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Baggage fees, operational performance and customer satisfaction in the US air transport industry

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ABSTRACT

In recent years, there has been a "de-bundling" trend in the US airline industry, where specific services that used to be included in a ticket fare are now priced separately. Although a major reason for these fees is to raise revenues for the airlines, the fees may also impact the operations of carriers. Among the new fees implemented by most US carriers is a payment for checked baggage. This paper analyzes the association of baggage fees with airline operational service outcomes, as measured by flight delays, mishandled baggage rates and the rate of customer complaints. Using data from the US domestic air transport market over the period 2004–2012 and estimating a series of equations, our results show that, on average, an increase in baggage fees is associated with a decrease in the mishandled baggage rate and to a reduction in the percentage of delayed flights. No significant association is found between the fees and the rate of customer complaints.

1. Introduction

On May 21, 2008, American Airlines made an announcement that dramatically changed the revenue position of US airlines. American announced that as of June 15th, it would begin collecting a fee of $15 per checked bag.[1] Although American Airlines was not the first US carrier to charge a fee for a first checked bag, it was the first "legacy carrier" to do so. The other major legacy carriers, United Airlines, US Airways, Northwest Airlines, Continental Airlines and Delta Airlines, quickly followed with baggage fees of their own. Within two years, the fees had been raised to the $20–$25 range for the first checked bag, with some carriers charging even more for a second checked bag (Barone et al., 2012). As a result, baggage fees as a percentage of US carrier operating income increased more than fourfold from 2007 to 2009 (Garrow et al., 2012). By 2010, US carriers were generating $3.4 billion annually in baggage fees, up from less than $500 million in the year before American's initial announcement (Tuttle, 2012; US Government Accountability Office, 2010).[2]

Although the imposition of the baggage fees had a dramatic impact on US carrier revenues, this is not the focus of the paper. Our aim is, instead, to analyze the association between the fees, the operational performance of US carriers, and customer satisfaction with their airline experience. As Michael O'Leary, the CEO of Ryanair, has stated (quoted in Allon et al., 2011, pp. 2–3): "[P]aying for checked-in bags … wasn't about getting revenue. It was about persuading people to change their travel behavior – to travel with carry-on luggage only … This helps us significantly lower airport and handling costs." In particular, we examine the association between the baggage fees and the rate of mishandled baggage reports, the percentage of delayed flights, and the rate of airline customer complaints.

If the baggage fees discourage passengers from checking their

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[1] See, for example, Barone et al. (2012). Up until American's initiative, only certain low-cost carriers (LCCs) (e.g., Spirit Airlines) charged fees on the first checked bag in the United States. Other LCCs, most notably Southwest Airlines and JetBlue, continued to offer "free" checked bags.

[2] US carriers collected some baggage fee revenues prior to American's announcement; for example, for third checked bags and for overweight bags.

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bags, then they should be associated with fewer mishandled baggage reports. Indeed, the US Government Accountability Office (2012) reports a steady decline in the number of mishandled baggage reports beginning in 2008. We examine the association between the imposition of baggage fees and the number of mishandled baggage reports per 1000 passengers.

The imposition of baggage fees can also have an effect on the percent of delayed flights. The loading, offloading, and transfer from one flight to another of checked baggage takes time to perform and may lead to operational delays. In addition, as Wu (2005) states, late arriving baggage disrupts the operations of an airline causing delays that may be propagated throughout the airline's network; for example, inbound aircraft may be forced to wait for delayed departing aircraft to clear gates, and thus may be delayed as well. To the extent that the baggage fees reduce the number of checked bags, then they may also be associated with fewer delayed flights. However, on the other hand, the fees have resulted in more carry-on (cabin) baggage (US Government Accountability Office, 2010; Halsey III, 2012) and the increased amount of cabin baggage can prolong passenger loading of aircraft, thus contributing to delays. McCartney (2010) noted this two years after the initial imposition of baggage fees by the US legacy carriers, observing that, "more flights are delayed when customers struggle to cram bags into full bins and airline workers have to send bags that don't fit down to cargo compartments." More recently, as Tuttle (2014) states, the legacy carriers have begun to more strictly enforce carry-on baggage rules in order to avoid passengers, "hogging the overhead bin space, and generally making the boarding process a time-consuming nightmare." Thus, it is an empirical question as to whether the baggage fees are associated with an increase or decrease in flight delays.

Finally, anecdotal evidence suggests that airline passengers dislike baggage fees (e.g., Waters, 2011). This dislike may lead to greater numbers of customer complaints. On the other hand, if operational efficiency increases due to fewer checked bags, customer complaints may decrease. Therefore, again, it is an empirical question as to whether the baggage fees are associated with greater or fewer numbers of customer complaints.

In order to examine the relationship between baggage fees and mishandled baggage reports, flight delays and customer complaints, we use data from the US domestic air transport market over the period 2004–2012 and estimate a series of equations. This period covers four years prior to the first baggage fee announcement and four years following the initial imposition of baggage fees by the legacy carriers. In addition, we include observations from both carriers that have imposed the fees (e.g., the legacy carriers) and carriers that have not imposed the fees at the time of our analysis (Southwest Airlines and JetBlue Airways).[3] Our results show that, on average, the imposition of checked baggage fees is associated with a decrease in the mishandled baggage rate and a reduction in the percentage of delayed flights. No significant relationship is found between the fees and the rate of customer complaints. These results thus support the finding that the checked baggage fees are associated with improved airline operations, but not necessarily with increased customer satisfaction.

1.1. Literature review

Given the relatively recent imposition of airline baggage fees (at least by the larger, legacy carriers), there has been little research conducted on their relationship to operational and financial outcomes. Allon et al. (2011) examine the imposition of the baggage fees from a public policy perspective. They ask whether the fees make society better or worse off. Using a theoretical modeling approach, they conclude that to the extent that the unbundling of the baggage fees from the airline fares can better match desired services with the willingness of customers to pay for those services, then society is better off. The fees allow those customers that do not require the baggage service to avoid paying for the service, so these individuals are undoubtedly better off. In addition, since the number of checked bags declines, airlines can enjoy lower costs and pass some of these savings onto all of their customers in the form of lower fares.

Hamilton et al. (2010) view the issue of baggage and other ancillary fees from a managerial perspective. They suggest a number of advantages to unbundling ancillary services or products from the primary product: First, a firm can charge a lower price for the primary product, and this is the price on which customers may focus. Thus, the product will appear to be more attractive from a pricing standpoint. Second, the lower price may help the firm when consumers comparison shop; for example, on websites that aggregate offerings from multiple firms. Third, the unbundling of the ancillary services or products makes the pricing policy of the firm more transparent, and transparency is a desired trait for some customers. On the other hand, the authors point out that customers may be annoyed by the additional fees and that the fees may discourage purchases. Along these lines, Southwest Airlines, which does not charge baggage fees (for first or second checked bags), claims that the company generated $1 billion in additional revenues in 2009 from former customers of baggage-fee charging competitors (Garrow et al., 2012).

Barone et al. (2012) use an event study to examine the effect of newly announced baggage fees on airline stock prices. Surprisingly, they find that the initial baggage fees announced by the airlines actually resulted in an average 10% decline in stock prices (i.e., mean negative "abnormal" returns of 10%, after accounting for the overall market movement). On the other hand, subsequent fee announcements produced, on average, positive 2.5% mean abnormal returns. When the authors examined all of the announcements together, they found that legacy carriers experienced a small, negative mean abnormal return of 1.1%, while the low-cost carriers (LCCs) did not experience significant abnormal returns from their baggage fee announcements. Finally, competing airlines also experienced negative abnormal returns when the initial baggage fees were announced. The authors attribute these negative returns to general investor unease with the airlines' financial conditions; that is, the need to impose baggage fees was initially perceived by investors as a weakness in the airline industry. Subsequently, investors may have realized the potential revenue gains from the fees and rewarded the carriers with positive returns when the later fees were announced.

Henrickson and Scott (2012) and Scotti and Dresner (2015) examine the impact of baggage fees on airline ticket prices and passenger demand. Henrickson and Scott (2012) find that ticket prices are negatively correlated with baggage fees, leading to the conclusion that airlines substitute baggage fees for higher ticket prices. They also find that Southwest Airlines, which does not impose baggage fees on first and second checked bags, increased their fares on routes in which they compete with the legacy carriers after the legacy carriers imposed their baggage fees. Scotti and Dresner (2015) find that the imposition of baggage fees results in a decrease in passenger demand, but that the elasticity is much smaller than an equivalent increase in ticket fares, leading to the conclusion that carriers can increase total revenues by reducing fares and substituting baggage fees. Similarly, Brueckner et al.

[3] Note that JetBlue Airways did not charge a fee for a first bag at the time of our analysis, but imposed a fee for a second checked bag. In 2015 JetBlue began charging for a first checked bag.