



Case study

Does market exit of a network airline affect airline prices and frequencies on tourist routes?

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HIGHLIGHTS

- We study the effects of the bankruptcy of a Spanish network airline; Spanair.
- We use panel data for Spanish routes with a high proportion of tourist destinations.
- We analyze the replacement of services of a network by low-cost airlines.
- We find a reduction in air fares but not a reduction in flight frequency.
- We provide evidence about the positive impact of low-cost airlines on tourism.

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ABSTRACT

This paper examines the influence of network airline bankruptcy (and consequently its market exit) on prices and route frequencies. Specifically, the 2011 case of Spanair is analyzed, using Spanish route data for the period 2006–2013. The study finds that the Spanair bankruptcy led to a reduction in prices on those routes where its services were replaced by low-cost airlines. On the other hand, there was no evidence of any clear reduction in flight frequencies. Given that tourist passengers are particularly sensitive to prices, this paper provides evidence about the positive impact of low-cost airlines on tourism.

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1. Introduction

A number of previous studies have shown a strong relationship between transport infrastructure and tourism (Abeyratne, 1993; Chew, 1987; Della Corte, Sciarelli, Cascella, & Del Gaudio, 2013; Khadaroo & Seetanah, 2007, 2008; Martin & Witt, 1988). Indeed, transportation acts as one of the main determinants of tourist destination as it improves accessibility to a particular location. A large proportion of tourists arrive at their final destination by plane so it is not surprising to find that air services have a high impact on the number of tourist arrivals (Albalade & Fageda, 2016; Bieger &

Wittmer, 2006; Dobruszkes & Mondou, 2013).

Thus, entries and exits in the airline market may have significant implications for tourism. Here it is important to mention that the air transport market is dominated by two different types of airlines. First, network carriers exploit transfer traffic through coordinated banks of arrivals and departures at their hub airports. These network airlines are usually former flag carriers and are frequently a part of international alliances. By adopting this strategy they are able to reduce their costs through the exploitation of density economies, and can offer greater flight frequency, which are highly valued by business and connecting passengers (Fageda, 2014).

Second, low-cost airlines operate point-to-point routes. They may be independent airlines or subsidiaries of network airlines but they are usually not integrated in international alliances. Low-cost airlines have been able to reduce their expenditure to compete with network airlines on short-haul routes (Francis, Dennis, Ison, &

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Humphreys, 2007). These cost advantages come from greater productivity of capital and labour due to the weak role of unions and high utilization of the planes and crew. Furthermore, they use one type of plane configured with the maximum number of seats so that they have lower labour costs and maintenance. They also take advantage of easy daily management as they operate direct flights and do not differentiate between different fare classes. Finally, some leading low-cost airlines like Ryanair choose secondary airports and therefore enjoy low charges and minimal congestion.

Overall, we may expect that low-cost airlines offer flights at lower prices and lesser frequencies than network airlines (Fageda & Flores-Fillol, 2012). This may have consequences for the type of passenger to which network and low-cost airlines offer their services. Given that most trips are made in order to undertake an activity at destination, the demand for transportation services depends not only on the monetary price of the trip but also on the travel time, since the latter implies a disutility for the transport user (Button, 2010). The sensitivity of business passengers to time is much higher than that of leisure passengers. In this regard, an increase in frequency should reduce waiting time, which is calculated as the difference between the desired and real time of departure. Thus, we may expect that low-cost airlines services are more convenient for leisure passengers while network airlines are better for business passengers. Recent studies provide evidence about the strong effect that low-cost airlines have on tourist outcomes (Donzelli, 2010; Chung & Whang, 2011; Rey, Myro, & Galera, 2011).

This paper examines an event that may help in identifying the differential impact of low-cost and network airlines on prices and frequencies offered on air routes. Specifically it analyses the case of Spanair, which was a network airline (integrated in the Star alliance) developing hub-and-spoke operations at Barcelona airport in 2011 when it was made bankrupt. Most its services were replaced by low-cost airlines such as Ryanair and/or Vueling although on some routes Spanair was also competing with network airlines like the former Spanish flag carrier (Iberia, integrated in Oneworld) or Air Europa (integrated in SkyTeam).

By drawing on data for a large number of Spanish routes for the period 2006–2013, price and frequency equations are estimated, controlling for demand, cost shifters and route competition. Similar control variables as those used in previous studies regarding prices and frequencies in the airline market are employed. Studies like those of Borenstein (1989), Brander and Zhang (1990), Evans and Kessides (1993), Brueckner and Spiller (1994), Marín (1995), Dresner, Lin, and Windle (1996), Berry et al. (1996), Morrison (2001), Fisher and Kamerschen (2003), Fageda (2006), Hofer, Windle, and Dresner (2008), and Oum, Zhang, and Zhang (1993) estimate how prices are influenced by route competition, airport dominance, or the presence of low-cost carriers. In a similar vein, Borenstein and Netz (1999), Schipper, Rietveld, and Nijkamp (2002), Salvanes, Steen, and Sorgard (2005), Wei and Hansen (2007), Brueckner and Pai (2009, 2010), and Bilotkach, Fageda, and Flores-Fillol (2010) examine the effect of factors such as route distance, competition, or aircraft size on flight frequencies.

The particular contribution of this paper is that it identifies the differential impact on prices and frequencies of low-cost airlines in relation to network airlines, as it exploits information generated by the bankruptcy of a network airline. In this regard, the estimation is made within the framework of a panel data analysis where frequencies and prices on routes operated by Spanair are compared with routes that are not affected by the bankruptcy (because they were not previously operated by Spanair). Among the routes affected by the Spanair bankruptcy, a distinction is drawn between tourist and non-tourist routes, and only those routes where low-cost airlines were operating services after the bankruptcy are identified. Hence, this study is able to specifically analyze the

replacement of services of a network airline by low-cost airlines on tourist routes.

As far as we know, only one previous paper has undertaken a similar analysis, but in a market where travel for tourism is more modest than in that analyzed in this study. Bilotkach, Mueller, and Németh (2014) analyzed the effects of the Malev bankruptcy at its hub, Budapest, where its services were replaced by low-cost airlines (Ryanair and Wizzair). The authors identified a significant reduction in flight frequency that was not totally compensated for by lower fares on a number of routes.

This paper is organized as follows. Section two outlines the variables included in the empirical analysis, the expected signs and the data used, while section three provides details of the estimation and results. The final section is devoted to the concluding remarks.

2. Data and variables

This study draws on data from 80 routes in 30 different airports. The frequency of the data is semi-annual, as we differentiate between summer and winter seasons in a period that starts in the summer of 2006 and finishes in the winter of 2013. The market exit of Spanair occurred in 2011, so the data contain observations for 12 seasons before exit and 3 periods after the exit. The average market share of Spanair on routes reached 32 per cent, while the range was between 7 and 100 per cent.

The two dependent variables in our models are prices and frequencies. Price information was collected for a sample week for each half year during the period. We considered the lowest mean round trip price charged by all airlines operating the route, weighted by their corresponding market share. The data were collected from the airlines' websites using a homogeneous procedure: every half year prices were collected one month before travelling and the price selected was for the first flight of the week, with the return leg being on a Sunday. Although prices by route and airline change substantially on a monthly/weekly basis, the price data are considered to be reliable. Data are collected at the same time for all airlines and routes, and by imposing the same conditions on all airlines and routes we can be confident in the data variability attributable to the differences between routes. We have collected data manually and in all cases we have identified the price for a round trip flight with the same airline. Finally, prices are corrected for inflation.

Frequency variable shows the weekly number of flights offered by the airlines on each route. This information was obtained from the Official Airlines Guide (OAG) website and refers to the same sample week as prices.

Before detailing the empirical strategy, the following tables include some descriptive analysis that uses changes in average data on the two dependent variables considered: frequencies and weighted prices. In order to do so, we also differentiate between non-tourist (Tables 1, 2, 3) and tourist routes (Tables 4, 5, 6).

The differentiation between tourist and non-tourist routes has been made on the basis of a document by the Spanish antitrust authority (CNMC, 2014) (see Table 7). In this report, a tourist airport is defined as an airport with a high level of national and international competition, a high proportion of low cost carriers or being close to a tourist destination, among others. In our database we included 9 out of 30 airports considered.¹

The tables below show an analysis of average data for those routes in which Spanair operated (and did not), and also take into account the before-and-after change. The key questions we seek to

¹ These airports are: Málaga, Alicante, Palma de Mallorca, Tenerife Sur, Gran Canaria, Mahón (Menorca), Ibiza, Arrecife (Lanzarote) and Fuerteventura.

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