A case study of pricing strategies in European airline markets: The London − Amsterdam route

Marco Alderighi [a,b,*], Alessandro Cento [c], Claudio A. Piga [d,e]

[a] Università della Valle d'Aosta, Grand Chemin 73/75, Saint Christophe 11020, Italy
[b] CERTeT, Bocconi University, Roentgen 1, Milan 20136, Italy
[c] Air France − KLM, Modigliani 45, Segrate 20090, Italy
[d] Department of Economics, Loughborough University, LE11 3TU, UK
[e] RCEA, Patara 3, Rimini 47900, Italy

ABSTRACT

Published fares London−Amsterdam are used to examine the pricing practices of low-cost and legacy carriers when operating in a large and crowded market. We investigate two strategies of market segmentation involving the time before departure the ticket has been bought, inter-temporal segmentation, and the duration of the stay, implicit segmentation. We find inter-temporal price discrimination emerges as an important strategy for all pricing but the two legacy carriers involved, British Airways and KLM, differ in their use of stay restrictions; British Airways does not assign a specific role to the duration of stay, while KLM make use of such rules extensively in price setting.

© 2011 Elsevier Ltd. All rights reserved.

1. Introduction

The success of some low-cost carriers in expanding their market shares has forced legacy carriers to revise their traditional strategies and, in some cases, to reconsider their business models. Low-cost and legacy carriers do business in a substantively different way not only in their network organization, but also in their commercial strategy and pricing practices. Concerning the latter, empirical work on carriers' pricing behavior has focused on conspicuous price dispersion recorded in air travel markets and its relation to market structures.[1]

There is significant evidence concerning the advantages for airlines of pricing to reflect consumer heterogeneity. To reap these, most carriers' focus on two strategies of segmentation involving the time before departure the ticket is bought/booked, inter-temporal segmentation, and the duration of the stay, implicit segmentation (Alderighi, 2010a). Low-cost carriers, because they mainly sell each leg independently, generally base their pricing strategy only on inter-temporal segmentation, while legacy carriers use more complex rules seeking to exploit both forms of segmentation.

Because consumers who buy tickets well in advance of a flight usually have a lower willingness-to-pay than those who buy closer to the departure, inter-temporal price discrimination is implemented by imposing an increasing pricing profile when booking date approaches the departure date. Because of the ready availability of data on posted prices, especially for low-cost carriers, the temporal form of discrimination has been extensively examined. Work by Giaume and Guillou (2004), Piga and Bachis (2007), Gaggero and Piga (2010), and others provide robust evidence that fare paths are generally sloping upward over time, especially in the last 20−30 days before flight departure.

Duration of the stay, which is usually based on ticketing restrictions stipulating a minimum number of days stay or a Saturday night stay-over, is seen as a pragmatic way of separating high willingness-to-pay business travelers from lower willingness-to-pay leisure travelers. By restricting the access to cheaper fares only to long-staying travelers, it is possible to simultaneously charge two fare profiles for the same flights. A necessary condition to implement this pricing strategy is the use of round-trip tickets.[2]

This second type of discrimination has been little explored (Borenstein and Rose, 1994). Stavins (2001), however, showed that

---

* Corresponding author. Università della Valle d'Aosta, Grand Chemin 73/75, 11020 Saint Christophe, Italy.
E-mail address: m.alderighi@univda.it (M. Alderighi).

[1] Theoretical explanations for price dispersion are usually based on a mixture of ingredients such as product differentiation, firm and consumer heterogeneity, demand uncertainty, capacity constraints, demand peaks, information asymmetry, and search costs. Alderighi (2010b) showed that none of the more popular theoretical models can in themselves justify the observed price variability.

[2] A referee noted that in some cases it is possible to circumvent the minimum stay requirement (e.g. using a cross-ticketing strategy). This strategy, however, is available for a limited number of passengers (i.e. those who fly on the same route more than once, and can plan in advance) and is usually engaged by those consumers having a lower valuation of time. In this respect, it could be seen as a form of 2nd price discrimination.

Saturday-night stay-over and advance-purchase requirements have a significant impact on prices while Puller et al. (2009) found that minimum and maximum stay restrictions play an important role in revenue generation. Escobari and Jindapon (2008) also found robust evidence that refundable ticket prices are significantly higher than non-refundable ones, which partially supports implicit segmentation (business travelers buy refundable tickets while leisure travelers tend to buy non-refund) because refundability can be also interpreted as an alternative way to implement inter-temporal segmentation.

The interest here is on whether there are substantial differences between low-cost and legacy carriers in their segmentation strategies, and on the respective merits of the various segmentation approaches in very competitive market situations.

To shed some light on these questions, a case study is conducted on the route linking London and Amsterdam between 1st and 15th March, 2009. This is one of the most important routes in Europe which, being insulated from competition from other transportation modes, features a high degree of intra-modal competition. It is supplied by a mix of low-cost and legacy carriers and used by business and leisure travelers. Two different typologies of tickets are considered: round-trip tickets corresponding to one-day stays and round-trip tickets corresponding to one-week stays.

2. Research design and data

The market share of low-cost carriers in Europe reached 19.5% of flights in May 2007 (Eurocontrol, 2007). In the first 6 months of 2007, the share of these carriers was 2.5% points higher than in the first six months of 2006. In the list of top ten airports ranked according to the number of low-cost arrivals during the first six months of 2007, the first three, Stansted, Luton and Gatwick, are located in the London area followed by Amsterdam and Barcelona, and then others such as Dublin, Manchester, Palma de Mallorca, Bonn and Brussels. While there are about 253 weekly flights operated by 3 legacy carriers competing with EasyJet between London and Barcelona, there are 373 flights between London and Amsterdam operated by two legacy carriers (KLM with 28%, and British Airways with 24%), two low-cost carriers (EasyJet with 16% and British Midlands with 13%) and one regional airline (VLM with 19%). The diversity of supply on the London–Amsterdam route favors it for a case study.

2.1. Data

A new database containing information on published round-trip airfares on the route London–Amsterdam, spanning from 55 to

Table 1
Database description.

Airfare	Lowest quoted airfare for a return ticket including all taxes and surcharges
Type of fare	Business one-day stay Leisure seven-day stay
Airlines	KLM, British Airways, British Midland, VLM, EasyJet
Point of Sales	United Kingdom
Point of Origin	London City/Stansted/Gatwick/Luton/Heathrow
Point of Destination	Amsterdam
Selling period	1 January 2009–15 March 2009
Travelling Period	One-15 March
Days prior departure	52 up to 1 day
Flight combinations	For one-day: each returning flight from 8 up to 36 h after flight departure time For seven-day: each returning flight operating the 7th day after flight departure time
Number of observations	14030

Table 2
Sample composition by airline and UK airport.

	Airport				
Carrier	LCY	LGW	LHR	LTN	STN
BA	1022	1518	2489		
BD			1855		
KL			2469		
U2		1381		184	1014
VG	2098				

Carrier = BA (British Airways), BD (BMI), KL (KLM), U2 (EasyJet) and VG (VLM). Airport = LCY (London City), LGW (Gatwick), LHR (Heathrow), LTN (Luton), STN (Stansted).

one-day prior the flight departure (*dbf*) is used for analysis. The data were collected over January–March 2009 using a spider accessing carriers' Internet official sites and retrieving the fares quoted by the carriers. The time period was selected to avoid summer, Easter or other holiday peaks to obtain a representative sample of the low-peak season for every day of the week, embracing week-end travelers as well as week business travelers. The fares are quoted in the UK market and are expressed in Euro, including all taxes and surcharges. We use the exchange rate of the day in which the fare was retrieved. Unlike much previous work, we focus on return tickets because this allows the capture of both inter-temporal and implicit segmentation.

The data sample is built on two traffic segments. The first includes flight combinations where return flights are between eight and 36 h after the first leg's departure time (one-day stay). Because of the very short stay, this ticket type is likely to be preferred by business travelers. The second includes each flight combination where return flights occur seven days after departure time (seven-day stay). In this case, we expect that it is more likely to suit the needs of leisure travelers. We refer to the first segment as business segment and to the second segment as leisure segment, although we are conscious that there may not be a perfect correlation.

Fares are collected for each segment. If the carrier offers multiple prices, as with legacy carriers, the minimum price available is recorded. For a passengers departing and returning on the same day, only combinations including flights leaving early in the morning and returning in the evening are considered – see Table 1.

The London airports analyzed are: London City (LCY), Gatwick (LGW), Heathrow (LHR), Luton (LTN), Stansted (STN) and the carriers considered are British Airways (BA), British Midland (BD), KLM (KL), EasyJet (U2) and VLM (VG)–see Table 2.

2.2. Pricing profile

Fig. 1 plots the temporal pattern for the five carriers' fares in the one-day stay segment. The fares profile for all increases as the departure date approaches, although we see differences in the average levels as well as in the slope of the curves. For all carriers, the temporal patterns appear to be flatter between 55 and 21 days before departure, after which fares increase steeply. The two legacy carriers, KLM and British Airways have the most expensive pricing profile followed by the regional carrier VLM.[3] While KLM is the most expensive all the time, British Airways starts with lower fares than VLM until 14 days before departure where its fares increase sharply to almost reach those of KLM. As expected British Midland

---

[3] There are many explanations for this result including, a better product quality perception, better scheduling, brand premium. In addition to these, a referee noted that, since BA and KLM are hub carriers, higher fares may be due to the carriers' needs of saving capacity for feeding intercontinental flights.