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Has Ryanair's pricing strategy changed over time? An empirical analysis of its 2006–2007 flights

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ABSTRACT

This paper analyzes the question of whether Ryanair's pricing strategies have changed over time. We create a panel dataset of fares for all of Ryanair's European flights over a two-year period, from 1 January 2006 to 31 December 2007. We calculate the average fare over a 90-day period prior to departure and the intensity of dynamic pricing for each flight in the panel, in particular analysing the changes in these variables observed between pairs of "equivalent" flights. Our results show that overall, both average fares and the intensity of dynamic pricing decreased in 2007. More than one-third of flights saw a price reduction of more than 10%. Now that it has become the dominant low-cost carrier in Europe, Ryanair appears to be softening its dynamic pricing activities on existing routes, typically employed to stimulate additional touristic demand. Thus, booking in advance becomes relatively more expensive.

1. Introduction

The pricing strategy of low-cost carriers is regarded as one of the most relevant factors for developing tourism towards short-haul destinations, especially in Europe. The most important European low-cost carrier, Ryanair, continues to grow at an astonishing rate. It handled up to 4.9 million passengers per month during 2007, as shown in Fig. 1. Its total traffic increased by 21.1% over the previous year. Revenues increased by 23% and the average revenue per passenger increased by 1.6%, as shown in Fig. 2. Ancillary revenues, now accounting for 17.8% of the total, far outpaced passenger growth with an increase of 41%. This confirms a trend observed over the last three years. The evolution in scheduled revenues is more controversial. During the last available accounting year (March 2006–February 2007) scheduled revenues increased by 7.1% to an average of 44.1€ per passenger. Over the 2007 calendar year, however, scheduled revenues per passenger appear steady: they register only a slight (1.2%) decrease, to 43.8€ per passenger.

Through an in-depth analysis of all 2006 and 2007 fares offered on Ryanair flights, this paper tries to answer several questions. Does the slight decrease in the average scheduled revenues per passenger reflect a uniform change in offered fares? Or is it due to a difference in the proportions of early-buying and last-minute passengers? Which determinants of price are playing an increasingly dominant role? Are Ryanair's fares sensitive to the trend in oil prices? Will tourism benefit from even greater discounts?

2. Literature review

The recent spread of low-cost strategies beyond the American domestic market, where Southwest started operating in the seventies, has brought low-cost pricing to the forefront of research. The success of low-cost airlines in Europe has been astonishing. Low-cost carriers offered almost 20% of all European flights in the first half of 2007 (Eurocontrol, 2007). Their pricing strategies, undoubtedly a cornerstone of their results, have driven a new wave of studies on airline behaviour and dynamic pricing. The increasing complexity and dynamism of the air transport industry further enhance the role of pricing. This section describes some relevant results from the literature on airline price competition and strategic dynamic pricing.

2.1. Pricing and competition

Competition has been widely proposed as one of the primary determinants of fares. Classical studies, starting with Borenstein's (1989) analysis, focus on relating the average level and dispersion of fares to the competitive environment. The main finding of such research is that an airline's dominance of the hub correlates with a fare premium. Recent studies point out the need to take into

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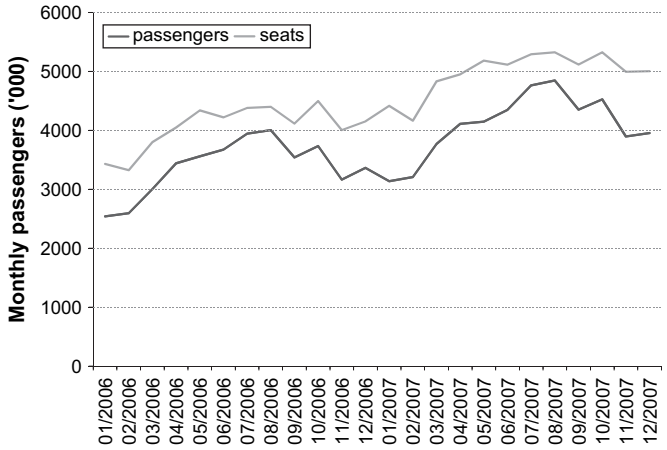

Fig. 1. Ryanair's monthly passengers and offered seats in 2006 and 2007.

account other variables such as the passenger mix (Lee & Luengo-Prado, 2005) and plane size (Gerardi & Shapiro, 2007). Hofel, Windle, and Dresner (2008) further investigate the presence of price premiums in the US airline industry, identifying the effect of low-cost carrier competition on their level and composition. Results highlight that while price premiums remained constant in value, the share of passengers subjected to the price premium decreased due to the presence of low-cost carriers. Gillen and Morrison (2003) discuss the form of competition between low-cost and traditional carriers. They consider the choice to serve secondary airports by employing a locational approach. Among other findings, their model shows that market interactions between traditional and low-cost airlines can exhibit price stability and relatively low price dispersion.

Most theoretical and empirical studies of low-cost airlines focus on the relationship between competition and pricing (Alderighi, Cento, Nijkamp, & Rietveld, 2004; Pels & Rietveld 2004; Piga & Bachis, 2007; Pitfield, 2005). Results confirm that the effects of competition on low-cost carriers' pricing are complex and not easily predictable. Alderighi et al. find that, on the main city pairs from Italy to the rest of Europe, traditional airlines react when low-cost carriers enter the market. Pels and Rietveld analyse the price behaviour on the London–Paris market on which both low-cost and traditional carriers operate. In this market, traditional carriers do not seem to react to price variations of low-cost carriers. Instead, they find that some carriers seem to lower their fares when

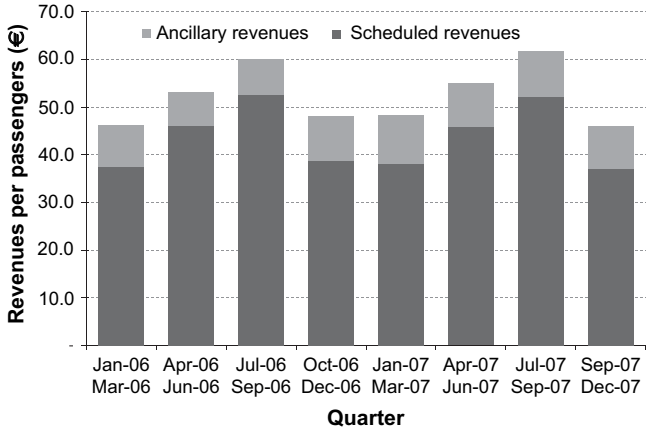

Fig. 2. Ryanair's ancillary and scheduled revenues per passenger in 2006 and 2007.

potential competitors raise them. A possible explanation is that price movements of competitors are interpreted as signals of market saturation. Pitfield analyzes price behaviour of competing low-cost carriers on UK-based markets. This study shows evidence of price leadership and, more generally, of a strong correlation between fares of low-cost carriers. The results also suggest that temporal pricing discrimination adopted by duopolistic low-cost markets is a threat to the recovery of fixed costs. Piga and Bachis find a positive correlation between an airport's market share and the fares of low-cost airlines serving that airport.

This variation is due to the difficulty of precisely identifying the determinants of low-cost fares from limited data: most studies examine only one or a few departing flights, only one departing airport, and a narrow set of advance-booking prices. The dynamism of the low-cost industry, however, implies that even the day-by-day pricing decisions made by airlines are important. Our study considers all the fares offered by Ryanair from 90 days before departure onward, on a very large sample of flights.

2.2. Dynamic pricing and yield management

The fares setting problem in airlines industry involve the use of some form of *yield management*. This practice, also known as revenue management or dynamic pricing, consists of "a set of pricing strategies aimed at increasing profits" (McAfee & te Velde, 2006). Yield management is particularly relevant to companies with a fixed amount of goods and low marginal costs. Typically, production capacity was determined at an early stage and the goods expire at a certain point in time (services offered only on a certain date, perishable goods). All these criteria apply very well to the tourism business and particularly to the airline industry: the schedules and aircraft are predetermined, marginal costs are low, and the value of a seat drops to zero after departure. An excellent pricing strategy for perishable assets can increase turnover by 2–5%, according to Zhao and Zheng's (2000) study. A series of studies have analysed the structure of optimal pricing strategies for the airline industry. Gallego and van Ryzin (1994) explore a number of desirable properties, including closed form solutions and sharp predictions; Zhao and Zheng (2000) determine the minimum conditions necessary for a dynamic pricing strategy to be optimal. For an exhaustive review of these studies, see Talluri and van Ryzin (2004) and McAfee and te Velde (2006).

Low-cost airlines use a simpler dynamic pricing structure than traditional airlines. While the latter traditionally separate customers with different willingness to pay by offering a range of services (VIPs lounge, business class, flexibility) and restrictions (weekend stay, frequent flyer program, age discount), low-cost airlines base their pricing mainly on the time to departure. Since low-cost carriers sell many one-way tickets, several of the rules and restrictions traditionally employed by network carriers do not apply. Conventionally, low-cost fares increase monotonically with date: the earlier you book, the cheaper the fare will be. According to McAfee and te Velde (2006), this strategy depends mainly on the trade-off between waiting for a lower price and the risk of not finding seats. Dana (1998) shows that an advance-booking discount is the optimal choice in competitive markets with uncertain consumer demand.

Anjos, Russell, Cheng, and Currie (2005) present a family of continuous pricing functions that can be used to characterise optimal pricing strategies. Malighetti, Paleari, and Redondi (2009) employ the family of curves described by Anjos to analyse the pricing structure of Ryanair. As noted by Malighetti et al. (2009) and Piga and Bachis (2007), however, the actual fares increases of low-cost carriers are not strictly monotonic with time. A review of temporal fare curves observed in the industry can be found in