Seminari di Economia

Lunedì 4 aprile 2016

Ore 15:00 - Aula Magna

Facoltà di Scienze Economiche Giuridiche e Sociali - Viale S. Ignazio 74, piano terra

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The hidden side of dynamic pricing in airline markets

Abstract This study builds on the notion of a price equilibrium in distribution, i.e., the equilibrium is defined over a range of prices, to describe how the distribution arises from an optimization model where we assume that each seat has a different probability of being sold. We then compare the theoretical distribution with the shape of the distributions observed from a sample of 37,501 flights operated by easyJet covering 74 European bi-directional routes over the period May 2014 – June 2015. The theoretical prediction of a price increasing as fewer homogeneous seats remain available is confirmed by the data, although we find that the empirical distribution is non-strictly monotonous, that is, the airline arranges seats into groups, denoted as "buckets", where each bucket is defined by a increasing price tag and a variable size. Because we can track the distribution of prices for each flight over a long period prior to its departure, we can then tackle two interrelated research questions: first, how is dynamic pricing implemented when the price equilibrium is in distribution?; second, and relatedly, how is the price distribution affected by the simultaneous presence of two conflicting incentives for the firm, one induced by the perishable nature of a seat that increases the need to lower the selling price over time to reduce the probability of taking off with empty unsold seats, the other arising from the presence of strategic consumers who would quickly learn of possible last-minute discounts? We find that: i) dynamic pricing takes many forms and shapes, involving not only price variations but, most importantly, changes in the distribution that result in variations of the bucket size as well as the creation of new buckets; ii) over the observed booking period, the firm shifts seats initially allocated to the higher-priced buckets to lower price buckets, a mechanism that may lead to the disappearance of the higher-priced bucket from the distribution; simultaneously, the price of the next seat on sale tends to increase, due to the increasing shape of the distribution and the fact that buckets disappear when they are sold out. The overall outcome is an increasing profile of fares over the last period of booking but a decreasing profile of the fares assigned to the last seats that remain to be sold. Hence, over time the slope of the distribution changes: initially, it is steeper because more seats are allocated to higher-priced buckets but it flattens as seats are reassigned to lower-priced buckets.

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