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A-LA-CARTE PRICING IN THE AIRLINE INDUSTRY:
Drivers, Consumer Effects, and Policy Options

by Gabriel Okolski



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ABSTRACT

In 2008, a number of commercial airlines separated from the long-established industry standard of allowing customers to check two bags at no additional cost and began collecting fees for both the first and second checked bag. This initiative in a-la-carte pricing is not unique to checked bags, however, these charges have been part of a broader expansion of non-ticket fees for new and existing products and services in the airline industry in the mid-late 2000s. This paper will provide some theoretical background for unbundling and ancillary revenue efforts in the airline industry and will utilize data from interviews at a large air carrier along with economic theory, and various sources to analyze the ancillary revenue trend of the 2000s from an economic perspective.

In particular, the paper will evaluate the incentives and drivers that caused this trend to occur when it did, analyze the effect on airlines' business structures and industry profitability, and spell out the consumer effects arising from this trend. It will also evaluate the merits of potential government restrictions on these fees that would limit airlines' ability to charge for checked baggage and other services. Ultimately, this paper finds that a-la-carte pricing in the airline industry is a price differentiation technique that rose out of revenue pressure in the 2000s. While some consumers may experience a welfare loss, others are potentially made better off by the elimination of a sort of subsidy that comes with lower base fares. Ultimately, policy action to rein in fees may do more harm than good because they potentially reduce total welfare in the airline market.

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A-La-Carte Pricing in the Airline Industry: Drivers, Consumer Effects, and Policy Options

Mercatus Policy Essay

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Introduction

Anyone who has flown regularly during the past ten years has certainly noticed major changes in pricing for ancillary products and services offered by the airline industry. Gone are the days of complimentary domestic meals in coach, two checked bags without charge, and the ability to sit in an exit row without paying extra. Instead, the typical air traveler currently faces a menu of add-ons and fees for services that have either been unbundled from the price of a ticket or have been offered as a new product or service.

Media reports (Kiley 2009, Seaney 2008) and anecdotal experience suggest that such fees have been the source of continued consumer complaints about the air travel experience. One popular theory behind airlines' rationale for these charges seems to be that airlines are "nickel and diming" consumers to squeeze out more profits at the consumer's expense. This popular assumption obscures the economics behind a major change in the way airlines price travel. Rather than offering a variety of related products and services with the price of a ticket, airlines have begun increasingly collecting ancillary revenues from consumers; this term refers to any revenue "beyond the sale of tickets that is generated by direct sales to passengers, or indirectly as part of the travel experience." (Sorensen 2009, 15) Bag fees have been, perhaps, the most visible of these. At the time of writing, only two large U.S. airlines—JetBlue Airways and Southwest Airlines—allow most customers to check a first bag for no additional fee, while only Southwest offers its customers a second complementary checked bag.

As will be discussed, this paper asserts that this change in pricing constitutes an ancillary revenue movement that took place within the airline industry in the mid-late 2000s. In light of this change in most airlines' business models, this paper will analyze the drivers and effects of a-la-carte pricing in the airline industry from an economic perspective. The paper combines

relevant research in the economics and business literatures and other sources with qualitative interview data collected from various personnel at a large network airline in 2010 to examine various aspects of a-la-carte pricing in the airline industry.

Specifically, the paper examines what drivers resulted in multiple airlines adopting a multi-part pricing approach where a single price had previously prevailed and why a-la-carte pricing only became prominent in the 2000s. Furthermore, the paper examines the considerations that airlines make when deciding which products and services to unbundle or offer a-la-carte and looks at the factors of the ancillary revenue movement that will impact consumer welfare. Finally, in light of potential government investigation and regulation of the airline industry's new pricing structure, (Maynard 2009) the paper will examine potential impacts and repercussions of government policies aimed at addressing these fees and suggest the path policy makers should take in addressing this issue.

The main findings of this paper can be summarized as follows. Two-part pricing ultimately allowed airlines to capture additional revenues by price differentiating among customers with heterogeneous tastes for onboard products and services. This innovation was largely driven by pressures to remain profitable in light of economic shocks and low-cost carrier competition at a time when excess capacity may have prevented equilibration of industry capacity and prices. Despite making certain consumers worse off, a-la-carte pricing is likely to improve total welfare and eliminate a sort of subsidy previously paid by customers who did not utilize "free" ancillary services.

The paper is outlined as follows. Chapter 1 provides relevant history of the airline industry and a background of major events during and leading up to the ancillary revenue movement. This chapter will also provide a review of the relevant literature pertinent to major

concepts in this analysis. Chapter 2 will discuss the economic theory that explains why a-la-carte pricing is an equilibrium strategy for airlines and will also discuss the drivers and factors that resulted in the timing of the ancillary revenue movement. Chapter 3 will investigate how ancillary revenues have been paying off for air carriers and analyze the considerations that airlines use in deciding which products and services to offer a la carte. Chapter 4 will look at potential effects of two-part pricing in the airline industry on consumers and consumer welfare. Finally, Chapter 5 will analyze the potential nature of government involvement into airlines' two-part pricing strategy, and what the effects of such involvement may be.

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Chapter 1: Background and Review of Relevant Literature

Given frequent competitive changes, high capital costs, and susceptibility to supply-and-demand shocks, commercial aviation represents a vibrant and unique industry that is at the center of a number of economic questions and analyses. The economics literature, along with related literatures on business, operations management, and similar fields, contains an extensive selection of papers covering a variety of topics, ranging from the effects of deregulation to airport congestion mitigation to revenue management techniques (see, for example, Brueckner 2002, Brumelle & Walczak 2003, and Morrison & Winston 1989). Nonetheless, the issue of a-la-carte pricing and the ancillary revenue movement in the airline industry has been largely untouched by formal researchers in the economics field. Given the fact that this shift in pricing has affected all carriers and has potential effects on passengers' welfare, this area merits analysis and discussion. This paper will thus seek to contribute to the economics literature by beginning to analyze this previously unexplored topic in airline pricing strategy.

This chapter will begin by providing airline industry context for the history and events behind the ancillary revenue trend and will refer to lines of research that are important to this analysis. Specifically, a good deal of research exists pertaining to the concept of price differentiation via two-part pricing, which characterizes airlines' new pricing arrangements. This chapter will also discuss the economic literature on bundling, and how the concept of bundling ties into two-part pricing and price differentiation. Finally, there is a long established line of research about entrepreneurship and the process by which entrepreneurs discover new innovations in an industry.

In addition to outlining key works and concepts from these relevant lines of literature, this chapter will also discuss the methodology behind the interviews conducted for this paper.

Additionally, the chapter will provide an overview of the most relevant topics discussed during the qualitative research.

Definitions

This paper uses a number of terms referring to either the airline industry or a-la-carte pricing that ought to be clarified prior to any sort of formal discussion. The first involves a distinction between **network carriers** and **low-cost-carriers (LCCs)**. Network carriers are those that operate flights using a hub-and-spoke system, (Brady 2005) which offers passengers nonstop service from a non-hub city to the hub or offers them connecting service between two non-hub cities through the hub. Network airlines, which include American Airlines, Continental Airlines, Delta Air Lines, United Airlines, and US Airways, are often referred to as “legacy airlines” because their existence predates deregulation.¹

LCCs, on the other hand, are airlines that use a low-cost business model, which may include attributes such as a single class of service, utilization of one aircraft type, limited inflight services, service to smaller airports, and lower employee wages and benefits. Examples of LCCs include Southwest Airlines, Spirit Airlines, and JetBlue Airways. In addition to LCCs, the Bureau of Transportation Statistics identifies a third group of regional carriers that operate smaller aircraft and provide service from small cities to network carriers’ hubs. These carriers often operate under the branding of a network airline and share largely harmonized customer service and fee policies with their network counterparts. Thus, for the purpose of this paper, they will be implicitly included under the network carrier heading.

¹ Northwest Airlines, which is mentioned during this paper, was part of this category prior to its merger with Delta Air Lines. As of writing, Continental Airlines and United Airlines plan to merge into a single network carrier.

A number of terms relating to various concepts in a-la-carte pricing also merit definition at this point. **Ancillary revenue** refers to revenue an airline earns beyond the sale of its core product of airline tickets (Sorensen 2009, 15). Such revenue can be generated by directly selling to customers or earning commissions from other companies by selling hotel stays, car rentals, etc. **A-la-carte** features refer to the amenities that customers can add to their travel experiences; such products typically involve checked luggage, onboard food, priority boarding, etc. (15) Within the realm of a-la-carte pricing, there are two broad categories of products and services. **Unbundling** refers to those products that were previously included with the price of a ticket but are now being offered for a separate charge to most or all customers. Perhaps the most visible example of unbundling to consumers is checked luggage, which was previously offered to customers for free. In addition to unbundling, there are also **new products and services** that were not previously offered with or without a ticket but have been introduced by airlines as an ancillary revenue stream. An example of such a new service is a fee that coach passengers can pay to gain access to product attributes that are generally reserved for business class or elite frequent-flyer customers.

Vestiges of Regulation

To fully understand the events surrounding airline product and service unbundling and ancillary revenue generation, one should look back to the regulation of the U.S. air transport industry; it was during this time that airlines bundled a number of related products and services with the ticket. Starting with the Civil Aeronautics Act in 1938, the federal government established the Civil Aeronautics Board (CAB), which had the power to regulate route entry and exit, fares, mergers and acquisitions, and subsidies. Unable to offer discounted fares in order to

compete with their rivals to attract customers, the airlines opted to offer increased quality products and services in order to lure travelers (Goetz & Vowles 2009, 253). One example of this response to price regulation is manifested in the “lounge wars”—airlines began competing with each other by outfitting certain planes with lavish lounges, complete with piano bars, poker machines, musicians, and magicians (Vietor, 78–79). On a more mundane level, competitive constraints gave airlines an incentive to provide high-quality food and drink offerings, and other perks, such as inflight movies, to lure customers onboard.

The lack of price competition led to a number of economic studies during the 1970s indicating that unregulated airlines may be able to lower fares and showing that competition in the industry could be robust without government involvement. (79) The appointment of deregulation advocate Alfred Kahn as CAB chairman provided a catalyst for the Airline Deregulation Act, which removed government control over route entry and exit and fares. Despite deregulation of these functions, the federal government retains widespread control over merger approval, safety, and other areas of the industry.

Two observations arising from deregulation are germane to this paper. First, in the period following deregulation, airlines responded to their newly acquired pricing freedom by developing more intricate and advanced ways to maximize revenues and yields being generated by flight activity. This development of revenue management techniques occurred with a rapid pace in the 1980s, following deregulation, and continued to evolve into the 1990s. All in all, airlines spent considerable time and resources researching and developing new yield management techniques, which include selling fares in “buckets” and better differentiating prices for various groups of passengers (Chiang, *et al.* 2006, 98). Concurrent with the discovery and development of these new methods, airlines also developed the hub and spoke model, by which

nearly all flights originate from or terminate in one or more “hub” cities. While this innovation allowed air carriers to offer services to more customers through connecting itineraries, it also generated increased complexities in the airlines’ pricing structures. Such complexities further helped to incentivize innovations in revenue management in the decade following deregulation (Smith, *et al.*, 11).

Second, airlines continued to offer a number of ancillary products and services that were vestiges from the regulation days of competition on a quality dimension. In some cases, this was a deliberate strategic decision. Following deregulation, a financially pressured American Airlines, unable to cut its costs to a competitive level, chose to brand itself as a full-service airline targeted at business travelers. Despite broad cuts in other areas post deregulation, American Airlines maintained service for reservations, ticketing, baggage handling, and in-flight amenities (Victor, 94). Other legacy carriers adopted a similar strategy to compete with a growing list of no-frills, low-cost entrants into the newly liberalized market.

Thus, the persistence of complimentary services and products, including luggage check, food, and beverages, can be seen partly as a competition strategy and partly as a vestige from deregulation. It is important to note that while many of these services have been unbundled from the airline ticket, some continue to persist as remnants from the time of regulation.

Complimentary soft drinks continue to be the norm for most U.S. carriers, and most domestic airlines offer inflight snacks at no charge and free full meals on international flights.²

² Only some budget carriers, such as Allegiant Air or Spirit Airlines, do not offer complimentary soft drinks onboard. Continental Airlines only announced in 2010 that it planned to do away with free passenger meals at meal times on domestic flights.

The Start of the Ancillary Revenue Movement

The majority of the public likely became familiar with notions of ancillary revenue and unbundling in the airline industry in 2008. In February of that year, United Airlines announced that it would charge customers paying certain non-refundable fares a \$25 fee for checking the second bag on domestic and Canada-bound flights (Carey 2008). Frequent flyers with elite status on the airline (those who flew a certain amount of miles over the course of a calendar year) would be exempt from the charge, which was the first of its kind among large U.S. airlines.³ Despite initial reluctance to follow, the remaining four network airlines instituted second bag charges within three months of the announcement.

As other airlines began to match United's charge, another carrier took the next big a-la-carte pricing initiative. In May 2008, American Airlines announced that it would extend its second-bag fee to the first checked bag as well. One month later, United Airlines and US Airways instituted similar first-bag fees (Maynard 2008). By the late fall, all U.S. network carriers, along with a large numbers of LCCs, such as AirTran Airways, had some sort of fee for most customers checking any luggage. Airlines with first or business class cabins and frequent flyer programs generally waived baggage fees for premium customers and those with elite status. Additionally, two large airlines held out (and, as of writing, continue to hold out) from instituting fees for all bags. JetBlue Airways, a low-cost carrier, only instituted a second-bag fee but still allows customers to check a first bag for free. Southwest Airlines, the largest U.S. airline in terms of domestic passenger boardings and a long-time LCC chose to retain its policy of charging for any bags checked in addition to the two-bag allotment.

³ Some discount carriers such as Spirit Airlines and the now-defunct Skybus were charging for bags before this point.

While the year of the bag fee may have brought the issue of ancillary revenues and unbundling to the public consciousness, the unbundling trend actually had its roots earlier in the decade. Most airlines reduced or eliminated meal service on most domestic flights following the attacks of September 11th, which resulted in widespread revenue losses for the airline industry (Sharkey 2001). Food on domestic flights did not completely disappear, however; around 2003, airlines began their first earnest tests of onboard food sales (Sharkey 2003). As discussed more in later chapters, food-for-purchase, with its roots in the demand shock of September 11th, has turned out to be a revenue source. A number of airlines currently sell food, ranging from snacks to full meals, on domestic flights of sufficient length.

In addition to checked luggage and food, a-la-carte pricing has grown into other types of onboard products that were previously included with a ticket. Following the institution of first and second checked bag fees, many airlines have instituted charges for exit row seats and bulkhead seats that offer additional legroom. On American Airlines and JetBlue Airways, customers must pay for pillows and blankets, previously offered for free.

Two-Part Tariffs

In its analysis of ancillary revenues, this paper characterizes airlines' new pricing arrangement as two-part tariffs, a subject that has been covered extensively in the economics literature. A two-part tariff is a price discrimination technique by which a firm charges a lump-sum fee for the ability to purchase goods along with a per-unit charge for the purchase of those goods (Carlton & Perloff 2005, 314). One of the more traditional examples of two-part tariffs in the literature is that of a country club, which charges a membership fee, plus a usage fee for members to play golf, access a restaurant, or use other facilities.

In these examples, this fee exists solely to give consumers access to purchase a good. Locay and Rodriguez (1992), however, discuss how a movie theater exhibits a type of two-part tariff by charging patrons for entry with a movie ticket and allowing them to purchase popcorn and other goods at an additional fee (954). In this case, the initial charge entitles customers to some sort of product in addition to the right to purchase additional goods and services. The movie theater case can be likened to the airline industry case of a-la-carte pricing: airlines charge consumers a base fare, which entitles them to the airline ticket. The base fare also gives customers access to purchase other goods and services, such as the ability to check bags, meals, etc., on an a-la-carte basis.

From a theoretical perspective, two-part tariffs are generally seen as a price discrimination technique by monopoly firms or firms with a high degree of market power (Carlton & Perloff 2005, 301). In a standard neoclassical analysis of monopoly two-part tariffs, the access charge is set to capture the consumer surplus that exists for all units purchased. This presents the firm with a challenge, however, since the amount of the access charge is constrained by lower consumer surplus levels of consumers who demand less of the good at a given price than other consumers. Because of the loss of consumers when the access charge rises, two-part pricing is unable to capture the same amount of consumer surplus as first-best price discrimination techniques when the firm faces consumers with heterogeneous demands. This assumes, of course, that the firm must charge a single access fee to all consumers.

One of the earliest thorough analyses of two-part tariffs was conducted by Oi (1971), who discussed the dilemma of whether an amusement park should allow entry for free and charge monopoly prices for the rides, or whether the park should charge an entry fee but allow free rides. While the park enjoys a monopoly position, under traditional analysis, the monopolist

would not be able to capture all consumer surplus by pricing where its marginal cost equals marginal revenue. This is due to the fact that a number of thrill seekers will not enter the park at all because of the high price. By charging an entry fee, the monopolist is able to capture the consumer surplus that the customers enjoy after purchasing their desired quantity of goods at a certain price. Oi points out that the amusement park faces a tension between raising the entry fee and losing part of its customer base. Oi's paper bears relevance for an analysis of two-part tariffs in the airlines industry; much like the amusement park, an airline enjoys a monopoly position once the consumer is onboard. This gives airlines ability to engage in some degree of price discrimination, as is the case for an amusement park.

While Oi and a number of subsequent researchers analyze two-part tariffs for a monopolist, Locay and Rodriguez (1992) show that two-part pricing can serve as an equilibrium strategy under competition. They demonstrate that competitive firms employing a two-part tariff will price the good/service above marginal cost while having an entry fee that is below marginal cost (955). The authors base their model on the assumption that goods and services are purchased by groups of people, rather than individuals. Thus, having groups of individuals provides, in essence, some level of market power by constraining individuals' ability to shop around at other firms. This is one potential factor that prevents competition from driving the price of the ancillary good to equal its marginal cost.

Button (2005) discusses the potential feasibility of two-part tariffs in the airline industry from a general perspective, discussing the access charges as a way to cover capital costs. (255) Button seems to discuss two-part tariffs in the context of airline "subscriptions," but finds limited potential use for this type of pricing mechanism in the airline industry. While some scholars may have seen limited applicability of two-part prices in the airline industry, airlines have pursued

this strategy. Nonetheless, Button makes a point that airlines may have difficulty in approximating the capital costs attributed to a single airline consumer. Thus, while airlines have taken a two-part pricing strategy, they still may face some difficulty in deciding how they plan to divide base fees and ancillary charges.

Bundling/Unbundling

From an economic perspective, bundling refers to a tie-in sales arrangement by which a firm sells its goods in packages (Adams & Yellen 1976, 475). Two types of bundling are commonly employed. A pure bundle occurs when a product or service is only available as part of a bundle. An example of this is Nintendo's Wii gaming console, which is sold with "Wii Sports," a sports simulator. Neither the console nor the game is offered separately by the retailer. Firms may also offer a mixed bundle, in which consumers can either purchase the relevant goods in a package or separately. Such is the case with combo meals offered at fast food restaurants.

Stigler (1963) was one of the earliest economists to show the profitability of a bundling strategy, applying the theory of bundling to production companies that only offered movies to theaters in bundles. Stigler showed that if two exhibitors valued film X at \$8,000 and \$7,000, respectively and film Y at \$2,500 and \$3,000, respectively, the studio could only charge \$7,000 and \$2,500 for a separate offering of the movies. Alternatively, the studio could offer both movies together, and given consumer demand, earn revenue of \$10,000, \$500 more than the separate offering would yield.

As shown by Stigler, the profitability of bundling as a pricing strategy is ultimately dependent on the negative correlation between the consumer demands for each product. Adams and Yellen (1976) conducted the first methodical analysis of bundling, showing that bundling

essentially sorts consumers into groups with different reservation price characteristics, and allows firms to extract consumer surplus (476). The authors show that with a mixed bundling strategy, a monopolist is ultimately able to create two separate markets for different customers. Schmalensee (1984) builds upon Adams and Yellen's intuition by deriving the general conditions under which bundling is a profitable strategy for a monopolist. One important implication from his derivation is that bundling may be a more successful strategy when marginal costs of providing components of the bundle are very low.

Other researchers analyze bundling in competitive market structures. For example, Matutes and Regibeau (1992) discuss the profitability of bundling strategies in a duopoly market where customers put together multiple components of a bundle to reach their ideal point. The authors find that mixed bundling can decrease firm profits in a duopoly, and may thus be used by an incumbent firm to discourage entry.

Airlines that had previously bundled a variety of services with an airline ticket have clearly unbundled many of those and moved to a two-part pricing arrangement. Some aspects of the bundling literature point to some considerations that may have driven unbundling. For example, rising marginal costs for ancillary products due to rising fuel prices may have increased the incentive to unbundle. Nonetheless, economic theory does not appear to have any clear conclusions about the connection between bundling/unbundling and two-part tariffs. In one paper, Murphy (1977) discusses two-part tariffs along with bundling and finds that bundling would earn more profits than two-part tariffs, with equal number of consumers with high and low demand for the products being bundled.

Despite a lack of conclusive research, the unique conditions of the airline industry imply that air carriers should pursue a two-part tariff strategy if they decide to unbundle products

and/or services. This is because consumer demand for an ancillary good offered by an airline is exclusively contingent on purchase of the base fare. For example, nobody would want to pay for a bag check service or a meal onboard the airplane if she were not going to undertake a trip. Given that these products are offered exclusively to complement the air travel experience, an airline faces somewhat of a dichotomous choice between bundling with a single price and unbundling with a two-part price.

The Role of Entrepreneurship

One of the key factors weighing into an airline's pricing decision and other business strategies is the role of the entrepreneur. It is important to remember that pricing decisions at the airline are ultimately made by individuals who become aware of new profit opportunities in the field and decide to take action based on future rewards. This basic notion goes back to Kirzner (1973), who emphasized that the human element of the entrepreneur is a more germane description of innovation than a faceless organization that is solving a simple optimization problem. Furthermore Kirzner's work, as well as the earlier work by Schumpeter (1947), emphasizes that entrepreneurial innovations require alertness to previously unexploited opportunities and some sense of "creative response" to take action in reply to those opportunities (150).

Kirzner asserts that the entrepreneurial process is rooted in a framework of means and ends that defines the entrepreneur's economizing problem (Kirzner 1973, 32–33). Ultimately, a businessperson wishes to achieve a certain set of goals (ends) but faces constraints as to the potential courses of action to achieve them (means). Ultimately, human action leads

entrepreneurs to become alert to new goals and the discovery of previously unrecognized means of achieving those goals.

The process of becoming aware to new, more profitable opportunities is not necessarily perfect—even those who have the information to develop new entrepreneurial opportunities may not discover those opportunities due to an inability to see relationships between the means and the ends of the opportunity (Shane & Venkataraman 2000, 222). Ultimately, the entrepreneur also has limited time and attention that can be spent on a certain idea. The existence of more lucrative opportunities may take focus away from other opportunities that may be relevant but are relatively less important or lucrative.

As Gifford points out, entrepreneurs possessing scarce attention also face a choice between allocating attention to current operations or innovating new strategies to achieve profitability (Gifford 1992, 276). Ultimately, Gifford finds that a firm's propensity to search for new profit opportunities is a function of how sustainable the current business arrangement is in generating profits. With limited attention to allocate, airlines were likely focused on maintaining strategies that generated modest profits through the late 1990s, prior to the events of September 11th. Furthermore, the nature of the LCC threat was still uncertain at that time, weakening the incentives to look for radically new pricing arrangements during the 1990s.

In addition, as Gifford discusses, the entrepreneur must often bear uncertainty when researching and pursuing new strategies, a very different concept from a predictable risk. Perhaps the first economist to seriously discuss and analyze risk and uncertainty was Knight (1921), who is well known for his distinction between the two concepts. Knight defines risk as a characteristic that can be measured and understood by the entrepreneur, whereas uncertainty cannot truly be measured (I.I.26). For example, a situation of entrepreneurial risk would involve knowing that a

new production process will have a 32 percent chance of improving efficiency, while uncertainty would involve not knowing what the probability of efficiency improvement would be. Knight emphasizes that uncertainty is a factor that can interfere with competitive outcomes as predicted by pure economic theory (III.VII.45). Thus, while a two-part tariff in the airline industry may be an equilibrium strategy, as predicted by economic theory, uncertainty (combined with other entrepreneurial factors) likely delayed its implementation.

Interview Data

This paper incorporates qualitative data from interviews that were conducted with various employees at a U.S. network carrier in January 2010. The research involved seven personnel working in positions related to corporate planning, revenue management, and product development. Participants were interviewed in person at the airline's headquarters to obtain qualitative data about the history of the ancillary revenue trend in the airline industry, key drivers of this phenomenon, economic considerations the airline makes with regards to a-la-carte pricing, specific experiences at the airline, and other factors. Interviews followed the general interview guide format: similar general questions were asked to each interviewee (some were omitted based on his/her area of knowledge), with different follow-up questions asked based on the responses. All interviewees are granted anonymity in this paper, as is the carrier itself. This condition was necessary to ensure that the airline would participate in this research.

To identify participants willing to participate in the study, the author contacted an employee at the airline who set up the discussions with relevant personnel. Because of this arrangement, the selection of participants cannot be considered a random sample, and thus cannot be used for any definitive conclusions about a-la-carte pricing at that carrier or at others.

Furthermore, because the responses came exclusively from participants working at a single network carrier, findings from the interviews alone may ignore key considerations for LCCs and cannot be generally applied to the industry as a whole.

Nonetheless, the responses are still useful to build the theoretical framework that is discussed in this paper. Interview responses were used to guide research into theories that are relevant for analyzing the ancillary revenue movement. While no definitive conclusions can be drawn, these findings represent a first step to applying economic theory to airlines' a-la-carte pricing initiatives.

In-depth discussions of the key findings from the interviews will be discussed in further detail throughout the following sections, as the theoretical framework is discussed. Some broad categories of discussion are worth noting at this point, however. First, with regards to the central question of this paper, interviewees discussed a number of drivers that resulted in the timing of the ancillary revenue movement. Nearly all interviewees discussed the key role of pressures to generate revenues during the 2000s, along with the roles of rising costs and a general inability to raise fares to a level that provided financial viability.

Many interviewees discussed the carrier's limited experience with some early ancillary product offerings that provided encouragement to institute bag fees. Another driver appeared to be technological changes—such as the ability to provide online bookings and self-service security kiosks—along with stricter security measures following the September 11th terrorist attacks. There was some disagreement among interviewees to what extent rising fuel prices specifically triggered the institution of checked bag fee charges by raising the marginal cost of transporting a bag. Most interviewees also spoke, either directly or indirectly, to the fact that the ancillary revenue movement was largely an emergent phenomenon, arising from an

entrepreneurial awareness that a multi-part pricing arrangement could be used to raise revenues and more efficiently differentiate customers based on their willingness to pay for certain ancillary services.

Some discussion took place about the existence of a first-mover problem by which firms in the industry were reluctant to bear potentially uncertain costs of unbundling and reluctant to offer ancillary services for fear that the costs would outweigh the benefits. Interviewees pointed to relatively long lags in firms deciding whether they would institute bag fees, and the carrier's own in-depth analysis to determine whether charging bag fees would be worthwhile. In a similar vein, interviews touched upon the competitive nature of the ancillary revenue trend. Participants also mentioned that ancillary revenues could help provide another dimension upon which airlines can compete and reduce their position as providers of a commodity-type product.

Interviewees agreed that unbundling and new a-la-carte products have paid off for the airline, exceeding expectations in many areas. Nonetheless, multiple discussions pointed to potential challenges to offer products and services that fit within the airline's brand and provide something that is value-added for customers. Some interviewees also said that bag fees lead to a more equitable fee structure by which customers who do not check bags no longer subsidize the costs attributed to those who do check bags. While such claim implies that baggage fees (and other a-la-carte initiatives) put downward pressure on fares, a number of interviewees doubted that this was the case, likely due to the lack of a visible drop in fares following unbundling. Two interviewees said, however, that ancillary revenues would likely drive down base air fares in the future.

Multiple interviewees discussed how a-la-carte pricing motivates improvements in product quality for consumers, but that such improvements are more likely for onboard products

(such as food) than for checked baggage. Furthermore, there is evidence that customers do not appear to be as outraged by additional fees as might be portrayed in the media, judging by sales being generated from ancillary services, but that customers seem to have difficulty separating new product initiatives from unbundling.

Looking to the future, all interviewees indicated that ancillary revenues will remain a permanent part of the airline business model, and that current holdouts (namely, Southwest Airlines) would likely adopt policies such as checked baggage fees in the future. There appeared to be indications that a-la-carte pricing may fundamentally change the airline pricing model by motivating carriers to fill planes at lower base fares if they are able to generate enough ancillary revenues associated with the flight (similar to a cruise ship filling rooms at low prices to reap additional onboard revenue). Finally, there was widespread opposition to potential government intervention to curtail fees and charges. Most responders seemed to indicate that similar practices are allowed in other industries, and that limitations, along with onerous taxes on the industry, would further tie airlines' hands.

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Chapter 2: Why, and Why Now? The Theory and Drivers Behind the Ancillary Revenue Movement

With an extensive menu of pricing options from which to choose, an airline has considerable leeway in determining its pricing structure as part of its business strategy. During the 2000s, however, a number of airlines concurrently adopted a strategy based on unbundling certain product attributes from the fare and built a business model increasingly based on a-la-carte pricing and ancillary revenue.

This chapter will address relevant economic theory, applied to the airlines' experience in the 2000s, that explains why this new pricing paradigm became prominent within the industry. The first part of this chapter is devoted to a discussion of static economic theory that explains airlines' rationale in using a multi-part pricing arrangement and why this has emerged as an equilibrium in the industry. In addition to this "why" discussion, the chapter will also present a discussion of the dynamic changes that have occurred in the industry and lie behind multiple airlines' a-la-carte pricing initiatives. This second section will discuss the "why now" element of a-la-carte pricing to explain why the ancillary revenue movement in the airlines occurred in the 2000s.

Why? Two-Part Tariffs as an Industry Equilibrium

Two airline customers are seldom identical. Whereas flying was once a luxury only accorded to higher-income individuals, an airplane flight today contains a cross section of business travelers, college students, pleasure seekers, and working-class families. The effects of deregulation, which opened up the industry to price competition as well as technological innovations, have driven the real price of air travel down dramatically over the past 30 years.

Between 1993 and 2007 alone, average domestic one-way fares fell from around \$300 to \$220 in real terms (Goetz and Vowles 2009, 257). With lower prices, airlines now face a broad customer base composed of individuals with a variety of tastes and preferences.

Even prior to the ancillary revenue movement, airline pricing techniques were developed to differentiate among different types of consumers. For example, before the 2000s (though it has made a comeback in recent months), airlines offered discount fares to travelers that stayed at their destination during a Saturday night. This practice ultimately served as price discrimination technique to ensure that customers with high valuation of time and high willingness to pay—usually non-leisure business travelers—would not receive the deepest discounts (Gale & Holmes 1993, 144). Furthermore, fewer discount seats are offered during peak times when the most time-sensitive customers would want to arrive and depart.

While such pricing techniques are aimed at pricing differently based on consumer reservation prices and extracting additional consumer surplus for the base fare, a basic evaluation of the travel experience indicates that there may be additional opportunities for price differentiation. Historically, airlines have not solely been in the business of providing passengers with a seat from point A to point B: once passengers are onboard, airlines have provided meals and snacks, drinks, and entertainment. The existence of various cabin classes of service—first, business, premium economy, or economy—represents an effort to extract additional surplus from consumers with high willingness to pay for additional features.

Furthermore, airlines may be able to benefit from market power once the passenger is onboard the aircraft to engage in price differentiation. Economic theory dictates that a firm's ability to differentiate among its customers depends on its ability to exercise market power (Carlton & Perloff 2005, 294). As discussed earlier in relation to Oi's (1971) paper about an

amusement park's monopoly position, an airline has some ability to serve as a monopolist once the aircraft doors have been closed. Additionally, the only place an airline customer can obtain checked luggage service is from the airline from which the ticket is bought; to date, competing airlines or other shipping firms do not offer to take any customer's bag before flight and return it right after.

Despite a limited monopoly position and certain aspects of price differentiation via cabin class, prior to unbundling and a-la-carte pricing there may have been numerous opportunities to capture additional customer revenues, and some of these opportunities may still exist. Teichert *et al.* analyze the stated preference data of 5,800 airline customers and find that customer segmentation by cabin class alone does not fully capture customers' preference heterogeneity. Instead, they suggest airlines should use additional product attributes to more effectively target varying customer willingness to pay (Teichert *et al.* 2008, 239–240).

As shown by Teichert *et al.*, customer heterogeneity gives airlines a variety of options to differentiate through different onboard products. From a strategic standpoint, airlines face customers who are spatially distributed along a sort of preference map for the air travel experience. A key consideration an airline must make, therefore, is what sort of pricing arrangement and what sort of products it should offer to target customers that are located in different positions along a distribution of tastes for onboard product attributes.

In such a way, an airline facing a distribution of customer taste experiences a situation similar to the one outlined by Hotelling (1929) in his paper about duopolistic competition for spatially distributed customers. Hotelling considered the decision that a firm would make in differentiating itself to capture the greatest amount of revenue from consumers uniformly distributed along a linear space (he spoke of a main street in a town). He found that a firm in

such a scenario faces strong incentives to position itself in the center of the distribution to capture as many consumers as possible from the other firm. Despite a potential increase in total welfare if each firm positions itself at opposing quarters of the line, thus reducing the distance consumers would have to travel, this outcome is untenable given each firm's incentives.

Hotelling points out that real-world firms competing for customers distributed in a quality space validate his theory: "Buyers are confronted everywhere with an excessive sameness. When a new merchant or manufacturer sets up shop he must not produce something exactly like what is already on the market. . . . But there is an incentive to make the new product very much like the old, applying some slight change which will seem an improvement to as many buyers as possible without ever going far in this direction" (54).

Each airline's choice in product offerings can often be found to exhibit a number of qualities of "sameness" to the industry standard—most airlines have similar seat pitch, similar cabin class offerings, etc. Hotelling's classic model is, of course, an abstraction, especially due to a number of constraints on the model (such as normally distributed consumers and a one-product duopoly market). Salop (1979) elaborates on the Hotelling model by positioning multiple firms on an infinite line or unit circle and adds another outside commodity to the economy. Salop finds that, in a similar manner to Hotelling's model, a firm faces low incentive to provide product variety relative to the social optimum (152). This leaves customers worse off than they otherwise could have been in the total welfare-maximizing setting.

While airlines may face spatially distributed customers, unlike the firms in the Hotelling and Salop models, they do not charge constant per-unit prices for air travel. Rather than a linear pricing arrangement, airlines charge different prices based on distance flown, time of day, and a variety of other supply and demand factors. A carrier's fares do not necessarily exhibit a linear

relationship: a flight that covers twice the distance as another will not necessarily cost twice as much (for example, a flight from New York to Washington, D.C. can often cost as much as a flight from New York to Las Vegas). Given these non-linear price arrangements and a spatial distribution of customers, what sort of pricing arrangements can be expected?

Armstrong and Vickers (2001) develop a framework for analyzing situations in which firms with non-linear pricing compete by offering “deals” such as tariffs, bundles of outputs, etc. In a similar fashion to Hotelling’s location model, Armstrong and Vickers’ model positions consumers within a utility space, where consumers differ in their tastes for the product attributes supplied by firms. One of the key distinctions allowing for analysis of the effects of non-linear pricing is the fact that, instead of analyzing changes in consumers transportation costs per unit of product consumed (the costs that consumers bear by moving from their position to purchase from a given firm), the authors’ utility space involves a transport cost per product. In many ways, this transport cost per product can be likened to an airline consumer’s costs of moving away from her ideal for an onboard product to buy the airline’s offering.

Armstrong and Vickers analyze a competitive situation where customers have heterogeneous tastes according to some characteristic that is unobservable by firms. Under these conditions, they find that two-part tariffs based on marginal costs emerge as an equilibrium strategy for each firm in the market. A later paper by the authors (2008) shows this result to be a unique equilibrium. Their result arises out of the authors’ demonstration that under a Hotelling model, two-part tariffs emerge as an equilibrium solution for both firms because the firm is able to effectively charge more to those who are spatially located closer and less to those located farther away, thus catering to various groups of customers (Armstrong & Vickers 2001, 589). When customers exhibit some sort of unknowable private information, so long as it is

uncorrelated with their spatial location, firms must assume a uniform distribution of customers and revert to the Hotelling solution (600).

The example presented by Armstrong and Vickers is, of course, a stylized model that only compares a situation of duopoly competition. While on certain routes, competition may only consist of two air carriers, for the industry overall, there are a number of airlines competing for customers and market share. Despite its shortcomings, however, the Armstrong and Vickers analysis gets at the heart of explaining an airline's use of a two-part pricing arrangement to further differentiate among consumers who have heterogeneous preferences. Some consumers are located "far away" from an airline that provides baggage check, meals, and other ancillary services, meaning that they have little use for such services and can go to other airlines closer to their ideal. These consumers have high costs associated with moving away from their ideal point; these costs are likened to transport costs in Hotelling-type models. Conversely, other consumers are "close" to the airline's product offerings. A single price fails to extract the additional revenues that can be taken from the close customers who exhibit higher willingness to pay for the service, as it must be lowered to attract the far away consumer. These consumers are less willing to pay for ancillary products and services and are more willing to undertake travel when the entry price is dropped.

In a later paper, Armstrong and Vickers argue that the equilibrium fixed fee under the two-part tariff balances the firm's loss of profit on existing consumers against its gain in profitable consumers from the other firm (Armstrong & Vickers 2010). This comment underscores the role that that two-part pricing and unbundling in the context of the airline industry plays. By being able to charge a base fare separate from fixed baggage fees, the airline can appeal to price sensitive customers who may be close to selecting another while still

recouping additional revenues from those customers who strongly prefer onboard ancillary services.

A number of interviews at the airline point to the fact that the decision to engage in a-la-carte pricing is in fact an attempt to deal with varying consumer valuation for ancillary products and services. As one interviewee said, “I think [a-la-carte pricing] is a constant balancing act around how . . . you find something that the customer values and is willing to pay for versus its something that not only do they not value but . . . also something that costs us a lot of money.” Another interviewee echoed this rationale: “I think that I would say that airlines have, you know, for a long period of time before this realized that they were providing services that had very high costs associated with them that were not necessarily appreciated by the passengers and appreciated by some passengers and not others. It didn’t seem like a good business model to be investing in.”

In discussing price differentiation, another interviewee mentioned an aspect pertaining to customers’ elasticity of demand at different parts of the purchase process. “We joke about this, but anybody who travels knows that vacation dollars are worth less than regular dollars,” the interviewee said. “When you’re on your way to Hawaii, you make a lot of different decisions than if you’re in the home searching the Internet for the lowest fares.” From the theoretical perspective outlined above, a customer’s preference then may not only be spatially distributed but also may also exhibit some sort of time dimension. Thus consumers at the time of travel may have their ideal preference shift closer to the airline’s product offerings, further allowing for extracting consumer surplus through a two-part pricing arrangement that levies additional fees for services offered during the travel experience. This separate pricing time gives airlines an

additional price differentiation dimension relative to other firms using two-part tariffs, such as amusement parks and movie theaters.

Why Now? Drivers and Timing of the Ancillary Revenue Movement

As proposed in the section above, a-la-carte pricing in the airline industry is a stable equilibrium arising from customer heterogeneity and distribution in a spatial framework. So long as duopolistic firms in such a situation employ non-linear pricing, Armstrong and Vickers predict that a two-part tariff will emerge as a stable equilibrium in the industry. If two-part tariffs and a-la-carte pricing are profitable strategies for airlines, given varying customer preferences and different valuations of ancillary services, there remains an additional nagging question: why have airlines waited until the 2000s to implement a business model focused on ancillary revenues when they have had pricing freedom since deregulation?

Though interviewees broadly discussed conditions endemic to the airline industry as a whole, interview data can only be assumed to apply to that air carrier alone. Nonetheless, these data can be combined with industry facts and economic theory to build a model of why airlines might not have adopted an a-la-carte model earlier. Ultimately, it appears as if there are four primary rationales for this observed delay: revenue pressure from excess capacity and low-cost carrier (LCC) competition, technological and exogenous changes, the role of entrepreneurial attention, and solving the first-mover problem.

Revenue Pressure from Excess Capacity and LCC Competition

The clearest conclusion from interviewees was that a struggle to raise revenues was the principal reason why airlines began unbundling certain products and services—most prominently

baggage fees—and looking for other avenues for instituting new products and services in the 2000s. This pressure in the 2000s came from two principal sources. Following a time of modest industry profits in the late 1990s (Doganis 2002, 18–19), the September 11th terrorist attacks resulted in weak demand for commercial air travel. Ito and Lee estimate that the terrorist attacks resulted in a negative demand shock of 37.8 percent in the month after the attacks (87), as well as an ongoing drop in demand of 7.4 percent through 200 (89). Within the four days following the attacks, the Air Transport Association estimated that airlines lost \$1.4 billion due to the shutdown of the national air transportation system, and industry losses in 2001 totaled more than \$7 billion due to the drop in passenger demand (Makinen 2002, 30).

While September 11th can be viewed largely as an exogenous shock, there are also endogenous factors that exacerbated the pressures to generate more revenues. Riding a wave of increased profitability in the late 1990s, a number of legacy carriers entered the 2000s with extremely high costs relative to other airlines, largely due to high employee wages and restrictive labor contracts, higher capital costs, a commitment to providing a number of onboard services (such as onboard meal service), and other factors (Morrell 2005, 306–309). This cost differential is evidenced by the fact that while legacy airlines collectively sustained multi-billion dollar losses in the years following 2001, the LCCs collectively remained profitable (Hecker 2005, 7). It is also one of the reasons that legacy airlines undertook post-September 11th initiatives to cut fixed costs through efforts such as outsourcing a variety of functions and eliminating aircraft weight (and, in many cases, associated services) to use less fuel.

Following an improvement in the industry after the attacks, airlines again faced stiff revenue pressures as fuel expenses increased due to a rise in the price of petroleum. Between 2007 and 2008, the average U.S. jet fuel price increased by 37.6 percent, from 216.5 cents per

gallon to 298 cents per gallon: during previous years in the decade, fuel never rose more than 51.9 cents per gallon from one year to another (ATA 2009). While fuel costs historically made up 10 to 15 percent of passenger airline operating costs, in the third quarter of 2008 that figure rose to an average of 35 percent (ATA). With fuel costs mostly fixed by exogenous prices (airlines still undertook many efforts to increase fuel efficiency and eliminate unnecessary fuel burn), air carriers faced increased pressure in order to generate additional revenues to maintain profitable.

In basic economic terms, the airline industry faced two stages of shocks—first, a demand shock resulted in decreased demand for air travel, with customers willing to buy less air travel at every possible price. Second, the rise in oil prices generated a supply shock, with airlines willing to supply a lower quantity of air travel at every possible price. Classical microeconomic theory predicts that a perfectly competitive market would have responded with: (a) a drop in capacity and a lower price for the demand shock and (b) a drop in capacity and a higher price for the supply shock.

Industry data display trends consistent with this theoretical interpretation. Figure 2.1 shows U.S. scheduled passenger airlines' Available Seat Miles (ASMs) and Revenue Passenger Miles (RPMs) from 1996 to 2009. A sizable drop in capacity can be seen between 2001 and 2002, and capacity remains below trend until the mid-2000s. After leveling off in 2007, capacity again appears to fall after that year. Figure 2.2 shows domestic average airfares from 1996 to 2009. Immediately following the September 11th attacks, airfares fell considerably. This low was followed by a gradual increase in fares until 2008, however, when prices rose above the pre-2001 point. In 2008, fares began a dramatic decline, however, likely in response to a global economic downturn.

Figure 2.1: U.S. Airlines Available Seat Miles (ASMs) and Revenue Passenger Miles (RPMs)⁴

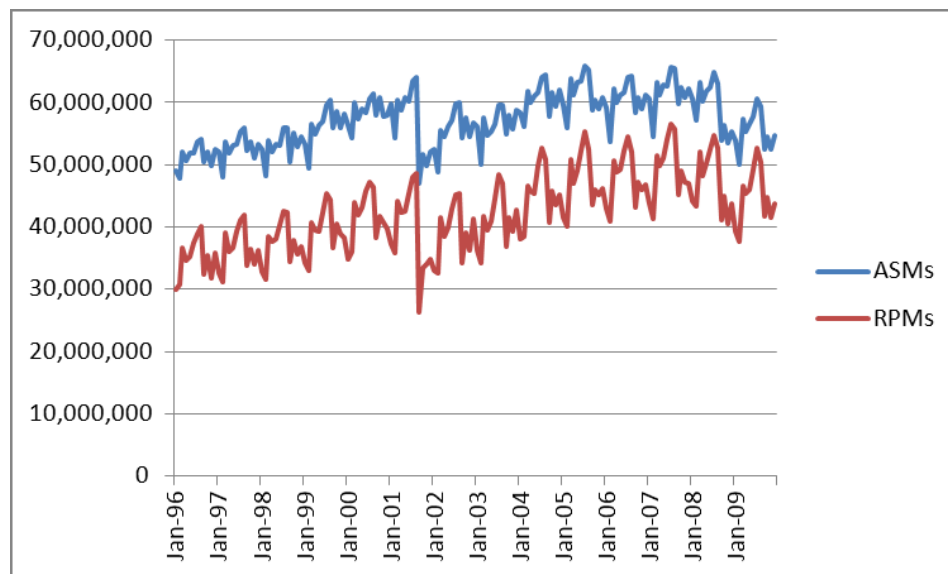
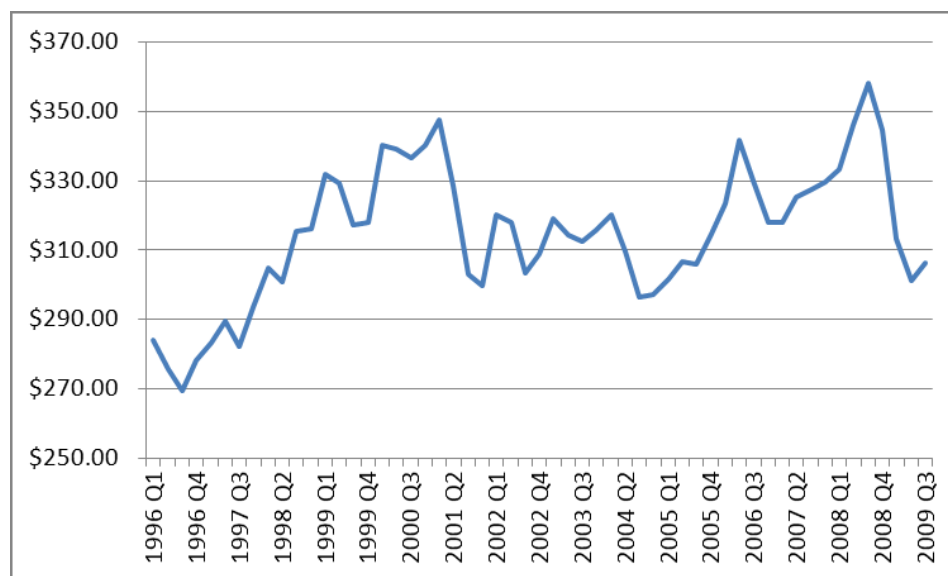


Figure 2.2: U.S. Airlines Domestic Average Airfares in Constant Dollars⁵



⁴ Source: Bureau of Transportation Statistics T-100 Data, all domestic scheduled passenger service.

⁵ Source: Bureau of Transportation Statistics Origin and Destination Survey data, all domestic scheduled passenger service. Airfares calculated on a round-trip basis or one way if no return is purchased.

Despite these indications that the airline industry adjusted to reach equilibrium, numerous interviewees indicated that their airline had a willingness to raise fares, but was unable to do so because of excess capacity in the market. Discussing the post-September 11th operating market specifically, one interviewee said, “Clearly the supply and demand side equation was out of whack. . . . And even throughout the high fuel costs for the entire decade, I think that there was just too much supply to allow . . . price increases to happen.” The employee spoke specifically about overcapacity being driven largely by the entry of LCCs and putting negative pressure on fares, and several other interviewees corroborated this claim. The notion of overcapacity in the airline industry has also been widely discussed by industry insiders and analysts (Clark 2009, Mutzabaugh 2005).

Despite some level of consensus that the airline industry is unable to reach equilibrium because of overcapacity, there seems to be no consensus on why this is the case. An overcapacity argument indicates that there is some sort of market failure or competitive discrepancy that prevents a stable equilibrium of industry supply and demand. Given historically low profit margins in the airline industry since deregulation, it is unlikely that airlines would be incentivized to enter the airline market because of the promise of high economic profits. Alternatively, core theory seems to provide a compelling explanation as to why individual airlines struggled to raise fares due to overcapacity.

The theory of the core in economics goes back to Edgeworth, who first analyzed this concept in 1881 (Telser 1994, 152). The core refers to the set of market outcomes that market participants prefer to any possible submarket involving a subset of traders (154). Thus, the core exists when no market participant has an incentive to pursue a deal with any single other participant or coalition of participants. This theory also sheds light on situations in which market

participants are unable to reach a pareto-efficient equilibrium. In an empty core situation, the terms that market coalitions would be willing to accept cannot be met by the market as a whole (155). In an empty core situation, market equilibration requires that a seller drop out of the industry. Doing so, however, raises the price above the remaining firms' minimum average costs. Thus, buyers may compel the seller (or another) to re-enter the market, thus returning it to a state of disequilibrium (Sjostrom 1993, 421).

A number of scholars have applied the theory of the inability to fine-tune supply to satisfy market demand as a rationale for overcapacity problems in the airline industry. Button (1996) analyzes the airline market in Europe, conducting an empirical analysis to see whether competitors were potentially cooperating to avoid an empty core. The results from a series of cross-sectional data from 1990 and analyses of the cost structure of the airline industry, including discontinuities in firms' marginal costs when they are below average costs, indicate that the airline industry may exhibit the properties of an empty core (286–287). Other authors have also suggested the presence of an empty core. Antoniou (1998) conducts a test of European market data, similar to that of Button, to determine whether an empty core, instead of collusion or cartels, explains mergers in the European airline industry. He finds a number of statistically significant variables, including variability of demand and passenger seat availability being positively correlated with European airlines' traffic shares, pointing toward an empty core theory (51).

It remains unclear whether a two-part tariff fully resolves an empty core problem in the airline industry or solves for some other overcapacity problem. It is certainly plausible that using two-part prices when consumers are heterogeneous could allow for a previously unstable capacity mix to prevail as an equilibrium solution in the industry. Further research is needed to ascertain whether a-la-carte pricing solves these issues.

Despite this open question, it is certain that empty core disequilibrium leading to excess capacity would interfere with the natural supply and demand dynamics that would allow prices and capacity to adjust in the wake of exogenous shocks. Facing an inability to set fares at a level that would at least allow them to break even, air carriers thus faced additional pressure to discover other pricing techniques that would allow them to remain competitive in the marketplace and earn revenues they were unable to capture through an increase in prices.

Another factor adding to the revenue pressure from these exogenous shocks and perhaps contributing to overcapacity in the industry involves the competitive threat of LCCs. Interviews suggested that the network carrier faced little pressure from LCCs in the 1980s and 1990s and was unsure whether these carriers would materialize into a significant threat. While long-time LCC Southwest Airlines maintained profitability throughout the 1980s and 1990s, that period was marked by the failure of several low-cost carriers, such as People Express and Pacific Southwest Airlines. Nonetheless, a number of small operations, such as Valujet and Vanguard Airlines, also started up in the 1990s to utilize the low-cost model. As one interviewee said, “As you get through the nineties, you get past the denial that LCCs will just somehow not be able to grow much because they’re point to point, or whatever they were at the time. . . . Clearly they have a business plan that works and you have to rethink yours.”

As Franke (2005) points out, major network carriers did not take the LCC threat seriously until the 1990s, and even then, they perceived it as a regional phenomenon restricted to a niche market (17). Nonetheless, he points out that it was actually the downturn in airline demand following September 11th that actually help the LCCs further attract previous network carrier customers who were looking to pay less for air travel (15). As mentioned above, LCCs actually remained profitable following this period while the network airlines took heavy losses. It was

also during this time that Southwest Airlines matured from a regional operator mostly in southern states into a robust nation-wide operation, and airlines such as JetBlue Airways in New York and AirTran Airways in Atlanta organized significant operations at major airports to compete directly with network carriers.

Thus by the 2000s, LCC competition compounded the other structural shocks affecting network airlines. This new group of leaner competitors only increased the pressure on large airlines to raise additional revenues to remain viable in the market, a task made even more difficult by an overcapacity problem that prevented a fare increase to an equilibrium level. In addition to putting pressure on airlines to seek out additional revenue sources, the LCC threat also gave airlines an incentive to target “no-frills” travelers mainly concerned with a low fare while maintaining a high level of onboard service for those customers who valued such offerings. In total, this pressure created a climate that incentivized innovation in new pricing techniques that had previously been ignored.

Technological Advances and Airport Changes

While certain pricing arrangements may be theoretically sound, real-world logistical and operational factors increase transaction costs that may mitigate gains from two-part pricing or unbundling. While offering goods in a single package may not allow for price discrimination techniques and other revenue enhancements, separating different elements of a product can be costly, requiring new techniques to collect revenues, costs to inform employees, and new types of packaging and product presentation.

One interviewee spoke broadly about technological barriers that hampered implementation of many a-la-carte pricing techniques. The first one dealt with the nature of

transactions at the airport. Historically, customers could clear security without a ticket, and obtain their boarding passes at the gate behind the security checkpoint. The interviewee said that because of the high levels of the complexity at airport gates—such as loading and unloading aircraft and responding to other customer concerns—this would be an inconvenient place to give customers the option to purchase a-la-carte products and services. The interviewee pointed out, “Post-September 11th, everything moved forward of security, so customers at least have to have some sort of piece of paper at that point of the process.”

A technological innovation allowed airlines to more easily offer ancillary options to passengers now obtaining travel documents behind the security line: the implementation of automated check-in kiosks. Use of these systems began in the late 1990s, largely as a way to cut labor costs. As the participant noted, “This has turned into a pretty efficient place for us to do a marketing transaction. . . . You’ve already got your credit card in the machine, we know who you are, we’ve matched it up with your reservation record. This is a great opportunity for us to go, ‘Oh you know you’re sitting in the back of the coach cabin. Would you like to sit in a better seat [for an extra charge]?’” Thus increased automation reduced the transaction costs involved with offering passengers unbundled products or other a-la-carte offerings for their trip.

Another technological driver of the ancillary revenue movement involved the increased ability of airlines to offer tickets to their customers directly through their own websites. Over the past several years, increased proportions of customers have been utilizing these websites in lieu of online travel agents (such as Expedia, Travelocity, etc.) and brick-and-mortar travel agents. Given the fact that an airline may wish to offer customers a wide menu of options, and that such options and prices vary across different customers, the interviewee said that it was difficult to get these services to list and present a-la-carte options in a way that would be streamlined and

comprehensible to consumers. Additionally, once a customer is on the airline's website, either to purchase a ticket or to check in for a flight, the carrier is able to directly offer ancillary products and services to the customer, providing an additional selling opportunity. Thus improved airline website technologies, and a shift toward these sites, have given the carrier more control over informing consumers and offering these products.

A final technological consideration involves transactions that occur onboard the aircraft for products and services offered in the cabin (such as meals). The introduction of a large volume of transactions onboard inevitably requires some form of onboard payment, if customers are allowed to make a choice at the point of purchase (one alternative scenario involves passengers choosing options such as meals at time of booking, but this may include an undesirable lag for customers). Without credit card reader technology, this inevitably means that flight attendants would need to have large holdings of cash to make change. Even if such was the case, scrambling to make change may reduce customer utility and the onboard experience.

A number of interviewees pointed to the importance of credit card readers that have become more available in recent years and "cashless cabin" technologies that streamline transactions by obviating this need for flight attendants to hold money. As one interviewee said, "Now that everyone's going to cashless (cabins) or putting credit card readers onboard, basically that opens up a whole new world of what you can charge for, so I think that creates a space where there's going to be even more product innovation onboard." The availability of this technology has likely driven some of the unbundling efforts in the realm of food and onboard purchase.

The Role of Entrepreneurial Attention

Revenue pressure and technological and other shifts refer to the two dynamic changes that occurred in the airline industry in the past 10 years that drove a move toward expanded a-la-carte pricing in the airline industry. Nonetheless, even if these factors did not exist, a revenue-maximizing airline is always, in a sense, revenue pressured, and older technology could have accommodated some forms of unbundling and a-la-carte selling. Thus, these factors explain what made airlines more likely to pursue a-la-carte pricing strategies in the 2000s, but they do not explain why air carriers had left unexploited profit opportunities untouched before that time. Based on interview data, the best explanation for this seems to lie in a consideration of the human entrepreneurial element and the risk and uncertainty that underlies many business decisions.

As discussed in the literature review, it is ultimately entrepreneurs who drive business decisions and make decisions on the best means to achieve a certain end, based on information at the time. Looking back to the post-deregulation era, entrepreneurs' attention and awareness was focused on capitalizing on revenue opportunities arising from a newly obtained freedom to choose prices and structure routes.

One interviewee pointed to the fact that these efforts at redefining the airline route structure and developing new yield management innovations were the most pressing opportunities during the 1980s. As Franke (2005) points out, a profitable period in the 1990s and the progress of computer technology turned industry attention to network management systems that facilitated sophisticated quantitative analyses (15). Franke further discusses the fact that the development of these mechanized optimization strategies meant that airlines spent their resources on optimizing their destination and hub portfolio in relation to other carriers (16).

Interview data also indicate that network optimization and revenue management initiatives represented the “low-hanging fruit” following deregulation. As one interviewee said of the innovation in the 1980s and early 1990s, “[We were] so busy doing the things right in front of us that are worth so much. How do you stop and say, ‘Hey wait, we should go over here and pick off this too.’ You wouldn’t know to ask the question.” Thus, from the standpoint of entrepreneurial alertness, which is scarce and can be allocating to either managing current business plans or developing new profit opportunities (Gifford 1992, 276), airline entrepreneurs likely maximized their returns by focusing attention on optimizing their pricing, revenue, and route strategies.

It should be noted that research into unbundling certain elements began to take place in the late 1990s and early 2000s, well before a-la-carte pricing became the operating norm for most airlines. One interviewee worked at two other network carriers previous to his current airline and said that two early attempts at a-la-carte pricing around this time, in which he was involved, were not found to be profitable business strategies. This fact highlights the evolutionary aspect to entrepreneurship: entrepreneurial attention did not focus on the potential for a-la-carte pricing until other innovations were exhausted and competition began to grow. The shocks of September 11th and fuel price increases, as discussed above, focused further entrepreneurial effort into developing new pricing strategies.

Additionally, early business decisions in response to those shocks gave airlines some experience and market-tested proof of the potential for ancillary revenues. For example, following the September 11th attacks, carriers faced decisions whether to cut meals or enhancements to their cabin products that became overly costly in the new operating environment. Examples of such enhancements included American Airlines’ decision to add

additional legroom throughout its fleet's coach cabin and United Airlines' Economy Plus cabin, which offers a cabin class between their coach and business class products.

The decision to cut or scale back these products may have provided entrepreneurs with increased awareness to the gains from a-la-carte pricing techniques; recently discontinued products provided an opportunity for airlines to experiment with new ancillary products. For example, as discussed in the introduction, many carriers began reintroducing meals and heavier snacks as part of food-for-purchase programs. And while American Airlines completely did away with its enhanced legroom product, United Airlines began offering coach customers access to Economy Plus for an a-la-carte fee, based on availability. These early forays into a-la-carte pricing likely gave airlines the impetus to enact further unbundling initiatives and provided useful experience regarding what sort of ancillary charges would earn revenue for the airlines. The evolving awareness of profitable unbundling strategy as a driver of the ancillary revenue movement of the 2000s cannot be understated.

Solving the First-Mover Problem

Ultimately, the only way a firm truly knows the outcome of a certain pricing change is through a market test. This indicates that there will always be some level of uncertainty involved with a change to the pricing structure, as discussed in the literature review. This uncertainty about an emerging technology or market conditions can spell out a disadvantage for first movers in the industry and give late movers a gain, potentially discouraging or delaying adoption of a specific innovation (Lieberman & Montgomery 1988, 47). Ultimately, the first mover may risk monetary or non-monetary losses if market conditions turn out to be less favorable than originally expected; this is tied in with the fact that other firms can free ride on the risks

undertaken by the first mover. Nonetheless, Wernerfelt and Karnani (1987) point out that certain factors may mitigate the reluctance to be the first mover, factors such as first-mover advantages or the ability to influence the way that the uncertainty is resolved. Hoppe (2000) formalizes the analysis of technological uncertainty in an economic model, showing that in equilibrium, the second mover has a strategic advantage that arises from observing the profitability of the first mover's actions (316).

Multiple interviewees characterized the industry situation surrounding the decision to unbundle the second and first bag fees as having elements of a first-mover disadvantage for air carriers in 2008. As one interviewee said, "First mover tends to carry a pretty big risk, and since the technology is slow to catch up, [an airline runs] the risk of being out there for quite a bit of time. Someone may want to match you today, but their systems may not enable them to catch up for six months, a year, weeks. And you're kind of taking it on the shin until everyone catches up." Ultimately, interviewees said that the airline only felt comfortable charging bag fees when it was certain that it could earn revenue from that strategy even in the case where all other airlines moved to a free checked-bag policy.

Once again, even with sound analysis, uncertainty is still a factor that may limit a firm from taking action. For example, U.S. Airways likely had strong market research and sound analysis before it instituted a policy of charging for onboard soft drinks in 2008. Nonetheless, amid consumer backlash and no similar fee from other large network carriers, it withdrew the charge several months later. While there is no substitute for a market test, revenue pressure and other incentives facing airlines in the 2000s made them more likely to take the plunge and bear any potential uncertainty to reap additional revenue.

Conclusion

This discussion in this chapter outlines a cohesive theory for why most U.S. airlines have moved toward an ancillary revenue model based on two-part pricing and why this change did not come about until the 2000s. From a theoretical perspective, the two-part pricing arrangement allows airlines to price differentiate and capture additional revenues from customers with heterogeneous tastes for ancillary products and services. By separating ancillary fees, an airline is able to obtain additional revenue from consumers who highly value such attributes, while still attracting customers who prefer not to pay for such additional products and services.

While this strategy represents a strategic equilibrium for airlines, entrepreneurial attention was focused on other aspects of the airline business following deregulation such as revenue management and network planning innovations. Nonetheless, changing conditions from LCC competition and exogenous shocks increased airline entrepreneurs' incentives to seek out unbundling and a-la-carte pricing strategies. Given these incentives, and an inability to raise sufficient revenues through fare increases due to excess capacity, entrepreneurs began examining ways to further earn revenues from consumers through price differentiation methods.

While theoretically sound, these pricing techniques came with uncertainty and potential first mover problems. Given a difficult economic environment and competitive pressure, the potential payoffs from ancillary revenue relative to the uncertainty compelled airlines to “pull the trigger” and accept uncertainty associated with moving to an a-la-carte model.

Ultimately, the four factors discussed as primary drivers to the ancillary revenue movement combined to create the ideal conditions for a-la-carte pricing to emerge in the mid-late 2000s. First, the industry was buffeted by shocks that affected airlines' balance sheets and left them trying to find additional sources of revenue. At the same time, new technological changes

made certain pricing mechanisms more feasible than they were in the past. These factors incentivized entrepreneurs to devote additional attention to a-la-carte pricing and ancillary revenue initiatives and encouraged them to explore previously unutilized or underutilized strategies. Despite some uncertainty as to the best way to proceed, the dire circumstances in the industry, technological changes, and new entrepreneurial awareness gave carriers the ability to overcome the first-mover problem and proceed with fully developing a-la-carte pricing models.

Thus, one can best characterize the shift to a-la-carte pricing as evolutionary, instead of revolutionary. The development of a number of factors, both endogenous and exogenous to the airline industry, going back to deregulation, finally created the conditions under which airlines could begin moving toward an a-la-carte pricing model. In the following chapters, the paper will examine what the effects of this evolution have been, not only for airlines but also for the consumer.

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Chapter 3: Airline Considerations for Pricing A La Carte

The previous chapter discussed the main drivers behind the timing and emergence of airlines' increased focus on ancillary revenues through a two-part pricing agreement. Building on the theory that airlines employing a-la-carte pricing are price differentiating among customers with heterogeneous tastes, this chapter will focus on the considerations that an airline makes in deciding what products and services it will offer a la carte and which ones it will continue to bundle with the price of an airline ticket. In essence, this chapter provides some of the “how” that accompanies the previously discussed “why” behind a-la-carte pricing.

Payoffs From Ancillary Revenue

Before discussing, in depth, the various factors affecting an airline's decision on when and where to use a-la-carte pricing, it is worth noting that unbundling of checked baggage and selling of other services appears to have been a largely profitable enterprise for most domestic airlines. During interviews, all interviewees who were asked whether unbundling is “paying off” unequivocally stated that it has generated more revenues than expected. One interviewee said that the a-la-carte pricing initiatives are expected to generate about eight times the amount of revenue predicted by the carrier's initial estimates in 2008.

The industry overall appears to be earning more revenue from bag fees, new onboard products, and other charges that it would have without these initiatives. Despite declining revenue from ticket sales in 2009, due to lower fares and lower demand, and a 17 percent drop in total revenues, the five U.S. legacy carriers (American Airlines, Continental Airlines, Delta Airlines⁶, United Airlines, and US Airways) saw a 19 percent increase in ancillary revenues, on average, during the course of the year (Airline Weekly 2010, 1). In the third quarter of 2009, the

⁶Includes figures for Delta Air Lines and Northwest Airlines.

most recent quarter for publicly reported data, U.S. airlines collected approximately \$2 billion in ancillary fees, up 36.4 percent from the third quarter of 2008 (Bureau of Transportation Statistics). In that quarter, ancillary revenue comprised 6.9 percent of total industry revenues, up from 4.1 percent the previous year.

The composition of ancillary revenue also points to the success that network carriers in particular have had with this technique. Figure 3.1 below shows the top five airlines, worldwide, for ancillary revenues for 2006 and 2008. While only one American network carrier was in the top five in 2006, U.S. network airlines came to dominate the top three spots on the list in 2008. Furthermore, the top ancillary revenue earners in 2008 earn considerably more than those from just two years prior.

Figure 3.1: Top Five Airlines by Ancillary Revenue Earnings⁷

Annual Results – Calendar Year 2006		Annual Results – Calendar Year 2008	
\$554,015,908	United Airlines	\$2,202,148,438	American Airlines
\$482,103,581	Ryanair	\$1,601,562,500	United Airlines
\$252,268,141	easyJet	\$1,501,464,844	Delta Airlines
\$179,288,475	Alaska Airlines	\$834,614,578	Ryanair
\$84,419,785	Aer Lingus	\$612,093,164	Qantas

While a-la-carte offerings have turned into profitable revenue centers for the major U.S. carriers, one additional factor must be considered: the effect of ancillary revenues on other revenues. While carriers may be generating larger volumes of ancillary revenues, these gains are potentially offset by declines in ticket revenues, either from reduction in base fares or from fewer people flying on airlines with the most burdensome fee structures. Only a thorough econometric analysis could determine the effect of a-la-carte pricing on fares and thus the effects on base fare

⁷Chart taken from Sorensen 2007, 11.

revenue. Such an analysis is outside the scope of this paper; however, it would be an important opportunity for future research to determine whether this strategy has improved producer welfare in the airline industry.

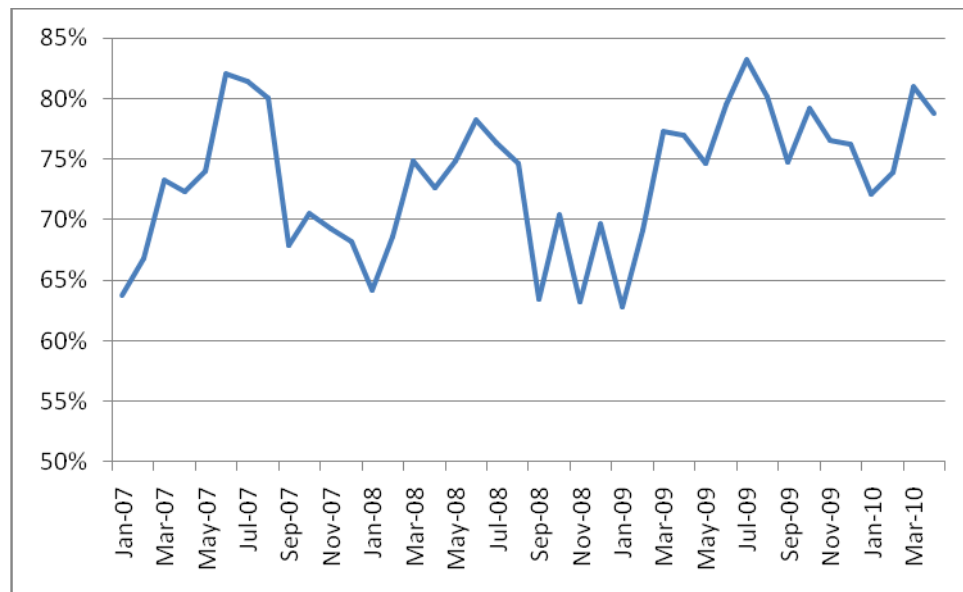
Of course, not all carriers have completely made the shift to an a-la carte pricing model. Southwest Airlines has yet to charge any fees for the first and second checked bag and for offerings such as exit row seats. In fact, the carrier has aggressively advertised the fact that it doesn't charge such fees, and that its competitors do. Such a strategy, after continuing to hold out from taking the fee leap for two years, indicates that there may be payoffs to attracting additional customers by permitting complementary bag check. Of course, Southwest Airlines has always pursued a different business strategy than the legacy carriers. Nonetheless, other low-cost carriers (LCCs) with similar operating structures to Southwest (limited aircraft types, quick turnaround times, etc.) have also made the shift to increased sources of ancillary revenue.

Southwest has asserted that it has experienced an increase in load factors from what it characterizes as customers switching from other carriers. During interviews, however, subjects indicated that their carrier's load factors were also strong, and that they have seen no appreciable decline in traffic. Indeed, legacy airline load factors have remained steady over recent years, and in January 2010, Southwest Airlines' load factor of 72.1 percent remained below the industry average of 74.9 percent (New Mexico Business Weekly). Though the exact figure cannot be disclosed for confidentiality reasons, the carrier at which interviews were conducted, along with all other network carriers, experienced above-average load factors during this month.

Furthermore, a look at Southwest's monthly load factors show no appreciable increase immediately in the wake of other airlines unbundling their bag fees (which Southwest heavily advertises as its competitive advantage). Figure 3.2 shows the data: a noticeable cyclical

variation is present, with peaks during the summer and troughs during the winter. Southwest's summer load factors in 2008, the year during which baggage unbundling took place, are slightly lower than those in the previous year. While load factors increase for summer 2009, the peak is not much higher than that for summer 2007. Perhaps the only major increase in load factors comes for winter 2009/2010, when Southwest's trough is much higher than it was in previous winters. As mentioned above, however, despite its increased performance, its load factors were actually lower than the industry average in that month. The data in the graph below show no evidence that Southwest is gaining customers from its policy of not charging a first- or second-checked bag fee.

Figure 3.2: Southwest Airlines Load Factors by Month, January 2007–March 2010⁸



If Southwest is not actively attracting customers due to no-bag-fee policies, there may be other rationales for why it, and other airlines, may be staying away from expanding its a-la-carte offerings. First, Southwest may face a unique distribution of customers that does not conform to the theoretical analysis presented in chapter 2. One interviewee also noted that Southwest tends

⁸ Source: various press releases reporting Southwest Airlines traffic statistics.

to fly shorter routes where it competes with other modes of transportation, such as automobile or rail, that allow a traveler to bring a certain volume of luggage for free. Such competition may thus constrain Southwest Airlines' ability to charge for the first and second checked bag. Also, despite its no-fee mantra, Southwest has taken some limited steps toward ancillary revenues; one example includes a priority boarding fee.

Brand Considerations

When interacting with a company, customers often engage with what they understand as a company's brand. The brand involves a combination of names, terms, signs, symbols, or designs that allow a consumer to identify a seller's or group of sellers' products and services from its/their competitor(s) (Keller 1993, 2). There are ample writings in the marketing literature devoted to the concept of the brand, specifically evaluating consumers' brand awareness, a brand image, and other related concepts.

From an economic theory perspective, brands also play an important role, though this concept has received less attention in the literature. Ultimately, a brand lowers transaction costs by reducing consumer search costs. Buyers can use brand information along with other heuristics to make purchasing decisions when considering a number of competitors. The brand provides information about unobserved attributes of the firm that can be used along with price information, personal preferences, and other factors to make a utility-maximizing purchasing decision (see Klein & Leffler 1981, 629–633).

As customers face decisions on how to purchase based partially on branding, firms face a choice on where they want to position their brands in relation to customers so as to maximize revenues. In this way, varying brands serve as a means of spatial competition by which firms can

compete for customers in a manner similar to that theoretically proposed in Hotelling's location model (Sappington & Wernerfelt 1985, 283). Building a strong or positively recognized brand can be an asset: in an analysis of the market for liquor products, Sappington and Wernerfelt find that firms with stronger brand names are more likely to move away from their "base" and be able to capture more customers. (286) Nonetheless, a firm that positions itself too far from an ideal position is likely to begin losing customers because it gets too far away from its base customers.

During interviews, numerous respondents noted that the airline's position as a full-service network carrier creates a certain brand image. As one interviewee said, "If you were to ask people to list airlines . . . [our airline] would not be at the top of the list as likely to have the lowest fares. What we would like to think is if you talked to a bunch of business travelers and asked them to pick their top five airlines, then [our airline] would be among the top of those for business travel." Because network carriers offer customers a network of flights to a broad set of domestic and international destinations, a customer looking to fly from Rochester, NY to Rapid City, SD would likely be unable to complete the itinerary on a single LCC. Furthermore, until recently, network airlines had offered their customers with a comparatively higher level of services, and they still offer customers the option to purchase additional add-ons that LCCs and other carriers do not provide. For example, few non-network airlines offer true first or business class cabins, full meals for purchase, and other amenities.

One popular reaction to increased fees and unbundling in the media is the perception that airlines have been "nickel and diming" their customers. Nonetheless, this abstraction ignores the fact that certain airlines cater to certain types of customers. According to an interviewee, the carrier's business-oriented focus manages much of the potential for a loss of customers due to nickel and diming concerns: business-oriented customers are likely to have higher reservation

prices and willingness to pay for unbundled products and are likely to have already paid a higher price for their tickets. Furthermore, a significant portion of business customers' travel is paid for by the employer and not personally borne by the traveler herself. As another interviewee noted that the customers who often have the highest expectations for service and who tend to feel the most personally affected by fees and charges are infrequent travelers: "It's unbelievable. These people pay the lowest possible price and they have these really high standards, and I think part of the challenge is that they don't fly that often."

That is not to say that an airline with sympathetic customers is able to charge for nearly all possible amenities offered onboard. For example, Michael O'Leary recently announced that his European ultra-discount airline Ryanair could start charging customers to use the lavatory onboard its planes (Mutzabaugh 2009). While such a policy would likely be met with revulsion (and could motivate a large shift in passenger to airlines that do not levy this charge) in the United States, consumers in Europe are already used to paying for bathroom use in many areas. Thus, cultural expectations may provide a sort of baseline that makes customers more or less willing to accept a certain type of pricing arrangement. One interviewee pointed out that these cultural expectations may play into certain customers viewing an airline's policy as cheap: "In Europe, you go into a restaurant and you order a sandwich. They come back with bread and meat and cheese, and that's it. . . . Americans don't have that mentality."

In order to further manage the "nickel and diming" perception, the airline appears to put emphasis on providing products that provide added value to the consumer, especially when it comes to the introduction of new ancillary products and services. One respondent said that the airline conducts extensive market research to determine what programs will benefit consumers while positioning the airline brand to capture additional consumer revenues. This process is not

always perfect, however. For example, US Airways became the first U.S. carrier to institute a charge for soft drinks onboard domestic flights in 2008. Following several months of customer complaints and with no other legacy carrier matching the charge, the carrier eliminated this fee (Castro 2009). Likewise, United Airlines abandoned plans for a 2008 pilot program that would involve food for purchase on certain transatlantic flights leaving from Washington Dulles Airport, due largely to customer complaints (Phillips 2008).

Indeed, certain elements play into customer perception of the airline brand and restrict how far away an airline is able to move. For example, one interviewee noted that a free soft drink on board has a “really emotional attachment” for the airline’s customers. Ultimately, customers may have strong perceptions tied to the service brand, and an airline wishing to move away from its brand image faces a potential decline in total revenues.

Furthermore, existing network carriers and higher-service LCCs may be constrained by past experiences with their brands and historical associations with the carrier’s products and services. For example, Allegiant Air, which became a popular leisure travel airline only in the past decade, has always been based on a no-frills, a-la-carte model. Indeed, it is one of the few domestic carriers that charges for a soft drink onboard. Despite this fact, Allegiant is rarely called out in the media for being one of the airlines guilty of “nickel and diming.” This is likely due to the fact that the carrier never offered these amenities for free and thus never changed course from its original business plan.

As discussed above, the brand reduces transaction costs by giving the consumer a model of what sort of products and services they can expect from the airline and how they compare to competitors. One potential challenge the firm may face, however, is if customer perception of the brand does not align with the actual product offerings and service quality attributed to the

company. Two interviewees discussed that this is a particular challenge for customers who are inclined to see all new fees as nickel and diming, even when they appear to be value added. Thus, the carrier pays attention to educating customers whenever possible about the difference between unbundled fees and new product/service options, and how a-la-carte pricing can add value. Given the constant media barrage by Southwest Airlines, interviewees admit that there is increased pressure to educate consumers. One interviewee acknowledged, however, “I think there’s a better way we could manage our customers’ expectations as well.”

Ultimately, these costs to educate consumers have the potential to improve brand image and allow the carrier to capture more consumers away from its base who currently misperceive or do not understand the airline’s product attributes. Interview data seem to support the spatial competition theory of branding—it appears as if the airline is trying to strike a balance between capturing additional customer revenue away from its base while not alienating its core customers. Interview responses tell a story of an attempt to capture the most revenue, at the margin, by fine tuning the position of the airline’s brand.

Complexity and Ability to Deliver the Product

It may come as a surprise to those who see unbundling fees as simply a way for an airline to nickel and dime customers to pad its own balance sheet, but according to multiple interviewees, their airline considers a drop in checked luggage due to fees to be a significant benefit. Ultimately, checked luggage adds additional complexity to an air transport operation by requiring the carrier to handle the customer’s bag, conduct a security scan, load it on the correct plane, transfer it to another aircraft if the passenger is connecting, and unload it. While much of these costs are fixed, there are additional variable costs: with more bags, there is an increased

chance for bags to get delayed or get lost, leading to costs involved with compensating the customers and tracking down the bags. Complexity has further increased since September 11th—following the attacks, airlines became required to scan all checked luggage and to ensure that any luggage loaded onto a plane would be unloaded if its owner did not board the flight.

Perhaps it is no surprise then that one interviewee said she would welcome third-party competition (likely in the form of a cargo operation) offering to take customers' bag for a fee. Nonetheless, this example highlights a further consideration that enters into a decision to unbundle products: transaction costs arising from the extra complexity that certain products or services add to the core product of providing a customer with a seat from point a to point b. Thus in addition to generating revenues from customers who have high valuations for certain ancillary services, the airline also is able to cut variable costs arising out of complexity, especially for those customers who had weak valuations for the products in question.

Changes in the marginal cost of delivering ancillary products and services, driven by endogenous and exogenous factors, may also play into a decision to unbundle. As discussed in chapter 1, bundling tends to be more common in industries where marginal costs of products/service in the bundle are low. Prime examples include television channels, software bundles, or fast-food combo meals. There appears to be mixed evidence as to whether unbundled products experienced large increases in marginal costs.

Presumably, as fuel prices rose substantially in the late 2000s, the marginal cost of carrying a checked bag onboard the plane would increase as the price of the additional fuel to carry the bag increased. Nonetheless, during an interview, one participant said that the marginal cost of carrying a bag had not increased materially. Nonetheless, another interviewee said he believed that fuel did indeed lead to a decision to charge for bags. Furthermore, it is widely

recognized that increased cost-consciousness drove many airlines to remove galleys in order to save weight and thus fuel (Alexander 2006). In light of these actions, and combined with the increased security-related complexity, there may have been a cost-reducing motivation behind unbundling bags, meals, and certain other services.

While certain ancillary revenues can reduce complexity costs, especially those attributed to customers with low valuations, the introduction of new pricing schemes may introduce added complexities that could mitigate potential gains. For example, facing a checked baggage charge, customers can be expected to substitute some of their checked baggage for carry-on luggage. Anecdotally, the overhead bins on flights now frequently fill up before boarding is complete, requiring some items to be checked at the gate. These lengthy procedures not only diminish the customer experience, but they may increase the potential for delay costs. Nonetheless, one interviewee said that while there have been additional carry-on bags, there have been few adverse impacts on the complexity of the airline's operation: "When we were looking at [unbundling bag fees] initially and it initially came out, we found that whatever (the Department of) Homeland Security had issued had more of an impact than our fees."

In some cases, complexity costs for certain services may inhibit the airline's ability to consistently provide a certain type of product or service to its customers. Multiple interviewees spoke about the issue of "deliverability" as a chief concern when considering products to unbundle or sell on an a-la-carte basis. In particular, one interviewee pointed to the somewhat dispersed timeframe for baggage fee rollout as a function of airlines ensuring that they had the technology to adequately charge customers and manage revenues incoming from baggage fees. In other cases, uncertainty may limit the options for delivery—for example, in certain cases,

customers may pay to upgrade to a higher service cabin, only to have the aircraft downgraded to a smaller type with the seat no longer available.

In many cases, operational disruptions pertaining to ancillary products can raise complexity costs by requiring additional mechanisms in place to accommodate customers who did not receive the product or service they were promised. In the case of unbundling, especially, customers will demand more reliable product delivery if they are paying for a service that was previously free. Because of increased consumer expectations, unbundling puts increased pressure on the airline to offer the service in a consistent manner. Ultimately, the predicted ability to provide customers with an advertised service may potentially increase complexities and costs that the airline must factor when making a decision to unbundle. Failing to do so can result in foregone ancillary revenues or perhaps a shift in customers to other airlines that provide more consistent ancillary products/services.

Competitive Considerations

As discussed in the example in chapter 2, airlines provide service in a competitive environment where they must respond to the market decisions of others. Even in cases where an airline operates the only nonstop flight on a route, it still may face competitive pressure from carriers that offer one- or multi-stop service to the destination. For example, airline loyalty programs have been able to capture connecting customers away from nonstop customers by offering a non-price attribute for travelers to consider. A passenger who values mileage accrual on one connecting airline (largely aided by elite status at certain mileage levels) may be willing to have a higher reservation price for that airline's services, relative to another nonstop airline (Department of Transportation 2009, 23–24).

In the neoclassical framework, competition occurs solely on a price and quantity dimension; however, real-world competition also occurs in a quality dimension. In the case of frequent-flyer miles, the potential to earn miles used for future travel lowers the real price of travel when one commits to a single airline; however, it also improves quality through various types of frequent-flyer perks and benefits. Thus higher levels of quality or different quality attributes can be used to attract customers from one firm to another.

In the airline industry, quality competition was widely seen during the regulation era, as airlines were unable to compete on price. Since deregulation, however, prices have fallen dramatically (Smith and Cox, 2010). While there have been cutbacks in the quality of the air travel experience in terms of frills and other services, due to more vigorous competition on a price dimension, there have also been quality improvements in terms of service frequency and other dimensions (Ellig and Crandall 1997, 40–44). With the return of price competition and the prominence of no-frills LCCs, airlines especially face a potential perception as providers of a commodity product, which only involves the attributes of flying a customer from point A to point B.⁹ As the goods or services in a market approach homogeneity, quality competition becomes less likely and price competition will dominate. Such a situation begins to approach the economic ideal of perfect competition, where firms with the lowest costs will be able to earn profits. The commoditization of air travel can be particularly harmful to network carriers, which have historically had higher operating costs than LCCs.

While an ancillary revenue model may spell out fewer services that are included in the price, it allows customers a better opportunity to personalize the travel experience based on their preferences and thus reduces the commoditization of the overall service. In many cases, the airline may also be able to offer a greater number of value-added services on an a-la-carte basis

⁹ This can especially be the case in short-haul air travel. *See, for example*, Tarry 2010.

than it would if it offered that product to all customers. This is because high costs may prohibit certain product offerings to all customers, but the ability to recover those costs from specific customers with high valuations can facilitate a value-added transaction that otherwise would not have happened.

Numerous interviewees spoke to the fact that unbundling and new a-la-carte products provide a way for their airline to differentiate their product from others. One interviewee specifically said that the airline was constantly thinking about way to innovate and create unique products that will attract customers and add value. Another interviewee spoke directly to the fact that differentiating can help make airlines “less of a commodity,” thus generating values for customers and airlines alike. He specifically spoke to the importance of this differentiation vis-à-vis the presence of discount carriers offering seats with few frills; simply removing products and services would only bring network airlines closer to the LCC realm in which they would face stiffer price competition.

Despite trying to differentiate themselves from other airlines, however, all airlines face somewhat of a challenge from third-party travel sellers (such as Expedia or Travelocity) that attempt to compare the airline’s offerings with those of its competitors. As one interviewee said, “We don’t have control over what their user interface looks like. . . . They’re trying to make everyone look the same, and we’re trying to make ourselves different.” This is likely a problem for the multitude of airlines that offer products and services on an a-la-carte basis and participate in online travel distribution systems. Ultimately, the notion that network airlines are using a-la-carte initiatives to differentiate themselves may be at odds with distributors trying to streamline information about the travel process to their customers.

As certain airlines attempt to use a-la-carte pricing as a means of product differentiation, they may face pressure from airlines that are uniquely suited to compete in such an environment. For example in 2008, Allegiant Air topped all carriers with ancillary revenue as a percent of total revenue with 22.7 percent (the next highest U.S. carrier was JetBlue with 10.3 percent) (Sorensen 2009, 33). Allegiant, which has seen large network expansions recently, may represent an airline that has largely formed its product in a new ancillary revenue-centric environment. Up-and-coming carriers, free from previous customer expectations about service levels, may be free to build a strong ancillary revenue model from the ground up, taking advantage of even more opportunities than legacy airlines are.

When asked about the potential for new entrants to take the ancillary revenue model that has been benefiting the network carriers and use it against them, interviewees said they were always conscious to competitive threats, but did not believe that this would be a serious concern in the near future. In particular, numerous interviewees pointed out that many of the upstarts do not offer the same network breadth or depth as the network carriers, and their competition is often constrained to leisure and other niche markets. Despite this fact, however, it should be noted that the LCC competitive threat in general was largely underestimated in the 1980s and 1990s. Since then, these carriers have proved to be a formidable force. Thus the potential for new entrants to gain an advantage in the ancillary revenue realm, by earning more revenues from network airlines or gaining additional market share, is not out of the question.

Conclusion

While chapter 2 established a-la-carte pricing in the airlines as an equilibrium solution in a theoretical sense, this chapter discusses some of the real-world considerations that affect an

airline's decision to offer a certain product on an a-la-carte basis. Ultimately, a carrier seeking to maximize revenue from its operation may face additional costs in terms of brand reputation, complexity, and competition that may make unbundling less of an attractive strategy than it is in theory. In many ways not discussed by the theoretical model, however, an ancillary revenue model may bolster an airline's competitive position by allowing the carrier to differentiate itself from the commodity view of air travel.

The considerations discussed in this chapter all come down to one key consideration for the air carrier: will unbundling a certain product better allow it to earn revenues through product differentiation, or will the costs of unbundling outweigh the benefits? As indicated in the initial discussion, airlines appear to have found a way to turn a-la-carte pricing into a profitable strategy. As time goes on and the ancillary revenue model further evolves, however, these considerations will continue to weigh into an airline's business decision.

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Chapter 4: Consumer Response and Welfare Effects from A-La-Carte Pricing

While airlines' shift to an a-la-carte pricing policy has resulted in additional revenue for airlines and impacted elements of their business strategy, the consumers who ultimately fill the seats are subject to a number of effects that impact welfare. Most importantly, multiple-part prices have the potential to make certain consumers better off, by reducing base fares, and others worse off by resulting in higher overall prices for those using ancillary products, who now must pay a fee. There are additional effects, such as changes in product quality, that further impact consumer welfare. This chapter will look at ways in which a-la-carte pricing affects consumers' utility.

Ultimately, there are a number of consumer-oriented issues that this chapter will discuss: the nature of consumers' response to a-la-carte pricing, potential downward pressure that a-la-carte fees have on base fares, improvements in product quality, and welfare gains from additional consumer choice. Rather than attempting to definitively quantify benefits and costs (a task left open for future research), this chapter will instead broadly discuss the various factors that affect consumer welfare due to a-la-carte pricing in the airline industry. These effects ultimately have policy implications that will be discussed in the following chapter.

The Consumer Response to A-La-Carte Pricing

As outlined a number of times throughout this paper, unbundling initiatives and new ancillary fees have elicited largely negative reactions in the media (Kiley 2009, Seaney 2008). Airline interview data, as well as other information, however, cast doubt as to whether consumer sentiments are accurately portrayed in the media and whether the media may indicate more of a drop in utility than is actually occurring.

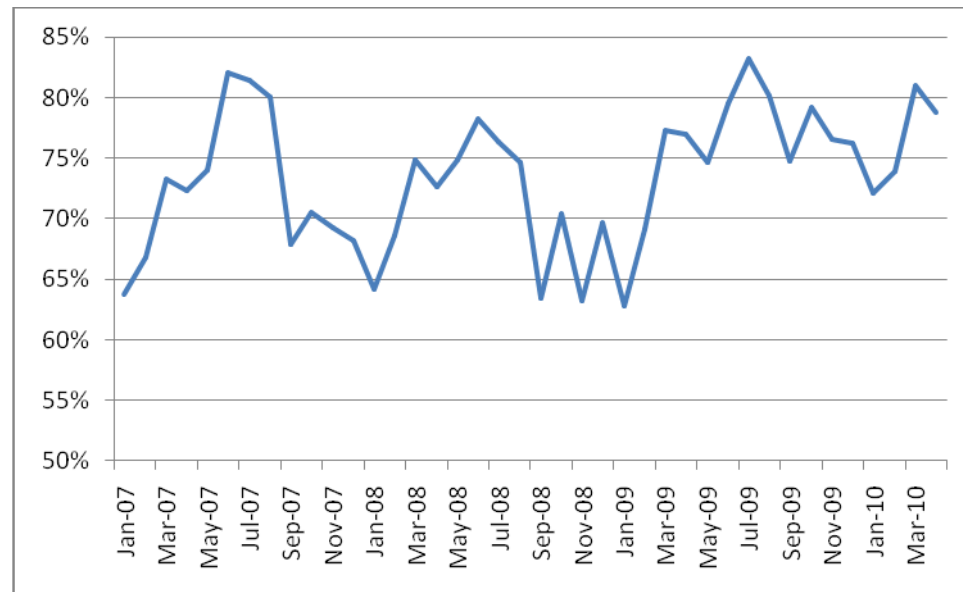
A number of interviewees pointed out that the largely negative reaction in the media does not accurately reflect the actual experience the carrier has had with its customers. When asked whether customer complaints matched media rhetoric, one interviewee responded, “No, not at all. . . . It’s a complicated business; it’s hard to get it right and occasionally the interpretations by pundits are almost accurate, but its more common that they’re a little bit the wrong way.”

More importantly, however, he indicated that the airline had not seen a major shift in passengers to carriers such as Southwest that include more services in the base fare: “For the first year, nobody flocked to Southwest, period. No share transfer . . . nobody lost load factor for this.” While the interviewee stated that more recently, Southwest may have been able to poach certain more infrequent flyers, he said the carrier’s load factors remain strong due to the airline picking up customers from other carriers in the meantime. It should be remembered, of course, that load factors are a function of a number of different supply and demand factors—for example, an airline may be losing customers, but if it cuts down on the number of seats it is offering then its load factors may remain the same or even increase.

Nonetheless, a cursory look at the data confirm that Southwest has not gained any significant load factor bump from its no-bag-fee policies. Looking at Southwest’s load factors is important due to the fact that adding capacity is, in many ways, more difficult than removing capacity. If Southwest were seeing a sizable increase in customers from fee-charging airlines, it would be unable to quickly add aircraft to accommodate increased travelers and should theoretically see load factors increase. While its load factors have been climbing in recent months, Southwest still remains below a number of the industry’s top ancillary revenue generators. As shown in chapter 3, Southwest’s load factors have continued to show a similar cyclical variation even after most other airlines have begun charging for bags. While the airline’s

load factors did start to rise above its past performance during the winter 2009/2010, its loads still remained below the industry average. This lack of any appreciable shift of customers from legacy and other fee-charging carriers to Southwest Airlines is shown in figure 4.1 below.

Figure 4.1: Southwest Airlines Load Factors by Month, January 2007-March 2010¹⁰



If customers are not fleeing carriers that charge fees, one must consider other factors that fuel the negative perception of a-la-carte pricing in the media. One interviewee pointed out that the airlines are an easy target in the media, and that a-la-carte prices may carry a sensational element that may garner media attention: “I think it’s very relatable: everybody basically travels at some point, and they all have their own horror story about their own experience. I just think that it resonates with a very wide audience of people, and it’s easy to tell the sensational side of the story and not the other side of the coin.” Nonetheless, some interviewees pointed out that the

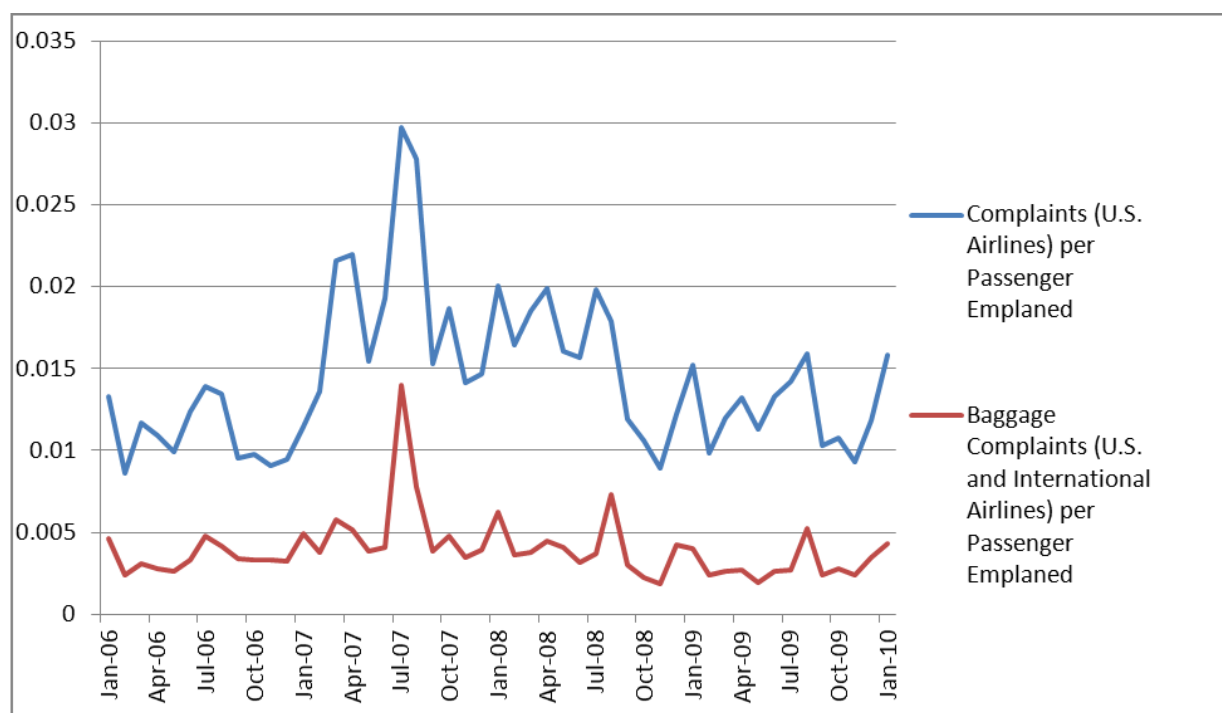
¹⁰ Source: Various press releases reporting Southwest Airlines traffic statistics.

airline, and even the industry as a whole, could do a better job of managing customer expectations of a-la-carte pricing by better informing them about its costs and benefits.

Department of Transportation (DOT) data, showing the number of complaints that customers filed against airlines in a given month, also support the fact that consumers may be somewhat indifferent to a-la-carte fees and charges. Figure 4.2 shows the total number of monthly complaints that travelers filed with DOT against U.S. airlines, as well as the number of baggage-specific complaints that travelers filed against U.S. and international airlines.

As seen in the graph, there is a large peak in complaints in late 2007, following lower levels in 2006. It should be noted that this peak took place before airlines began unbundling bag fees from the fare, en masse. Before this major unbundling took place, both overall and baggage complaints actually fell and remained relatively constant in the months during baggage unbundling. Complaints then exhibit a noticeable decline going into 2009, an unexpected result if one assumes, *a priori*, that consumers are largely angry about additional baggage fees.

**Figure 4.2: DOT Airline Complaints per Passenger Emplaned,
January 2006–January 2010¹¹**



While the number of passenger complaints may be governed by a number of factors, including total system volume, fare levels, and the overall quality of non-ancillary services, these complaint data do not show any immediate effect of a-la-carte pricing initiatives on customer dissatisfaction. One important potential reason for this is that after an airline institutes a bag fee, it sees a drop in the number of checked bags. This implies fewer opportunities to lose or mishandle a bag, potentially resulting in lower complaints. Nonetheless, this factor is counterbalanced by the fact that once passengers have to pay for checked luggage, they may be more compelled to complain to DOT if their luggage is lost or mishandled.

There are additional plausible hypotheses for why complaints have fallen slightly. On some level, some customers may be willing to accept a-la-carte pricing arrangements because

¹¹ Source: DOT Air Travel Consumer Reports, *available at* <http://airconsumer.dot.gov/reports/index.htm>. Passengers emplaned includes international and domestic passengers.

they have not significantly impacted the customer's price of travel or perhaps because some customers understand, on some level, that fees result in lower fares for their preferred level of service (a point that will be discussed below). Furthermore, complaints may be falling because a large number of passengers can just carry on their bags, involving little inconvenience to them. Regardless of the exact reasons, the volume of customer complaints provides further evidence that a-la-carte pricing has not resulted in a sharp increase in consumer dissatisfaction.

The Fee/Fare Connection and Consumer Welfare

The theoretical foundation of two-part pricing clearly outlines a tension that the firm faces between raising the per-unit charge and lowering the lump-sum entry fee. In his paper on the subject, Oi points out that the amusement park loses part of its customer base when it raises the entry fee because of additional customers who no longer derive sufficient surplus to enter the market. Oi mathematically shows that there is a negative relationship between the lump sum fee and the per-unit price; *ceteris paribus*, a monopolistic firm cannot simply add an entry fee without lowering the per-unit price (Oi 1971, 79–80).

Extrapolated into markets that exhibit higher level of competition, the ability to simply add a fee onto a price, without lowering that price, will be further constrained by other firms' abilities to provide more favorable pricing arrangements. Just as competition in markets with single-price arrangements tends to dissipate profits, airlines may be expected to compete away some of the revenues earned from a-la-carte pricing arrangements. While airlines do exhibit certain degrees of market power, this may not be sufficient to stifle a competitive dissipation of some ancillary revenues though base fare increases. For example, during regulation, airlines

enjoyed monopoly positions as the only carrier on certain routes, but competition forced them to compete on a quality dimension to dissipate profits (Goetz & Vowles, 253).

Given this competitive nature of the airline industry, it is therefore plausible that the separation of a single ticket price into a two-part price would mean that the institution of a per-unit charge would put some downward pressure on the entry price, which is, in this case, the fare. Absent some sort of change in supply or demand that would motivate a change in the price, airlines are thus theoretically limited in their ability to simply tack on additional fees while leaving the fare untouched.

Despite this theory, an interview question about this fee-fare relationship yielded a number of responses indicating that the carrier has not made operations decisions in light of a-la-carte pricing that would put downward pressure on the base fare. One interviewee said that a fare decrease is “not a direct manifestation” of a move to an a-la-carte pricing model. Another participant said that while there “may be a shred of truth” to a higher fee, lower fare connection, “fares are a product of something entirely . . . strong and powerful in the competitive marketplace, but not in any way boosted or harmed by the surrounding fees.” Based on responses, however, interviewees may have misinterpreted questions about whether fares were lower than they otherwise would have been due to a-la-carte pricing as asking whether fares were actually lower following a shift in pricing.

Nonetheless, other participants indicated that there may indeed be a downward effect on fares. One participant also expressed uncertainty about the question, but pointed out that she sees that enacting a fee “does not have a one-to-one” relationship on decreasing the fare (meaning that a one dollar increase in fees would decrease base fares by less than one dollar percent). Another participant said he believed that in the long run, a-la-carte pricing initiatives have the

potential to lower fares, but that the economic forces driving such a change would not “happen with the stroke of a pen.” This indicates a belief in price stickiness in the industry, preventing short-run equilibration, due in part, perhaps, to the excess capacity problem discussed earlier. This comment may also indicate that other factors may continue to drive price increases in the short run.

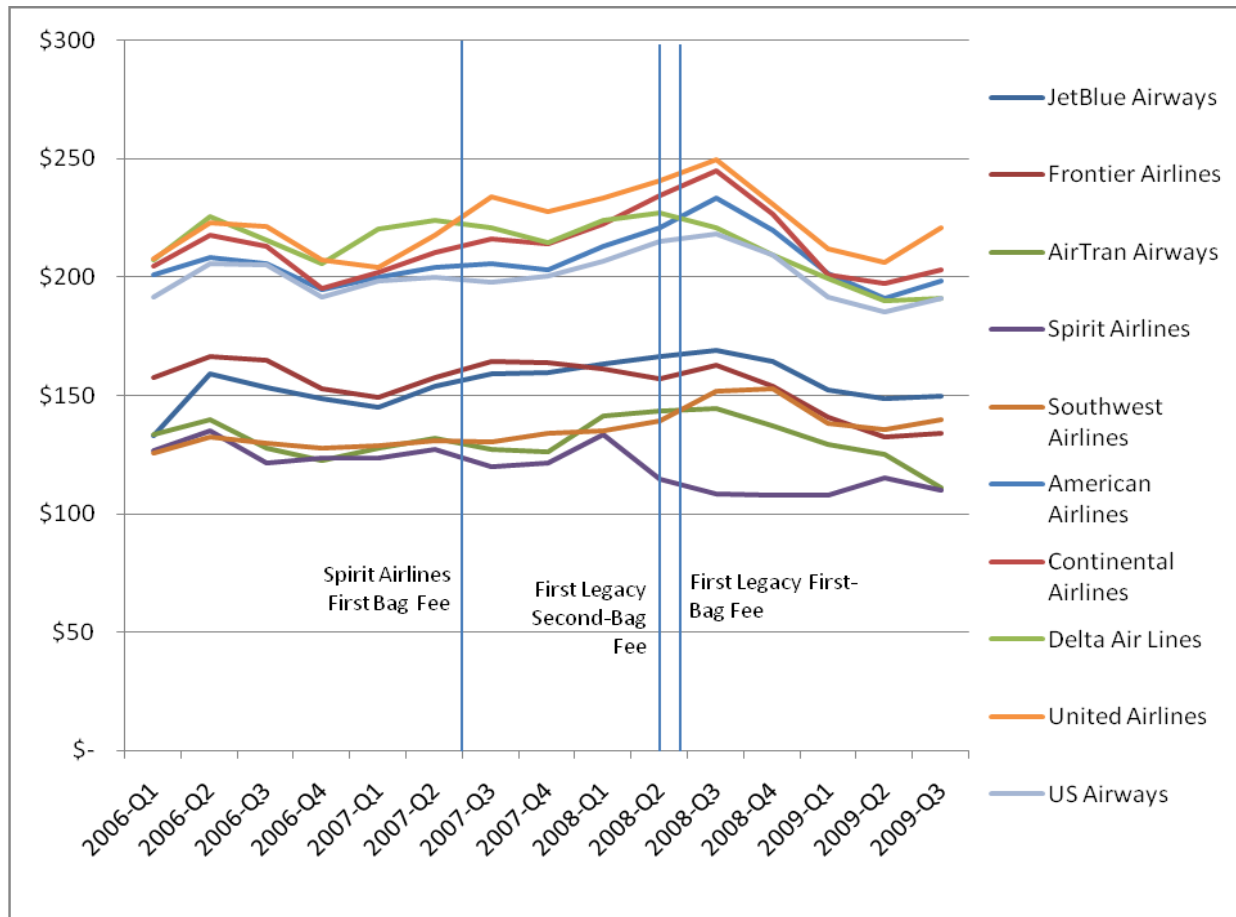
Some respondents, even though they claimed not to believe in any sort of fee-fare connection, implicitly indicated fees’ downward pressure on fares by discussing a sort of subsidy. Such a situation occurs when consumers who don’t utilize bundled services end up subsidizing those who do when such services are included in the ticket price. As one interviewee said, “These services are not enjoyed uniformly by our customers; to just raise the fare; you’re asking everybody to chip in. Some people eat the sandwiches and some people don’t, and if some people take two bags and some people don’t . . . customers don’t derive the same amount of value from each one of them. So rather than try to subsidize the two bag guy with the zero bag guy and raise everything, I personally think it makes more sense to [charge] people for what they want and don’t charge for what they don’t want.” Another interviewee similarly noted that the industry needs “to start getting to a place where not everything is tied to the base fare and that customers aren’t subsidizing each other for services that they don’t value.”

Such comments about a subsidy indicate that when faced with the option to raising fares for all customers, airlines have instead chosen to charge an additional fee to customers who value and utilize a certain fee/service (this may, nonetheless, be combined with a base fare increase if market dynamics dictate). By implication, this means that there is a negative relationship between fees and fares, as predicted by economic theory. Interviewees may have decided not to

characterize this negative pressure when asked directly, because many fares have been rising despite the enactment of fees.

Ascertaining the true effect that a-la-carte fees have on the base fare requires a regression analysis controlling for the multitude of other factors that affect an airline's prices. Such an analysis is outside of the scope of this paper. Nonetheless, a cursory look at U.S. carriers' airfare data yields some preliminary conclusions about potential effects on base fares. Figure 4.3 shows U.S. airlines' average domestic fares between the first quarter of 2006 and the third quarter of 2009 (the most recent quarter for which data are available). The graph includes the five current U.S. legacy carriers, as well as five low-cost carriers (LCCs). Of specific interest are the average fares of Southwest Airlines, which does not charge a first-and-second bag fee, and JetBlue airways, which does not charge for a first checked bag but charges for a second.

Figure 4.3 – U.S. Airlines Average Fare (One Way), 2006-2009¹²



Considering the fact that bag fee unbundling initiatives largely occurred during the first three quarters of 2008, the data in the graph above show a post-third quarter drop in fares for all airlines, except for Southwest, which sees a fare drop at the end of 2008. This drop is largely consistent with the theory that the introduction of a fee would cause a drop in fares, however a more thorough statistical analysis is needed to determine how much of this effect, if any, is caused by unbundling efforts.

A drop in fares of LCCs JetBlue and Southwest indicate that there may be other dynamics that caused fares to drop at this time, most likely the nascent economic downturn. However these carriers see a much lower drop in fees, in percentage terms, than that of the

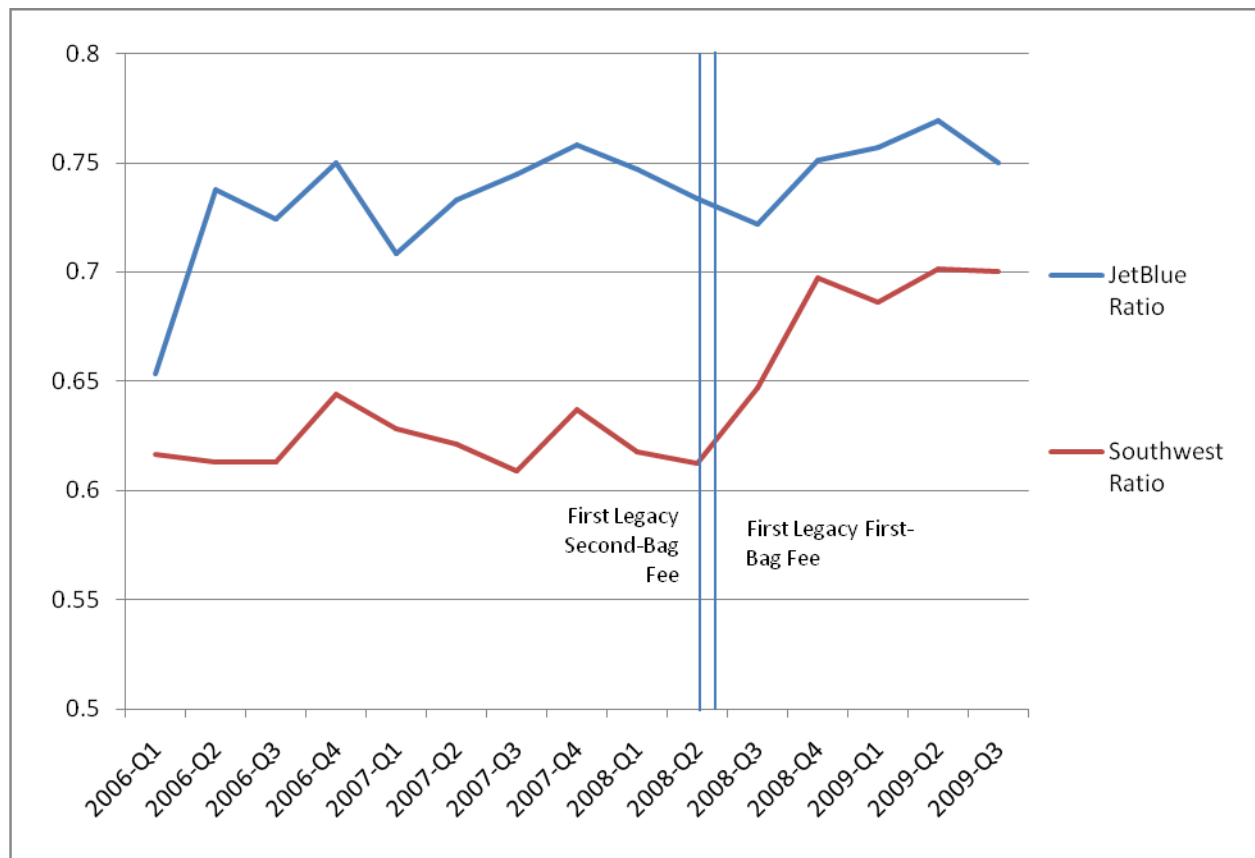
¹² Source: DOT Origin and Destination Data.

legacy airlines and AirTran Airways and Frontier Airlines (which began charging bag fees). The fare decreases are also less than the legacy carriers. One theoretical explanation for this is that the amount of decline in Southwest's fares and some of the decline in JetBlue's explains other market pricing factors, such as consumer demand and input prices, while the additional drop that other carriers experience represents the drop attributable to bag fees.

It should be noted that Spirit Airlines' fees remain relatively flat during this period. Nonetheless, that carrier reduced its fares after the first quarter in 2008. That airline began charging for a first bag in June 2007, however, almost a year earlier than other airlines. The earlier timing of Spirit's fare drop is not surprising: in announcing its first-bag fee, Spirit also pledged to lower its system-wide fares (Associated Press 2007). Nonetheless, there is approximately a nine-month lag between the institution of a first bag fee and a decline in fares.

Another relevant comparison to show the base fare effects of unbundling decisions involves evaluating the ratio of airlines that do not charge fees to those that do. Figure 4.4 below shows the ratio of JetBlue Airways and Southwest Airlines' average fare to the average legacy carrier fare from 2006 to 2009. Concurrently with most network airlines' bag fee unbundling efforts, the ratio of Southwest's fares to the legacy average rises and remains relatively steady through 2009. This conclusively indicates that Southwest's base fares rise in relation to its network competitors immediately as they begin taking in bag fee revenue. JetBlue's fares also rise after the middle of 2008, however the magnitude of the price increase is less than that of Southwest and doesn't bring the ratio to a substantially higher point than it has been in the past. This may be because JetBlue still charges for a second check bag, and is thus earning some additional bag revenue.

Figure 4.4: Ratio of JetBlue Airways and Southwest Airlines' Average Fares to the Average of All Network Carriers, 2006–2009



Once again, while no definitive conclusions can be drawn from the graphs above, airlines that have chosen not to unbundle the first bag, namely JetBlue Airways and Southwest Airlines, do have an increase in base fares relative to other carriers. Additionally, the earlier timing of Spirit Airlines' fare drop and its explicit announcement of lower fares provide evidence that the theoretical predictions described above may be plausible. This link is not conclusive or definitive, and merits further research to control for other factors impacting the fare to determine the true effect that a-la-carte pricing has on base airfares.

In the case that a-la-carte pricing exerts a downward pressure on base fares, there are varying welfare effects for different types of consumers. On a more general level, however,

Armstrong and Vickers (2010), whose model was discussed in chapter 2 as the underlying theory behind airlines' a-la-carte price strategy, discusses the overall effects on welfare from two-part tariffs as a non-linear price strategy. The authors find that ultimately, the two-part pricing arrangement leads to higher total welfare, increased producer welfare, and decreased consumer welfare (51). Increases in producer and total surplus are due to firms extracting additional consumer surplus through the two-part tariff and a cost-based linear price reducing above-marginal cost pricing in imperfect competition. Armstrong and Vickers discuss that various factors may affect this welfare calculation, however. For example, if customer heterogeneity rises above a certain level, total welfare will be reduced (despite producer welfare being improved). If consumers strongly associate with a certain brand, however, the positive effect on overall welfare will be multiplied, but consumer welfare will still be lower.

Applied to the airlines, the theoretical welfare effects above apply if fares drop when fees are instituted. These welfare effects are tied into the subsidy discussed by interviewees. Assuming that the reduction in the base fare is not greater than the fees the passengers pay, a-la-carte pricing is extracting additional surplus from consumers who used to utilize these for free and making them worse off. This is because, under the previous arrangement, the costs of providing these benefits to a concentrated number of consumers were dispersed across all passengers, regardless of whether they used the service. In theory, these costs would not only include operational costs, but also the opportunity cost of not charging a fee for the service. With the new a-la-carte structure, a person checking two bags and ordering an onboard meal now bears a greater responsibility for paying for that service. Of course, the additional fee is theoretically offset by a fare that is lower than it otherwise would have been. It must be

remembered that this characterization assumes static product quality; the next section will consider the effects of changes in quality of the ancillary products/services.

Looking at the ratio of Southwest Airlines' fares to the legacy carrier average provides a back-of-the-envelope estimate of the potential fare effects from baggage unbundling. Assuming that this ratio remained constant into the first quarter of 2009 instead of changing, one can extrapolate what the average fares of all legacy airlines would have been absent the baggage fee unbundling. If legacy airlines' fares kept pace with those of Southwest into 2009, these carriers would have charged a first-quarter 2009 fare of \$223.71 instead of the \$201.42 that they actually charged. This would represent a decline of \$22.29 for the average network carrier ticket fare that occurred because bag fees were instituted. For the average passenger, this value would more than eclipse the price of checking a first bag on any airline at the time (and still eclipses the price of many airlines' current first-bag charges). Though this is a cursory calculation ignoring a number of other factors, it indicates that the average network carrier who pays to check one bag may still be paying less for her ticket.

Customers who do not utilize ancillary services are made better off so long as they pay base fares that are less than they would be under the single-price scenario. Unfortunately, because their analysis only considers a two-part price for one good (whereas airlines' access fee also entitles customers to a ticket), Armstrong and Vickers do not consider the welfare implications of consumers who only pay only one of the prices. Nonetheless, basic intuition indicates that customers who did not utilize ancillary services before the fees are better off. So long as fares are driven downward, there is no need for these customers to pay an extra premium to cover other customers' usage of certain products. This may be part of the reason why customer reaction and complaints may be more measured than what is seen in the media; one

interviewee mentioned that fewer than half of its customers checked a bag. One of a network airline's core customer groups is business travelers, who tend to pack light and carry bags into the cabin (though many business passengers do not pay fees because of employer-sponsored travel or elite status with a frequent flyer program). These customers may realize, intuitively, that they do benefit from not having ancillary products and services bundled into the fare if they were paying a sort of subsidy under the previous arrangement.

One additional consideration must be made regarding the potential for increased overall welfare—the fact that a price change affecting different consumers implicitly affects consumer use based on consumer valuation. For example, with a bag fee instituted, the number of customers who check bags is likely to decrease due to the law of demand, a trend supported by responses during interviews. With some consumers opting not to pay the bag fee, airlines do not need to provide a product to consumers who do not highly value luggage check but were receiving it as a subsidy previously.

Herein lies the key efficiency gain resulting from a bag fee—by charging customers who value a service for the use of that service, airlines (so long as they are pricing efficiently) are helping to guide total consumer resources to their highest-valued use. Thus while some passengers are made better off and some passengers are made worse off, the airlines' a-la-carte pricing arrangement can be viewed as a move that improves efficiency overall. This argument, of course, hinges on the fact that bag fees are set based on market supply and demand dynamic, and that carriers aren't using market power to charge monopoly bag prices. Further research to answer this question could examine whether there is evidence of a markup over marginal cost for bag fees.

One additional consideration that must be made, however, arises from taking the efficiency argument to the extreme—why wouldn't airlines simply enact a-la-carte fees for all different products that could be used onboard? For example, there could be charges for lavatory use, soft drinks, for ringing the flight attendant call button, for turning on the reading light, etc. Interviews indicated that consumers may desire to have the option to use certain services free of charge and may be willing to accept a sort of subsidy arrangement. For other services, there may be health/safety issues that make a bundling arrangement preferable to an a-la-carte model. Furthermore, airline branding, as discussed earlier, may play a role in preventing an airline from unbundling nearly all services for fear of becoming perceived as overly cheap travel provider.

One interviewee pointed to free soft drinks as one of the services that most consumers prefer to receive with the price of a ticket: "We did a bunch of research around what matters for people and what doesn't, and oddly a drink on board has this really emotional attachment for our customer." She added that the revenue gains to be achieved from charging for the soda were also negligible. This indicates that with low potential for ancillary revenues from certain items, the airline is better off bundling certain items or services. This is because the potential revenues gained from such items are less than the costs of losing customers to airlines with a more preferred arrangement. Of course, surveys and market data can mask customers' true preference, and some other airlines do charge for soft drinks. These carriers (for e.g., Allegiant Air, Spirit Airlines) are currently seen as offering a totally no-frills experience; if consumers begin to extend such a conception to other carriers, there may be a potential for added fees in this area in the future.

Changes in Product Quality

While the above discussion focuses on the prices and quantities of airfare, competition and price changes also occur on a quality dimension. Furthermore, consumer welfare is impacted not only by changes in price relative to quantity, but also price relative to quality. As an example, based on her utility function, a consumer may be better off buying a glass with her favorite sports team's logo on it for \$5 than receiving a low-quality plastic cup laden with sponsor ads for free with the purchase of a ticket to a professional sporting event. Ultimately, improvements in airline ancillary product quality have the potential to improve consumer utility from product offerings relative to when they were bundled with the price of a ticket.

In accordance with the law of demand, a consumer's ideal quality when product price is zero, or close to zero, differs from a consumer's preferred quality when a higher price is set. Buyers who consumed some quantity of low quality products given away at no cost may no longer wish to consume those products if the price rises. For producers, this means that offering such products on the market at a fee will only allow them to capture small amounts of revenue that may not justify the costs of offering those products. As an intuitive example, an airline passenger may eat a free meal onboard an aircraft, even if she finds it to be of low quality. If the airline begins charging any amount for that same meal, however, the customer may not consume it.

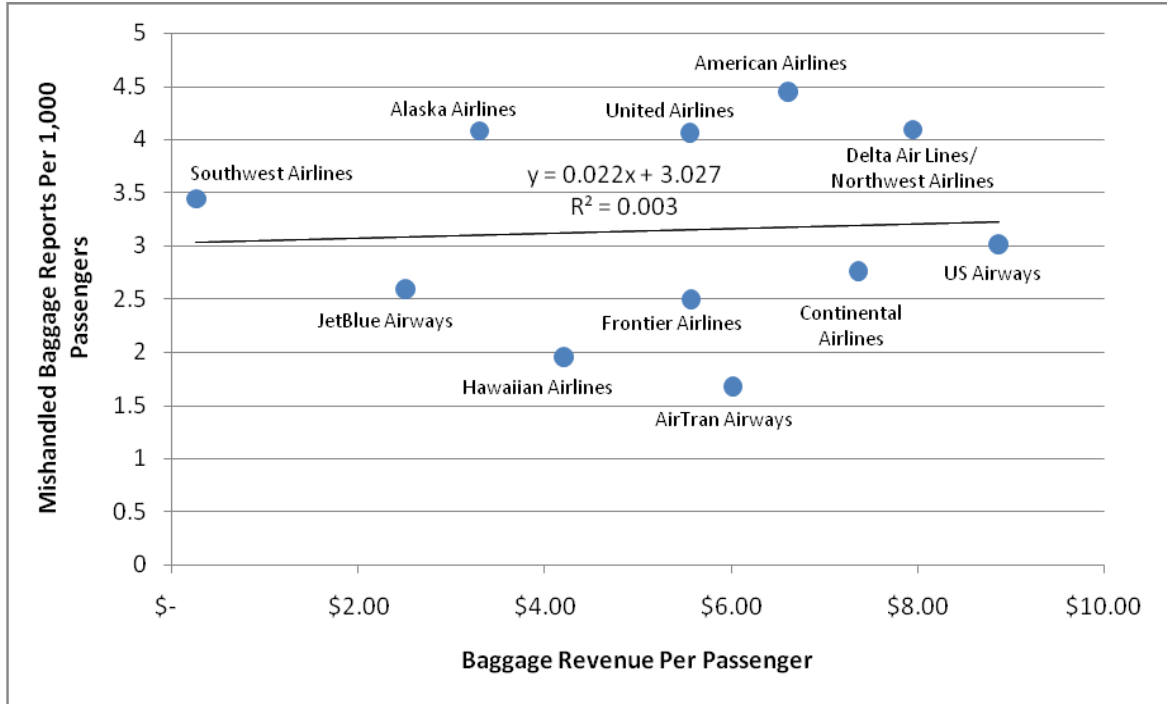
Interview data indicate that the airline, and likely all carriers in the industry, face strong incentives to improve product quality when charging customers for a product or service, especially when the product is one that has been previously included in the price of a ticket. One interviewee mentioned the example of airline meals: "[If we're] going to try and charge \$12 for a meal, we need to provide a meal that's comparable to when they pay \$12 somewhere else and so

there's . . . a quality issue there. I feel like . . . it does pressure you to sort of deliver it because the customer's expectations rise." Indeed the meals that had previously been the butt of jokes (as described by the interviewee) have been replaced by more appealing options. For example, Delta Air Lines offers food that has been designed by celebrity chef Todd English for purchase on longer domestic flights, and American Airlines offers onboard menu selections from Boston Market.

Another interviewee agreed that meals exhibited the characteristic of product improvement. He expressed doubt that the incentive to improved quality applied to certain products such as checked baggage to attract consumer revenue. The data may support this claim: Figure 4.5 shows the relationship between mishandled baggage reports per 1,000 customers and baggage revenue per passenger for select airlines. As seen from the ordinary least squares line of best fit, the amount of consumer revenue has no significant correlation with the amount of baggage revenue per passenger. Nonetheless, the coefficient of determination is extremely low at 0.003 and the P value is 0.862, indicating that the result of this line of best fit is not statistically significant.

While this simple relationship is not conclusive, it indicates that further research may be warranted to determine whether airlines with high volumes of bag revenue have not improved baggage handling quality. Such a phenomenon could potentially be a manifestation of consumers' demand inelasticity for baggage fees: consumers needing to transport a checked bag have few other options than to pay the airline to transport the luggage. Airlines may ultimately face little pressure to improve product quality when they unbundle services for which consumers have few alternatives.

Figure 4.5: Plot of Mishandled Baggage Reports/Baggage Revenue and Regression Line¹³



On the other hand, consumers have more alternatives with regards to products such as onboard food or inflight entertainment. For example, consumers have a wide variety of food options available in the airport (food that can be brought onto the plane), as well as a number of entertainment options through iPods, personal DVD players, magazines, etc. Improvement in food quality has already been mentioned; a number of domestic airlines offer complimentary seatback television for free with recent movies available for purchase.¹⁴ Another manifestation of improved product quality for goods with elastic demand includes JetBlue Airways' unbundling of pillows and blankets in 2008 (JetBlue Airways 2008). Instead of unwashed items reused by many customers, however, the for-sale pillow and blankets are made of toxin-repellent fabrics and environmentally friendly materials. Additionally, consumers who purchase the \$7 amenity

¹³ Source: DOT Bureau of Transportation Statistics T-100 Data and DOT Air Travel Consumer Reports. Data include mainline carriers subject to mandatory baggage complaint reporting and is limited to domestic travel. Student's t statistic = 0.18, P value = 0.862.

¹⁴ Two notable examples are Delta Air Lines and JetBlue Airways.

kit are able to keep the pillow and blanket and also receive a \$5 coupon to Bed Bath & Beyond. American Airlines recently instituted a similar program.

While airline consumers using ancillary products and services may be paying for them, there is evidence that in some cases they are receiving higher product quality for their expenditures than they would be if such products and services were included in the fare. Ultimately, this quality improvement should be factored into any analysis of the welfare gains and losses. While a consumer may need to pay \$12 for a meal that was given for free before, better quality means that the consumer is better off than if she were paying for a meal whose quality was unchanged before it was unbundled. Thus improved quality works in an opposite direction to the welfare losses that some customers experience and perhaps could lead to welfare enhancement for customers who strongly value product quality and are willing to pay for it.

Despite quality improvements, it should be noted that certain elements of a-la-carte pricing may produce the potential for adverse impact on quality. A prime example deals with carry-on baggage: customers now face incentives to bring additional luggage into the cabin to place into overhead bins. Anecdotally, this scenario has led to less room for onboard space and the frequent need to “gate check” any excess carry-on luggage that does not fit in the cabin. Though interviewees stated that increased onboard complexity from bag fees have not significantly affected their airline’s on-time performance, more complexity during boarding has the potential to reduce the quality and welfare for all consumers.

It appears as if airlines may be able to mitigate such negative effects through further fees and charges. In April 2010, Spirit Airlines announced that in an effort to reduce overhead bin crowding and offer even lower fares, it would begin charging customers who bring a carry-on bag that does not fit under the seat (Martin 2010). It is unclear whether these fees will survive

recent congressional opposition to a carry-on bag fee and whether other higher-service airlines would match the charge (Heflin 2010). Nonetheless, it should be noted that even quality effects from a-la-carte pricing have an implication for airlines' future charges and the further development of an a-la-carte industry structure.

Gains from Consumer Choice

The previous section discussed the importance of product quality and its effect primarily on consumers who buy the product. There is an additional consideration to be made, however, applying to all customers who fly. Because of a carrier's ability to generate revenue from ancillary products and services, a-la-carte pricing provide consumers with an expanded menu of options, some of which are of higher quality than otherwise been provided. Depending on the time until their travel plans and amount of future uncertainty for preferences for onboard services, some travelers benefit from knowing that they will have the option to obtain additional on-board products if they so please.

Ultimately, consumers benefit from having additional choices available to them for future purchase, even if they do not end up utilizing that service. For example, while a certain customer may not end up purchasing an inflight movie *ex post*, she may, *ex ante*, value the option to purchase that service during her flight. As Petrin (2002) points out in his analysis of new products in the minivan market in the 1970s, consumers experience welfare gains when they receive additional choices in a certain product market. Ultimately, additional choice generally helps to mitigate a firm's ability to exercise market power and opens up consumers to welfare-enhancing options that were not previously available. This case can be applied to retail services at the airport: while consumers had the opportunity to purchase certain products before boarding

(such as meals, books, and blankets), consumers now have the opportunity to obtain a different product quality and level of convenience by buying on board. Additionally, competition from airlines will put further pressure on airport retailers to offer consumers with competitive prices.

Interviewees reiterated that they believe the a-la-carte model is beneficial in providing consumers with additional options and ability to customize their trip. As one interviewee said, “It’s kind of a win-win for customers and for the companies because it lets people really customize their experience.” She also said that while airline customers may be unaccustomed to the idea of customization and benefits from additional choice, some of those same people are accustomed to it in other settings: “You know people go on Chipotle.com and they spend 15 minutes customizing their \$5 burrito.”

It should be remembered, however, that fast casual restaurants offering a variety of toppings on one’s food often offer them for free. Consumers, of course, would be even better off if they could choose additional options to customize their travel plans at no additional cost. Due to factors discussed earlier, however, offering certain ancillary products and services for free is not a revenue-maximizing strategy for many airlines. Thus, in the case of the airline industry, consumer benefits from expanded choices are only possible with those options coming at an added fee. In the alternative scenario, which represents the way airlines previously operated, passengers get add-ons for free, but their set of choices is much more limited.

Early unbundling efforts and current a-la-carte product development initiatives, many of which are introduced experimentally by airlines, may drive changes in the air travel experience that have the potential to further expand consumer choice and generate consumer welfare benefits. In discussing the future of ancillary revenues, many interviewees spoke of the potential for airlines to expand the products and services they are able to sell onboard the aircraft. In such

a way, airlines may move closer to the type of model employed by a cruise ship operator or a casino—with large portions of ancillary revenue generated onboard the ship or inside the casino, these firms have an incentive to offer low prices in order to fill rooms in order to generate revenues from guests' other spending. For example, one interviewee spoke about selling additional items to customers such as coupon books for destinations.

There are a number of reasons why the majority of carriers may not offer this sort of model currently. For example, they may not have the expertise or technology currently necessary to begin to sell some seats at cheap prices in order to generate onboard revenues. From an entrepreneurial standpoint, there may be some uncertainty associated with the profitability of providing many additional add-ons. Another potential limit pertains to the airline's brand. The introduction of a new product also is tied to where the carrier wishes to position itself in relation to its customers in a Hotelling-type location space. Perhaps offering a multitude of additional travel add-ons may make network airlines and high-service LCCs appear "cheap," which may move carriers away from their target group of consumers. In doing so, these airlines may face profit losses other airlines that offer a number of associated travel products and a lower cost of travel. Furthermore, entrepreneurs in the airline may simply be unsure of the benefits of offering additional onboard services. Thus far, the industry has not moved far beyond *Sky Mall* catalogs in terms of onboard retail sales. Perhaps as airlines gain more experience from selling onboard amenities, entrepreneurs will become aware to new profitable opportunities for cabin sales.

If they do become more prevalent, new a-la-carte product opportunities have the potentially to dramatically change the way airlines price travel. One interviewee said: "Over time, I think you'll see the desire to fill seats because if you get people on the plane, you can sell to them, whereas before, historically, it's been sort of the opposite. You gained by not having

[certain customers] because there's all these costs; if I put a guy on the plane, I've got to give him a turkey sandwich, I've got to do this, I've got to do that, I've got to take his bag. . . . This incentive to fill a plane could lead airlines offer last-minute empty seats at highly discounted prices, in a similar way that a Las Vegas hotel may attract a gambler with a low last-minute room price. Such a pricing strategy would be fundamentally different from the current arrangement, in which last-minute seats often carry a significant premium.

Even standby boarding, which is used to fill up the very last seats on a plane, carries additional charges for most customers. Just as last-minute fares carry a premium from time-sensitive customers who are willing to pay to travel on short notice, standby travel commands a premium because it gives time-sensitive customers the opportunity to arrive at their destinations earlier. It should be noted, nonetheless, that certain airlines occasionally offer last-minute airfares through their websites or through third-party travel providers. One potential reason why this strategy has not been expanded yet, however, is that these deals may incentivize flexible budget travelers to always wait until the last minute to gain fire-sale deals. Such problem is solved in the hotel industry by websites such as Hotwire.com, which sells last-minute rooms but does not disclose the hotel's identity until after booking. Currently, a number of websites follow this strategy for airline travel, mostly for intercontinental flights. As airlines further develop their ancillary products, an increased number of tickets may be sold in such a manner.

These lower prices have the potential to confer additional benefits to consumers who do not utilize ancillary products and services by lowering the fare even further. Additionally, the incentive to continue to expand the airline's set of product offerings expands consumer choices, conferring further benefits. While one interviewee said that the "sky is the limit" when it comes to unbundling, it is important to remember an airline's ability to sell may ultimately be

constrained by aircraft weight limitations and cost. While an airline may want to offer an onboard gift shop for example, the added weight and space on the aircraft may drive prices to unsustainable levels.

Aircraft space and weight restrictions may also mean that some ancillary products would be unavailable to customers when they want to purchase them. While, as discussed in chapter 3, interviewees said the airline focuses on the ability to deliver on a product, in some cases, unpredictable demand may lead to scarcity onboard the aircraft. For example, some customers may not be able to purchase their desired food selections if the aircraft is not loaded with ample provisions. Ultimately, if customers experience repeated unpredictability in being able to obtain a certain ancillary product or service, their welfare gains from additional choice may be diminished.

Conclusion

This chapter has outlined a number of the welfare considerations that affect all consumers travelling in an airline market marked by a-la-carte pricing. Perhaps most significantly, there appears to be limited evidence that fees may place downward pressure on base fares. Future research is needed to determine the presence and nature of any fee-fare effect, controlling for other factors. Such research is important in determining the changes in consumer welfare for consumers who do and do not utilize ancillary services. So long as fees put negative pressure on fares, a-la-carte pricing promotes a more efficient arrangement by removing a sort of subsidy that customers who did not utilize ancillary services had to pay. Additionally, future research should also further ascertain the effects of improved product quality and additional consumer choice arising from a-la-carte pricing.

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Chapter 5: The Policy Implications of the Ancillary Revenue Movement

With many airlines radically changing their pricing structures for ancillary services over the past decade, passengers have not been the only ones to take note of the changes. On a number of occasions, government officials have denounced airline fees and discussed potential regulatory options (Maynard 2009). Perhaps the strongest language came in April 2010, when Spirit Airlines announced that it would begin charging customers to bring certain carry-on luggage into the cabin (fees were only exempted for baggage that could fit underneath the passenger's seat). In response, Department of Transportation (DOT) Secretary Ray LaHood said that the department would be considering rulemaking action to prevent Spirit from enacting the fee: "I think it's a bit outrageous that an airline is going to charge someone to carry on a bag and put it in the overhead. And I've told our people to try and figure out a way to mitigate that. I think it's ridiculous" (Elliott 2010).

Contrary to the notion that a-la-carte pricing results in some sort of market failure, the analysis in this paper suggests that this type of pricing emerged in part due to an empty core market failure and that the arrangement is likely welfare enhancing. Thus, any government intervention that restricts carriers' ability to charge certain ancillary fees for costly services that are highly valued by consumers, such as baggage check, threatens to move the industry away from an arrangement aimed at reaching equilibrium. The onus is ultimately on government to prove that it would be correcting some sort of market failure, preserving competition, or correcting an efficiency-stifling externality.

While there has been no formal, publicly available government analysis of the potential harms of airlines' a-la-carte pricing policies, policy makers have implicitly proposed three primary rationales for why government ought to regulate or legislate a-la-carte pricing in the

airline industry. First, they claim that certain charges are anti-consumer because they force customers to pay for a service that ought to be included in a ticket. Second, airlines are evading taxes by increasing revenue sources from ancillary fees, which are not subject to the same taxes that apply to base fare revenues. Third, airlines are underproviding information about fees, leading customers to make different choices than they would if they were fully informed. This chapter will analyze the merits behind each of these main rationales for government intervention, as well as the merits of the policy options that would likely be used to correct each problem.

The Proper Role of Government and Incentives for Regulation

Before discussing the merits of each of the rationales for regulatory or legislative intervention, it is worth providing some brief discussion what role government ought to have in fostering market efficiency and protecting consumers in the airline industry. Economists generally argue that government intervention in a market should be predicated on providing some sort of public good or resolving a market failure (Arrow 1969). In pursuing this end, regulation serves to prevent deadweight losses from excessive market power, mitigate economic inefficiency arising from externality effects, and provide public goods that are demanded by consumers but underprovided (or unprovided) by producers.

Despite the theoretical ideal for government as a welfare-enhancing entity whose regulation is aimed at correcting problems in the economy, there are a number of competing explanations for how regulation operates and what incentives may drive a certain regulatory structure. Stigler (1971) argued that private firms expend resources to capture the regulatory system in order to obtain regulations that would harm competitors or bolster their own position in a market. Other scholars point to different rationales for government rules. For example,

Niskanen (1968) points to the budget-maximizing incentive that regulatory agencies face in making decisions about regulation. Because of their desire to expand the scope and budget of their agency, regulators may construct regulation or programs that do not maximize net benefits for their sponsors (voters or interest groups).

Perhaps most relevant to this paper is Posner's (1971) theory that regulation has the effects of compelling a firm to provide certain customers with a subsidized product or service at the expense of other customers. As such, regulation often imposes a *de facto* tax on certain users that is transferred to other users of a certain service; this tax allows for provision of some service that would otherwise be unprovided or underprovided in the market. Posner mentions a number of potential examples, such as natural gas producers being forced to sell at prices that do not include scarcity rents, thus benefiting current consumers as the expense of future customers (23). As will be discussed further below, regulation of certain a-la-carte products and services may have this effect of taxing certain users for the benefit of others.

One additional distinction ought to be made between regulation and legislation. While DOT and the Federal Aviation Administration are primarily tasked with regulating airlines' practices, these agencies ultimately receive their mandates from Congress. Various members of Congress have been vocal about their intention to investigate and fight fees; Representative James L. Oberstar, chairman of the House Committee on Transportation and Infrastructure has been one of the main supporters of an investigation into the trend, commissioning a Government Accountability Office report on the subject. Additionally, Senator Charles Schumer, along with other lawmakers, introduced legislation in the senate to ban airlines from charging fees for carry-on luggage (Heflin 2010). Congress thus could issue laws curtailing airlines' ability to charge fees, laws that would take precedence over an agency's regulation.

It should be mentioned that Congress need not necessarily legislate in order to motivate action on airlines' pricing policies. As outlined by Weingast and Moran (1985), the legislature's control over bureaucratic agencies' budget, roles, and functioning can be leveraged in order to motivate agency action. For example, if a given member of Congress has significant influence in the appropriations process over DOT and wishes to curtail ancillary fees, she could compel that agency to undertake action that would achieve that end. Thus, politicians' incentives to curtail airline bag fees could result in rulemaking by bureaucrats. Such rulemaking would likely reign in fees in a way that meets the objectives of the legislative majority or those Members of Congress who influence and control various committees.

Consumer Harm/Travel Necessity Rationale for Regulation

Sen. Robert Menendez, a co-author of the bill that intends to prevent airlines from charging consumers to put carry-on bags in the overhead bin, said during a CNN interview in April 2010: "It seems that air carriers are crossing a line that will end [by] pricing middle-class families right out of being able to fly, and that's not right. While airlines have a right to set prices, families should have the right to bring a change of clothes with them and not be gouged for it" (CNN 2010, para. 8). Additionally, a request from representatives Oberstar and Jerry Costello directing GAO to commission a report on a-la-carte pricing refers to ancillary fees as potentially "excessive" (House Committee on Transportation and Infrastructure 2009). These comments indicate one of the primary rationales behind government action: consumers are being unfairly charged for products and services that are travel necessities, and such products should be included within the price of a ticket.

Necessity is ultimately a term that does not apply to all customers for all relevant fees. Even in the case of overhead bin fees, there are still customers who pack sufficiently few items such that they can put them under the front seat for no additional cost. In case of checked-baggage fees only, the fact that interviewees indicated that the amount of checked luggage declined after the fee was imposed indicates that checking a bag is not a necessity. Necessity implies that consumers' demand is perfectly inelastic, meaning that they would pay any price for a service. This concept is more of an ideal in economic theory than a reality.

Even under the assumption that all ancillary services are indeed travel necessities, it should be noted that government regulation does not force the bundling of certain necessary components with their partner goods in a number of other industries. For example, a computer printer is unable to print pages without two components: paper and ink cartridges; these components can roughly be categorized as necessities for using the product. Nonetheless, retailers sell a number of printer models without these two necessary inputs, and government action does not compel firms to offer bundles of printers, ink cartridges, and paper to consumers.

It is also noteworthy that some retail printers are sold with ink cartridges, just as some airlines have held out from charging their consumers certain fees. If such items were really necessities, then one would expect a shift of all customers to those firms that offer bundled options, thus forcing other firms to provide this more favorable arrangement. This analysis, of course, only applies to a competitive market; in monopoly markets there may be the potential for customers to receive their less-preferred arrangements. A dearth of industry profits would indicate that pure monopoly or even high degrees of industry-wide market power is not a serious problem for the airlines.

Thus the travel necessity argument is arbitrary, ignores market forces, and does not explain why government has allowed other industries to unbundle their services. Unlike the case of some other regulations requiring bundling for safety or other reasons, such as requiring that auto manufacturers provide their cars with seat belts, there has been no safety argument for requiring checked-bag fee restrictions. There have also been no serious arguments that some sort of collusion is driving these fee increases.

Nonetheless, the clearest policy option to deal with such a scenario involves forcing airlines to include certain ancillary products and services within the price of a ticket. This could include requiring carriers to include a first- and second-bag option for free, along with a list of services and products that airlines have not yet unbundled on a large scale (such as lavatory use, free carry-on luggage, etc.). Given the fact that this regulatory option would largely be driven by consumer pressure to force airlines to provide customers with a perceived “free” service, it is likely to be based on popular expectations about what ought to be included with an airplane ticket. It is unclear whether such a definition would include items such as meals on domestic flights, which were unbundled in the early 2000s.

An option requiring inclusion of various ancillary products/services would still give airlines control over base fares. Following up on the earlier discussion, if there is in fact a negative relationship between ancillary fees and base fares, forcing inclusion of fees in the base fare would result in an increase in airfares for all consumers. As a result, the industry would be returned to an original condition with lower total welfare. As a corollary, the effective subsidy that existed, whereby certain customers who didn’t use ancillary services paid the same as those who did, would be restored. In a sense, such a government policy may actually harm some of the consumers that the government would aim to help: occasional leisure ticket travelers and those

who do not check luggage would end up paying higher fares to accommodate those passengers who fly more often and check their luggage.

This particular regulatory structure thus has the effects outlined by Posner (1971): certain customers are effectively taxed in order to provide other customers with a service that would otherwise not be provided for free by the market. This explanation underscores the potential policy importance of knowing the statistical connection between fees and fares; Posner even suggests that government should conduct an analysis internal cross subsidies arising from regulation for public record (47). Even without definitive information, however, the fact that an a-la-carte pricing model is prevailing in absence of price regulation indicates that this arrangement may be efficient given market conditions.

Nonetheless, efficiency does not necessarily equate with consumers being better off; as discussed in chapter 4, airlines' pricing arrangements are likely to increase total welfare, but reduce consumer welfare by requiring consumers who use ancillary services to pay for the ones that they value. Ultimately, this may be one of the fundamental drivers of legislative action. Consumers who previously utilized services such as free bag check and bulkhead seat assignment now are required to pay for them, rather than having their costs dispersed among all customers. It may ultimately be this group that is exerting pressure on members of Congress to restrict bag fees. Though there is no hard evidence to support this claim, some public choice theory predicts that members of Congress will be responsive to the desires of the median voter in her district.

Having experienced the benefits of an ancillary revenue model, airlines being forced to provide a certain set bundle of services may attempt to offer premium, upgraded versions of a product, in a similar manner to different cabin class offerings. Assuming that government does

not mandate some sort of quality standard, airlines may be able to drive some ancillary revenue from those consumers wishing to pay a premium for a higher-quality product. Of course, such an arrangement will be a second-best alternative because airlines will still need to provide a free service to customers who do not value the service enough to pay market rates for it. Furthermore certain ancillary services, such as baggage check, may be unlikely to sustain a “premium” option.

As an option similar to enforcing some sort of standard, government can also set a limit on the level of ancillary fees that an airline can charge. In many ways, a requirement setting a menu of products and services that must be provided with a ticket is a sort of special case that limits ancillary charges at zero. Working backwards from the analysis above, a limit may have similar, albeit less severe effects on total welfare. For example, fares of base tickets may rise, albeit less than would be the case if a-la-carte pricing were prohibited. Additionally, absent market failure, a fee limit would represent a sub-optimal pricing arrangement, though closer to efficiency than a requirement that certain products/services be included as part of a ticket. Furthermore, there are difficulties associated with deciding whether the optimal limit would be set, based on an evaluation of market forces and inflation, and such difficulties could place costs on regulatory agencies.

Tax Evasion Rationale

Another explicit motivation for regulation involves differences in taxation on the base fares and fees that an airline charges. In a September 2009 ruling, the Internal Revenue Service found that aviation taxes do not apply to revenue from bag fees, along with revenue from meals and certain other “non-transportation” services (Department of the Treasury 2009, 7). As airlines begin to collect significant portions of their revenues from a-la-carte fees and ancillary services,

they are lowering their effective tax rate by including revenues that cannot be subject to aviation taxes and fees. This effective loss in tax revenues to the government has gotten explicit attention from some lawmakers; as Representative Oberstar said, “Maybe we have to teach [airlines] a lesson, and make them pay their fair share” (Maynard 2009).

From a theoretical perspective, a revenue-maximizing government faces the problem of setting the tax structure so as to maximize returns from taxes; tax rates above or below an optimal point will yield sub-optimal revenues.¹⁵ While the effective tax rate on airfare increased sharply after September 11th, this rise has occurred concurrently to a drop in base fares. As a result, the constant dollar value of total taxes and fees collected on the average ticket has remained steady near the \$50 level since the early 1990s (Karlsson 2010, at 12). This stability indicates that policy makers levying taxes may have found a tax structure that they feel generates an optimal amount of revenue. Of course, there may be other factors, such as interest group pressure or some sort of regulatory inertia, that are contributing to this stable level.

Despite this stability, however, a-la-carte pricing, especially if fees put negative pressure on fares, allow airlines to partially avoid the government’s tax structure. With airlines lowering the effective tax rate through the increasing use of fees, a revenue-maximizing government may seek to use regulation or legislation to recoup additional revenue lost through different pricing schemes. A *New York Times* article pointed out the potential significant impact of these taxes: from January through November 2009, extending the 7.5 percent excise fare tax to fees would have generated \$225 million in additional tax revenue, provided that airlines decided to collect the same amount of ancillary revenue with the taxes in place (Maynard 2009).

¹⁵ This is the notion of the Laffer curve, credited to Arthur Laffer but pioneered by earlier economists such as Keynes. See Laffer 2004.

If ancillary revenues did become taxed, however, it is unclear how much the airlines would change their behavior in collecting ancillary fees when it comes to the level of the fees being charged and the number of fees. When it comes to the level of the fees, one must consider the relative elasticities of supply and demand for ancillary products. It should be noted that various researchers have estimated a range of elasticities of demand for air travel based on stage length, cabin class, and other factors (*See Gillen, et al. 2008*). These ranges of estimates may be useful in extrapolating the elasticity of demand for certain ancillary services in future studies.

A neoclassical economic analysis of taxes largely predicts that so long as consumer demand is not perfectly elastic, some of an imposed tax will be passed along to consumers. Unfortunately, there is no systematic measurement of the slope of consumers' demand curve for air travel's associated services. Given the fact, however, that the number of bags being checked has fallen since checked bag fees were introduced, it is reasonable to assume that demand is not perfectly elastic. Thus, if government extended taxes to ancillary fees, it is likely that some of those taxes would be passed on to consumers, as they currently are in the case of airline tickets.

In dealing with the tax effects on the number of products/services carrying an ancillary fee, one must look to whether a tax evasion strategy actually plays into the airline's decision. If airlines are indeed using a-la-carte pricing as a tax evasion scheme, and for no other reason, the imposition of taxes would remove a sort of arbitrage opportunity and incentivize them to return to a bundling strategy. If, however, tax evasion does not play any role in a-la-carte pricing, then they would keep their fees in place due to the added welfare gains and simply reap less revenue than they did under untaxed a-la-carte pricing. There is also a chance that the rationale for a-la-carte pricing includes element of both tax evasion and economic efficiency; in this case, airlines would remove some of their ancillary fees, but not all of them.

Unsurprisingly, no airlines have claimed to use ancillary revenue to evade taxes. An interviewee commenting on the matter also said that avoiding taxes was not a principal rationale for a-la-carte pricing efforts: “I don’t think that when people started doing these things that it had really occurred to us. Maybe some, but it was not a driver.” Despite this interviewee’s comment, air carriers aware of the tax structure would nonetheless face strong incentives to shift revenue to untaxed ancillary earning. As outlined by Maynard (2009), mentioned above, the revenue gains to an airline from not paying taxes may be significant. Because of the sensitive nature of this question, further research is needed to determine the true nature of airlines’ intentions vis-à-vis tax evasion.

Ultimately, determining the merits and effects of a tax on ancillary fees depends on currently unobserved characteristics, such as elasticities and the motivation for tax evasion. What can be said is that, under the current arrangement and ignoring distribution effects, customers who utilize a-la-carte products and airlines are better off than they would be under a system that taxes ancillary products. These consumers also bear less of the tax than they would under a bundled pricing arrangement if there is a negative fee-fare connection. Assuming, however, that taxes on ancillary products are raised to the same level as taxes on the fare, consumers who use ancillary products actually bear additional tax burden than they would in a bundled arrangement. Assuming a negative fee-fare connection and assuming that airlines pass fee and fare taxes onto the consumers at the same rate, a customer utilizing an a-la-carte service in an unbundling scenario pays a higher portion of the tax than she did in the bundled scenario: because she is paying a higher fare and fee than the previous bundled fare (which was subject to a cross subsidy), she thus pays a larger amount of taxes.

Thus, government applying a tax to ancillary fees has the potential to increase the costs of a number of consumers who do not pay for ancillary services. While this is the case for consumers, a tax rule is likely to be less burdensome than a ban on certain ancillary fees because it continues to allow airlines to utilize a total welfare-enhancing strategy that is still, as discussed by this paper, more efficient than the bundled pricing arrangement. The main difference is that airlines and customers will pay more taxes under this arrangement than they would have had to without a regulation.

The merits of this approach are affected by one other factor: the extent to which the collected taxes are redistributed to airline customers in the form of value-added goods or services that would be unprovided or underprovided by firms. As discussed by a number of scholars and industry insiders, however, there are indications that airline customers' taxes are not currently commensurate with the level of services they receive. Meade (2000) points out that the ticket tax system does not accurately allocate costs based on a passenger's marginal use of the air transportation system, largely due to a lack of accounting for the marginal costs imposed by aircraft of certain size and inability to assess other FAA costs (215). Meade brings up other distortions that exist, such as the fact that different customers paying for the same seat face different tax amounts (214). Button (2005) points out a claim that was central to an aviation taxation debate in 2006—general aviation, mostly utilized by high-income travelers, extensively utilizes aviation infrastructure and creates congestion without paying a commensurate amount compared to airlines (19).

Also, as discussed above, those utilizing a-la-carte products also end up paying an increased share of the tax burden in an unbundled scenario (with taxes on fees) relative to a bundled scenario. These customers are likely to receive the same level of tax-funded service in

each scenario, meaning that they see less return for their taxes when a-la-carte pricing is in effect. Given these inequities, there is doubt as to whether consumers who are taxed on the fees they pay would see a welfare increase in proportion to their tax contribution.

Lack of Consumer Information Rationale

A third common claim by a number of public figures is that airlines are not providing sufficient information about fees to customers, who are being duped into choosing airlines or making decisions that they otherwise would not have chosen under perfect information. Comments by DOT Secretary LaHood in the aforementioned interview seem to support this rationale for regulation: “This idea of trying to deceive people with some little amount of print that nobody can read, or somewhere tucked away, I don’t agree with that” (Elliott 2010).

As discussed in chapter 4, however, customers do not seem to be expressing a substantially higher level of complaints that may be associated with some sort of deception. In the end, perhaps consumers simply become upset when they arrive at the airport and are faced with paying an additional fee before boarding the aircraft. While customers would face fees earlier (and perhaps be more aware to them) if they were charged during the booking process, doing so is often unfeasible because customers may not know about travel details, such as how much luggage they plan to pack, until closer to the trip date. Furthermore, as mentioned in chapter 2, pricing at the time of travel is a price differentiation method used to attract customers’ potential higher willingness to pay while travelling.

Despite the fact that customers do not pay fees until they are close to the trip date, interview data, as well as actual experience with airlines’ websites, indicate that information may be adequately provided to consumers. A number of interviewees emphasized that providing

consumers with information about fees and charges was an important aspect of the airline's service brand. As one interviewee said, "We try to make it so that when an offer is presented to the customer they clearly understand the benefits and they have a clear way to say 'yes' or 'no.'" Other interviewees pointed out that given Southwest Airlines' aggressive marketing about other air carriers' bag fees and a-la-carte charges, consumers have been largely primed to expect a-la-carte pricing.

Additionally, during the booking process on a number of airline websites, consumers are informed that additional fees may apply; these are usually associated by links to a description of additional prices for ancillary products and services. Figure 5.1 below shows the author's own ratings of "poor," "fair," and "good" for how several airlines disclose ancillary fee information on their websites, for whether baggage fee information is disclosed during booking, and whether food-for-purchase fees (if applicable) are clearly disclosed during booking (criteria for ratings described in footnote).

Figure 5.1: Ancillary Fee Disclosure on Airline Websites¹⁶

	American Airlines	Continental Airlines	Delta Airlines	United Airlines	US Airways	AirTran Airways	JetBlue Airways	Spirit Airlines
Comprehensive fee information available from home page?	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair
Baggage fee information provided during booking?	Fair	Fair	Good	Good	Fair	Fair	Good	Poor
Food purchase information provided during booking?	Good	N/A	Fair	Fair	Fair	Poor	N/A	Poor

As seen in figure 5.1, all airlines provide either fair or good disclosure of baggage fees during the booking process except Spirit Airlines, which nonetheless offers information buried in a long paragraph of text during booking. All airlines also provide information on other ancillary product fees, though customers must visit a number of different pages on the site to obtain all information. For the most part, airlines providing food-for-purchase provide some level of disclosure to customers that fees will apply once onboard; AirTran Airways and Spirit Airlines were the only ones to poorly disclose such information.

This survey of airline websites shows that the carriers are providing with information about bag fees (arguably the one that most affects consumers) during the booking process, as well as providing consumers with other fee information. Far from being relegated to fine print, this information often appears as a highlighted link appearing when the passenger selects the

¹⁶ Source: airlines' websites, accessed April 29, 2010. For the first category, poor indicates no ability to find fee information from the website, fair indicates information is available, but requires visiting multiple pages, good indicates existence of a single page with comprehensive fee information. For the second category, poor indicates no information disclosed or information buried in long paragraph of text, fair means disclosure text or link is highlighted but finding it requires searching, good indicates a link to bag fee information clearly visible to customers. For the third category, poor means no food-for-purchase information given, fair means the customer is notified that food will be available for purchase but pricing information must be found elsewhere, good means notification and food pricing is clearly available.

flight(s) she wishes to purchase. In addition, bag fees and charges have come under increased focus in the media, making it unlikely that customers that regularly follow the news or use the Internet would be oblivious to potential fees and would not check with an airline about relevant charges prior to booking. While some first-time or infrequent airline customers may be taken by surprise by fees, claims that there is broad misinformation seem largely unjustified.

Nonetheless, a potential government law or rule may require all airlines to list all potential consumer charges when customers book a ticket, and perhaps during other times during the travel process. A rule may also require airlines to use some formatting standard to ensure that this information is readily visible to consumers. As discussed further below, this sort of requirement would increase the costs of the relevant regulatory agency in charge of determining and enforcing this requirement.

In addition to being largely unnecessary, such a requirement may lead to questions about the desired level of information provided to consumers. For example, should an airline have to disclose the price of every single food and beverage item available for purchase onboard, or would it be sufficient to note that food and certain beverages are only available for purchase? Arbitrary lines of disclosure may ultimately lead to inequity between information requirements for airlines and for other travel industries (for example, hotels and rental cars).

Nonetheless, from total welfare perspective, some sort of information requirement would be the least intrusive regulatory option, with perhaps some gain in welfare if the costs of posting the information are low. *Ceteris paribus*, providing consumers with more information helps to foster efficient decision-making among market participants. While many travelers may be familiar with the ancillary fee structure that many airlines have adopted in recent years, there is always potential that some first-time flyers who have little access to media outlets will be

unaware of certain airline pricing policies. Nonetheless, the fact that this group is likely to be very small means there are few benefits.

Once again, so long as the costs are sufficiently low, information disclosure should not significantly add to an airline's costs. Nonetheless, if requirements involve mandatory disclosure in television advertisements, or other costly means of disclosure, the benefits to consumers may outweigh the onerous costs. Furthermore, there may be difficulty dealing with any requirement that mandates disclosure by third-party travel providers, each of whom has incentives to provide its customers with a standardized menu of booking fees. Additionally, if regulations required booking agents who communicate with customers via telephone to disclose fees, they would inevitably end up spending additional time informing consumers, requiring airlines to pay extra to staff these functions.

In addition to imposing menu costs on firms, disclosure requirements also impose costs on government agencies to determine, monitor, and enforce the requirements. For example, the government currently requires that airlines notify customers when there is a change in aircraft type or when a different airline is carrying its passengers on a flight through a codesharing agreement. For these requirements, the Department of Transportation is responsible for analyzing the costs and benefits of the program, which involves department time and resources for determining program viability. Costs to government could potentially be exacerbated if a regulatory agency decides to monitor whether disclosure is proceeding as required. Enforcement actions against a carrier in violation also have the potential to channel time and resources to enforcing a rule that has few consumer benefits. These and other government costs must be added to the private burdens of an information disclosure requirement.

While an information disclosure requirement may be beneficial for consumers and promote a more efficient market, a revenue-maximizing government may be less concerned about the state of consumer education than a decline in its own revenue or the demand of voters in a congressional member's home district. Overall, reducing consumers' information costs does not substantially affect the government's revenue position when it comes to foregone taxes from ancillary fees. Furthermore, constituents driving their members of Congress to action are likely to be more cognizant of issues related to a-la-carte pricing and more inclined to check with an airline to see what fees they will potentially face onboard. Any constituent pressure, therefore, is less likely to be aimed at improving information and more likely aimed at removing changes that some passengers may see as excessive or unwarranted. Thus, overall, an information disclosure requirement is not likely to remain a stand-alone option for regulating baggage fees; if such a law or regulation were enacted, it would likely be part of some broader initiative involving some of the options listed above.

What Should Be Done?

In addition to the options above, government has the option to not regulate airlines collecting ancillary revenues beyond current requirements and to maintain the industry status quo. This would keep airlines free to determine their own pricing schemes and let market forces influence how consumers are informed by airlines about such fees and charges. While this would certainly be the easiest option for the government to implement, since it does not require any action, it is nonetheless the least likely to be politically feasible due to the incentives facing the government, as discussed above.

One important consideration involves preserving freedom for companies in a competitive market to decide appropriate pricing that will maximize revenue, based on consumer demand and competition from other firms. The federal government has made it clear that airlines provide a vital service to the country, as evidenced by a \$15 billion airline bailout authorized by Congress following the September 11th attacks (Bailey 2002, 18). Despite its apparent desire for a robust system that provides access to many parts of the country at reasonable prices, the federal government levies relatively high taxes (relative to other products and services in the economy) of nearly 16 percent of the ticket price (MIT Ticket Tax Project 2010). Airline profit margins have been historically slim since deregulation, with fierce competition in a number of markets.

If anything, the growth of a-la-carte pricing has allowed airlines to garner additional revenues in an attempt to improve profitability during adverse economic conditions. Interventions beyond some sort of information requirement have the potential to further harm revenues and make it more difficult for airlines to cultivate a robust nationwide air transportation network. So long as the theory outlined in this paper is correct and a-la-carte pricing represents a welfare gain for the airline industry, government intervention could be stifle economic efficiency and further handicap the airlines' ability to remain commercially viable.

Furthermore, while consumer welfare may have declined from ancillary revenue initiatives, this decline is associated with a more equitable pricing policy, whereby customers who value a service must pay to use it and those who do not value it are not forced into subsidizing it for the rest of their customers. Given that Southwest Airlines does not charge first or second checked bag fees and airlines have varying fee structures, the average customer is, on the margin, clearly willing to accept such a pricing arrangement. If not, she would take her

business to a no-fee carrier, providing other airlines with an incentive to re-bundle these services with the price of the ticket.

Additionally, other travel-related industries that exhibit similar types of pricing arrangements are able to exist free from government regulation about what ought to be included in the product definition. Even in the case that government allows airlines to continue to unbundle ancillary products and services but imposes additional taxes on them, there is no clear evidence that such an arrangement would make for more equitable sharing of tax burdens by air travelers. Before government decides to impose additional taxes, it should fix the aforementioned inequities in the system and provide some showing that taxes will be used to fund welfare-enhancing services that would not otherwise be provided by the private sector.

Viewed from this perspective, the government's ideal action should be as little intervention in airlines' a-la-carte pricing realm as possible. While an information requirement is the least burdensome option, even this alternative may not be necessary given widespread media attention to fares and fees and current consumer information policies and may even be welfare reducing on net. Nonetheless, it is evident that additional taxes on ancillary fees and limits on these fees have the potential to disrupt a pricing arrangement that market participants have deemed acceptable. Absent some showing that airlines have used market power or collusion to achieve these policies, restrictive regulations would only hurt industry revenues and many consumers worse off by leading to higher fares, less choice, and lower product quality.

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Conclusions

This paper has analyzed various aspects of airlines' efforts to unbundle parts of their product as well as introduce new a-la-carte products. In addition to discussing the drivers and economic theory behind this trend, the paper has analyzed some of the primary effects of a-la-carte pricing on airlines and customers. Finally, the paper has analyzed several policy alternatives that government may be considering, as policy makers contemplate regulating a-la-carte fees in the airline industry.

The unique onboard amenities that air travelers receive have a long history, going back to the airline industry's period of regulation. Many of these services remained, as air carriers began to develop the next generations of their business models based on revenue management techniques, improved network planning, and advanced forecasting methods. It was not until revenue pressure in the 2000s, exacerbated by an excess capacity problem, forced airlines to find new sources of revenue. While entrepreneurs in the airline industry had been increasing their awareness of the potential gains from a-la-carte pricing models, it was the shocks of the 2000s that finally encouraged them to make the shift.

From an economic perspective, airlines' adoption of a two-part pricing strategy allows the airline to better differentiate among its heterogeneous customer base. Ultimately, airlines are able to extract additional consumer surplus from passengers who value ancillary services enough to pay for them. In doing so, however, they have potentially ended a subsidy that other consumers who did not use such ancillary products and services paid to their fellow consumers. With indications that fees put downward pressure on base fares, customers may now have access to lower base fares, should they decide to pack light, carry their bags into the cabin, and eat their meals at home.

Far from being a mechanical solution to an economic optimization problem, however, airlines are constantly exploring and evaluating when to introduce new a-la-carte products. Such decisions are highly contingent upon the airline's choice of where to position its brand, and whether it can deliver new products to the consumer. This process may generate dynamic benefits for consumers in the forms of improved product quality and potential changes to the airline business model. As airlines develop the a-la-carte model further, there is a chance that airlines may end up emulating a cruise ship or casino that lures last-minute customers in with extremely low prices only to recoup ancillary revenues from them. This model would be good for consumers by giving them additional options for low base fare travel.

Given the fact that airlines have been able to capture many consumers' welfare and that ancillary revenues are largely untaxed, it is unsurprising that politicians and policy makers have targeted a-la-carte pricing in the airline industry as ripe for regulation. Nonetheless, most of Washington's options for regulating the airlines would likely diminish total welfare in the airline industry and only handicap a new source of revenue that has helped airlines overcome adverse economic conditions and an excess capacity problem. Regardless of the intents of government, most policies are likely to do more harm than good.

This paper is an initial economic treatment of airline ancillary revenues, and this subject is ripe for future research. In particular, new work in the area ought to target the specific role that uncertainty and a potential empty core problem had in determining the timing of the ancillary revenue movement. Additionally, econometric studies ought to explore whether a-la-carte pricing has, *ceteris paribus*, raised airline revenues and whether the introduction of fees has a statistically significant negative correlation with base fares. Analysis of these issues would provide some real-world evidence to the questions dealing with producer and consumer welfare,

as well as elucidate additional nuance behind the potential effects of lawmaking or rulemaking aimed at ancillary revenues.

The realm of a-la-carte pricing is ultimately a dynamic process driven by human entrepreneurs who are constantly being made aware of new pricing and revenue opportunities. Perhaps the most intriguing aspect of ancillary revenues in the airline industry deals with the innovations that have yet to be seen. Indeed, new innovations in airline product offerings have the potentially to further change the airline industry, and will provide numerous opportunities for future research.

Perhaps what makes the issue so ripe for study is this fact that the ancillary revenue movement represents a major change for such a vibrant and important industry. One interviewee put the issue in perspective best: “Part of it too is that we actually want to change the model. This airline industry is fundamentally broken. I think we pay higher taxes than any other industry, including tobacco and alcohol, and that essentially you need to start getting to a place where not everything is tied to the base fare and that customers aren’t subsidizing each other for services that they don’t value.” With airlines having taken one more step to “fix” the industry, it will be interesting to see what new changes and developments are on the horizon.