

Rapid Communication and Price Fixing: The Airline Tariff Publishing Company Case

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A firm announces a price increase and shortly thereafter its competitor announces its own increase to the same price level. Is that price fixing? Most antitrust economists and lawyers would say no. What if the announcements are made and changed rapidly? What if each firm makes many announcements before they settle down at identical prices? Finally, what if the prices being announced are to take effect at some future date so that no sales actually take place at these prices while the announcements are being made? This is a gray area of the antitrust laws. While an agreement among competitors to fix prices is *per se* illegal, computer technology that permits rapid announcements and responses has blurred the meaning of “agreement” and has made it difficult for antitrust authorities to distinguish public announcements from conversations among competitors.

These were some of the issues that were raised in the U.S. Department of Justice's investigation of the major U.S. airlines and the Airline Tariff Publishing Company (ATPCO), which is owned by the airlines and disseminates price change information to airline and travel agent computer systems. The investigation began in 1991, and the resulting case was settled with a consent decree in March 1994. The case never went to trial and, therefore, it set no formal precedent. Still, the legal pleadings, negotiations, and the final consent decree indicate some of the difficult antitrust issues that are raised by rapid price announcements as well as the impact of new communication technologies on those issues.

The Airline Industry in the Early 1990s

From the time of airline deregulation in 1978 through the early 1990s, the airline industry was in a state of nearly constant upheaval. At the time of deregulation, the U.S. domestic jet air travel market included about 20 competitors ranging from small regional carriers to the largest national and international airlines. Immediately following deregulation, many startup airlines entered the domestic market. Concentration at both the national and the route level fell in the first five years following deregulation. Most of the startups were small regional airlines. Under the financial pressure of competition, few were ever able to turn a profit. By the mid-1980s, airlines were folding faster than new ones were entering, and many were disappearing through merger. A merger wave in the middle and late 1980s, along with more exits during that time, raised the Herfindahl index for domestic air travel from 854 at the beginning of 1985 to 1074 at the beginning of 1990.

¹ Severin Borenstein consulted for the U.S. Department of Justice in this matter. For helpful comments and discussions, I am grateful to Dennis Carlton, Rob Gertner, Rich Gilbert, John Kwoka, Carl Shapiro, and Larry White.

Two of the most important and unforeseen developments in the industry following deregulation were the airlines' moves to hub-and-spoke networks and their increased sophistication in pricing and marketing their products. The hub system created a natural area of dominance for a carrier. Since most cities do not have sufficient traffic to support hubs for two different carriers, a typical big-city airport is likely to be dominated by a single airline. From its hub, an airline would offer nonstop service to many or most of the country's other large cities and many small cities in the region of the hub. Such a network also lends itself naturally to offering change-of-plane service between airports for which the hub is a convenient intermediate stop. These routings could compete with nonstop service offered by a carrier that has a hub at one of the endpoint airports. For instance, while Northwest was the only carrier to offer nonstop service between its Detroit hub and Los Angeles, it had less than 60% of the traffic in that market, with the remaining traffic flowing over competing carriers' hubs: with Continental, changing planes in Denver; with American, changing planes in Chicago; with United, changing planes in Denver or Chicago; with Delta, changing planes in Salt Lake City.

The major carriers also became very sophisticated in marketing and pricing their products following deregulation. They developed customer loyalty plans that reinforced their dominance at their hubs. These included frequent flyer programs and travel agent commission override programs (TACOs). TACOs are effectively "frequent booker" programs for travel agents: agents are rewarded for directing a high proportion of their bookings to the airline. Airlines also offered corporate discount programs that rewarded a corporation for concentrating its air travel with just one airline. The debate about the efficiency versus market power enhancement properties of these programs is still active, but there is general agreement that these programs led to greater airport concentration.²

Believing that hubs delivered significant competitive advantages, and forecasting continued growth in the industry, the remaining carriers in the late 1980s invested heavily in new equipment. The world's largest producer of jet aircraft, Boeing, reported record sales, and the delivery lag on some aircraft grew to many years. Carriers continued to establish new hubs in ever smaller cities, including Dayton, Raleigh-Durham, and Kansas City. By early 1990, however, it was apparent that the industry had overinvested in aircraft capacity. Demand was not expanding as rapidly as expected and hubs at smaller airports were turning out frequently to result in more costs than benefits to the hub carrier. As the 1990-91 recession hit and the Gulf War reduced even domestic air travel demand, newspapers reported that fleets of commercial aircraft were being grounded and stored in the Mohave desert. Many carriers went into financial distress and a number entered chapter 11 bankruptcy proceedings: Eastern (1989), Continental (1989), Braniff (1989), Pan Am (1991), America West (1991), Midway (1991), and TWA (1992). As a whole, the industry reported record losses in 1990, 1991, and 1992.

Airline Pricing

² For a description of market power that might result from these loyalty plans and increasing hub concentration, see Borenstein (1992). For an alternative view, see Carlton and Bamberger (1997).

By the time the ATPCO investigation began in 1991, airlines had developed very sophisticated systems for setting fares, determining the number of seats available at each price, and disseminating this information to customers, travel agents, and other airlines. On a single route, such as Minneapolis-Atlanta, a carrier was likely to have more than a dozen different fares available at a time, and to have still more listed fares that were unavailable because no seats had been allocated to that fare category.

ATPCO is a central clearinghouse for distribution of fare change information. Each day airlines send to ATPCO information on new fares to be added, old fares to be removed, and existing fares to be changed. At least once a day, ATPCO produces a compilation of all industry fare change information and sends that computer file, which includes thousands of fare changes, to a list of recipients. The list includes, among others, all of the major airlines and all four of the computer reservation systems (CRSs) in the U.S. – Sabre, Apollo, Worldspan, and System One. Each CRS company operates a networks of computers that travel agents and airlines use to access flight, fare, and seat availability information on virtually any airline in the world. Thus, information sent to the CRS becomes available to consumers, travel agents, and all other airlines by the following morning.

To follow the ATPCO case, it is important to understand the information that is transmitted by ATPCO. Fare information that airlines submit to ATPCO includes a fare basis code (a “name” of the fare), the origin and destination airports, the price, first and last ticket dates, first and last travel dates, and any restrictions on the use of the fare (e.g., advance purchase, minimum stay, blackout dates, type of consumer who can buy it, such as clergy, or a specific routing or set of flights to which the fare applies). First and last ticket dates indicate when the carrier or a travel agent can sell tickets on the fare, while first and last travel dates indicate the range of dates on which travel can occur under the fare. By setting a future first ticket date on a new fare or setting a future last ticket date on an existing fare, a carrier could announce a fare increase, but delay its implementation until a specific future date. This ability to pre-announce price increases became a central focus of the investigation.

Ticket and travel dates, and all restrictions, are submitted as a “footnote” to the fare. Each footnote has a “footnote designator,” which is a name for the footnote. Footnotes do not follow a numerical order, but are simply given footnote designators by the submitting airline. The use of fare basis codes and footnote designators as possible modes of communication also became a focus of the investigation.

“Competitive” Pricing in Immediate-Response Oligopoly Markets

While the ATPCO case involved a complex set of institutions and markets, one of the issues at its core was quite basic: when a small number of firms selling a homogeneous

good can monitor one another's prices and respond to changes almost immediately, what is the likely outcome? In such a case, collusive pricing can result even without any sort of explicit communication among the firms. Acting unilaterally, each firm recognizes that price cuts will be matched immediately, so cutting price makes sense only if the firm would prefer an equilibrium in which all firms charged the new lower price. This greatly reduces the incentive to compete on price.

In recent work, Gertner (1994) has explored the outcome in such a market when firms have different costs and capacity constraints. His work, which is motivated by and refers frequently to the airline industry, concludes that if firms are not too different, the outcome in immediate-response markets will still be close to the collusive outcome and the price will be dictated by the firm that prefers the lowest price. This occurs because higher cost firms have nothing to offer a low cost firm in return for it agreeing to a price above its own profit-maximizing levels. Of course, if which firm prefers the lowest price differs across markets, then there may well be room for trades in which each firm agrees to a higher price than it would like in one market in return for increasing price closer to its preferred level in another market. Gertner also finds that if firms differ sufficiently in costs or other attributes, one firm may be able to sustain a lower price than others with none wanting to change its price given the prices charged by others. This result relies on the lower cost firm having a capacity constraint. In such a case, the higher cost firms are better off allowing the low-cost firm to fill its capacity and then selling to the remaining demand than matching the price of the lower cost firm and gaining a higher market share. Thus, even though the airlines differed in costs and other attributes, the ability to monitor one another's prices closely and respond very quickly could still result in prices well above the competitive level.

This line of economic research, however, has a mixed message for antitrust. On the one hand, low-cost monitoring and quick response raises concern that prices will end up at supracompetitive levels and will harm consumers. On the other hand, this may happen without any further facilitating circumstances --- that is, without any actions that are clearly in violation of antitrust laws. It is not an antitrust violation for a firm unilaterally to charge high prices. Not only does such a circumstance present a dilemma for the prosecution of an antitrust case, it also makes it difficult to devise a remedy to the situation. Neither "charge lower prices" nor "stop responding to the actions of other firms" are realistic remedies under the antitrust law (though the former is the basis for much of economic regulation).

The Justice Department's Case

On December 21, 1992, the U.S. Department of Justice filed antitrust charges against ATPCO and eight major airlines.³ The complaint charged that the airlines, through ATPCO, had colluded to raise price and restrict competition in the airline industry. The Justice Department argued that the airlines had carried on detailed conversations and

³ The airlines were Alaska, American, Continental, Delta, Northwest, Trans World, United, and USAir.

negotiations over prices through ATPCO. It pointed to numerous instances in which one carrier on a route had announced a fare increase to take effect a number of weeks in the future. Other carriers had then announced increases on the same route, though possibly to a different fare level. In many cases cited, the airlines had interated back and forth until they reached a point where they were announcing the same fare increase to take effect on the same date. In cases where one airline did not announce that it would post the same fare increase as the others, the increase generally did not take place. In such situations it was common for carriers to “roll” their fare increases -- that is, to move the effective date further into the future, in order to give the carrier that had not announced a matching fare increase more time to do so.

The DOJ garnered this information simply from the records of the ATPCO. It also had documents from each airline’s daily internal fare change reports, which included phrases of the nature “we are waiting to see if [carrier name] is going to go along with our proposed increase,” “we are abandoning the increase on [city1]-[city2] because [carrier name] has not matched,” and “[carrier name] is now on board for the [date] increase to [fare level] on [city1]-[city2].” The DOJ argued that the announcement of fares that are to take effect at a later date allowed the airlines to negotiate over prices without ever offering those prices to the public. While none of the announcements was binding, such “cheap talk” can still aid collusive behavior.⁴

The DOJ’s case also was based on patterns of multimarket coordination that it claimed to have identified. The complaint argued that the carriers were using fare basis codes and footnote designators to communicate to other airlines linkages between fares on different routes. A typical example of the allegation went something like this: Say that airline A1 has a hub at city C1 from which it serves a route to city C3 with nonstop flights, as illustrated in Figure 1. Airline A2 has a hub at C2, which is between C1 and C3. Airline A2 is offering a relatively low fare in the C1-C3 market with service that requires a plane change at C2. This low fare is siphoning off customers from the nonstop service that A1 offers on the route. A1 would like A2 to raise its fare on the C1-C3 route.

If that were the whole story, however, A1 would not have much ability to bribe or coerce A2. However, A2 serves C2-C4 with nonstop service, and A1 offers change-of-plane service on that route over its hub at C1 -- exactly the reverse of the previous situation. A1 could strike a deal with A2 in which each carrier agrees not to undercut the other’s nonstop service with its own fares that require a plane change at its own hub.

The DOJ argued that in such situations the ATPCO system of fare basis codes and footnote designators offered the sort of sophisticated communication necessary to spell out and agree upon such a deal. Here’s one way the DOJ said it would work: A1 would institute a new fare on C2-C4 that undercut A2’s fare on that route, and A1 would give this new fare the same or a similar fare basis code as A2 was using for the fare A1 was unhappy with on C1-C3, thus signalling to A2 the connection between the two fares. A1 would then put a short last-ticket date on this new fare, indicating that it would be

⁴ See Farrell and Rabin (1996) for a thorough discussion of the effects of cheap talk on collusion.

available for only, say, two weeks. It would also put in a fare on the C2-C4 route that matched A2's current fare and would give that fare a first-ticket date that was the same as its last-ticket date for the cheaper fare. A1 would then wait to see if A2 got the message. If it did, A2 would put a last ticket date on its fare on C1-C3 that was the same as the last ticket date A1 had put on its cheap C2-C4 fare and would add a new fare that matched A1's fare on C1-C3 and had the same date for its first ticket date. If that happened, then two weeks hence each carrier, without further action, would raise its fare on the other's nonstop route so that it was no longer undercutting the nonstop route with change-of-plane service.

If A2 did not get the message or respond in the way that A1 wished, A1 could roll forward its last-ticket date on its cheap C2-C4 route. By re-filing the fare with a different last ticket date, A1 could also make sure that this fare again showed up on A2's daily list of new fares, just in case A2 overlooked it the previous time.

The DOJ argued that the combination of future first ticket dates and fare basis codes or footnote designators that allowed an airline to highlight a link between two fares on different routes made it much easier than it would otherwise be for two airlines to "negotiate" over fares on different routes. With these facilitating devices, the Department asserted, the airlines could make clear the "trades" they were offering: raising price on one route in return for a rival raising price on another route.

The Airlines' Defense

While under the Section 1 of the Sherman Act, blatant price fixing has been found to be *per se* illegal, in reality there are many cases that do not fit that mold. Often, as in the ATPCO case, the action under scrutiny is not secret meetings of executives in smoke-filled rooms. In this case, no face-to-face meetings were alleged. Rather, the airlines were accused of making very frequent statements that amounted to a negotiation over price. The statements were also made in public in so far as travel agents and others with access to a CRS could follow the rounds of announced future price changes. The basis of the Supreme Court's view that blatant price fixing is *per se* illegal is that there is no credible argument that such behavior could benefit consumers or competition. The airlines asserted that there was a clear argument that the actions at issue could benefit consumers, so that any examination should be under a rule of reason standard.⁵

The airlines responded to the specific DOJ charges by pointing out that all firms price in response to the actions of their competitors. They argued that each carrier was acting in its own independent best interest when it raised price. It would be unrealistic to think that a carrier would set its fares without considering the response that they could anticipate from other airlines. Once it was recognized that it is legitimate for an airline to consider

⁵ Carlton et al. (1997) make this argument persuasively.

the likely response from its competitors, the airlines argued that the DOJ allegations were indistinguishable from competitive behavior. A carrier probably would not want to cut price if all its competitors would match. Likewise, an airline will not be able to make a price increase “stick” if other airlines keep their prices at a lower level.

One can draw a parallel with a market that is undeniably competitive, such as the wheat market. For the price of wheat to increase, some seller must be the first to raise its price. It will do so in the belief that the competitive equilibrium price is higher than the current level. If it is incorrect, then most other wheat sellers will not follow along, and the first firm will lose all or most of its sales. It then will be forced to reduce its price again. It has done nothing anticompetitive, but rather has engaged in a normal part of the price discovery process in a competitive market. As recently as June 1993, the Supreme Court found in *Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.* that such parallel pricing is likely to occur in competitive or oligopolistic markets without collusion.⁶ In a slightly earlier case, the Supreme Court had stated that “conduct that is as consistent with permissible competition as with illegal conspiracy does not, without more, support an inference of conspiracy.”⁷

The defendants argued not only that the observed parallel price movements were consistent with competition, but also that pre-announcements of price increases were in the interest of consumers. Far from being devices for price fixing, the airlines asserted that such advanced warnings to consumers were a device for creating consumer benefits and maintaining goodwill. They submitted hundreds of affidavits from travel agents praising the airlines’ policy of advanced notice on price rises and making dire predictions if such notices were eliminated. The travel agents said that consumers became very angry when the price of a ticket increased between the time that the traveler reserved the seat and actually purchased the ticket. Many agencies reported having programs to notify their loyal customers of pending fare increases that were likely to affect them. It was clear that the travelling public was used to receiving plenty of warning of fare increases and that, *holding fare levels constant*, they would prefer to continue to get advanced notice of increases.

The airlines supported their argument that consumers value information of future price increases by introducing evidence about the bookings “surge” that had occurred prior to some price increase. They focused on a few incidents in 1991: heavily advertised fare wars that ended at a certain date, a date that had been widely publicized in advance. The airlines showed that bookings surged just before the end of these “sales” and then fell substantially in the days following the price increase. In one of these incidents, the surge had been so dramatic and the demand for bookings so great as to cause the Sabre CRS, the largest in the U.S., nearly to crash on the night before the discounts expired.

⁶ See *Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.*, 61 U.S.L.W. at 4703. Also see Burnett’s chapter in this volume.

⁷ *Matsushita Electric Industrial Co. v. Zenith Radio Corp.*, 475 U.S. 574, 597 n. 21 (1986). Also see Elzinga’s chapter in this volume.

The airlines also defended advanced notice of price increases by pointing out -- in an argument reminiscent of the *Ethyl* case -- that airlines engaged in such advanced warnings on monopoly routes as much as on competitive routes.⁸ This demonstrated, the airlines argued, that the primary consideration in pre-announcing fare increases was maintaining goodwill with consumers, not signaling to competitors.

Further, the defendants argued, the price-fixing theory was refuted by the fact that airlines didn't pre-announce price decreases. They pointed out that there is no goodwill justification for delaying a price decrease in order to give advanced warning rather than putting it in place immediately. On the other hand, they contended, price cuts are very destabilizing to cartels, so a member of a price-fixing conspiracy would be as, or more, concerned with getting the approval of its fellow conspirators for a price decrease as for a price increase. Thus, if airlines were to use advanced notice of price changes to support a price-fixing conspiracy, they would be more inclined to pre-announce decreases.

The airlines recognized that documents received by the DOJ in the discovery process had indicated a few occasions in which one carrier had retaliated against another's incursion into its area of dominance by cutting fares on routes dominated by the aggressor airline. They argued, however, that this was a natural part of the competitive process. If another carrier hits you where it hurts, you turn around and hit them back where it hurts them. This wasn't multimarket price fixing; it was aggressive, perhaps excessively macho, competition. If on a few occasions a pricing analyst got carried away with the conflict analogy, that was certainly not evidence of price fixing. Furthermore, if a carrier knows that another airline is likely to respond aggressively and to expand a fare war beyond a single market, it is only natural for it to be less inclined to initiate a fare cut even if it would otherwise like to. The point, the defendants argued, was still that all of this behavior was undertaken unilaterally by each airline, that no agreement was solicited or accepted.

All of the defendant airlines protested that they had never used fare basis codes or footnote designators to signal connections between fares or to communicate information to other airlines that might support price fixing. The few cases in which a fare basis code was found to contain the two-letter code of a rival airline were argued to be anomalies that did not constitute a pattern of collusive behavior. The airlines also explained that it was often easier to give certain fares the same footnote designators when they were likely to have the same restrictions for the foreseeable future or to give different footnote designators to fares with the same restrictions if it was believed likely that the restrictions on one would become different from the restrictions on the other.

Two other factors, the airlines asserted, made price fixing untenable in the airline industry. First, not all of an airline's prices were public. Airlines regularly cut special deals with

⁸ In the *Ethyl* case, one of the defendants demonstrated that the practices it had been accused of engaging in to facilitate collusion were the same practices it had used decades earlier when it was the only producer of the gasoline additive. *E.I. DuPont de Nemours & Co. v. FTC*, 729 F.2d 128 (1984). Also see Hay's chapter in this volume.

large corporations. In return for a guaranteed amount of traffic from the corporation or share of the firm's business, an airline typically would offer some percentage rebate on all tickets. The size of that rebate was kept secret. Any carrier could cheat on a collusive agreement with these rebates and faced a low probability of detection. Second, airlines could not monitor how many seats a carrier was making available at each fare it published. An airline could effectively cut its prices by making a large number of seats available at its lower published fares. A competing airline could never be sure of the exact mix of passengers and fares that another carrier was serving.

Finally, the airlines argued that common sense didn't support the price fixing story. The airlines were experiencing the largest annual losses in their history. Major airlines had recently entered chapter 11 and two of the largest pre-deregulation carriers, Pan Am and Eastern, had been liquidated. New entry had nearly stopped since the middle of 1990, further indicating that the industry was not offering firms an attractive return on investment. If there was price fixing, it certainly wasn't making the airlines rich.

The Justice Department's Response

While the DOJ continued to argue that the case could be prosecuted as a *per se* violation of the Section 1 of the Sherman Act, both sides pursued arguments that would be relevant only under a rule of reason standard. The Department recognized that some consumers may have benefited from pre-announcement of fare increases. Rather, it argued that such benefits were likely to be very small in comparison to the opportunity that pre-announcement afforded airlines to coordinate price increases.

Furthermore, the DOJ argued that consumers also were often misled by last ticket dates. A DOJ study found that about half of all last ticket dates placed in the CRS systems turned out to be inaccurate. In some cases, they were rolled forward until all airlines on a route had announced the same increase, with only the last announcement being correct. In many cases, they were simply withdrawn if competing carriers did not go along. (On rare occasions, the increase was implemented sooner than the last ticket date suggested.) Consumers who bought tickets sooner than they would have liked, due to pre-announced increases that never actually occurred, were made worse off by these announcements.

The airlines' "surge" data turned out to be less persuasive than appeared to be the case at first. The airlines had submitted surge data for only the largest and most highly publicized sales in the recent past. These were not the pre-announced increases that most concerned the DOJ, because the heavy advertising that accompanied these last ticket dates made it very difficult for the carriers to "negotiate" through numerous changes in the dates and fares. The airlines did not supply surge data for more typical unadvertised increases or ones that came about after a number of different announced last ticket dates and subsequent changes.

The Justice Department agreed that pre-announcement of price decreases would indeed be powerful evidence that they were being used for collusion, but argued that the absence of

such announcements simply could be due to the airlines' awareness that such behavior would assure an antitrust investigation. The practice of pre-announcing price increases could still be a device intended to facilitate collusion. Similarly, while the use of pre-announcements on monopoly routes indicates that it is not valueless to consumers, it does not indicate the predominant reason for use of pre-announcements on competitive routes.

The DOJ also suggested that the airlines had available a ready substitute for advanced notices of fare increases, one that did not raise the antitrust issues that were the focus of this case: the airlines could guarantee a fare for some period of time after a traveler made a reservation. The guarantee could be for a few days, a week, or longer. Implementing such a system would not be trivial, however, since airline reservation systems were programmed only to ticket at the price effective at the time the ticket was purchased. A price-guarantee system would require that the computers maintain a record of the price in effect at the time the reservation was made. Opinions differed with regard to the cost of implementing such a program. Many of the airlines also argued that it would not substitute for pre-notification of price increases, as many customers would still be angry if they waited longer than the price guarantee period and found themselves facing an increased fare.

Finally, even if all last ticket dates were accurate and if fare guarantees could not viably replace them, a simple "back-of-the-envelope" calculation indicated that the total savings to consumers from early warning of price increases was likely to be very small. Here's how such a calculation could be done: assume that on a typical route, price increases were implemented once every 60 days (which is more often than actual) and that a typical fare increase is five percent. Assume that advanced notice of the increase caused a full day of bookings that would have occurred after the increase to instead take place before. For an increase that is not advertised outside the CRSs, this is a very large surge effect. This would mean that $1/60^{\text{th}}$ of consumers would receive a savings of five percent due to the advanced notice of price increases, or an average savings of slightly less than 0.1% per traveler on the route. Of course, those consumers who missed the fare increase date due to the absence of pre-announcement would be unhappy about paying the increase, but for the entire group of travelers on the route, the average savings is likely to be extremely small. If the pre-announcements aided collusion to any noticeable extent, it is likely that consumers would benefit from their elimination.

Two points were made in response to the assertion that discounting to corporations made collusion implausible. First, even if sales to corporations remained competitive because of secret discounting, there was no reason to think that this disciplined prices to all other consumers. Corporate discount tickets accounted for less than ten percent of volume on nearly all routes, so this still left a large proportion of the market subject to the collusive prices. Second, the corporate discounts were mostly discounts off of list prices. In the short run, with these discount agreements in place, any increase in the list price would be reflected proportionally in the discounted prices as well. Of course, in the longer run, if the market for corporate discount passengers were competitive, list price increases would be largely offset by greater proportional corporate discounts.

The issue of seat availability is a complex one. Airlines expend a great deal of effort to try to figure out the proportion of seats their competitors sell at each published fare, but they are not entirely successful. At any point in time, however, they can see whether a competitor has any seats available at a given price -- in airline parlance, whether a "bucket" is open or closed. Thus, if one carrier attempts to cheat on a collusive price by offering a greater number of seats at lower listed prices, competitors can observe that it is keeping a low-price bucket open and can keep their own corresponding bucket open as well. This is not a perfect substitute for knowing a competitor's total sales in each bucket, but it means that no airline can secretly undercut its rivals by having a low price available when others don't.

The Justice Department argued that profit levels were not relevant to the investigation. DOJ investigators pointed out a number of cases in which the colluding firms were in poor financial health. While collusion is likely to raise profits compared to the same market without collusion, there are many cases in which colluding firms lose money. In the ATPCO case, it was noted that the airlines had made massive investments in capacity just before the 1990-91 recession hit, leaving them with aircraft that were depreciating without even providing services. Besides the costs of holding excess capacity, the existence of that capacity lowered each firm's marginal cost of serving a given route, thus putting downward pressure on prices. This is part of the normal economics of markets with large fixed capital investments. Though excess capacity depresses prices and causes firms to report losses, economists agree that this is the efficient economic response to such situations. Even if firms colluded in such a situation -- and the desire to do so is likely to be great -- they may not be able to raise prices to the point that they can cover the cost of all prior investment errors.

Fashioning a Remedy and Negotiating a Settlement

As the Justice Department continued the investigation in 1992, a question hung over the case: If the Department could prove its case and prevail at trial, what remedy should it seek? Parallel price movements of competing firms are not generally illegal. DOJ was reluctant to pursue a settlement that would place such restrictions on how or how often firms could change their prices. Through the discussions with the defendants and the memos written by each side, the case came to focus on two issues: the pre-announcement of price increases and the alleged use of fare basis codes and footnote designators to communicate linkages between prices on different routes. It became apparent to all involved in the case that rapid information transmission was inherent in the computer technology in use in the industry. The DOJ would not easily be able to prevent airlines from "proposing" fare increases and then withdrawing those fares relatively quickly if competitors didn't match.

Instead, the Department decided to pursue remedies that it hoped would make it more costly and less effective to use the system for collusive bargaining. First, the DOJ proposed the elimination of last ticket dates except in situations in which the carrier was engaged in significant advertising through newspapers, television, radio, or other media intended to inform consumers of the last ticket date. The idea was that such announcements are clearly aimed at consumers, and making changes to such information after it is advertised is costly and potentially harmful to the carrier's reputation. (Later in negotiations between the airlines and the DOJ, it was agreed that carriers could also post a last ticket date if it was only to match the last ticket date of another carrier, which had advertised that date.) Likewise, airlines would not be able to pre-announce prices that would go into effect in the future, that is, it could not use future first ticket dates. Thus, an airline could advertise "Sale Ends November 30," but could not say what the price would be after November 30.

Some airlines argued that requiring a carrier to advertise a sale in print, television or other media would raise the cost of running a sale and would thus discourage price cutting. There was, however, no requirement of advertising in order to run a sale, only in order to put a last ticket date on the sale. An airline was free to cut its price for any period of time it liked without advertising. It could not, however, put a last ticket date on the fare in its listing with ATPCO unless it also communicated in some direct fashion to consumers. It was also unclear what sort of a short term sale an airline would want to run without advertising. The point of cutting price is to increase sales as much as possible in order to make up for the lower price a firm receives from those who would have bought even at the high price. A sale without advertising seems more likely to decrease revenue from those who would have bought at the high price while minimizing the increase in total sales.

The other major condition of the proposed remedy was on the use of fare basis codes and footnote designators. The Justice Department proposed that these codes could contain only the basic information they were said to contain: abbreviations that indicated fare class, minimum stay or advanced purchase, and other restrictions. In the course of the case, examples had come to light in which one carrier had put the two-letter airline code of another in a fare that appeared intended to retaliate against that competitor. Similarly, the DOJ's proposed remedy restricted the use of footnote designators to make them more generic and less able to convey information about the connection between different fares. A carrier would be required to use the same footnote designator for *all* its fares that had footnotes with identical information: such as first and last travel dates. Carriers generally had many footnote designators that pointed to footnotes containing the same information. In addition, carriers would not be allowed to list footnote designators that pointed to "empty" footnotes, ones that had no further information about the fare. This practice had also been observed during the investigation in situations where it appeared to be used to identify connections between fares on different routes.

The Case Filing and Partial Settlement

On December 21, 1992, the DOJ filed the case accusing all eight of the airlines under investigation of price fixing through the ATPCO. As it often does, the DOJ had, prior to filing, engaged in lengthy informal discussions of the case and settlement talks with the defendants. Thus, along with filing the case, the Justice Department also announced a settlement with United Airlines and USAir. Under the settlement, the airlines did not admit guilt on any of the charges, but they agreed to abide by the DOJ's proposed remedies. In particular, United and USAir agreed to stop announcing most price increases in advance of the date on which they took effect. Instead, most price increases would have to take effect at the time they were announced.

Under the Tunney Act, a settlement of a government antitrust case such as this one must be approved by a federal court. The idea behind the Tunney Act was to assure that the government didn't cut a backroom deal with specific defendants in return for favors. The court must review the settlement, hear arguments from all interested parties, and determine that the settlement is in the public interest.

At the Tunney Act hearing, which took place shortly after the settlement with United and USAir was reached, the other accused airlines argued strongly against the settlement. Their arguments were essentially the same as they had used all along in responding to the government's investigation: first and last ticket dates are for the purpose of informing consumers and give significant benefits to them; airlines act unilaterally but are of course influenced by the prices that other carriers' charge; the evidence did not support the feasibility or practice of collusion in this market; and any signalling or attempt to coerce competitors to raise price was an anomaly.⁹

In responding to these filings, the DOJ examined the airlines' incentive for making such an argument. The Justice Department argued that if the airlines' pleading was accurate, then they would have no incentive to oppose restrictions being placed on their competitors, United and USAir, in the use of first and last ticket dates and other complex information transmission through ATPCO. The DOJ argued that accepting the non-settling airlines' arguments would imply that they would gain a significant competitive advantage versus United and USAir. In fact, two of the non-settling carriers stated that they would not accept the proposed settlement for themselves, because it would put them at a competitive disadvantage against other airlines that were not part of the case.¹⁰ If this were true, the

⁹ Some of the airlines also argued that the proposed settlement could raise fare levels. If airlines found it more difficult to raise prices, they might be less inclined to experiment with lower fares, because it would be difficult to return to the pre-discount level. Of course, this same argument applies to nearly any impediment to collusion: if firms cannot collude as easily as previously, they might be less inclined to start a price war. The argument is not logically inconsistent, but there does not appear to be any evidence that impeding collusion reduces aggressive price competition.

¹⁰ In a pleading shortly after the settlement with United and USAir, Delta stated that it had not discontinued the use of first/last ticket dates because if it did so, it "would be at a competitive disadvantage with respect to the remaining airlines that would be operating under no similar restriction." TWA made a similar argument. *Joint Response of the Airline Tariff Publishing Company, Alaska Airlines, Inc., American Airlines, Inc., Continental Airlines, Inc., Delta Air Lines, Inc., Northwest Airlines, Inc., and*

DOJ argued, one would expect the other airlines to be happy to see United and USAir subjected to these restrictions.

In contrast, DOJ submitted, if the techniques that United and USAir had agreed to cease using had been part of a system of price coordination, one would indeed expect the non-settling airlines to fight it. If these facets of ATPCO filings had supported coordinated behavior, then the inability of United and USAir to use them would be nearly as harmful to the other airlines as if they had been forced to accept these restrictions on their own behavior. Thus, their arguments against the settlement with United and USAir may have undermined the pro-competitive case the other defendants had made for the suspect behavior.

The Final Settlement and Its Effects

Despite the protests of the other defendant carriers, the settlement with United and USAir was accepted by the courts under the Tunney Act. Shortly after, the other six defendants entered further negotiations with DOJ. On March 17, 1994, a final settlement of the ATPCO case was announced. The other six airlines agreed to nearly the same restrictions as had United and USAir. The consent decree is to last for ten years, until 2004. Until that time, these airlines cannot use footnote designators and fare basis codes to convey anything but the most basic information; they cannot link different fares with special codes; and they cannot pre-announce price increases except in the case of widely-publicized sales.

While the settlement restricts behavior that the DOJ believed facilitated the communication of information that supported collusion, it does not restrict the fares that a carrier can offer or when the carrier can begin or end their availability. This was made clear in a memorandum filed with the settlement at the request of American Airlines. Two examples detailed in the memo make clear the freedom that airlines still have and the difficult antitrust issues that remain. The DOJ, as part of the settlement, accepted that neither of these scenarios would constitute a violation of the consent decree.

Scenario 1: "At noon on Friday Airline A transmits 10% fare increases on certain city-pairs to ATPCO. The increased fares become available for sale through CRS at 5 p.m. that same day. On Saturday, Airline B transmits 5% increases to ATPCO on the same city-pairs. Airline A withdraws its 10% fare increases on Sunday when it learns that competing airlines have not offered matching fares for sale. Airline B withdraws its 5% increased fares. The following week, on Friday, Airline A raises its fares 5% on those city-pairs where Airline B had raised its fares 5% the previous week. On Saturday, Airline B matches Airline A's 5% fare increases, and both Airlines thereafter offer those fares for sale."

Trans World Airlines, Inc. to the Courts order of May 24, 1993 requesting information, June 28, 1993. p. 10.

Scenario 2: “Airline A offers for sale a low fare (e.g., \$101) for travel on a route that is important to Airline B. Airline B matches the \$101 fare for travel on the same city-pair and also offers for sale a \$101 fare for travel on a city-pair that is important to Airline A. Airline B withdraws both \$101 fares after one day. Airline A then withdraws its initial \$101 fare the next day.”

The DOJ stated that these scenarios involved the offering of *bona fide* fares for sale that are available to consumers at the time they are published. Because they involved a change in the carrier’s economic behavior in the marketplace, and were not intended solely to communicate a carrier’s planned future fare changes, the DOJ agreed that they would not be forbidden under the consent decree.

Beyond clarifying the settlement, these scenarios also described the way that prices have been set in the industry since shortly after the December 1992 settlement with USAir and United. Since that time, the airlines have implemented most of their fare changes on weekends, when a very small share of tickets are actually sold because most travel agencies are closed. It is now common for an airline to post price increases on a Friday afternoon, which then become available in the CRSs on Saturday morning. If its competitors in the markets do not match the increase by Sunday afternoon, the airline then withdraws the increase Sunday night, so that the original lower prices are in effect on Monday morning.¹¹ If its competitors match, the higher fares remain in effect.

The ATPCO case raised some of the most subtle and challenging issues in enforcement of section 1 of the Sherman Act, the cornerstone of U.S. antitrust law. Unfortunately, because the case never went to trial, the ATPCO case set no legal precedent. Furthermore, because the remedy fashioned addressed only institutional aspects of the airline industry, today it provides little guidance as to where in the gray area of section 1 legitimate communication ends and price fixing begins. It did, however, clarify the DOJ’s willingness to pursue cases of coordinated pricing through rapid communication, as well as the types of arguments that are likely to arise in such cases.

¹¹ See Hirsch (1993).

REFERENCES

Borenstein, Severin. "The Evolution of U.S. Airline Competition." *Journal of Economic Perspectives* 7(Spring 1992): 45-73.

Carlton, Dennis W., Robert H. Gertner, and Andrew M. Rosenfield. "Communication Among Competitors: Game Theory and Antitrust," *George Mason Law Review*, 5 (Spring 1997): 423-440.

Carlton, Dennis and Chip Bamberger, "Airline Networks and Fares", Unpublished manuscript, 1996.

Farrell, Joseph and Matthew Rabin. "Cheap Talk." *Journal of Economic Perspectives* 10(Summer 1996): 103-118.

Gertner, Robert H. "Tacit Collusion with Immediate Response: The Role of Asymmetries," Unpublished manuscript, 1994.

James S. Hirsch, "Fliers Discover They Don't Fare Well on the Weekends," *Wall Street Journal*, July 30, 1993, B1.

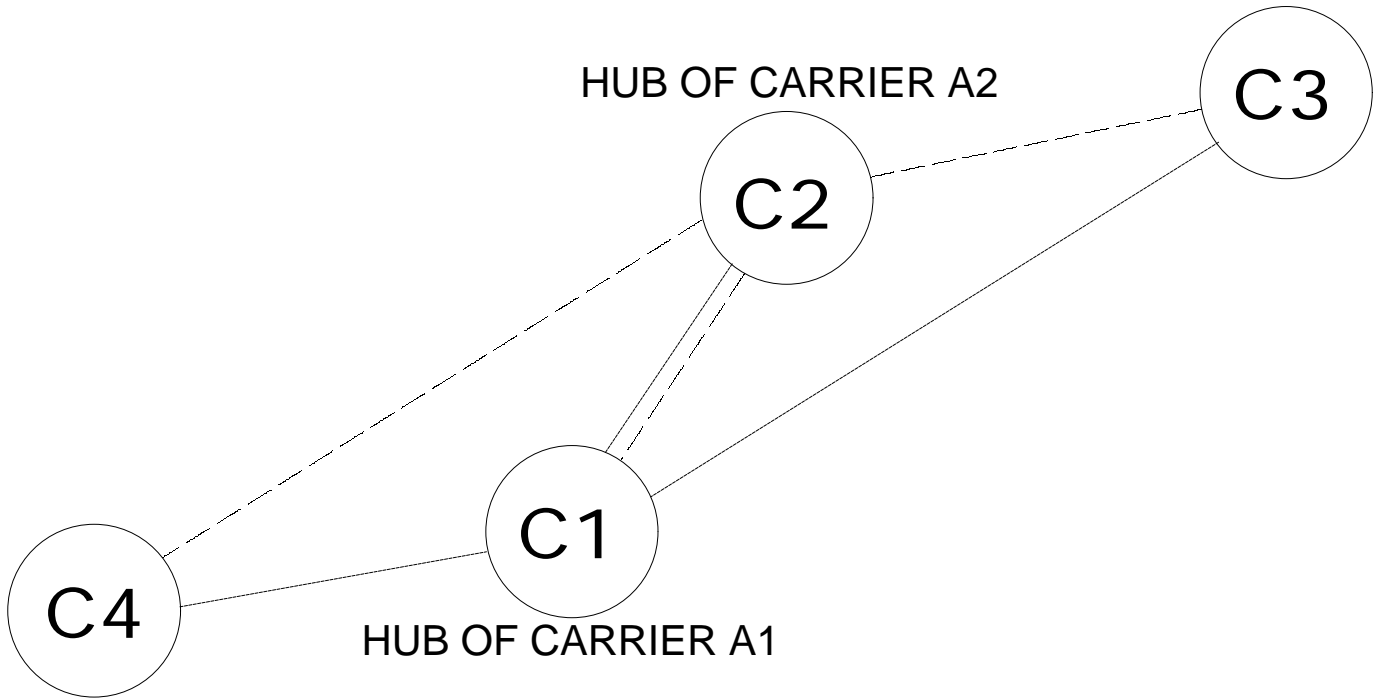


Figure 1: Carriers with Overlapping Networks