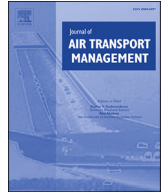




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## Feasibility and desirability of airport competition: The role of product substitutability and airlines' nationality

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## ABSTRACT

Competition between airports within a nation is not always feasible. Some airports are sheltered from other airports competition because catchment areas do not overlap due to geographical reasons or consumers' preferences. This is not necessarily serious if competition with non-national airports exists, or the existence of other goods strongly interrelated with the airport market limits the possibility of market power. However, even when competition between airports is feasible, there is no consensus among academics and practitioners about its desirability. In this paper we argue that, even when airport competition is feasible, it might not be desirable from the national point of view. Our argument is based on the joint analysis of airports' market power, airlines' market power, and airlines' nationality.

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### 1. Introduction

Competition between airports within a nation is not always feasible. Some airports are sheltered from other airports competition because catchment areas do not overlap due to geographical reasons or consumers' preferences. This is not necessarily serious if competition with non-national airports exists, or the existence of other services strongly interrelated with the airports market (intermodal competition or non-aeronautical activities) limits the possibility of market power.

The air transport industry is characterized by a vertical structure in which airports are owned by public or private firms (upstream firms) that allow airlines (downstream firms) to use their infrastructures in order to provide air transport services to final consumers. While competition both in the upstream and downstream market is undoubtedly welfare enhancing, what happens if there is competition in the upstream (airports) market but not in the downstream (airlines) market? In such a situation, is competition between airports always desirable?

In a vertically structured industry, the analysis of any effect in the upstream market should be performed taking into account the

level of competition in the downstream market. In the pricing literature, for example, many authors argue that the analysis of airport's pricing policies does not require the consideration of the downstream market in the case of competitive behavior of airlines (see for example, Brueckner, 2002; Mayer and Sinai, 2003; Basso and Zhang, 2007; Basso and Zhang, 2008; or Zhang and Czerny, 2012). However, when airlines have market power such analysis would be misleading. We have found a similar result for the analysis of airport competition: when analyzing the effects of airport competition, we cannot abstract from what is happening in the airline market. Moreover, we need to take also into account the nationality of air carriers.

Regarding airport competition feasibility, Forsyth et al. (2010) argue that the lack of competition between airports may come about for two types of reasons: locational reasons and natural monopoly reasons. The locational explanation relates to the fact that for most airports there are no close substitutes as attractive locations are limited (Forsyth, 1997). The other explanation relies on economies of scale in airport provision. In presence of economies of scale, it is more efficient to produce with a single firm than with two or more. In order to prevent the monopolist to use its market power by reducing quantities and increasing prices, some regulation is needed. However, in this paper we argue that rather than locational and natural monopoly reasons, the key feature to be considered when analyzing airport competition feasibility is consumers' preferences.

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Airport competition, when feasible, can be classified within three different types (see, for example, [Santaló and Socorro, 2015](#))<sup>1</sup>:

1. Competition between airports that are geographically located close to each other: Each airport has a catchment area. When airports are located close to each other, catchment areas overlap and airports may compete for customers in overlapped areas.
2. Competition between tourism oriented airports: Even if tourism oriented airports are not geographically located close to each other, they may compete for the type of tourist that predominately visits the region (sun and beach, snow, etc.).
3. Competition between airports for connecting traffic: In hub and spoke networks traffic is concentrated in large airports (hubs) that connect with small airports (spokes). In this kind of networks, airports may compete for being a hub.

Even in the absence of any of these three types of airport competition, airport market power in aeronautical services is not necessarily present. Intermodal competition in medium distance corridors, or the existence of non-aeronautical activities as a main source of airport's profit, can mitigate the negative effects resulting from the lack of direct competition between airports.

On the one hand, airports' market power in aeronautical services may be limited by the existence of alternative transport modes such as maritime transport or the high speed rail (HSR). While maritime transport may be considered as a substitute of the air transport in short-haul routes (mostly interisland routes), the transport mode that more aggressively compete with the air transport is probably the HSR. Although different authors set different thresholds on the distance for which the HSR loses its advantage over aircraft ([Buchanan and Partners, 1995](#); [Janic, 2003](#); [De Rus and Nombela, 2007](#); [Vickerman, 2009](#)), most authors agree that the HSR is competitive for distances below 800 km in length ([Commission for Integrated Transport, 2004](#); [Givoni and Banister, 2007](#))<sup>2</sup>.

On the other hand, airport market power in aeronautical services may be limited if the airport has significant non-aeronautical revenues. Non-aeronautical revenues are higher, the larger the number of passengers is. Thus, non congested airports may be interested in reducing their aeronautical charges in order to increase the number of passengers and, thus, the amount of non-aeronautical revenues. As argued by [Starkie \(2002\)](#), the optimality of such a pricing strategy depends on different factors, such as the demand elasticity with respect to aeronautical charges, the magnitude of passengers' expenditure in the commercial areas, or airport mark-ups in this kind of non-aeronautical activities.

There is no consensus in the literature regarding the desirability of airport competition within a nation. In the very beginning of the privatization of BAA, the UK Department of Trade highlighted the advantages of common ownership of airports. In particular, it distinguished the following advantages ([UK Department of Trade \(1976\)](#); [Barrett, 2000](#)): (1) concentration of activity at a small number of airports; (2) ownership by BAA should ensure that there is no wasteful competition between airports; (3) common ownership would ensure that the interests of the regions were taken into account when considering development in the London area; (4) common ownership would mean a consistent charging and investment policy for the airports; (5) overall planning of the airport

system to accommodate the growth of traffic may be less haphazard than if ownership remained in different hands; (6) common ownership would attract the necessary quality of personnel to the benefit of the airport system as a whole.

Given all these arguments the UK Department of Transport decided to privatize BAA as a single entity rather than as competing airports ([UK Department of Transport \(1985\)](#)). Some authors have criticized such a decision (see, for example, [Barrett, 2000](#)). Actually, in 2008 the UK Competition Commission recommended that BAA be forced to divest itself of two of its three London airports in order to promote competition between these airports. In fact, London Gatwick was acquired in 2009 by Global Infrastructure Partners and Stansted airport was sold to Manchester Airports Group in 2013.

Similar discussions took place during the privatization of airports in Australia. In this country a governmental organization, the Federal Airports Corporation, used to operate the whole network of 22 airports. By the mid 90s they were privatized through long term leases on an individual basis. During a first phase the airports were subject to price-cap regulation that later was modified by light-handed regulation.<sup>3</sup>

The Mexican case is another example of privatization of airports by groups ([Sacristán Roy, 2006](#)). In particular, the Mexican government decided to privatize 35 out of 57 airports in Mexico (the most profitable ones), identifying four different groups of airports: the Southeastern Group (with 9 airports), the Pacific Group (with 12 airports), the Central-Northern Group (with 13 airports), and the Mexico City Group (with 1 airport).

In recent years, Spain has also been debating on which is the best model for airport privatization. The government chose the privatization of airports as a network. In this case the whole network of airports (46 airports and 2 heliports) operated by AENA, were partially privatized in 2014. The Spanish Government kept 51% of the capital, whilst remaining shares were split among main partners (21%) and flotation in the stock exchange (28%).

The main arguments for keeping the network and not introducing competition between the Spanish airports had to do with the current degree of competition from other airports at the international level (hub competition and competition between tourism oriented airports). Moreover, a well-developed high speed rail network was already competing in the medium distance interurban market, gaining market share dramatically. Other arguments relied on the need to keep the reputation of being the largest airport operator worldwide, what facilitated the chance for succeeding when competing with other global airport operators in the international markets.

In fact, when countries opt for privatizing their airports, in any of their variants, the configuration of the domestic network is a key element for its implications for competition. When airports are close substitutes, the individual operation can contribute to increase competition levels and, hence, to reduce the need for regulation. However, when competition between national airports is not feasible, or when the competitive pressure from other international airports or other modes of transport is already high enough, the individual operation of airports does not bring many advantages apart from the elimination of inefficiencies associated with the existence of cross-subsidies. On the contrary, it might damage a national operator in an international competitive context, and further reduce its efficiency by not exploiting specialization economies ([Betancor and Espinosa, 2015](#)).

In this paper we provide a new argument to be taken into account when analyzing the desirability of airport competition within

<sup>1</sup> See [ACI Europe \(1999\)](#) or [Copenhagen Economics \(2012\)](#) for similar classifications.

<sup>2</sup> Airports' market power in aeronautical services may be limited by the existence of the HSR not only because of an increased intermodal competition but also because it reduces the travel time to other possible airports.

<sup>3</sup> See [Yang and Fu \(2015\)](#) for an analytical comparison of price-cap and light-handed airport regulation in the presence of demand uncertainty.

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