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Are passengers willing to pay more for additional legroom?

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Abstract

This paper investigates whether or not the efforts by two of the largest US airlines to increase seat pitch (i.e. legroom) across their aircraft fleet during 2000 resulted in fare premia relative to the other 'full service carriers'. Using panel data from 1998 to 2002, we estimate fixed-effects regressions in markets with overlapping service between large hub and spoke carriers and find that United's 'Premium Economy' program was more successful than American's 'More Room Throughout Coach' program at generating fare premia.

Keywords: Airline pricing; Product differentiation; Seat pitch

1. Introduction

The rapid expansion of low-cost carriers (LCCs) and recent bankruptcy filings by both United and US Airways has focused most of the recent attention regarding airline costs and service quality on the differences between the low cost (i.e., Southwest and JetBlue) and 'full service' (i.e., American and Delta) carriers.[1] In contrast, relatively little attention has been paid to the differences in service quality among carriers within either of these two groups. One area of service-quality competition that has received some recent attention is flight cancellations and delays (Mazzeo, 2003). Rather than explicitly attempting to link prices and service quality, this literature has focused primarily on the relationship between service quality and market concentration.[2] With regards to in-flight service quality, the literature has typically assumed that full service carriers are, for the most part, fairly homogeneous.

In any given city or airport-pair market, there are numerous of factors that may account for differences in average fares across full service airlines. Numerous studies (Borenstein, 1989; Evans and Kessides, 1993) have attempted to identify and assess the degree to which factors such as market share (both in the market and at the endpoint airports), network size, and the number of destinations served by a carrier from the endpoint airports impact a carrier's costs, potential market power and/or service quality—and hence its relative fares—in a given market. A unique change in relative service quality that occurred during 2000 among the 'full service' carriers in the US airline industry is examined. In particular, two of the largest US carriers—United and American—reconfigured their aircraft fleet to provide additional seat pitch (i.e., legroom) in their coach class cabins.[3] By literally removing seats from their aircraft, these two carriers reduced the seating capacity of their aircraft, improving in-flight service

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[1]See, for example, 'The Airlines' New Deal; It's Not Enough,' *Fortune*, April 28, 2003, and 'How to Fix the Airlines,' *BusinessWeek*, April 14, 2003.

[2]Rupp et al. (2003a, b) provide a closer link between pricing and delay/cancellation probability (their measure of service quality) in their examination of schedule recoveries following airport closures due to security breaches following September 11th.

[3]TWA experimented briefly with expanded coach class seating in 1993 after it re-emerged from bankruptcy, but quickly discontinued its 'Comfort Class' after it failed to generate price premiums. Source: 'New Coach Seating Configurations—Comfort Class Deja Vu All Over Again?', *Plane Business*, February 12, 2000.

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quality, but at the same time, increasing unit operating costs. Therefore, an implicit assumption made by both American and United was that passengers would be willing to pay a premium for what was deemed to be a higher quality service offering. The purpose of this paper is to test the assumption that passengers are willing to pay more for one particular aspect of service quality—additional seat pitch.

2. Service-quality competition in the airline industry

Since the deregulation of the US airline industry in 1978, service-quality competition, broadly defined, has evolved along two main lines: LCCs such as Southwest and JetBlue, and 'full service' carriers such as American, Delta, and United. LCCs primarily serve the most heavily traveled routes and are known for their simple, 'no frills' in-flight service and lower average fares (Morrison, 2001; Dresner et al., 1996). Full service carriers, on the other hand, differentiate themselves from LCCs by offering a number of service characteristics typically unavailable from LCCs such as extensive national and international route networks, pre-assigned seats, some degree of in-flight meal service on longer flights, multiple service/cabin classes, and comprehensive frequent flyer programs that permit passengers to earn and redeem miles on a wide range of domestic and international partners (both airline and non-airline). While most passengers can readily distinguish between the service quality of low cost versus full service carriers, many travelers would be hard-pressed to identify significant differences in service quality on comparable flights among the competing full service carriers. Thus, competition among the full service carriers in markets where their networks overlap has typically been in the form of price, flight frequency and schedule competition (Borenstein and Netz, 1999; Ross, 1997). Full service carriers have also attempted to differentiate themselves by comparing their on-time performance or even their amount of overhead luggage space. Carriers can also compete along less quantifiable service-quality dimensions such as crew friendliness.

During 2000, two of the largest full service carriers in the US, American and United, engaged in an overt (and heavily marketed) form of in-flight service-quality competition by reconfiguring their aircraft fleets to increase the 'seat pitch' in their coach class cabins. Seat pitch refers to the horizontal distance between the same part (i.e., front) of two seats in consecutive rows of an aircraft, and thus, greater seat pitch should be weakly preferred by passengers (all other things equal) to less seat pitch. Prior to these changes, each of the large network carriers offered industry standard seat pitches of 31 to 32 inches. While American and United were the only two full service carriers to increase seat pitch in their coach class cabins, they adopted very different approaches.[4] American's program, referred to as 'More Room Throughout Coach' increased the seat pitch for all coach class seats across its entire aircraft fleet to between 33 and 35 inches. In contrast, United's 'Economy Plus' class increased seat pitch to an industry-leading 36 inches, but the increased pitch was limited to the first 6–11 rows of the coach class cabin depending on aircraft type. Thus, while all coach class passengers on American experienced 'More Room Throughout Coach' starting in 2001, only a subset of coach class passengers (in general, high yielding business passengers) received extra legroom on United. In particular, United's Economy Plus seats are typically reserved for their top tier frequent flyers or passengers purchasing full fare or only moderately discounted (Y, B or M class) coach tickets.[5]

While increased seat pitch—all things equal—would likely please most passengers, it is both costly and risky for an airline to provide given the competitive nature of the industry. Since increased seat pitch necessarily reduces the number of seats per flight and most operating costs remain constant regardless of the number of seats, a carrier that increases its seat pitch also increases its unit operating costs. (Fewer seats would also result in less weight, which in turn would reduce fuel costs, however, this impact is likely to be negligible.) These higher unit costs can potentially be overcome if passengers value extra seat pitch enough to pay a premium for it.[6] There is no guarantee, however, that passengers—even if they are aware of the difference in seat pitch—are willing to pay a fare premium relative to other carriers for this added element of in-flight service quality.

3. Model and data

Our analytical approach is to estimate fixed-effects price equations using a cross section of airport-pair markets prior to and following the changes in seat pitch. Controlling for factors that are known to impact relative fares and assuming that no other changes in relative service quality occurred over the same period, comparing the difference between coefficients on carrier dummy

[4] JetBlue recently announced it too would increase seat pitch in roughly two-thirds of its seats to 34 inches. See 'JetBlue Adds More Legroom Across Fleet,' company press release, November 13, 2003.

[5] Source: www.ual.com.

[6] It is also possible that the higher unit costs could be overcome by increasing load factors. However, since both carriers' programs reduced seating capacity at a time when load factors were high by historical standards (for example, American's domestic load factor in 2000 was 70.4% versus an average of 62.6% during 1990–1999), it is likely that the carriers' primary goal was to attract higher paying passengers.