



Competition and public service obligations in European aviation markets [☆]



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ABSTRACT

This paper analyzes the effect of universal service policies on the airline markets of five European Union countries (France, Germany, Italy, Spain and the United Kingdom) in the period 2002–2010. Results show that airfare discount schemes for island residents raise demand and positively affect competition and the number of flights at the route level. These effects are evident in France and Italy, but are particularly marked in Spain. By contrast, public service obligations (PSOs) reduce competition on the protected routes, while their effect on the number of flights differs depending on national regulations. In Spain, routes protected with PSOs have greater flight frequencies than those on unprotected routes of similar characteristics, but in France, Italy and the UK the opposite result is found. The empirical model also finds that on routes with low-cost airlines market concentration is smaller and there is a larger number of flights. This result is relevant for the design of universal service policy, since in recent years low-cost airlines have entered a number of thin routes and have increased access to air transportation.

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1. Introduction

The liberalization of air transport initiated in the European Union (EU) at the end of the eighties created a single aviation market with the objective of improving the mobility and well-being of European citizens. Following these market reforms, the airlines reconfigured their networks, enhanced service quality, set lower prices and began operating more strategically. The lowering of entry barriers, the success of low-cost airlines, and the capacity expansion achieved by many airports increased competition and productive efficiency.¹ As a result, there has been a marked growth in scheduled flights and in the number of seats available per kilometer in both domestic and international markets.²

In spite of these changes, more than 50% of domestic routes in European countries are monopolized by one airline. Some thin and peripheral routes are protected with universal service regulations, but most routes are unregulated and their users are likely to receive poor service while paying higher costs for flights. In the EU the universal service instruments that have traditionally been used to protect specific routes are price discounts, which are typically offered to island residents, and

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¹ Maillebiau and Hansen (1995), Button (1998), Oum et al. (2005a), Dobruszkes (2009), Goetz and Vowles (2009) and European Union (2013) analyze market liberalization in the EU and the US.

² Dobruszkes (2013) reports that between 1995 and 2012 the number of routes in the European market increased from 2070 to 3254. This has meant a major diversification in terms of spatial coverage and of the total number of seats offered. See also ICAO (2007) for a more general perspective of market trends.

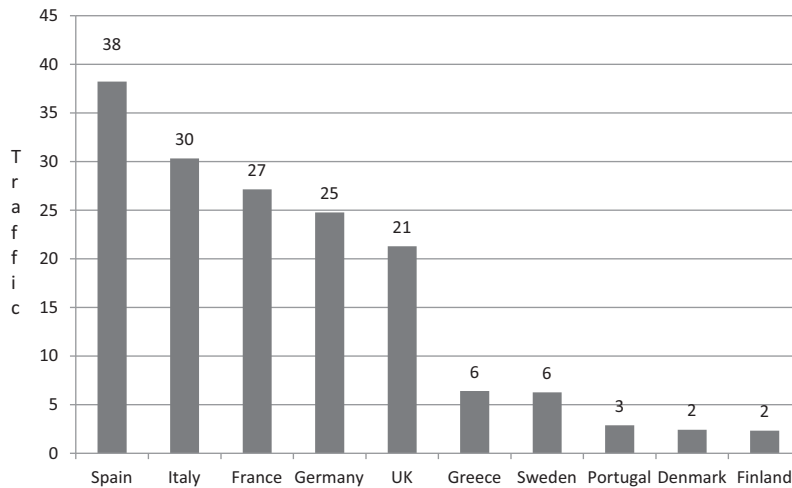


Fig. 1. Domestic air traffic in European countries in 2010 (million passengers). Source: Eurostat (2012). http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-SF-12-021/EN/KS-SF-12-021-EN.PDF.

public service obligations (PSOs), which are regulations that establish the frequency of service on a route, the size of the aircraft, the schedule for the service, and, on occasions, the maximum permitted fare for some or all seats. The use of these instruments and the selection of protected routes can differ significantly across European countries, and often national regulations are inconsistent and uncoordinated (Williams and Pagliari, 2004; Lian, 2010).

This paper contributes to the economic literature on air transportation by presenting a multivariate econometric model that analyzes the effects of the universal service policies implemented in France, Germany, Italy, Spain and the United Kingdom in the period 2002–2010. Specifically, we use a rich data set with around 693 routes per year that allows us to examine the effects of price discounts and PSOs on the level of competition and on the number of annual flights at the route level. The paper focuses on these five countries because they represent the largest European markets in terms of routes and traffic (Fig. 1).³

Several European national and regional governments have introduced sizeable air service discount schemes that benefit island residents on domestic routes which have islands as their endpoints. These discounts are financed by governments, which subsidize the price paid by island residents.⁴ Results show that, in the countries examined, discounts have implied a decrease in market concentration. One explanation for this is that discounts raise demand among island residents and increase the profitability of protected routes. The empirical analysis also reveals that discounts have increased flight frequencies on protected routes in Spain, France and Italy.

A further contribution of the paper is the analysis of the effects of PSOs on the level of competition and on the flight frequencies offered by airlines. PSOs usually guarantee a minimum number of flights on certain routes, and often these frequency floors are complemented by capacity regulations (number of seats and aircraft size), time table requirements (departure and arrival times) and price regulations (price caps and reference caps). The model presented shows that PSOs reduce the level of competition on protected routes, possibly because they reduce their profitability. By contrast, it finds that the effect of PSOs on flight frequency is largely dependent on national regulations. In Spain, routes regulated with PSOs offer more flights than unregulated routes of similar characteristics, but in France, Italy and the UK the opposite result is found, indicating that frequency floors are insufficient to compensate for the low demand on protected routes. The joint consideration of these results indicates that the EU does not have a homogeneous approach to the regulation of thin routes, and that the intensity and scope of these regulations may depend on policy objectives.

The empirical literature has analyzed the effects of market characteristics such as route competition, airport dominance, and the presence of low-cost carriers in the pricing strategies of airlines on thin routes. For example, Starkie and Starrs (1984) examine the development of new routes in Australia following deregulation in 1979, and Bitzan and Junkwood (2006) show that US airfares for flights serving small communities are higher than those for large communities, owing to differences in costs and market power. However, very few studies have examined the effects of universal service policies. In Spain, Calzada and Fageda (2012) report that routes benefiting from price discounts are priced more highly than the rest of domestic routes, and that intra-island routes regulated using price caps and frequency floors have lower prices and higher frequencies than unregulated routes of similar characteristics. Using logistic regression techniques, Lian (2010) analyzes the weaknesses of the PSO regulation implemented in Norway and discusses the negative evolution of airfares. Lian and

³ Eurostat shows that in 2011 the UK, Germany and Spain accounted for almost half of the EU's total traffic of international and domestic passengers. France and Italy also handle a high percentage of traffic. In the remaining European countries, the total traffic is much lower.

⁴ These discounts should be distinguished from the price reductions embedded in PSO regulations.

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