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Can low cost carriers deter or accommodate entry?

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Abstract

This paper analyses entry deterrence and accommodation by low cost carriers (LCCs) with two games. In the first game two LCCs compete in a horizontal differentiation setting. Results show that the entrant may drive away the incumbent from its original location under certain conditions. In the second game the incumbent is a LCC and the entrant a full service carrier, with vertical differentiation. The incumbent tries to deter or accommodate entry by product proliferation. We find out that the incumbent will only deter entry if it can surpass the entrant's quality, and that product proliferation is not an accommodating strategy.

Keywords: Low cost carriers; Entry deterrence; Entry accommodation

1. Introduction

Some low cost carriers (LCCs) have grown and acquired significant market power. In November 2004, Ryanair announced that it had beaten Easyjet and British Airways in the UK market. From 2002 to 2005, Easyjet and Ryanair registered a growth in capacity, measured in ASKs, of, respectively, 199% and 159%. During the same period the two airlines increased their network, measured by their number of destinations, in 83%. Future growth will be still more impressive, as far as we may evaluate by the planned fleet in 2006 for these two airlines and for 2015, which amounts to 61 aircraft firm buys and 120 aircraft options for Easyjet and to 132 firm buys and 179 options, all of Boeing 737, for Ryanair.

LCCs have grown both by entering in full service carriers (FSCs)'s markets and by launching new routes linking smaller cities. But demand may not grow so fast, and new routes with enough demand may soon be exhausted. The fight for new markets and the preservation of their monopolies can lead these companies to strategic pre-emptive behaviour, either towards full service carriers (FSCs) or towards other LCCs. Some evidence suggests that pre-emptive behaviour is already a fact, as will be shown below.

On the other hand, market power and the fight for markets may lead to concentration in the low cost segment of air travel industry. While in 2006 about 60 LCCs operated in Europe (AEA, 2006). Alamdari and

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Mason (2006) predict that by 2015 only two or three LCCs will be active in European airline markets. If this will happen it may be expected that weaker LCCs will be eliminated by the stronger ones, both by mergers or acquisitions and by the use of pre-emptive behaviour. This paper analyses LCCs' behaviour, specifically in what regards entry deterrence and entry accommodation strategies. The route London–Grenoble is a good example of entry by different types of airlines and will be taken as a base for our theoretical analysis.

We present two games, one with horizontal differentiation and one with vertical differentiation competition. In the first game it is the entrant that may engage in a price war. Rather than the usual case, often described in manuals, of the incumbent threatening a price war, we allow for the possibility of the incumbent being the weak firm and the entrant the strong firm. In the second game the incumbent tries to deter or accommodate entry by means of product proliferation. While any firm can engage in a price war, product proliferation is more likely to be an incumbent's strategy. When a firm has been in the market for a certain time, it has developed a knowledge that enables it to have an advantage in launching new products. In the case of airlines, this advantage may be related to route and airport transaction costs. Besides, a product proliferation strategy takes time to be developed since launching a new product involves its creation and advertising and when intended to deter entry it must be done before entry occurs. A price war can only take place after entry, and while the entrant is still out of the market a price war is no more than a threat, whether credible or not.

With the horizontal differentiation game we show that if the entrant is a strong firm, in the sense that it has the reputation of a firm that sets low prices and survives to a price war, it may drive the incumbent away from its original location. The second game analyses the role of product proliferation in entry deterrence and accommodation. Results show that an incumbent LCC can never deter a FSC from entering the market unless it can launch a new good with a higher quality than the entrant's. But then the LCC had to supply a service that is better than a FSC's. We also show that in the same case product proliferation is not an accommodating strategy, the incumbent being better-off by simply doing nothing.

The paper investigates new issues. In fact, game theory approaches have explored the case of predatory incumbents, but not of entrants with predatory reputation. Games of entry accommodation by product proliferation with vertical differentiation are also a missing point in the literature.

The paper is organised as follows: Section 2 deals with previous literature's findings. Section 3 describes the London–Grenoble route while giving other evidence on pre-emptive behaviour by LCCs. In Section 4 we develop two games of entry deterrence and accommodation and analyse their results. A few concluding remarks are presented in Section 5.

2. Previous research

Theoretical research on entry deterrence in air travel industry has focused mostly on hub and spoke networks together with code share alliances. Oum et al. (1995) find that changing the incumbent's network from linear to hub and spoke may deter entry if the entry cost falls within a certain range. Chen and Ross (2000) establish conditions under which a code share agreement can withdraw potential entrants. Lin (2005) analyses the importance of airline alliances in deterring entry and shows that the result depends on the entrant's cost. Morrison (2004) stresses that in air travel markets capacity expansion by the incumbent airline may become a credible threat for the entrant as fixed inputs, like aircrafts, do not have to be permanently assigned to a particular route.

However, empirical works agree on the fact that capacity expansion has no pre-emption effects and has not been used as an entry deterrence strategy, but they disagree on the effects of cutting fares. Goolsbee and Syverson (2004) analyse 838 routes between 61 airports to assess incumbents' strategies whenever a route is threatened by Southwest Airlines' entry. They find weak evidence of capacity expansion by incumbents before entry but a substantial pre entry drop in fares along with strategies directed to increasing consumer loyalty. With a sample of 370 LCCs' entry events in the US Ito and Lee (2003) find little evidence of entry deterrence strategies by FSCs. Forsyth (2003) when analysing entry of Australian LCCs concludes that FSCs have not been aggressive and have not adapted to the new market pattern. Specifically for European airline markets, Roller and Sickles (2000) present an empirical study to account for the influence of an increase in capacity on airlines market power before the European de-regulation process. Using Fudenberg and Tirole (1984)'s taxonomy they conclude that airlines are "puppy dogs" which means that increases in capacity reduce theirs profits.