inefficient residual sector can lead to a lower aggregate efficiency level. PPP can accelerate projects that seduce the private investment over other projects that have no such appeal (VICKERMAN, 2004). Still according to Grilo (2008), the competition issues are also important. Most of the mixed structure are delimited by a public procurement that can lead to a competitive process if the number of bidders is sufficiently high. However, gains of efficiency are due to the permanent exposure to competition. It usually happens during the public procurement, but not after it (BRONCHI, 2003; GRILO, 2008).

Despite the academic comparison, evidences show that PPP do not guarantee efficiency by itself, "[...] especially when the project is complex and the contract very incomplete" (ESTACHE; SAUSSIER, 2014, p. 11). This means that the institutional context in which PPP takes place matters:

> In this context, the evidence also shows that regulators and competition agencies have a stronger role to play than they are credited for by policymakers betting on PPPs. And so do regulation, liability rules, and authorized contractual provisions, even if their optimal design is likely to differ from one country to another due to differences in institutional constraints and history. (ESTACHE; SAUSSIER, 2014, p. 12).

For measuring the value of a PPP institutional framework, Grilo (2008) indicates the "value for money" method, first mentioned by Butt and Palmer (1985). The process includes basically three concepts: economy, efficiency and effectiveness. It indicates if the PPP project is viable for the private investment and if its social gains undertake the public provisions. The authors argue that the method should be applied in order to account the public beneficiaries.

Regarding PPPs within the airport sector, Oum, Yan and Yu (2008) find some interesting and concrete results about the types of organizational governance. Aplying complex econometric models and United States airport's data, they conclude that "airports with the ownership forms of majority private, public corporation, and airport authority are more efficient than those with various forms of government ownership and management (majority government, US city/state, shared government, and US port authority)" (OUM; YAN; YU, 2008, p. 21). This can be suggestive in the way that autonomy management is determinant for the improvement of airport's control. They also make strong affirmations about the PPPs in the sector as conclusions of the work:

> (a) countries considering privatization of airports should transfer majority shares to the private sector; (b) mixed ownership of airport with a government majority should be avoided in favor of even 100% government owned public firm; (c) U.S. airports operated by port authorities should consider to transfer ownership/management to independent airport authorities; and (d) privatization of one or more airports in cities with multiple airports would improve the efficiency of all airports. (OUM;YAN; YU, 2008).

The paper is indeed interesting for this research as it focuses on the ownership forms in order to investigate airports' efficiency. There are various forms of private involvement in the ownership and management of airports, including full, majority and minority privatization, as well as concessions through PPP models.[4]

In a comparative perspective, the Brazilian model for the management of airports, with a 49% public ownership, does not find a successful correspondence within foreign experience. In UK, for instance, only two of its twenty main airports have a public ownership different from 100% or none.[5]

The "value for money", in specific PPP's forms, and the econometric model, in a general sense, can be both contested (including its conclusions); nevertheless, the experts' academics findings should be taken in account.

In Brazil, the generic definition of PPP governance is established in Law n° 8.987/1995, related exclusively to concessions, and in the Law n° 11.079/2004, commonly known as the PPP law. The main difference between them is that the second one allows the public sector to shift some of the budget resources to private entities for service purposes. In this case, the private agent is encouraged to invest in solid constructions, differently from the public procurement form, when the private firms tend to cut costs, since they will not be responsible for the long term quality (or non-observable quality) of the investment (MATTOS; MAFFIA, 2015). Another difference concerns the notion of availability payment, as payment of private parties may vary based on performance and other incentives.

4 For example, the major Australian airports and the Leonardo da Vinci Airport in Rome have been fully privatized; the Copenhagen Kastrup Airport, the Vienna International Airport and the Brussels International Airport had its majority stakes transferred to private shareholders; and the Beijing Capital International Airport, the Shanghai Pudong Airport and the Malaysia Airports Holdings had its minority shares sold to private investors (OUM;YAN;YU, 2008).

5 The public share ownership is 49% in the airport of Birmingham and 51% in the airport of Newcastle. The same share is 100% in the airports of Manchester and Nottingham East Midlands, while 0% in the rest of UK's main airports (with more than 1 million annual passengers in 2005). Ownership data is from 2007 (STARKIE, 2010). These two examples of mixed ownership are insufficient to guide a benchmark reference to the Brazilian model used during 2012-2014.

Provided that many projects are being prepared or under construction in Brazil, it is difficult to find *ex-post* studies concerning the advantages and disadvantages of PPP's contracts and its future guidance, especially related to airport management. Nevertheless, the discussion associated to airport administration has increased in last years, which include new studies, and public debates.

2 Case analysis

This paper is based on the analysis of 5 concession contracts signed in 2012 and 2014 by the Brazilian government within its general policy of infrastructure expansion of the country by the modernization of main airports. The main goal of the research is to assess the choice of imposing a 49% share in all winning consortiums to the Brazilian state-owned-enterprise (SOE) *Infraero*, in regard to the related public procurement procedures.

In addition to the literature review and the analysis of related documents, in particular the 5 concession contracts signed in 2012 and 2014, we carried out informal interviews with public officials from the Brazilian government who were responsible for the design and implementation of the new liberalization policy in the airline sector.[6]

The analysis is divided in five main sections, in order to better assess the impacts of the mandatory rule of 49% share ownership: access to knowledge, government influence in decisions, funding, cross subsidization and competition issues.

As a result, the paper intends to shed some light over the future round of airport concessions in Brazil, as there seems to be room for adjustments concerning this specific topic: should the next rounds of concessions impose *Infraero*'s participation in the winner consortium and in what extent should its mandatory stake be defined?

2.1 Access to knowledge

The main aspect that seems to have driven the political decision to impose a 49% share for *Infraero* in the winner consortium is related to access to knowledge. Since *Infraero* manages about 66 airports in Brazil, it appears to be important that *Infraero* could retain close participation in the new way of running business in order to improve its skills on airport management in general.

The idea has in principle sound grounds, especially considering that the world's main operators entered the Brazilian market through the proposed PPP model. Indeed, the first rounds of concession imposed high requirements of experience for applying to the procurement

6 A few face-to-face interviews were performed and the identities of the civil servants remain anonymous. They held key public positions during the period of the design and the implementations of the 2012-2014 airport concession contracts.

procedures. While the first round of concessions imposed the need of 5 years of prior practice in management of an airport with a flux of 5 million passengers per year, the second round of concessions also imposed a need of 5 years of prior experience, but in an airport with greater flux of passengers per year (12 million for Belo Horizonte airport and 22 million for Rio de Janeiro airport).

The chart below summarizes the concession results for the five airports subject to this paper's analysis:

FIGURE 1 – **Main private operators in Brazilian airports**

AIRPORT	CONSORTIUM	OPERATOR	PRIOR EXPERIENCE
BRASÍLIA	INFRAMERICA	CORPORACIÓN AMERICA	BUENOS AIRES, ARGENTINA
CAMPINAS	AEROPORTOS BRASIL	EGIS AVIA	PARIS (CDG), FRANCE
SÃO PAULO (GUARULHOS)	INVEPAR	AIRPORTS COMPANY OF SOUTH AFRICA (ACSA)[7]	CAPE TOWN AND OTHERS, SOUTH AFRICA
RIO DE JANEIRO (GALEÃO)	AEROPORTOS DO FUTURO	CHANGI	SINGAPORE, SINGAPORE
BELO HORIZONTE	AERO BRASIL	FLUGHAFEN ZÜRICH AG	ZURICH, SWITZERLAND

Source: author with data from Brazilian National Civil Aviation Agency (ANAC).

One can easily note that important foreign airport operators entered the Brazilian market, with clear benefits in terms of quality of services and efficiency in the business of airport management in Brazil. For the first time, consumers and airline companies would be able to benefit from the standard of services from an operator from Buenos Aires, Paris (CDG), Cape Town, Johannesburg, Singapore or Zurich.

In this context, it appears quite positive that *Infraero*, in its capacity of a Brazilian SOE, had access to knowledge in order to improve its core business of airport management, in special in all other airports in which it still plays a role of sole operator.

7 ACSA owns and operates nine major South African airports, including international airports in Cape Town, Johannesburg and Durban.

However, what does not seem quite clear (and thus positive) was the format chosen to enable this public benefit (and potential efficiency for the management of other airports in Brazil). The mandatory requirement of a 49% stake in the winner consortium is not the only way to assure the access to know-how. At least a few other ways could have been designed to allow this positive externality derived from the entrance of major international operators in the Brazilian market. For instance, a simple requirement of a 1% stake would be enough for the same purpose. In reality, a mere requirement in the rules of the auction, granting *Infraero* access to meetings, data, personnel etc., would also enable the access to know-how and fulfill this positive outcome as a public policy to improve the overall airport management in Brazil.

Furthermore, public records and informal interviews collected for this research demonstrate that *Infraero* was often represented by government officials in the meetings held by the consortium, instead of attendance through *Infraero*'s internal staff – who could more likely internalize the know-how for purposes of improving management in other Brazilian airports. It is clear that government officials play an important leadership role in these situations, but less evident is their capability to properly acquire and transfer technical know-how to *Infraero*, in particular to often rotation of these government officials.

In a nutshell, **the access to know-how is a positive aspect that should be promoted in future concessions. Nevertheless, the mandatory requirement of 49% share to *Infraero* is not a necessary way to assure this benefit**.

2.2 Government influence in decisions

Another aspect evoked to justify *Infraero*'s high share participation was the need to maintain the influence of government in key decisions of the consortium. In this regard, there are at least two interesting remarks: should the government influence the decisions of the consortium? And, if so, in what extent and by which means should this influence take place?

First of all, it is questionable if government should influence the decisions of the consortium. The specialized literature indicates that there might be more negative than positive effects of this influence. Indeed, private companies tend to be more careful to enter a PPP if they have limited control on running the business in which they are experts. Thus, it would likely create disincentives to the public tender itself as fewer companies would be interested in the bidding.

Nevertheless, the participation of *Infraero* in the board of the consortium was clearly a Brazilian model of airport concessions. The public tenders had expresses provisions in this sense, establishing a board of directors (*Conselho de Administração*) with at least 5 members and nominations proportionate to respective shareholdings. In this way, *Infraero* would always have the right to nominate at least 2 members of the board with its 49% stake and at least 1 member, regardless of future eventual changes in the shareholder's participation in the consortium.

In addition, the shareholder's agreement provides a sort of a "golden share" to *Infraero*, in the sense that it indicates a set of decisions that should always be subject to its express approval,

such as any change in the nature of business carried out by the consortium, the increase or reduction in the total number of its corporate shares, any chance in its by-laws, establishment of any complementary form of partnership with the consortium, any merger or acquisition and any sale of assets of the consortium. At the same way, board directors appointed by *Infraero* should abstain to vote on deliberations concerning any change or performance of the concession contract.

In spite of the direct participation in the board, it seems that the retention of influence in key decisions is not directly associated to a high stake in a company. This is related to the question of the extent and ways by which this influence may occur. As mentioned for the knowledge transferring, this could also be achieved by other corporate or contractual means. The current setup of the concession contracts establishes *Infraero* as the major single shareholder with a 49% stake, but no control over the business itself of the consortium. It is entitled to minority representation in the board of directors and some key veto prerogatives not directly related to the daily management of the airport under concession.

By analyzing this aspect of the concession model, it seems that the government influence on decisions is important, but not essential, as it may create disincentives to the participation of private stakeholders in the public tender. In any case, once again **the mandatory requirement of 49% share to *Infraero* does not seem to be a necessary or an adequate mean to assure the government's influence in the consortium**. A set of corporate or contractual provisions, such as golden shares, could eventually fulfil this aim of governmental influence in decisions.

2.3 Funding

The natural rationale of corporate shareholding is to share profits and risks of a certain economic activity. In this sense, it usually involves investments to fund the activity and risk-taking amongst shareholders. Thus, the choice of imposing a mandatory 49% stake to *Infraero* has relevant consequences in this field, particularly considering the fact that it is a wholly state-owned company.

At first glance, it seems reasonable to assure a high public stake on lucrative airports, such as the main airports that were initially subject to concessions. The high volume of passengers and cargo in these airports are attractive for a private perspective of investment return. In addition, as it will be seen in the following section, the main airports in Brazil play an important role of cross subsidization as their gains enable the maintenance of less or non-profitable airports in the country.

Indeed, literature stresses the importance of considering this profit/risk assessment when designing PPPs:

> Often the Government is a co-owner of the public-private partnerships in order to ensure that any financial gains arising from the partnership are shared with the taxpayer. This

> set-up may confuse the roles of the Government as a shareholder and regulator, and could establish a *de facto* monopoly position of the incumbent private partner. It also entails a greater exposure of the budget if a private partner fails. (BRONCHI, 2003, p. 19).

However, the Brazilian experience after the first years of concession indicates a danger to the mandatory 49% stake policy. As a consequence of the reduction of *Infraero*'s share participation from 100% to 49% in the main Brazilian airports, it suffered a decrease of 56% in its national revenues and only 17% in its national costs. Furthermore, the new consortiums have devoted high investments in order to promote airport expansion and modernization, which also affects *Infraero*'s financial sheets: R$ 2.2 billion in 2014.[8]

This means that *Infraero*, instead of collecting profits from the healthy activities of the main airports in Brazil, is forced to inject more capital in order to fund the expansion and modernization of airports. At the end of the day, it remains as the main shareholder of the consortium, although with limited participation in its governance structure. In other words, the private shareholders make the decision of investing and the public stakeholder bears most of its cost.

One should also note that some consortiums are composed by important public investors, in addition to *Infraero*'s 49% share participation, which increases even more the "public stake". For instance, the consortium of the largest Brazilian airport is composed by 49% of *Infraero*, approximately 45% of Invepar and approximately 6% of Airports Company of South Africa. By its turn, only 25% of Invepar's capital belong to a private company (Group *OAS*). The rest is held by public pension funds (*Funcef*, *Previ* and *Petros*, with 25% each), which results in an important public participation in the consortium of the country's main airport and in a greater governmental influence in the decisions, but also in the funding, profits, losses and risk-sharing.

In the future rounds of airport concessions, it is estimated that the consortiums must to invest about R$ 8 billion.[9] This would mean, at least in the near future, more spending for all shareholders of the next consortiums, including *Infraero* and other possible public stakeholders, such as the public pension funds mentioned above. It is unclear whether the bids to enter the market will effectively be transferred to Infraero's management of other national airports.

8 Interview of Gustavo do Vale, President of *Infraero*, to *Folha de S. Paulo* on August 21, 2015. Available at: <http://www1.folha.uol.com.br/mercado/2015/08/1675658-infraero-gasta-r-50-milhoes-ao-mes-com-trabalhadores-excedentes.shtml>. Access: July 2, 2016. R$ 2 billion corresponds approximately to € 500 million.

9 Total investments estimated for modernization and expansion of the airports in Fortaleza, Salvador, Florianópolis and Porto Alegre throughout the entire concession period. Source: *Folha de S. Paulo* on August 31, 2015. Available at: <http://www1.folha.uol.com.br/mercado/2015/08/1675647-futuros-concessionarios-de-aeroportos-terao-de-investir-r-85-bilhoes.shtml>. Access: July 2, 2016.

Hence, **the mandatory 49% stake for *Infraero* risks to continue public expenditure (through investments) instead of public revenues. This leads to the question whether the 49% stake should be reduced or even eliminated in future rounds of concession**, in particular in light of a scenario of political and economic crisis that reduces the government's capacity to maintain investments with public resources. In any case, it seems that discussions should focus more on the extent of this reduction (or elimination) rather than on its necessity.

2.4 Cross subsidization

Another important aspect, which is related to the previous on funding, concerns the cross subsidization. In reality, *Infraero* used a cross-subsidies policy to maintain commercially unprofitable airports that are considered to be socially important to the country. The subsidies were mainly originated by the profits made with the largest Brazilian airports, namely those already subject to PPPs, as it may be seen by the scenario in 2010 prior to concessions:

FIGURE 2 – **Numbers of *Infraero* in 2010**

AIRPORT	REVENUE (R$)	%	COSTS (R$)	%	RESULTS (R$)
BRASÍLIA	98.414.679,00	4,4%	92.631.183,00	4,5%	5.783.496,00
BELO HORIZONTE	82.226.838,00	3,7%	76.792.656,00	3,7%	5.434.182,00
RIO DE JANEIRO (GIG)	315.302.513,00	14,2%	329.967.542,00	15,9%	-14.665.028,00
SÃO PAULO (GRU)	607.643.026,00	27,3%	341.479.026,00	16,5%	266.164.000,00
CAMPINAS	179.768.988,00	8,1%	151.952.700,00	7,3%	27.816.288,00
SUM OF OTHER 61 AIRPORTS	940.996.200,00	42,3%	1.080.134.662,00	52,1%	-139.138.459,00
TOTAL	**2.224.352.244,00**	**100%**	**2.072.957.769,00**	**100%**	**151.394.479,00**

Source: author, with data from Brazilian National Civil Aviation Agency (ANAC).[10]

10 *Relatório de Desempenho Operacional dos Aeroportos*. Brasília: ANAC, 2011.

The numbers are quite clear in terms of impact in revenues, costs and results of each airport. The sum of the results of the five airports subject to concession were positive, about R$ 290 million, while the sum of the results from the rest of airports were negative, about R$ 139 million (which led to the total results of near R$ 151 million in 2010). In fact, only 11 airports (amongst the 66 managed by *Infraero*) had positive results in 2011: Brasília, Belo Horizonte, São Paulo (CGH), São Paulo (GRU), Curitiba, Fortaleza, Salvador, Campinas, Goiânia, Vitória, and Jacarepaguá.[11]

Indeed, *Infraero*'s profits are mostly sustained by the main airports of the country, in particular the international airport of São Paulo (GRU). These airports clearly enable a cross-subsidization scheme for the maintenance of unprofitable airports.

However, the dilution of shares from 100% to 49% derived from the current concession model in all five airports of this research, generates in principle a reduction of dividends (even if this statement depends on the annual profits itself). Moreover, the current PPP policy imposes great investments to all shareholders of the consortiums, including *Infraero*, in order to expand and modernize these airports. This has an impact also in terms of corporate results, as it increases expenditure with investments.

So, the question here basically is: how should *Infraero* maintain unprofitable airports without the profits originated from the main airports?

At least two alternatives deserve a proper analysis by researchers and policy makers: (i) first, the maintenance of a special fund to support the activities of unprofitable airports; and (ii) secondly, an adjustment in future concession rounds to impose a cross subsidy policy that requires private investors to bid for a group of airports at the same time (i.e. one profitable and another commercially less attractive).

2.4.1 National Fund for Civil Aviation

The *National Fund for Civil Aviation* (FNAC) was created by the Brazilian federal government in 2011 to promote the aviation sector, in particular to enable the construction, reform and expansion of regional airports in the country. Its budget comes from the royalties paid by winners of tenders and certain airport taxes. Its creation was a consequence of the concession policy, which would affect *Infraero*'s budget to manage the unprofitable airports of the country. It is a simple and reasonable measure, to enable cross sublimation in despite the transferring of public shares of profitable airports to private entities.

The main aspect seems to focus more on the management rules of this fund rather than on its existence. In fact, some critics have accused the government of using the budget from the fund to boost overall presentation of the government's numbers (i.e. reducing public losses in

11 The airports from Goiânia, Vitória and Jacarepaguá represents for less than 1% each of total revenues of *Infraero*.

the year). If it is true, the budget is not being invested on its purpose and it is a matter of control, management and implementation of the fund for civil aviation.

2.4.2 Concession by group of airports

The strategy of imposing a bid winner to manage a group of airports, i.e. both a profitable and an unprofitable airport, is interesting and deserves to be further examined. The concession of a group of airports enables gains of scale and performs a more transparent cross subsidy policy (*vis-à-vis* the one the currently exists) as a specific profitable airport will subsidize a specific unprofitable airport.

For this purpose, the precise profitability of each airport (current and potential) should be carefully reviewed in order to find the correct incentives, including the best pairs of airports and the best design for the public tenders: "if one airport wins traffic from another which has ample spare capacity, subsidies will distort the pattern of traffic" (FORSYTH, 2010, p. 435). Of course, the amount to be offered by bidders will likely decrease as the tender itself becomes less attractive. The variable royalties to be paid throughout the concession period may also need to be adjusted.

In any case, the solution does seem to be possible and interesting as it reliefs *Infraero*'s burden for management of unprofitable airports and is likely to create efficiency gains in the market as a whole. One should also imagine that it could promote competition in the market for national airport hubs, in addition to the competition for international airport hubs, as a major operator may have incentives to develop a certain regional airport.

In a nutshell, **it seems important to design mechanisms of cross subsidization to promote unprofitable airports at the regional and local levels in Brazil**. Currently, a national fund has been created in 2011 as part of the liberalization process of the sector. It seems an interesting instrument as *Infraero* has lost an important part of its revenue due to the concession of profitable airports to private sector. Even if its existence seems positive, the forms of management, control and implementation of the fund deserve a careful look, as it may be used for other purposes than promoting regional civil aviation. In addition, another instrument of cross subsidization would imply the use of private sector itself through the concession of pair (or group) or airports, including a profitable and a less attractive airport in the tender package.

In spite of the model (or models) to be chosen, **transparency is an aspect that requires attention in the Brazilian cross-subsidization structure**. The calculation of its existence and extent is more sophisticated than it seems, thus a better assessment could likely generate efficiencies to the sector. It could also contribute to design the proper incentives for private investors in future concession rounds. In the current model, the mechanism of subsidization is unclear.

2.5 Competition issues

The competition issues will be further analyzed in a following paper concerning competition

between airports. Is it possible such a thing as competition between airports? In spite of the first impression that airports may be considered as a natural monopoly due to large sunk costs and economies of scale and scope (PEREIRA NETO et al., 2016), recent studies indicate a genuine competition in certain markets, for instance, in connecting services: "Transfer traffic is considered to be sensitive to different price/frequency combinations offered via different hubs, although no empirical data illustrating this is to hand" (STARKIE, 2008, p. 140). This would indeed be in line with the general literature on this particular issue:

> The empirical evidence suggests that most efficiency gains stem not from the tender as such but rather from the permanent exposure of potential contractors to competition: competition in the market is more important than competition for the market. It is therefore essential that the process of tendering and contracting be organised in such a way that they reduce the government's dependence on the incumbent franchise or concession holder. (BRONCHI, 2003, p. 19).

In practice, airports do seem to have incentives to compete as "hubs" in order to attract the most airline companies to its infrastructure for connecting flights (PEREIRA NETO et al., 2016). This can be seen intuitively in Europe for connecting flights in London, Amsterdam, Paris, Frankfurt or Milan.

If this is true, the political decision of contracting with different private players in Brazil should be right – at least in what it concerns the main airports that could compete in the market of connecting services (São Paulo, Rio de Janeiro, Brasília, Recife and eventually a few others). Regarding the Brazilian political choice of contracting with different airport operators, Caio Mário da Silva Pereira Neto, Paulo Leonardo Casagrande, Filippo Maria Lancieri and Joaquim Nogueira Porto Moraes state that:

> The recent Brazilian experience contained a noteworthy particularity: bidding rules were specifically designed to prevent cross-ownership among different airport operators. In the first round of biddings (in 2012), no single private entity could be awarded more than one airport concession. Moreover, the bidding rules of the second round (in 2013) provided that corporate groups responsible for operating one of the airports granted in the first round could not hold more than a 15% stake at a consortium bidding for an airport in the second round. (PEREIRA NETO et al., 2016, p. 9).

Nevertheless, the political choice of maintaining *Infraero* with a stake in all Brazilian airports seems to go against the previous reasoning (and also political choice). If *Infraero* remains as shareholder in all airports, the company is able to access full information of the market, including current and potential airport alliances, pricing policies and other relevant corporate strategies. In this specific aspect, it is irrelevant the size of *Infraero*'s stake in the concession

consortiums, since the information could also be accessed through interlock directorates, minority shareholdings and other corporate setups.

Moreover, what would happen if *Infraero* were eventually privatized? One should not misconceive this possibility for the future as an option for institutional design in the sector. In this case, the private entity would become a shareholder of all main Brazilian airports, albeit the efforts that are being made to prevent this sort of relationship to increase competition between airports, in particular those that may serve as international hubs.

At the same time, the issue of independent ownership has been explored by academics: "for airports to compete, they need to be under separate ownership. [...]. Minority shareholdings may be used to strengthen the alignment of objectives and lessen competition" (FORSYTH, 2010, p. 430). An interesting aspect of this issue concerns the creation of airport alliances, as the one between Amsterdam Schiphol and Aéroports de Paris.

In any case, an important message seems to be that **competition matters in the market of airport management, differently from what was thought in the past**. The traditional idea that airports are natural monopolies does not seem to correspond to the present reality, in particular considering certain segments of the market (i.e. competition for hubs) and alternative model transportation (i.e high-speed trains). Enabling a player (i.e. *Infraero*) to participate in the management of all Brazilian airports goes against the idea of competition between airports, which seems to govern the airport concession rounds, as it limits foreign players to a certain number of auctions.

Conclusions and recommendations for next airport concessions

The overall policy of airport concessions to private sector has led to positive outcomes to Brazil: in the past years, the size of the main airports of the country, as well as the quality of services provided have been expanded. Major international operators have entered the country, contributing to efficiency in the management of airports.

Infraero, the Brazilian state-owned company, is a key-player in this process. Until 2011, it was in charge of management of almost all civil airports in Brazil. For this reason, the Brazilian government decided to impose a mandatory rule in the first public tenders of Brazilian airports: *Infraero* should participate in the winner consortium with a 49% share. This rule has several consequences and this paper addressed its main aspects as research question, namely **what are the key advantages and disadvantages of the hybrid governance structure that currently exists in Brazil for the management of its main airports?**

As a result of this academic assessment, the paper also modestly tried to draw a few suggestions to the next rounds of concessions, some of them already incorporated in the 2017 airport concession round. They are summarized below:

i. *Access to knowledge:* the access of *Infraero* to know-how in airport management is a positive aspect that should be promoted in future concessions. The major airport operators in the world have entered the Brazilian market and it certainly is an opportunity to *Infraero* to learn from their experience. Nevertheless, the mandatory requirement of 49% share to *Infraero* is not a necessary way to assure this benefit, as there are corporate and contractual setups that enable similar advantages without its downsides.

ii. *Government influence on decisions:* this is a more sensitive aspect, as its approach may vary from a political standpoint. Nevertheless, it seems reasonable to consider that government might wish to retain an influence on decisions, in particular to avoid certain decisions that may impact on public services. However, once again the mandatory requirement of 49% share to *Infraero* does not seem to be a necessary or an adequate mean to assure the government's influence over the consortium. It may also be guaranteed by different corporate or contractual arrangements, with less burden to the public shareholder and similar advantages.

iii. *Funding and risk-sharing:* the maintenance of the mandatory 49% stake for *Infraero* may continue to impose a reality of public financing rather than collecting profits. This is a major drawback, in particular considering a national scenario of economic crisis and public budgetary constraints. It seems that the discussions on future concession rounds should focus more on the extent of the reduction (or elimination) of the mandatory share rather than on its necessity.

iv. *Cross subsidization:* as *Infraero* has reduced its shares in the main (and profitable) airports, the current liberalization policy should consider cross subsidization instruments to enable the proper development of regional (and unprofitable) airports in the country. The national fund created in 2011 appears to be an interesting instrument to compensate the reduction of *Infraero*'s revenues, although its form of management, control and implementation may deserve a better analysis from policy makers in order to fulfil its purpose of promoting the regional and local civil aviation in Brazil. In addition, other instruments of cross subsidization could be foreseen in future concession rounds, such as the concession of a group of airports, for instance a pair of airports including a profitable and a less attractive in the tender package. In any case, transparency of cross-subsidization strategies deserve more attention and could contribute to the design of future rounds in terms of applying the proper incentives for private investors.

v. *Competition:* future rounds of concession should continue to consider competition issues as an important aspect for tender design and concession contracts. The specificities of the market, such as competition for hubs and alternative modal transportation, have justified

a change in the traditional way of seeing airports as natural monopolies. The foreign experience, with many cases of privatization and PPPs around the world, confirms this assessment.

In conclusion, these seem to be the main findings and suggestions for future rounds of concessions, related to the former mandatory rule of imposing to *Infraero* a 49% share in all winner consortiums.

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