



## Pro-competition rules in airport privatization: International experience and the Brazilian case



Caio Mário da Silva Pereira Neto <sup>a</sup>, Paulo Leonardo Casagrande <sup>b</sup>, Filippo Maria Lancieri <sup>c, \*</sup>, Joaquim Nogueira Porto Moraes <sup>d</sup>

<sup>a</sup> FGV Law School, Yale Law School (JSD), São Paulo, Brazil

<sup>b</sup> University of São Paulo (JSD), Universities of Hamburg and Manchester (LLM), São Paulo, Brazil

<sup>c</sup> INSPER – Instituto de Ensino e Pesquisa (M.Econ) and University of Chicago Law School (LLM), São Paulo, Brazil

<sup>d</sup> Catholic University of São Paulo (J.D.), São Paulo, Brazil

### ARTICLE INFO

#### Article history:

Received 14 January 2015

Received in revised form

11 March 2016

Accepted 11 March 2016

#### Keywords:

Airport privatization

Cross-ownership restrictions

Airport competition

Auction rules

### ABSTRACT

This article aims to demonstrate the importance of establishing pro-competition rules in the concession of multiple airports to private companies by describing the recent Brazilian experience. More specifically, it addresses: (i) how the economic literature deals with potential competition among different airports, and how this competition was dealt with in the concession programs of Australia, Mexico and the United Kingdom; and (ii) Brazil's recent experience with airport concessions, where international benchmarking led to cross-ownership restrictions. As a conclusion, this paper defends that governments should design regulatory restrictions that account for the existence of competition among airports. Nevertheless, these restrictions must be carefully planned and designed to achieve their goals.

© 2016 Elsevier Ltd. All rights reserved.

## 1. Introduction<sup>1</sup>

Brazil has recently joined the group of countries that have large airports operated by private companies. In 2011, the greenfield project of the International Airport of São Gonçalo do Amarante, in the metropolitan region of Natal (Rio Grande do Norte), was awarded to a private company. In 2012, three different private consortiums won the concession contracts for the International Airports of Viracopos (VCP, at Campinas, São Paulo), Governador

André Franco Montoro (GRU, at Guarulhos, São Paulo) and Brasília - Presidente Juscelino Kubitschek (BSB, in the Federal District). Finally, in 2013, the Brazilian government granted to private parties the International Airport of Rio de Janeiro/Galeão - Antonio Carlos Jobim (GIG) and Tancredo Neves International Airport (CFN, located in the metropolitan area of Belo Horizonte, Minas Gerais).

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.<sup>2</sup>

These restrictions were designed to foster more intense competition among different airports, especially in the

\* Corresponding author.

E-mail address: [filippoml@al.insper.edu.br](mailto:filippoml@al.insper.edu.br) (F.M. Lancieri).

<sup>1</sup> Abbreviations used: AICM – Mexican City International Airport; ANAC – Brazilian Civil Aviation Regulator; ASA – Mexican Aeropuertos y Servicios Auxiliares; ASUR – Mexican Aeropuertos del Sureste de México; BAA – British Airports Authority; BSB – International Airport of Brasília; CC – United Kingdom former Competition Commission; CFC – Former Mexican Comisión Federal de Competencia (antitrust authority); CFN – International Airport of Minas Belo Horizonte; FAC – Australian Federal Aviation Corporation; GAP – Mexican Grupo Aeroportuario del Pacífico; GIG – International Airport of Rio de Janeiro; GRU – International Airport of Guarulhos/São Paulo; IIT – Invitation to Tender; p/y – Passenger per year (usually expressed in millions); OFT – United Kingdom former Office of Fair Trading; OMA – Mexican Grupo Aeroportuario del Centro Norte; VCP – International Airport of Campinas/São Paulo.

<sup>2</sup> Please refer to items 3.18 and 3.19 (Brazilian National Civil Aviation Regulatory Agency - ANAC, 2013a) A summary of the bidding rules and concession contracts for GIG and CFN airports maybe be found in English at <http://www.epl.gov.br/airports2> under the links "Contract Signed".

development of national and international hubs. During the preparation of the invitation to tender (ITT), there was intense discussion among government agencies and interested bidders on the scope and effects of such restrictions. Many argued that they would lower the competitiveness of the tenders by limiting the number of bidders. Ultimately, cross-ownership restrictions were adopted, and not only were the value of the awards significant, but the tenders attracted some of the world's most prominent airport operators.

Given this context, this article discusses the benefits of policies adopted in concession programs to increase future competition among airports. In order to do so, it is divided in three parts: I) this short introduction; II) a summary of the relevant economic aspects concerning competition among airports, including a brief description of three relevant examples of international experience (Australia, Mexico and the UK); and III) an analysis of the Brazilian airport concession program, including (a) the review of data that supports the finding of potential competition among the airports; (b) the legal challenges that surrounded the biddings and how these were addressed; and (c) a critical analysis on how the process was conducted. By learning from international experience, the conclusions are that the pro-competition rules adopted in Brazil were an important tool to assure the good results of the Brazilian tenders and will lead to important benefits in the future. However, the analysis was limited in many areas, in particular those relating to soft agreements between airlines and airports and the participation of the State-owned player INFRAERO in all consortia.

## 2. Competition among airports: economic aspects and international privatization experience

### a. Economic aspects of airport competition: catchment areas and hubs

For many years, airports were considered natural monopolies.<sup>3</sup> The prevailing idea was that effective competition among different airports was prevented by the large investments needed for the construction of terminals, runways and other infrastructure, which ultimately led to the large economies of scale and scope involved in the provision of airport services.<sup>4</sup>

More recently, this view is slowly being replaced by a pragmatic approach that acknowledges effective or potential competition among airports – especially those that operate in similar catchment areas and/or can serve as hubs for certain regions.<sup>5</sup> Such an approach rests on the recognition that airport operators are active in two-sided markets. By defining services and rates, they seek to attract both *airlines* and *passengers*. Moreover, decisions of these two groups of agents (passengers and airlines) are interconnected. Air transport companies want to operate in airports “catching” as many potential passengers as possible; while, passengers will choose terminals offering the cheapest and most convenient flights, as well as greater destination diversity.<sup>6</sup>

Considering this framework, a first relevant variable to identify competition among airports is the time passengers are willing to spend to reach them, which defines the respective “*catchment area*”. This catchment area is not fixed, but rather changes according to the type of travel (short or long-haul), passenger type

(business or tourist) and other preferences within groups (i.e. price elasticity).<sup>7</sup> These preferences also change over time. For example, the catchment areas of short haul flights have been expanded by low cost carriers – i.e., certain passengers are willing to spend more time to reach an airport further away in order to benefit from lower ticket prices.<sup>8</sup>

As for long haul flights, especially international ones, consumers normally tolerate travelling for longer distances to reach an airport, implying larger catchment areas. They also tend to accept more connecting flights to reach a final destination, as the time loss in a connection becomes a smaller percentage of the total travelling time. This represents another dimension of rivalry among airports, namely the competition between those that concentrate short-haul flights from several locations (known as “*hubs*”). Therefore, passengers' long haul choices include a selection of both an airline and, if applicable, connection hubs – which provide different types and levels of quality in their services.

From the airline's perspective, different airports may serve as a hub. For any airport, becoming a hub of a major airline means having a higher level of demand for both local and international flights, which increases revenues from services provided to airlines and other commercial activities (rents from shops, parking lots, etc.). Thus, airports can strongly compete for the preference of airlines' international operations, mostly by offering lower fares and better services. Moreover, such competition can be a main driver of investments and quality differentiation, as terminals try to improve their services to attract one or more carriers and their passengers.<sup>9</sup>

As seen, there are good grounds for the establishment of rules ensuring that different companies control different competing airports. This view is also supported by the international experience summarized below.<sup>10</sup>

### b. Inspiration to the Brazilian program of airport privatization: the experience of Australia, Mexico and the UK

While designing its own airport concession program, Brazilian government officials took note of the experience of other countries, most notably Australia, Mexico and the UK. The first two represent ex-ante approaches, where bidding rules forbade significant cross-ownership. In the UK, competition issues were addressed ex-post, notably through a review by the national antitrust authorities. This has led to significant challenges associated with the need to adjust the regulatory framework after privatization had taken place.

In 1994, the Australian Government decided to privatize its main airports, formerly under the control of a state enterprise called Federal Airports Corporation (“FAC”).<sup>11</sup> Following the privatization decision, FAC was then split up into 22 new companies, so as to facilitate the concession of specific airports. The privatization process was designed considering the strategic importance

<sup>7</sup> For example, UK authorities have concluded that except in special circumstances, passengers will only travel between 60 and 120 min to catch a flight, depending on the type of passenger involved and the destination – with the usual passenger regularly travelling up to 90 min (UK Civil Aviation Authority, 2012), p. 37–46.

<sup>8</sup> (Copenhagen Economics, 2012), p. 15. and (McKinsey and Company, 2010), p. 267.

<sup>9</sup> An example of how competition can increase investments is the one found between the terminals of Frankfurt, Munich and Dusseldorf to become Lufthansa's hub, described in (Copenhagen Economics, 2012), p. 37–38.

<sup>10</sup> (Gonçalves, 2010), p. 22.

<sup>11</sup> For further information on the strategic importance of airports in Australia, the current state of airports and sector planning for the future, see (Australian Government - Department of Infrastructure and Transport, 2009).

<sup>3</sup> See (Copenhagen Economics, 2012), p. 3.

<sup>4</sup> See (Organization for Economic Co-operation and Development - OECD, 1997), p. 7.

<sup>5</sup> See (Copenhagen Economics, 2012), p. 3.

<sup>6</sup> See (Copenhagen Economics, 2012), p. 20; and (Fiuza and Pioneer, 2009), p. 40–41.

of the country's four largest airports: Sydney (with 20.7 million passengers/year), Melbourne (13.5 mi. p/y), Brisbane (10.26 mi. p/y), and Perth (4.6 mi. p/y).<sup>12</sup> The four airports represented 81% of annual Australian passengers' movement and 85% of airport fees' revenues.<sup>13</sup>

In order to increase competition, the Australian Government imposed limitations on cross-ownership. More specifically, the operator of Sydney Airport and its shareholders could not hold, directly or indirectly, more than a 15% stake in Melbourne, Brisbane and Perth airports' operators.<sup>14</sup> In 1997 the airports of Melbourne, Brisbane and Perth were transferred to the private sector, the same happening with Sydney's airport in 2002.<sup>15</sup> The economic groups controlling each airport remained completely independent, as no common corporate link was established.<sup>16</sup>

These limits on cross-ownership enabled the establishment of effective competition among these airports, and, with that, reduced the need for close supervision and regulation by the Australian government. Between 1997 and 2002, regulators implemented a system of soft regulation capping prices for main airport fees.<sup>17</sup> After 2002, however, these caps were removed and replaced by a monitoring regime that resembles an antitrust control.<sup>18</sup> Australian authorities have identified evidence that the airports in the country present high investments in capacity expansion, high quality of service and low fees.<sup>19</sup>

Another noteworthy experience happened in Mexico, where different economic groups responsible for managing private airports allowed for the comparison of their respective operational efficiency, something that improved the information available for regulatory decision-making.<sup>20</sup>

Indeed, since the 1960's, the Government-Owned company *Aeropuertos y Servicios Auxiliares* ("ASA") managed Mexican airports. After the decision for privatization in 1995, 35 out of the 58 airports operated by ASA (chosen by their economic viability) were divided into four legal entities, organized according to Mexico's different regions: (i) *Grupo Aeroportuario del Pacífico* ("GAP"), with airports concentrated in the Pacific coast; (ii) *Grupo A. del Centro Norte* ("OMA"), present in the center north region of the country; (iii) *Aeropuertos del Sureste de México* ("ASUR"), for airports in the southeast region; and (iv) *Aeropuerto Internacional de la Ciudad de México* (AICM), responsible for Mexico City's airport, the country's main hub. Each company concentrated a large airport (at least 5 million p/y) and smaller ones, so as to take advantage of economies of scale and network externalities.<sup>21</sup> The AICM handled more than

20 million p/y, or 35% of the national demand, while GAP, ASUR and OMA accounted for 27%, 18%, and 15%, respectively.

The privatization process was divided in two stages. Initially, between 1998 and 2000, the control of the operations of airports under the management of GAP, OMA and ASUR was granted to *strategic partners* - special purpose companies controlled by at least one Mexican company and one experienced airport operator. On that opportunity, strategic partners acquired 15% of the shares of each airports' holding company (GAP, OMA and ASUR), and there were limitations on cross-ownership. Each strategic partner could only hold shares in one of the holding companies.

Later, during the 2000s, the Mexican government sold the remaining 85% shares it still held in each airports' holding company, both to the same strategic partners and to investors in the capital markets. Again, at this stage of the privatization process, cross-ownership limitations were imposed.

Due to political factors, AICM was not privatized and remained under the administration of ASA. As a consequence, it was not subject to price and quality regulation normally applicable to private operators.<sup>22</sup>

During the years 2006–2007, the Mexican antitrust authority (then called *Comisión Federal de Competencia* – "CFC") conducted a detailed study on the airport sector. After using various metrics to compare the performance of each of the independent operators, the CFC recommended that: (i) AICM should be regulated under the same standards applicable to private operators; and (ii) the government should establish common criteria to determine the maximum fees for all airports.<sup>23</sup> The CFC also recommended that, in case of further privatization, airports within AICM's catchment area should be granted to independent groups. In CFC's view this would enable competition to arise and increase AICM's operational efficiency and service quality.<sup>24</sup>

The Mexican experience highlights an important benefit of rules restricting cross-ownership among different airports: the ability to monitor performance by comparing the metrics of the different operators, a practice known as "*yardstick regulation*".<sup>25</sup> Infrastructure regulation is usually marked by significant information asymmetry between regulated companies and regulators, which can lead to economic inefficiency. In this context, the existence of different operators conducting similar activities benefits the regulator, as it allows the comparison among the performance of various regulated entities with regard to investments, cost structure, quality levels, etc.

Last but not least, a third relevant example of airport privatization took place in the UK, where the common control of competing airports led to significant problems in capacity, quality of service and prices.<sup>26</sup>

In the 1960's, the management of all major UK airports was assigned to Government-Owned companies, both national and local. One of the most important was the *British Airports Authority* – hereinafter "BAA", the company responsible for managing the country's main airports: (i) London Heathrow Airport, (ii) London Gatwick Airport (iii) London Stansted Airport, (iv) Glasgow

<sup>12</sup> (Hooper et al., 2000) p. 183–185. Data is for the years 1996/1997.

<sup>13</sup> See (Australian Government Productivity Commission, 2011), p. 73.

<sup>14</sup> See (Australian Government - Department of Infrastructure and Transport, 2014) There are also restrictions to foreign capital (49%) and airlines capital (5%), limitations that also address competitive concerns. For more information, see (Hooper et al., 2000), p. 189–192.

<sup>15</sup> For further information on the process and structure of each of these airport leases, see (Hooper et al., 2000) and (Australian Government Productivity Commission, 2011), p. 154.

<sup>16</sup> In this regard, see the structure of each group after the transfer process in (Australian Government Productivity Commission, 2011) Annex 2.

<sup>17</sup> (Australian Government - Department of Infrastructure and Transport, 2009) p. 174–175.

<sup>18</sup> (Australian Government - Department of Infrastructure and Transport, 2009) p. 174–175.

<sup>19</sup> In this sense, please refer to (Australian Government Productivity Commission, 2011) p.xx.

<sup>20</sup> For a summary of the privatization of Mexican airports see (Rico Galeana, 2008), p. 320–323. Also, see (International Civil Aviation Organization - ICAO, 2013) Finally, another important source is the large study made by the Mexican antitrust authority over the sector's competitiveness: (Comisión Nacional de la Competencia, 2007).

<sup>21</sup> (International Civil Aviation Organization - ICAO, 2013), p. 1.

<sup>22</sup> (International Civil Aviation Organization - ICAO, 2013), p. 2 (Rico Galeana, 2008), p. 320–321, and (Comisión Nacional de la Competencia, 2007), p. 5–8.

<sup>23</sup> (Comisión Nacional de la Competencia, 2007) p. 10–12 and 17–20.

<sup>24</sup> Here it is important to stress that ASA also held minority shareholding in two groups of airports in the area surrounding the AICM, the ones of Cuernavaca and of Toluca/Querétaro/Puebla. Those were also owned by the Federal Government but through other companies, See, (Comisión Nacional de la Competencia, 2007), p. 31.

<sup>25</sup> (Shleifer, 1985), p. 319–327 (Bagnoli and Borenstein, 1991), p. 115–136. (Ayres and Braithwaite, 1992) p. 142.

<sup>26</sup> For a summary of airport privatization process in the UK, see (Office of Fair Trading - OFT, 2007). Also see (Competition Commission - CC, 2009), p. 11.

International Airport, (v) Prestwick International Airport (Great Glasgow) (vi) Edinburgh Airport, and (vii) Aberdeen Airport.

BAA was privatized in 1987. At the time, the government opted for a one shot process (all airports assigned to only one player), arguing that it would encourage greater investment in the expansion of terminals.<sup>27</sup> In 2005, the airports managed by BAA accounted for 60% of passenger movement within the UK, 90% of the movement in the Southeast region of Great Britain and 84% of the movement in Scotland.<sup>28</sup>

Despite the presence of regulatory control, this high concentration was deemed by the British Government as jeopardizing the quality of the services rendered by BAA. This is well exemplified by the former Office of Fair Trading (“OFT”) investigation into BAA’s activities, which concluded that the joint control of several airports: (i) restricted the ability of Low-Cost Carriers to reduce average fare prices to consumers; (ii) encouraged BAA to withhold investments in capacity expansion or incur in gold-plating as means to increase regulated prices, and; (iii) allowed BAA to provide poor quality services and nevertheless obtain high yields.<sup>29</sup>

The case was referred to the Competition Commission (“CC”), which after an inquiry of more than two years, concluded in 2009 that, in fact, cross-ownership among BAA’s airports lowered incentives for investments in infrastructure expansion, better services and lower costs.<sup>30</sup>

Consequently, in March 2009 the CC ordered BAA to sell Gatwick, Stansted and either Glasgow or Edinburgh Airports.<sup>31</sup> BAA accepted the divestiture of Gatwick airport (sold on October 21st, 2009, for 1.5 billion pounds)<sup>32</sup> and Edinburgh airport (sold on April 23rd, 2012 for 807 Million pounds),<sup>33</sup> but challenged the order to sell Stansted, claiming this sale to be disproportional. Nevertheless, the divestment obligation was maintained in both the Competition Appeal Tribunal (decision from February 1st, 2012), as well as the Court of Appeals (decision from July 26th, 2012)<sup>34</sup>, and Stansted was ultimately sold on January 19, 2012, for 1.5 Billion pounds.<sup>35</sup>

This UK experience highlights the importance of taking airport competition into account *before* the privatization process takes place (with *ex ante* rules). Otherwise, relevant problems may have to be addressed *ex post* by antitrust authorities, implying greater complexity and additional costs. Moreover, the UK experience indicates that any *ex post* intervention also tends to face litigation by the incumbent, depriving passengers and airlines of the benefits arising from airport rivalry during the dispute in courts.

### 3. The Brazilian airport privatization program: the design of tender rules that consider potential competition

The Brazilian airport privatization program was divided in two different rounds, including 5 different airports. The 2012 round comprehended the concession of Brazil’s main international hub, Guarulhos (GRU), together with Brasilia (BSB) and Viracopos (VCP), which are important domestic hubs (for connecting flights within the country). For this first round, the bidding rules specifically prohibited

a single entity or consortium from winning more than one airport.

The second round included the concession of two other large airports, Rio de Janeiro (GIG - Brazil’s second most important international hub) and Belo Horizonte (CFN – Brazil’s third largest metropolitan region). This second round also limited cross-ownership, and the bidding rules established that: (i) the economic groups responsible for operating an airport auctioned in the first round could not hold more than 15% of the shares of a consortium bidding for an airport from the second round<sup>36</sup>; and (ii) a single economic group could only win one of the two airports being auctioned in this second round.<sup>37</sup>

These restrictions, however, were only imposed after an intense regulatory debate. Even though all five airports were expected to be included in the privatization process, the bidding rules for the first round did not clearly establish that there would be cross-ownership limitations between the first and the second rounds. Therefore, after the second round restrictions were announced, those controlling the first three privatized airports challenged these restrictions under the grounds that: (i) no possible competition could be established between the first and second rounds’ airports, in particular between the two international hubs – GRU (first round) and GIG (second round), and; (ii) such restrictions would be illegal under Brazilian public procurement legislation, in particular for limiting the number of potential bidders participating in the tender.<sup>38</sup> Nonetheless, as will be seen below, none of these challenges withstood a more thorough analysis.

#### a. Data on potential competition among the privatized airports

At the time of the biddings there was qualitative and quantitative information supporting the possibility of competition among the airports to be awarded, and particularly between GRU and GIG.<sup>39</sup> Notably, the Government focused its studies on three relevant markets of competition between the airports: (i) competition in catchment areas; (ii) competition for connecting passengers; and (iii) competition for cargo.<sup>40</sup> However, it refused to delimit geographical markets, saying that the important issue to be addressed was substitution between airports.<sup>41</sup>

The Government found limited scope for competition in catchment areas, as most of the airports were more than 500 km away from one another – the only exception being GRU and VCP (distant only 115 km).<sup>42</sup> The analysis, therefore, focused on competition relating to connecting passengers and cargo.

The Government concluded that there was at least potential competition between the airports for connecting passengers and, in some cases, for cargo. In both cases, the analysis was mostly limited to simple and readily available data, such as: (i) market-shares or

<sup>27</sup> In this sense, see (Competition Commission - CC, 2009), p. 5.

<sup>28</sup> (Office of Fair Trading - OFT, 2007), p. 4–8.

<sup>29</sup> (Office of Fair Trading - OFT, 2007), p. 4–8.

<sup>30</sup> For a summary of CC’s findings, please refer to (Competition Commission - CC, 2009) p. 8–16.

<sup>31</sup> See (Competition Commission - CC, 2009) p. 15.

<sup>32</sup> See the news (BBC News, 2009). It is important to mention that BAA was already considering the sale of Gatwick as means to diminish its heavy debt burden - (BBC News, 2009).

<sup>33</sup> See the news (Competition Commission, 2012) and (Jacobs and Sakoui, 2012).

<sup>34</sup> See (Royal Courts of Justice (2012)).

<sup>35</sup> See the news (BBC News, 2013).

<sup>36</sup> Please refer to items 3.18 and 3.19 of the (Brazilian National Civil Aviation Regulatory Agency - ANAC, 2013a). It must also be stressed that since the winning consortiums would be entitled to acquire a share of 51% of each airport, with the Brazilian State-Owned Entity INFRAERO accounting for the rest, the final share of the cross-ownership would be limited to 7.5%.

<sup>37</sup> Please refer to item 3.3 (Brazilian National Civil Aviation Regulatory Agency - ANAC, 2013a).

<sup>38</sup> In this sense, please refer to the article (Brazilian National Civil Aviation Regulatory Agency - ANAC, 2013b) and (Jornal Valor Econômico, 2013).

<sup>39</sup> Brazilian Authorities relied on three main documents to establish cross-ownership restrictions between airports being awarded. A technical note by the Brazilian Secretariat for Civil Aviation - (Secretariat for Civil Aviation - Brazilian Presidency, 2013) – and two decisions by the Brazilian Federal Auditing Court (Brazilian Federal Auditing Court, 2013a, 2013b).

<sup>40</sup> (Secretariat for Civil Aviation - Brazilian Presidency, 2013) p. 25–27.

<sup>41</sup> (Secretariat for Civil Aviation - Brazilian Presidency, 2013) p. 28–29.

<sup>42</sup> These, however, had already been awarded in the first round of biddings. (Secretariat for Civil Aviation - Brazilian Presidency, 2013) p. 35.



**Table 1**

Selected information presented by the Brazilian Federal Government on airport competition – data for 2012.

Airport	% of national cargo movement (in kg)	% of connecting passengers against total passengers by airport (domestic and international) <sup>43</sup>	Number of passengers in international routes - % as total in Brazil <sup>44</sup>
GRU	33.38%	19.70%	61%
GIG	8.74%	14.10%	22.7%
CFN	1.21%	12.20%	2.4%
BSB	3.80%	42.06%	2.2%
VCP	15.08%	37.09%	No information provided

Source: (Secretariat for Civil Aviation - Brazilian Presidency, 2013) p. 35–40.

relevance in each of the product markets; and (ii) the geographic distance between them. The most relevant data presented for item (i) can be found below: Table 1

Under the government's view, this data demonstrated how GRU and GIG were Brazil's most important international hubs. It equally demonstrated how there was at least potential competition between the airports to become international or national hubs, and possibly to develop into cargo hubs.<sup>45</sup>

The Government also stressed the importance of cross-ownership restrictions to allow for the successful implementation of benchmarking and yardstick competition. The idea is that these oversight methods would allow for a better regulation of the sector, such as a proper implementation of X Factors that account for productivity gains when revising price caps.<sup>46</sup> The Brazilian Government then explicitly quoted the experiences of the UK, Mexico and Australia as examples justifying why benchmarking is a significant reason to restrict cross-ownership.<sup>47</sup>

In its final review, the Brazilian Federal Auditing Court (linked to the National Congress) accepted the arguments presented by the Federal Government as sufficient justification to establish cross-ownership restrictions between the airports being awarded in the second round of bids.<sup>48</sup>

#### b. Legal challenges to the cross-ownership restrictions of the Brazilian Airport Privatization Program

Besides questioning the potential competition among airports, parties trying to challenge the cross-ownership restrictions of the second round of privatization also claimed that they were illegal. The main arguments contrary to these restrictions were basically that: (i) any such restriction should have been established in a clear manner *before* the first round of concessions; and (ii) restrictions on cross-ownership could limit both the number of bidders and the value offered for the rights to explore such airports – harming the overall public interest.

These legal arguments were subject to more intense public debate than those related to the actual economic evidence on competition among different airports (presented in Section 3.a above). In general, Brazilian Courts refrain from reviewing substantive aspects of policymaking, especially when they involve economic evidence.<sup>49</sup> The same cannot be said about a more formal

review related to due process, which is subject to intense scrutiny by Courts. However, a brief analysis of the Brazilian legal framework is sufficient to demonstrate how regulators had the necessary authority to establish cross-ownership restrictions in the second round of privatization – a conclusion also reached by Brazilian Courts.

The Brazilian Constitution delegated to the Brazilian Legislative and Executive branches the definition of the legal regime applicable to concession contracts (art. 175). Moreover, art. 29, XI of the Brazilian Concessions Law (Law 8.987/9) also established the Administration's obligation to encourage competitiveness in infrastructure sectors. Finally, the National Civil Aviation Policy, approved by Presidential Decree 6.780/09 listed competition in air transport services (item 2.6) and in the provision of airport infrastructure services (item 3.6) as key drivers to increased investments, higher quality services and lower fees.

Additionally, the Civil Aviation Law (Law 11.182/2005), which created the Civil Aviation National Agency ("ANAC"), granted the agency authority to establish the concession model for Brazilian airports. Within this specific authority, Presidential Decree 7.624, of 2011 (i.e., prior to the first round), set up the general framework for airport concessions, and expressly provided that ANAC could establish restrictions on the participation of companies in concession proceedings, so as to ensure competition (art. 15).

Finally, ANAC's Invitation to Tender no. 2/2011 (related to the first round) stated in Section 5.15.1 that "*Each private consortium shall only be entitled the administration of one airport.*" Some parties argued that this provision should be read narrowly, as relating only to the first round of bids (no player would be able to acquire two airports from the first round). This contrasted with the Government's reading that this restriction applied to all bidding rounds, a view that was later upheld by the Brazilian Federal Auditing Court in its review of the second round.<sup>50</sup>

As per the argument that cross-ownership restrictions would limit the competitiveness of the bidding proceedings (as fewer players would be able to participate), these predictions were not confirmed. The second round attracted 5 consortiums, including operators responsible for some of the world's main terminals, such as Paris/Amsterdam, Zurich/Munich, Singapore, Frankfurt and Heathrow. In the end, private parties paid the Brazilian Government a total sum of BRL 20,839 billion (approx. 9.27 Billion USD), an increase of 353% over the minimum price of BRL 5.9 billion.<sup>51</sup> Together, both the number of parties and the final value of the bids largely exceeded the Government's expectations.<sup>52</sup>

#### c. A critical analysis of the Brazilian process

The comparison between the Brazilian case and the experience of other countries provides an important benchmark against which

<sup>43</sup> In this table, the Government presented information on the percentage of connecting passenger in relation to the total number of passengers for *each airport*, and not for the entire country. For example, if GRU handled 100 passengers per year, and 20 were connecting passengers, the percentage for GRU was 20%.

<sup>44</sup> In this case, the percentages are not per airport, but rather for the total amount handled in the country. For example, if Brazil had 100 passengers departing or arriving in international flights in 2012, and GRU handled 20, the percentage for GRU was 20%.

<sup>45</sup> (Secretariat for Civil Aviation - Brazilian Presidency, 2013) p. 35–40.

<sup>46</sup> (Secretariat for Civil Aviation - Brazilian Presidency, 2013) p. 41.

<sup>47</sup> (Secretariat for Civil Aviation - Brazilian Presidency, 2013) p. 44–58.

<sup>48</sup> (Brazilian Federal Auditing Court, 2013a).

<sup>49</sup> (Pereira Neto, Adami, & Lancieri, 2014).

<sup>50</sup> (Brazilian Federal Auditing Court, 2013c).

<sup>51</sup> For the right to explore Galeão the companies paid BRL 19,019 billion, and for Confins 1820 billion. (Brazilian Federal Government, 2013)

<sup>52</sup> Please refer to (Portal Brasil, 2013).

one can assess the merits and problems of the Brazilian model.

Overall, it seems that Brazil learned from international experience when designing its own airport privatization program. In particular, from the very beginning, the Government ruled out a system that replicated the UK's experience. The goal was to attract international capital and expertise to increase the country's lack-luster infrastructure without having to put "all eggs in one basket".

Brazil also learned from Mexico's experience. The system of regulation put in place by ANAC is based on a price-cap mechanism that is similar for all airports – incorporating some of the Mexican antitrust agency's recommendations. These caps are adjusted according to a set of criteria that includes inflation, the investments actually made by the individual operator, a quality indicator (Q Factor) and a comparative productivity factor (X Factor) that considers productivity gains of rival public and private airports – incorporating yardstick regulation to the monitoring system. As we have seen, the Government expressively mentioned the UK, Mexico and Australia as important examples that justify the establishment of yardstick regulation among different airports.

The Brazilian analysis, however, may have been oversimplistic at times, especially when compared with its peers abroad.

For example, the OFT<sup>53</sup> and the CC's<sup>54</sup> decisions presented long and detailed sections on the definition of both relevant markets in terms of products and geographical area. To assess the existence of substitutability between different airports, these analyses considered many different sources of evidence, such as passenger preferences, maximum travel time to reach the airport and even airlines' behavior and complaints. They also relied on share of terminating passengers as a better proxy for market share than general flight passenger handling information.<sup>55</sup>

Brazilian authorities fell well short of that. Most of the data used to support the restrictions imposed related to somehow generic and readily available information on number of passengers and distances between airports. It was surprising, for example, that authorities did not perform simple Origin and Destination research to assess what was the primary target of connecting passengers, simply relying on what percentage of local traffic they represented. And even this data can be misleading. For example, while GRU has only 19.7% of connecting passenger traffic, against 37% of VCP, GRU actually handles almost twice more connecting passengers than VCP (4.2 million v. 2.2 million). Given the economies of scale involved in hub & spoke networks, it is easy to see how absolute data may be more relevant than relative data.

Moreover, the governmental analysis also ignored important evidence from airlines' strategic behavior that could have informed decision making. As an example, in a public hearing before the Committee for Economic Development, Industry and Trade of the Brazilian House of Representatives, TAM – Brazil's leading airline – presented information on route design that reinforced the importance of GRU and GIG as international hubs. TAM also stated that GRU's saturation led to the development of GIG as an alternative (competing) hub, and that BSB was an important national hub.<sup>56</sup> TAM's and Gol's experience also pointed to the importance of GRU and GIG as major hubs for domestic traffic, with a growing role

being performed by BSB, VCP and CFN.<sup>57</sup>

These were all important and readily available information that could have been used by Brazilian agencies to better assess market behavior and substitutability (as done in the UK).

Another dimension of the strategic interactions among competing airports that was not addressed by Brazilian authorities was vertical foreclosure. Brazilian regulators recognized that an airline has incentives to restrict competitors' access to services and facilities of a hub airport, so as to limit their ability to operate and expand routes by tapping in the aggregated demand in that particular hub.<sup>58</sup> Regulators can monitor access or pricing restraints used to protect a dominant airline, but other types of indirect discrimination (e.g. finger access, luggage delivery times) are harder to detect.

In order to address this issue, the Brazilian Government decided to cap the participation of airline companies in airport operators to 5% in both the first and the second round of concessions, preventing airlines from having any significant say in how airports were managed.<sup>59</sup>

This, however, may not be enough. The system put in place established no particular safeguards against "soft vertical agreements" between airlines and airports. Even in the absence of structural links, an airline can still try to use its monopsony power to influence the operator of its hub to negatively affect competitors. With its purchasing leverage, it can request improved service from the airport operator in a way to discriminate competitors. Even though these are hard to measure, the government could have tried to implement more sophisticated Q and X factors as a way to create incentives for equal treatment of airlines.<sup>60</sup> As the entire methodology is yet to be developed, there is still room for this critique to be addressed. In any event, *ex post* monitoring may help controlling for any potential distortion that these soft agreements may create.

It is not clear if incorporating this information would have changed the overall results. Nevertheless, given that stakes were high and that the Government was being challenged on the cross-ownership restrictions, one could expect a more thorough review. The very different stages in the decision making process between Brazil and the UK or Mexico may justify some of these divergences. Brazil seemed to rely more on the Australian experience, where the implementation of *ex-ante* cross-ownership restrictions seems to have led to a more positive outcome even when airport catchment areas do not necessarily overlap.

Finally, it is important to consider one important area in which the Brazilian model seems nearsighted: the role of INFRAERO, the public operator. This unique characteristic of the Brazilian airport privatization system may also be its most controversial.

As shown above, the Brazilian government went a long way to try to establish limitations on cross-ownership between airport operators. However, INFRAERO (the state owned operator) remained a significant party in the consortia, with a 49% stake in all privatized airports. This was justified by the Government as necessary to ensure "transfer of knowledge" between private and

<sup>53</sup> (Office of Fair Trading - OFT, 2007), Section 4.

<sup>54</sup> (Competition Commission - CC, 2009), Sections 2 and 3.

<sup>55</sup> (Competition Commission - CC, 2009), Section 3.

<sup>56</sup> (TAM Linhas Aéreas, 2012). Slide 2.

<sup>57</sup> As an example, between 40% and 50% of GOL's passengers (Brazil's second biggest carrier) connected or flew through one or more destinations before reaching their final travel destination in 2012. (Gol Linhas Aéreas Inteligentes, 2013) p. 21. Unfortunately, neither the airlines nor the authorities presented specific information on the percentage of international connecting passengers in GRU and GIG.

<sup>58</sup> A famous example of Hub protection strategies by dominant airlines was the Department of Justice claim that American Airlines was in violation of Section 2 of the Sherman Act by illegally undercutting fares and driving out of business smaller airlines which had just started operating routes to and from Dallas/Ft. Worth International Airport (AA's main hub). The case was ruled against DoJ, but the example is still valid. (United States District Court for the District of Kansas, 1999), p 1. (United States District Court for the District of Kansas, 2001) The summary judgment was later affirmed by the Tenth Circuit of the United States Court of Appeal.

<sup>59</sup> In the (Brazilian National Civil Aviation Regulatory Agency - ANAC, 2011) And (Brazilian National Civil Aviation Regulatory Agency - ANAC, 2013a), item 3.22.

<sup>60</sup> The criteria currently put in place is simplistic and limited to objective criteria such as number of parking slots added to the airport.

public parties.

Nonetheless, considering that the Government was concerned with the establishment of at least potential competition between airports, this policy of state-owned minority stakes is out-of-place. There is well settled antitrust scholarship arguing that minority shareholding may lead to coordination between competitors, even in the absence of decision making power (as is the case with INFRAERO).<sup>61</sup> The governmental analysis did not address this important matter at all. In the end, by trying to privilege a public operator the government may have created a conduit for communication among competitors that undermines the cross ownership restrictions put in place. If the Government was indeed concerned about lack of information sharing it should have taken different paths to share experience with the new operators, without direct ownership in multiple airports.

#### 4. Conclusion

This paper addresses the design and implementation of airport privatization and concession programs, presenting arguments for establishing cross-ownership restrictions in airport auctions.

There is a growing literature defending the importance of airport competition as a driver for investment and better service quality. The rationale behind these measures is clear: different airports that share common control have lower incentives to compete among themselves, as there is no financial loss to the common shareholders if customers (either airlines or passengers) exchange one airport for the other. Moreover, common shareholders are capable of coordinating the actions of different airport operators so as to jointly maximize their profits. For example, if two airports are under common control, shareholders may decide to concentrate investments in only one airport, allowing it to become a hub, instead of duplicating investments to develop two competing hubs.

Over the past years, many countries have privatized airports under different regimes.<sup>62</sup> The experience of those early-comers highlights the benefits of *ex ante* cross-ownership restraints and the problems that can arise from joint ownership of competing airports. In particular, airport competition may diminish the need for the regulation (Australia's experience), and may reduce information asymmetries between regulators and regulated companies (Mexico's experience). On the other hand, the cost of not addressing the importance of competition during privatization may lead to higher fees, lower investment levels and lengthy legal proceedings that harm the improvement of airport services – as in the UK experience.

Brazil seemingly learned from international experience when designing its own airport privatization program. It did not put “*all eggs in one basket*” as in the UK and tried to incorporate some of the sophistication in tariff regulation that was recommended in Mexico. In doing so, Brazil moved closer to the Australian experience, where potential competition between hubs was found to have positive impacts, even when catchment areas did not interlap. Problems arose when authorities failed to recognize that the establishment of airport competition requires a holistic analysis of the entire civil aviation system that is present in the country. In other words, the lack of a comprehensive privatization plan from the very beginning, with clear rules for all privatization rounds, led to costly litigation around bidding rules for the second round. It may also inhibit increased airport competition in the future due to a

significant minority shareholding by INFRAERO.

The issues mentioned above merit further research. For instance, controlling with more objective data whether different hubs indeed competed for the same connecting passengers, or if the Government may have foreclosed potential bidders without very sound reasons, could provide valuable new insights for future bids. Further studies on the role of INFRAERO may also pinpoint to what extent (if any) the company is undermining the concession model by allowing for coordination among different airport operators. Finally, another promising area of research concerns potential soft vertical agreements between privatized airports and airlines or airline alliances, in order to find out whether these agreements may impact competition among airports.

Overall, the cross-ownership restrictions in Brazil seem to have had a positive impact on the privatization process. Despite these restrictions, the bidding process attracted a significant number of national and international players, and award payments largely exceeded governmental expectations. After two rounds of privatization, the structure of the market for airport services spurred new investment and preserved actual and potential competition. Airports awarded in the first round of biddings have undergone significant investments, and GRU's new terminal and runway were made at record speed, in time for the World Cup held in 2014. Indeed, these results have encouraged the Brazilian government to prepare a new round of auctions, this time composed of four smaller terminals, expected to take place between 2016 and 2017. One can only hope that they will continue their learning curve, improving the country's infrastructure.

The Brazilian experience with cross ownership restrictions adds to the portfolio of airport privatization processes around the world. We recommend that other countries following similar paths consider some of the successes and mistakes discussed in this article.

#### References

- Australian Government - Department of Infrastructure and Transport, 2009. National Aviation Policy White Paper: Flight Path to the Future.
- Australian Government - Department of Infrastructure and Transport, 2014. Ownership and Control of Airports [WWW Document]. URL (accessed 6.5.14.). [http://www.infrastructure.gov.au/aviation/airport/planning/Ownership\\_control\\_airports\\_overview.aspx](http://www.infrastructure.gov.au/aviation/airport/planning/Ownership_control_airports_overview.aspx).
- Australian Government Productivity Commission, 2011. Economic Regulation of Airport Services - Productivity Commission Inquiry Report.
- Ayres, I., Braithwaite, J., 1992. Responsive Regulation: Transcending the Deregulation Debate. Oxford University Press.
- Bagnoli, M., Borenstein, S., 1991. Carrot and yardstick regulation: enhancing market performance with output prizes. *J. Regul. Econ.* 3, 115–136.
- BBC News, 2013. Stansted Airport Sold for £1.5bn [WWW Document] BBC News. URL (accessed 3.7.16.). <http://www.bbc.co.uk/news/business-21093783>.
- BBC News, 2009. BAA Agrees Gatwick Airport Sale [WWW Document] BBC. URL (accessed 3.7.16.). <http://news.bbc.co.uk/2/hi/business/8317662.stm>.
- Brazilian Federal Auditing Court, 2013a. Decision 2.666/2013-Full Court.
- Brazilian Federal Auditing Court, 2013b. Decision 2.466/2013-Full Court.
- Brazilian Federal Auditing Court, 2013c. Decision 3.026/2013-Full Court.
- Brazilian Federal Government, 2013. Auction of Brazil's Galeão and Confins Airports Reaches Average Premium of 253% over Minimum Asking Price [WWW Document] URL (accessed 3.7.16.). <http://www.copa2014.gov.br/pt-br/node/39179>.
- Brazilian National Civil Aviation Regulatory Agency - ANAC, 2013a. Invitation to Tender 1/2013.
- Brazilian National Civil Aviation Regulatory Agency - ANAC, 2013b. Congressmen Challenge Government Demands on Airport Concessions.
- Brazilian National Civil Aviation Regulatory Agency - ANAC, 2011. Invitation to Tender 02/2011.
- Comisión Nacional de la Competencia, 2007. Opinión con el fin de promover la aplicación de los principios de competencia y libre concurrencia en la proveduría de servicios aeroportuarios. Oficio PRES-10-096-2007-182, 2007.
- Competition Commission, 2012. CC Approves Edinburgh Airport Sale | Media Centre | Competition Commission [WWW Document] URL (accessed 3.7.16.). <http://webarchive.nationalarchives.gov.uk/20140402141250/http://www.competition-commission.org.uk/media-centre/latest-news/2012/apr/cc-approves-edinburgh-airport-sale>.
- Competition Commission - CC, 2009. BAA Airports Market Investigation.

<sup>61</sup> (Organization for Economic Co-operation and Development - OECD, 2008; Steven and Daniel, 2001, 2000).

<sup>62</sup> Please refer to (Portal Brasil, 2013).

- Copenhagen Economics, 2012. Airport Competition in Europe.
- Fiuza, Eduardo, Pioneer, Heleno Martins, 2009. Estudo Econômico sobre Regulação e Concorrência em Aeroportos.
- Gol Linhas Aéreas Inteligentes, 2013. Gol's 20-F Form for 2012.
- Gonçalves, S.S., 2010. Modelos de exploração do mercado de aeroportos no Brasil.
- Hooper, P., Cain, R., White, S., 2000. The privatisation of Australia's airports. *Transp. Res. Part E Logist. Transp. Rev.* 36, 181–204.
- International Civil Aviation Organization - ICAO, 2013. Case Study on Commercialization, Privatization and Economic Oversight of Airports and Air Navigation Services Providers - México.
- Jacobs, R., Sakoui, A., 2012. BAA Sells Edinburgh Airport for £807m. *Financ. Times*.
- Jornal Valor Econômico, 2013. Consórcios ainda querem mudanças nas regras dos leilões de aeroportos [WWW Document]. *Valor Econômico*. URL (accessed 3.7.16.). <http://www.valor.com.br/brasil/3246244/consorcios-ainda-querem-mudancas-nas-regras-dos-leiloes-de-aeroportos>.
- McKinsey and Company, 2010. Estudo do Setor de Transporte Aéreo no Brasil.
- Office of Fair Trading - OFT, 2007. OFT Reference to the Competition Commission 912.
- Organization for Economic Co-operation and Development - OECD, 2008. Policy Roundtables - Minority Shareholdings.
- Organization for Economic Co-operation and Development - OECD, 1997. Policy Roundtable: Competition Policy and International Airport Services.
- Pereira Neto, C.M. da S., Adami, M.P., Lancieri, F.M., 2014. O Diálogo Institucional das Agências Reguladoras com os Poderes Executivo, Legislativo e Judiciário: Uma proposta de sistematização, in: *Direito Da Regulação E Políticas Públicas*. Malheiro Editores, São Paulo.
- Portal Brasil, 2013. Governo federal comemora o sucesso na concessão de aeroportos [WWW Document]. *Portal Bras*. URL (accessed 3.7.16.). <http://www.brasil.gov.br/governo/2013/11/governo-federal-comemora-o-sucesso-na-concessao-de-galeao-e-confins>.
- Rico Galeana, O.A., 2008. The privatisation of Mexican airports. *J. Air Transp. Manag.* 14, 320–323.
- Royal Courts of Justice, 2012. *EWCA Civ 1077-BAA Limited (Appellant) Vs. Competition Commission (Defendant)*.
- Secretariat for Civil Aviation - Brazilian Presidency, 2013. Technical Note 33/DERC/SPR/SAC-PR - Competition between Airports and Limitations on Cross-ownership.
- Shleifer, A., 1985. A theory of yardstick competition. *RAND J. Econ.* 319–327.
- Steven, C. Salop, Daniel, P. O'Brien, 2001. The competitive effects of passive minority equity interests: reply. *Antitrust Law J.* 69, 611–625.
- Steven, C. Salop, Daniel, P. O'Brien, 2000. Competitive effects of partial ownership: financial interest and corporate control. *Antitrust Law J.* 67, 559–614.
- TAM Linhas Aéreas, 2012. TAM's Presentation before the Brazilian House of Representatives - Commission on Economic Development, Industry and Commerce.
- UK Civil Aviation Authority, 2012. Stansted - Market Power Assessment: Non-confidential Version.
- United States District Court for the District of Kansas, 2001. *United States of America, Plaintiff, V. AMR Corporation, American Airlines, INC., and AMR Eagle Holding Corporation, Defendants*. No. 99-1180-JTM.
- United States District Court for the District of Kansas, 1999. *United States of America, Plaintiff, V. AMR Corporation, American Airlines, INC., and AMR Eagle Holding Corporation, Defendants*.