
Dissipating the Airline Deregulation Dividend

The Decline of Competition at Hub Airports

Severin Borenstein

Since price and entry controls were removed from the airline industry in the late 1970s, much of the analysis of the industry has focused on determining whether consumers have benefitted from deregulation. This is unfortunate for two reasons. First, the answer is fairly clear. Most travelers are better off than they would have been had Civil Aeronautics Board price, quantity, and rate-of-return regulation continued, and the *net* benefits are certainly positive. Second, the answer has sometimes been misinterpreted in arguing either that the industry is now extremely competitive or that any remaining problems must be the fault of the government. Although consumers have benefitted from deregulation, there is less competition in the airline industry than was hoped for or is possible.

The airlines' formation of hub-and-spoke net-

works since deregulation represents both an important advance and a serious anticompetitive influence. Hub-and-spoke airline networks have lowered airlines' costs per passenger by allowing them to fill each flight more completely and to use their aircraft more hours per day. Hubs have also increased the number of flights offered on some city-pair routes, because the number of connecting passengers travelling on some spokes of the network is large enough to justify additional flights on that spoke. It is particularly disappointing, therefore, that construction of the hubs has also led to a decline in competition for passengers who want to fly to or from the hub cities. The average prices paid to travel to or from hub airports are not necessarily higher than they would have been under regulation, but they are usually 15 to 40 percent higher than similar trips that do not end or begin at a hub. Almost certainly fares to or from hubs would fall if there were active competition for these customers.

Declining competition at the hubs is in part a natural outgrowth of the economies of scale associated with hub-and-spoke systems. To take

Severin Borenstein is an associate professor of economics at the University of California at Davis and a consultant to government and industry on the airline industry.

advantage of these scale economies, an airline must run a large number of flights in and out of its hub airport. In many cases the scale of operations necessary for one airline to support a hubbing system is also large enough to satisfy most of the demand for "local" travel to and from the hub airport. The result is that many airports receive extensive service from their hub airline but very little service from any other airline. Often, the only service offered by another airline is flights to its own hub airport. For instance, United serves Minneapolis/St. Paul, Northwest's primary hub, but only with flights to Denver and Chicago, United's two largest hubs.

Natural scale economies do not completely account for declining competition at the hub airports, however. Since deregulation, airlines have introduced marketing devices that complement the natural advantages of dominating operations at a particular airport. The best known of

The airlines' formation of hub-and-spoke networks since deregulation represents both an important advance and a serious anticompetitive influence. Hubs have lowered airlines' costs and increased the number of flights offered on some city-pair routes, but there are discrepancies between prices at dominated airports and elsewhere.

these are the frequent flyer programs that give travel bonuses to purchasers after they have flown a certain number of miles on the airline. A similar but less-well-known program is the travel agent commission override through which an agent can earn an increased commission if he books a certain amount of travel on a specific airline. Each of these devices tends to give an advantage to the largest airline at an airport and thus makes it more costly for a new airline to enter and compete.

Limits on airport capacity as well as the methods of allocating it among airlines have also tended to increase fares at the hubs. The scarcity of gate facilities at many large airports would drive up prices to some extent even in the most competitive markets, and capacity management at most airports has further damped competitive

forces. Long-term leases on gates and the dominant airline's power at many airports to block airport expansion plans have strengthened the hand of an airline with large operations at an airport.

Suggestions that the government investigate the discrepancies between prices at dominated airports and elsewhere have been met with warnings about the dangers of reregulation. More specific opposition has been couched in three arguments. First, some opponents have argued that once appropriate adjustments for the flight distance, the number of stops, and other factors are made, prices are no higher for travel from dominated airports than for other domestic travel. Second, many have stated that even if prices are higher, travelers to and from dominated airports are compensated for the higher prices with better service on these routes, most notably more frequent and more nonstop flights. Finally, a few have argued that even if prices are higher and increased service does not justify the increased prices, the airport dominance problem is just an unfortunate and inevitable outgrowth of the efficient hub-and-spoke systems, which clearly yield greater benefits to travelers as a whole than the costs they impose on some local passengers. Therefore, any government intervention would be unwise.

Does It Cost More to Fly to Dominated Hub Airports?

Measuring and analyzing prices in the airline industry is complicated both because of the multiplicity of products that airlines sell—flights on different routes—and because of the multiplicity of prices that an airline charges for different seats on the same route. To address the problems created by multiple fares on a single route, analysts often determine the average ticket price and compare that with some notion of a competitive price. But determining the competitive price is not straightforward. The cost of providing air travel varies with distance, but the relationship is not strictly proportional—providing an 800-mile trip costs the airline more than providing a 400-mile trip, but it does not cost twice as much. Thus, comparing price per mile for different distance routes is not valid. The simplest and probably least controversial way of adjusting for cost differences is to compare the average prices on different routes of roughly the same distance.

Table 1: Comparison of Prices at Dominated Hubs to All Other Routes

Airport	Dominant Airline	Dominant Airline Prices (percent of prices elsewhere)	Other Airline Prices
Chicago O'Hare	United	124	117
Dallas/Ft. Worth	American	134	114
Atlanta	Delta	145	97
St. Louis	TWA	113	91
Houston Intercontinental	Continental	123	107
Pittsburgh	USAir	128	110
Minneapolis/St. Paul	Northwest	129	117

Such a comparison is the basis for Table 1. Using data from July to September 1989, Table 1 compares on a distance-matched basis the average fares on routes from dominated hub airports with the average fares on all domestic routes that do not include one of these hub airports. (These are not the only dominated hubs, but they are the largest hubs of each of the seven largest domestic airlines.) For example, the 28 percent fare premium identified in Table 1 for USAir at Pittsburgh is an average, weighted by passenger-miles provided, of the price differences observed when comparing all USAir flights to and from Pittsburgh with nonhub trips covering similar distances. Table 1 reports a similar comparison between fares charged by the "other" airlines serving these hub airports and prices to and from nonhubs. As the table shows, the dominant airline at each of these airports also charges higher fares than the other airlines serving the same airport.

The basic story does not change when we take explicit account of the different quality of service from the hub airports. There are more direct flights available from hubs than from other airports, so simply comparing hub prices to the national average might be biased against the hubs. After all, it makes sense that people who take

direct flights pay higher prices than people who have to change planes.

It may be sensible, but it is not true. Nationwide, for trips of a given distance from origin to destination, direct flights cost about 5 percent *less* than change-of-plane trips of the same origin-to-destination distance. It is true that the average fare for change-of-plane service on routes with a substantial proportion of both direct and change-of-plane flights tends to be lower. When there is no direct-service competition, however, fares tend to be much higher than on direct service routes with no significant change-of-plane competition.

All this explains why the story told in Table 2 resembles that in Table 1. Table 2 examines only fares for direct flights. The only noticeable change is in the prices charged by other airlines. They are now closer to those of the dominant airline. This is explained by the fact that most of the direct service offered by other airlines is to the other carriers' own dominated hubs.

The story would not be much different if the table were also subdivided by the number of daily travelers on a route. Thinner routes do have higher prices—due possibly as much to the diminished competition on such routes as to the higher costs of serving them—but adjusting for

Table 2: Comparison of Direct Prices at Dominated Hubs to All Other Direct Prices

Airport	Dominant Airline	Dominant Airline Prices (percent of direct prices elsewhere)	Other Airline Prices
Chicago O'Hare	United	130	126
Dallas/Ft. Worth	American	139	117
Atlanta	Delta	150	95
St. Louis	TWA	118	83
Houston Intercontinental	Continental	126	102
Pittsburgh	USAir	135	132
Minneapolis/St. Paul	Northwest	133	140

this difference has little effect on the measures of the dominant airline premium.

Of course, careful analysts will adjust for many other factors in determining the existence and size of a dominant airline fare premium. Examples include the costs attributable to scarce airport and runway space, the size of the aircraft used, and the tourist/business mix of the markets. As the number of explanatory factors increases, so does the necessary sophistication of statistical analysis. Economists at the Department of Justice, the Department of Transportation, the General Accounting Office, the Air Transport Association, Boeing Corporation, Yale University, the University of Maryland, the University of Michigan, and the University of California at Davis have all conducted such analysis. Only the study by the Air Transport Association, a trade association made up of most of the large

Factors to be considered in determining the existence and size of a dominant airline fare premium include the costs attributable to scarce airport and runway space, the size of the aircraft used, and the tourist/business mix of the market. Most studies have found a positive and significant relationship between airport dominance and prices.

U.S. airlines, found no relationship between airport dominance and prices. Each of the others has found a positive and significant relationship.

Does Better Service at a Hub Airport Justify Higher Prices?

This question really has two parts. First, do hub airports actually offer local residents better service? Second, does it cost more to serve passengers travelling to or from hub airports? The answer to the first question is quite clearly, "yes." Given the number of local passengers flying to or from an airport, the number of flights or available seats is much greater at hub airports than at nonhubs. The completely unsurprising explanation is that the large number of connecting passengers at the airport permits the hubbing airline to increase the number of flights without suffering decreased load factors.

The service advantage at a hub airport is quite pronounced. At major hubs with relatively small local populations, such as St. Louis or Pittsburgh, passengers changing planes outnumber travelers flying to or from the city. San Diego's airport, for example, serves about 20 percent more *local* passengers than does the St. Louis airport, but because San Diego is not a hub, it has less than half as many daily departures as St. Louis. It is clear that travelers to or from hub airports get increased benefits along with the increased prices. It is even quite possible that most travelers would choose the higher price/better service package of a hub airport over the lower price/poorer service alternative available from most nonhub airports. When it comes to air travel, people who live in cities with hub airports probably are better off than people who live in nonhub cities.

But that is the right answer to the wrong question. In competitive markets prices are driven by the costs of production, not by the benefits that consumers receive from the product. Quality improvements should be accompanied by increased prices only when the quality adjustments cause production costs to increase. In fact, the ability of a firm to inflate its prices solely on the basis of the benefits consumers receive is a fairly good indicator of market power and reduced competition.

So, does it cost more to serve a passenger flying to or from a hub airport than to serve other travelers? Certainly not. The whole purpose of establishing hubs is to raise the airline's operating efficiency and thus lower its costs per passenger. Flights to and from a carrier's hub tend to have higher load factors than its other flights. The hub-and-spoke system allows the airline to centralize aircraft maintenance and to utilize personnel at the hub airport more efficiently. Overall, planes flying to and from hubs are used more hours per day and have more passengers on board on each flight.

Are Hub Airports and Higher Prices Inevitable?

To advocate eliminating hub airports would be as economically and politically foolish as to argue for reinstituting price and entry regulation in the industry. (Accomplishing the former would almost certainly require adoption of the latter.) More than forty years of extensive intervention in the airline industry clearly demon-

strated the inability of the government to participate effectively and efficiently in day-to-day airline management decisions. There is, however, a large, if somewhat fuzzy, area between government management of the industry and a pure laissez faire policy. As in most industries, the optimal level of intervention may be somewhere in between.

The efficiencies an airline attains from operating a hub will give it some competitive advantage at its hub airport. If that were the whole story, we would also expect those efficiencies to be reflected in lower, not higher, prices at the hub. For economies of scale to produce both lower costs and higher prices, there must be some other barrier that reduces the threat of competition even when the incumbent's prices are set above the costs of potential entrants.

Sunk costs associated with entering a market often are the source of such barriers. If a potential entrant faces high enough unrecoverable one-time costs when entering a market, entry will be discouraged even when prices are well above its production costs. This is particularly true when potential entrants recognize that the incumbent is charging a price substantially above its own costs, so that it could respond to entry by reducing its price significantly without suffering negative profits. The key then to diagnosing the causes of inflated prices at hub airports is to determine the kind and magnitudes of sunk costs potential entrants face.

In the case of airlines, sunk costs of entry are directly related to the scale of entry necessary to be competitive. If an airline can compete effectively by serving just one or two routes from an airport with only a few flights per day, then it will incur lower costs of entry than if the viable entrant must start service on many routes simultaneously. The factors that raise the minimum scale necessary for successful competition—and thus raise the sunk costs of entry—can be usefully divided into those that are a direct consequence of the size of the incumbent's operations at the airport, what might be termed the "natural advantages" of the dominant airline, and those that arise from marketing techniques that are not inextricably linked to the operation of a hub, what I term "strategic advantages."

The most obvious natural advantage is the reputation developed by an airline with a large presence in a particular area. A slight variation on a common prederegulation theory in the airline industry holds that if customers do not

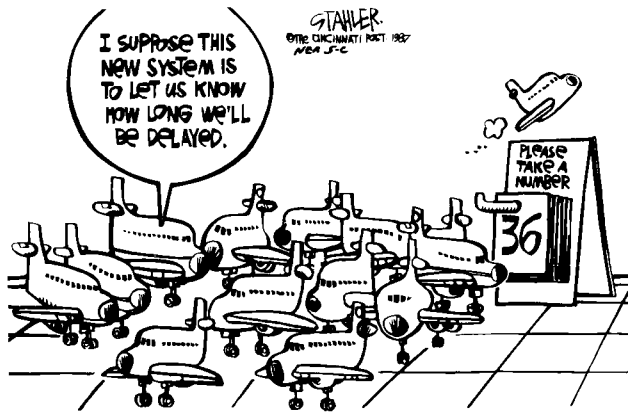
know which airlines serve a particular route, they are likely to call first the airline that serves the most routes or has the most flights from their home airport. For at least two reasons this effect alone probably explains only a very small part of

To advocate eliminating hub airports would be as economically and politically foolish as to argue for reinstituting price and entry regulation in the industry. Extensive intervention in the airline business for forty years has clearly shown the government's inability to participate effectively and efficiently in daily airline management decisions.

the advantage from airport dominance. First, the proportion of people who book their domestic flights through a travel agent has grown steadily since deregulation and now stands at about 80 percent. Preferences arising from imperfect information should not influence the decisions of travel agents. Second, under regulation all airlines serving a route necessarily charged the same fares so that the benefits to shopping around were much smaller than they are now. In the 1960s a customer calling several airlines might have located a more preferred departure time, but she would not have found a lower price.

Other information-based hypotheses are also suggested to explain an airport dominance effect. Advertising is likely to have a greater impact per dollar for an airline that serves many routes from a city than for one that serves only a few routes. Consequently, the dominant airline is likely to do more local advertising than will carriers with smaller operations in a city. Similarly, because acquiring information about quality of service is costly, the consumer may prefer an airline on which he has already flown. This is likely to be the airline with more flights from his originating airport.

Frequent-Flier Programs. Although the nature of the airline industry would seem to imply that these information advantages will flow to the major carrier in a city, airlines have in recent years created new marketing devices that aug-



Reprinted by permission of NEA, Inc.

ment these advantages. Frequent-flier programs, for example, were developed to induce brand loyalty, and they are particularly beneficial to a dominant carrier in an area. If an airline serves more routes and has more flights from a city, then both the majority of a local resident's future flights are more likely to be on that airline than on any other and that airline is likely to serve a wider variety of "payoff" destinations from the city-destinations that are particularly attractive prizes when awarded as frequent-flier bonuses.

The importance of the first effect results from the fact that the prize value per cashed-in mile increases with mileage. This reward structure encourages customers to minimize the number

New marketing devices contribute to a dominant airline's competitive advantage. These include frequent-flier programs, travel agent commission override programs, and computer reservation systems. These are strategic advantages, not inextricably linked to the operation of a hub.

of different airlines on which they accumulate their frequent-flier mileage. The second effect might be seen as an artificial network economy. By making the frequent-flier bonus a future trip on "any route we serve in the United States," the carrier creates an option on future travel that increases in value with the number and variety of points served by the airline from the frequent-flier program member's home airport. Both of these effects are magnified when the traveler

who receives the bonus does not bear the full money or time costs of adjusting travel plans to take advantage of the program, such as when the traveler's time and ticket price are paid for by his employer.

It is possible that smaller carriers at an airport could challenge the dominant airline's advantage by forming affiliated frequent-flier programs in which the mileage earned on many different carriers could be combined to receive a free trip on any one of those airlines. Unfortunately, the costs of establishing such agreements and then enforcing them seem to be quite high. Furthermore, even a combination of the second, third, and fourth largest airlines at many hub airports would still leave the size of their operations at that airport—and thus the attractiveness of their combined frequent-flier programs—far behind that of the dominant airline. And, of course, airlines that might consider a combined program to overcome the dominant carrier's advantage at one airport would be interested in exercising a similar advantage at the airports they dominate.

Some observers have also suggested that a new entrant could overcome the dominant incumbent's advantage by offering to accept the mileage that customers have built up on the incumbent's program, just as some airlines (and many pizza parlors) respond to coupon offers of competitors by accepting the other firm's coupons. But the financial liability created by such an offer would further increase the sunk start-up costs for the entrant and thus would bring us back to the original problem. Furthermore, the average traveler will still expect that most of her future flights will be on routes that the dominant firm serves, so that she remains better off in terms of the frequent-flier program to concentrate all of her business with the dominant firm.

Travel Agent Commission Override Programs.

The commission system that is the basis for travel agent remuneration exhibits many of the same properties and problems of frequent-flier programs. Travel agent commission override programs are contracts between an airline and a travel agent in which the airline agrees to increase the agent's commission rate, from 10 percent usually to somewhere between 12 percent and 18 percent, if the agent reaches certain sales goals. The goals may be stated in terms of a certain dollar volume of sales—for example, the commission rate would be increased if the agent

sells more than \$80,000 of travel on the airline in a month—or in terms of a certain share of the agent's business—for example, the commission rate would be increased if more than 60 percent of the agent's air travel sales are with that airline. Commission override programs are essentially frequent-booker programs that, as with frequent-flier programs, can be used most effectively by the dominant carrier at an airport to bias brand choice in travel purchases.

In a 1988 survey of travel agents, 24 percent of the 702 responding said that their choice of carrier was "usually" affected by override payments, 27 percent said "sometimes," 13 percent said "rarely," and 35 percent said "never." Given the complexity of airline pricing and seat availability these days, it is simply unrealistic to think that competition will discipline any agent who pursues commission override programs rather than the client's best interests. The average customer would find it very difficult to monitor his agent closely enough to detect with confidence every breach of the agent's responsibility to the client.

Computer Reservation Systems. The most publicized strategic tool in the airline industry is probably the computer reservation system. In the past, airlines that owned computer reservation systems listed their own flights first, ahead of competing flights from other airlines. This practice was banned by the Civil Aeronautics Board in 1983 because it was argued that it biased the airline choices of travel agents and, thus, of consumers. If some subtle biases remain, they are likely to benefit the dominant airline in an area because, when other things are equal, travel agents are more likely to use the computer reservation system owned by the locally dominant airline.

One advantage of owning a computer reservation system may be its use in implementing travel agent commission override programs that link the commission override to the share of airline bookings that an agent makes on a certain airline. Such schemes require data on all of the agent's bookings—data that will be immediately available to the airline that owns the computer reservation system used by the agent for ticketing.

The Impact on Market Share. Name recognition among local customers, advertising economies, frequent-flier programs, travel agent com-

mission override programs, and computer reservation systems all probably contribute to a dominant airline's competitive advantage. One way to see the magnitude of this advantage is to examine how airport dominance increases an airline's share of the passengers who regularly use the airport. The factors discussed will affect people who live near and originate their trips at the dominated airport with a dominant carrier much more than people who live elsewhere and are traveling to that airport. Travelers are unlikely to be affected very much by the advertising of the carriers that dominate their destination points. Similarly, the frequent-flier program of the dominant carrier at the destination point will have no particular appeal to these customers, nor will the commission override program of that airline have much influence on the travel agent in a distant originating city.

One way to assess the magnitude of a dominant airline's competitive advantage is to examine how airport dominance increases an airline's share of the passengers who regularly use the airport. An imbalance in market share based on passengers' originating points would be hard to attribute to differences in price or quality of service.

To give a concrete example, there would be a strong indication of a competitive advantage for the airports' dominant airlines if Delta served most of the Atlanta-Minneapolis local passengers who originated their trips in Atlanta while Northwest captured most of the passengers whose trips began in Minneapolis. This is in fact the case. Delta gets 66 percent of the round trip nonstop passengers on this route who start their trips in Atlanta compared with 28 percent of Minneapolis-originating passengers. Northwest gets 72 percent of the nonstop round-trips that originate in Minneapolis and only 34 percent of those originating in Atlanta.

Such an imbalance in market share is hard to attribute to quality or price differences. An airline charges the same price on a route regardless of the point from which the passenger begins his trip. The quality of service is also independent of the passenger's point of origin, since regardless

of the endpoint from which the passenger starts, she takes one flight in each direction on the route; only the order of the two flights depends on the origination point.

Using this sort of comparison and controlling for the few factors that differ by the passenger's

The market share advantage generated by airport dominance is twice as large on business routes as on routes that serve primarily tourists. This is consistent with the fact that airport dominance tends to increase the fares paid by the high-end customers more than it increases the prices of discount tickets.

point of origin—most important, the convenience of flight scheduling for trips in each direction—I have estimated that a .25 percent increase in an airline's traffic share on a particular route will result from a 1 percent increase in airport dominance, that is, a 1 percent increase in the airline's share of all other traffic originating at the airport. Similarly, if airline *A* is competing against airline *B*, a 1 percent increase in *B*'s airport dominance will lower *A*'s share on the route on which they compete by .25 percent.

Thus, if one airline with a 60 percent share of all trip originations at an airport (this number is typical of the dominant airline's origination shares in Table 1) were competing on a specific route against another airline that had a 10 percent share of all airport trip originations, the 50 percent airport share differential would imply a 12.5 percent market share advantage for the dominant airline on the route over which the two airlines compete. That sort of gap can easily be the difference between profitable and unprofitable operations on a route.

It is noteworthy that the market share advantage generated by airport dominance is twice as large on business routes as on routes that serve primarily tourists. This is consistent with the fact that airport dominance tends to increase the fares paid by the high-end customers more than it increases the prices of discount tickets. Both facts indicate that frequent-flier programs, which are targeted primarily at business travel-

ers, are probably part of the cause of the advantage arising from airport dominance.

Not only do the natural and strategic marketing advantages of the dominant airline make it difficult for another airline to attract passengers, but the allocation and production of airport terminal capacity present barriers that also deter new entry. At many airports, gates are leased on a long-term basis—usually at below-market prices. This practice often allows a single airline to control most of the gate capacity available at the airport. With the low lease fees and long-term control, a dominant airline can find it profitable to buy up a disproportionate share of airport capacity to restrict the supply available to potential competitors.

Equally important in reducing access to airport space is the control that incumbent airlines are often given over the supply of new gates and other airport facilities. The long-term lease agreements often protect the investment of incumbent airlines by giving them a voice in the decision to build additional gates. In addition, the most common method of financing airport construction and expansion asks incumbent airlines to purchase or guarantee bonds issued by the local airport authority. In return, the incumbent is inclined to demand restrictions on facility use. At a few airports, incumbent airlines have agreed to finance construction of new facilities only after receiving assurances that older facilities will be decommissioned so that no net increase in gates will result.

Policies for Increasing Competition at Hub Airports

We certainly would not want to live without hubs, but different government policies might make it easier to live with them. Rather than replacing competition with government-imposed price ceilings, changes in policy should be aimed at increasing the competitive pressures felt by airlines at their hubs. It is unrealistic to expect an entrant to immediately establish a second hub at an airport, but the barriers to entry facing nondominant competitors could be reduced. Some proposals to consider follow.

First, eliminate frequent-flier programs, perhaps with some time lag such as two years. (This need not relieve the airlines of their current liabilities for mileage earned.) Not only do frequent-flier programs give a competitive advantage to a dominant airline, but they are a kick-

back that results in inefficient decisions if the person receiving the bonus is not the one paying for the ticket. Furthermore, because they are untaxed compensation to employees, frequent-flier programs work in part as a tax scam that reduces Treasury receipts.

Second, require travel agents to post the average commission rate they received from each airline over the previous three-month or six-month period. This may not be effective if customers are unwilling to use the information, but it is a low-burden way to put buyers on notice that the agent is looking out for his own interests as well as those of the customer. When I see that my agent gets a much higher commission from United than from Southwest, I am more likely to be suspicious if he neglects to mention any Southwest flights.

Third, do not allow incumbents to deter entry at an airport by locking up gates with long-term leases or by vetoing expansion plans. Local airport authorities should shorten the terms of leases on airport facilities and should give priority to other firms if a dominant incumbent is underutilizing the facilities it holds. Alternative financing sources for airport expansion should be found to lessen the influence of incumbent airlines on these decisions. Some federal government participation might be appropriate since airports, particularly hubs where people are changing planes, are used by many people who do not live in, or even travel to, the immediate area of the airport.

Fourth, enforce the antitrust laws against mergers between airlines with systems that overlap substantially. The Department of Justice now has authority for antitrust enforcement in the airline industry. Unlike the Department of Transportation, which had this authority until 1988, the Justice Department seems to understand that entry in airline markets is not so easy that antitrust policy should be based on theories of the shadowy "potential competitor."

Probably the worst outcome from the current debate on airline policy would be to return to the old price and entry controls that failed us for decades before deregulation. Recognizing that, however, should not inhibit implementation of prudent public policy. In fact, policies that promote competition in the industry may be the

most effective defense against those who advocate replacing competition with government control.

Without some action, the decline of competition that has been evident since the mid-1980s will continue. Entry of new firms into the industry has virtually ceased, and expansion of low-cost airlines into the strongholds of older, higher-cost carriers has been greatly curtailed.

Different government policies might make it easier to live with hubs. Rather than replacing competition with government-imposed price ceilings, changes in policies should be aimed at increasing the competitive pressure felt by airlines at their hubs. Barriers to entry facing nondominant competitors could be reduced.

One lesson we learned from the legacy of massive government regulation is that it interferes with the efficient operation of an industry. The lesson we should now learn from the era of deregulation is that a laissez faire policy can also lead to failures of competition and to the loss of economic efficiency.

Selected Readings

- Borenstein, S. "The Dominant-Firm Advantage in Multiproduct Industries: Evidence from the U.S. Airlines." *Quarterly Journal of Economics* (forthcoming).
- Borenstein, S. "Hubs and High Fares: Dominance and Market Power in the U.S. Airline Industry." *RAND Journal of Economics*, Vol. 20, No. 3 (1989).
- Levine, M.E. "Airline Competition in Deregulated Markets: Theory, Firm Strategy, and Public Policy." *Yale Journal on Regulation*, Vol. 4, No. 2 (1987).