

# An Overview of Competition in the American Airline Industry

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The purpose of this paper is to determine the state of competition in the airline industry. I will argue that there exists a considerable potential for market power that if exercised will harm the American air traveller. A comparison of between the regulated period and the deregulated period of the industry will show efficiency and competitive gains made during the past decade. Ironically, these very gains in productivity have caused unanticipated stresses on the airline industry. The importance of antitrust in response to industry changes will be examined. A relevant economic study that seeks to assess if market power exists will be examined. Finally, some suggestions are offered to ensure that the benefits thus far gained from deregulation are not squandered away.

Production efficiency as a result of cost competition plays the role of protecting the consumer from paying excessive costs in the core market structure. Allocation efficiency, or the lack of monopoly power in a market, assures us that supply will not be restricted in an effort to increase price and profit. A healthy market is that which has both of these, among other, elements. With competing interests in an industry, firms are compelled to provide benefits and cut costs better than the opposition. With all firms in an industry competing in this manner, the consumer benefits with low prices and increased incentives to purchase a good or service. An industry without competitors lacks any motivation

for firms to cut costs or provide extra services as long as its product is demand inelastic. Given the importance of travelling by air in today's society it is a fair assumption that airline services are faced with an inelastic demand curve, at least in the short run. Consequently, from a production efficient perspective it is important to maintain a competitive atmosphere in the airline industry.

Free, or reasonable cost, entry into an industry is an important aspect of competition. A market can be allocation efficient if it is truly contestable. The contestability theory essentially states that the threat of new entrants into an industry will ensure that the incumbents act competitively. Even if the structure of the industry is oligopolistic or completely monopolistic, if new firms are free to enter and exit with low cost, a healthy amount of competitive behavior will be observed. If firms were earning excessive profits competitors will enter the market, increasing supply and working to reduce price. Inefficient firms who do not provide low cost services will not survive as others, incumbents or new entrants, are able to offer them. The airline industry might be thought of as contestable because of the ease of exit. An airline can conceivably switch from unprofitable to promising routes with little more than flying its planes to the new destination. [1] If ease of entry (and exit) is assured competition should be adequate to maintain an allocation efficient stan-

dard in the industry. Considerations of competition were the impetus for the enactment of the Airline Deregulation Act of 1978. From 1938 government regulation, under the Civil Aeronautics Board (CAB), controlled entry into the industry, route determination, and the fares carriers could charge. The rapid growth of the industry and of technological innovations were additional reasons for government supervision.

The CAB's manner of regulation was, at times, very uncompetitive. In its forty year period of control, the CAB did not award any major markets to new entrants, allowing them to only serve small markets until they were proven to be "fit, willing, and able" (the CAB guideline definition).

[2] Even if a new entrant proposed to serve interstate markets at lower costs, the CAB would protect incumbents from such competition by entry.

[3] In some instances routes were awarded to faltering incumbents in hopes of improving the airline's profits. [4] This seems a backward way of maintaining competition.

Fare structure was also not indicative of a competitive industry. The CAB set price floors for routes that could not be violated. These regulated prices were often high above, not in balance, with costs. [5] Airlines could compete for passengers only by offering better conveniences and frills.

The concept of universal service was a goal of regulators. Even the smallest of towns were sure to receive some air transport if necessary.

Naturally the costs of such service were quite high and firms needed to be subsidized. The result was the cost of a major flights supporting the universal service policy. The CAB had to keep fares above cost to pay for such service to smaller towns. The result was not production efficient; great volumes of high-service flights were being offered in ever emptier planes. [6] Consumers had very few pricing options. [7]

The deregulation movement began to capture attention with investigative work by the Senate Judiciary Committee in 1975. [8] Critics saw how the intrastate service in California and Texas was able to offer much lower fares than those in similar regulated markets. [9] Arguments of the benefits of cost competition and efficiency convinced both the Committee and a task force established by the CAB. [10] Over the objections of the well-protected airline companies, Congress passed the Airline Deregulation Act of 1978. [11] Carriers would now decide for themselves route selection, fare structure, and any additional services to be offered.

Deregulated service in the industry has allowed for great increases in cost competition and consumer welfare. Fares are structured as more representative of costs. [12] Competition has helped to reduce the excessive wages that were not reflective of true marginal productivity. [13] A greater variety of flight and pricing options, particularly with discount fares, are now available to the consumer. [14] The Brookings Institute has

estimated that such benefits accrue to \$6 billion every year. [15] Dun's Business Monthly attributes deregulation as having increased American GNP by \$8 billion, measured in 1977 dollars. [16] Over 120 certificated airlines now offer service, whereas only 34 provided passenger service in 1978. [17] As of February 1987, the number of competitive markets had grown to 1,834, up from 1,126 in 1978. [18] Passenger-miles had increased by 63%, from 222 to 361 billion, as of October 1986. [19] Over 100,000 more jobs exist in the airline sector than during the regulated era. [20] The New York Times reported that 1982 fares, if held constant in 1972 dollars, were lower by 12.6%. [21] While many fears of the economic consequences that deregulation might produce, few can argue with the early success it achieved. Only recently have winds re-regulation been stirring, as merger tolerance and a stunted infrastructure have endangered these sizable gains.

A major innovation of the airlines that dramatically increased efficiency was the establishment of the so-called hub and spoke routing method. [22] Rather than the largely nonstop service of the regulated era, airlines form hubs, or centralized stations where numerous flights arrive and depart in a short period of time. Departing flights travel on the spokes, making stops in smaller markets and/or going on to another hub. Although most passengers would seem to prefer nonstop service, the

creation of the hubs indicates that there are few routes that can exclusively support the costs of such service. [23]

Benefits of this system aid both consumer and airline. Passengers have greater access to smaller markets, although they must first usually travel to or originate from a hub. [24] In this way many smaller markets that could well have lost service are rendered profitable. This is clearly an efficient outcome. Firms generate increased revenue from higher load factors (% of seats filled). [25] Airlines more efficiently utilize equipment and ground personnel. Rather than spreading out services such as ground crews across a region, at a hub more effective control and hence, lower costs are possible. [26] Hubs have the effect of economies of scale. The more centralization an airline can achieve, the more it can reduce costs and offer more flights to differing regions. Such growth leads to new hubs being created in what were previously considered small markets, again giving more travel options to the consumer. [27] As long as entry is readily affordable the gains from such competition are enormous. Smaller local carriers are able to expand to be regional operators, and theoretically, national carriers, provided there is adequate room in the industry for such expansion. [28] But this same expansive ability also avails itself to the larger more established carriers as well. If they are allowed to prevent smaller carriers from such expansion and competition, efficiency

in the industry is sure to decline. This is where the always important issue of antitrust comes into play. The two foremost issues are industry concentration and merger policies, and predation. [29]

With the passage of deregulation, Section 408 of the bill transferred final authority of antitrust issues, primarily concerned with mergers, to the Department of Transportation (DOT). This reduced the Antitrust Division of the Department of Justice into merely an advisory role. [30] If regulated barriers to entry and set prices are abandoned, a substitute regulatory mechanism must be established--competition. [31] Oligopolistic collusion might result if mergers are allowed to go unchecked. Mergers that allow major carriers to restrict entry would allow opportunities for unchallenged price increases.

In the beginning of the deregulated era, the DOT was not faced with many decisions in the area of mergers. Smaller low cost carriers sprung up in every region that could attract travellers away from the major trunk lines. Southwest, Pacific Southwest, Air Florida, New York Air, Muse Air, Jet America, Northeastern, Pacific East, Hawaii Express, and People's Express are examples of this kind of carrier. [32] Extra capacity existed at airport terminals, allowing this rapid surge in firms and flights. Large carriers responded to this competition by creating the hub and spoke system, which as we have seen, cut costs. These large firms soon realized



that merging with small carriers would have tremendous benefits, your basic horizontal interfirm internalization. A merger would eliminate a lower priced rival and provide additional equipment to further the establishment of hubs.

Mergers of this type began in the mid-1980's. The DOT showed a very permissive hand. As of March 1987 the DOT had issued twelve final decisions on airline mergers, all but one were approved. [33] Three of these cases had been approved against the judgment of the Department of Justice, who had reservations about possible anticompetitive effects. [34] Although most of the merger applications were not of a substantial nature, a few cases did appear to have great importance. The issue of entry, or potential entry, was crucial in the cases that the two agencies disagreed upon. The Northwest/Republic and TWA/Ozark mergers are examples of mergers leaving some cities with only one major carrier. [35] In these two cases the Department of Justice had concern over the possible entry barrier effect the mergers would have. But the DOT failed to find any physical entry barriers, and in believing in the contestability of the market, concluded the mergers to be safe. [36]

Rather than a preventative antitrust policy, the DOT appeared to use the opposite, approving mergers unless there were only obvious elements of uncompetitiveness. The result is an eight firm industry that controls

94% of passenger traffic. [37] The air major fliers are Texas Air (Continental and Eastern), United, American, Delta, Northwest, US Air, Trans-World Airlines, and Pan-Am. There are three levels at which competition can be measured in the industry; national, hubs, and city-pair markets. With such a high concentration at the broadest level of measurement, it appears quite likely that even more concentration exists as one examines smaller and smaller forums. Data concerning hub concentration reflects this, as I will show.

The enormous growth in air traffic has ironically been working to reduce efficiency as the industry has reached its full capacity. Although passenger miles have nearly doubled since deregulation, there are some 4,000 fewer air traffic controllers. [38] This is largely a result of the refusal of the Federal Aviation Administration to re-hire any of the 11,000 controllers fired during the 1981 PATCO labor dispute. [39] There literally has been no new major airports built in the past fifteen years. [40] Although this spring Denver voters approved a referendum to build a new airport to supplement Stapleton Airport, attempts such as these, especially in large metropolitan areas, are met with objections over noise, property value decreases, and the like. Even airlines themselves are fighting such development. United and Continental, who together control 85% of the flights at Stapleton, are fighting against the increase in capa-

city and competition that would surely result from expansion of the industry infrastructure. [41] This infrastructure is clogged to a point where efficient service is no longer possible. It appears highly unlikely that the airline industry is perfectly contestable. If new entrants are hampered from even getting their planes off the ground at the peak hours which consumers demand flights, I would believe entry to be restricted. In such a business atmosphere common sense dictates that the nature of competition will change, if only subtly.

Other factors appear to be restricting free entry. Entry is not costless in terms of sunk costs that cannot be recouped. Items such as advertising and ground facilities are lost if an airliner decides to vacate a hub location. [42] In a perfectly contestable market the incumbent must be restricted from adjusting prices after new entrants arrive. [43] This results in the new entrant winning customers away from the incumbent and providing sufficient intimidation to prevent the incumbent from again raising price above competitive levels. In the airline industry it appears that incumbents are often able to respond instantly, through the use of computerized booking, with lower prices to match the offers of a new entrant. Hence, even if entry were sufficiently easy, a prospective newcomer has no incentive to challenge an above cost incumbent. The effective opportunity cost is no greater than its current market. Indeed, if

entry costs are substantial, the rate of return might even be less than its current market, encouraging the incumbent to further control the hub. The antitrust policies of the appropriate authority plays a crucial role here. In the opinion of many the DOT's approach has been far too lax, resulting in concentration increases and anticompetitive practices which raise fares, diminish consumer choice and deteriorate service.

Another problem associated with market power affects entry in the airline industry. Competition dwindles as firms monopolize their control of airport terminal gates. By tying up gates the hub-dominating firm can prevent new entrants from having anywhere to sell tickets or facilitate the boarding of planes. This can be achieved through exclusive long-term leases and by obstructing expansion plans by airport administrations. [44] Gates can potentially go unused as incumbents may either refuse to lease them or charge prohibitive rates that make entry unprofitable. [45]

The problem of reduced consumer options has already manifested itself. Several city hubs are now served only by one or two major carriers. The DOT's merger tolerance has resulted in some cities' only two carriers merging into one firm. [46] Two years ago American Airlines had 63% of the traffic at Dallas/Ft. Worth. Northwest had 81% at Minneapolis/St. Paul, and 64% at Detroit's Metropolitan Airport. US Air held an 84% share of all flights in the Pittsburgh market. [47] In 1988 Delta's control over

Atlanta flights had grown to 62%. Piedmont Airlines in Charlotte dominate to the tune of 89%, increasing fares 34% since 1985. And in St. Louis, the city most impacted by the controversial TWA/Ozark merger, 83% of all flights are operated by TWA, and prices have increased 22%. [48] As national carriers continue to divide markets, with no decline in demand, chances of entry decline. An exasperated David R. Hinson, once chairman of Midway Airlines said: "Every major city is hubbed, every gate is used, every ticket counter is occupied, and no one wants to give anything to anybody." [49]

Actual economic studies have been performed to assess the state of competition in the airline industry. Paul W. Bauer and Thomas J. Zlatoper studied models, that of industry concentration and the theory of market contestability. [50] For the study of concentration the Herfindahl Index (the sum of all firms' market shares) was used to compare airlines to other industries. Finding that the typical route is serviced by only 2.5 carriers, the resulting Herfindahl Index is over 4,000. [51] This is well above the 1,800 figure that the Department of Justice uses as a yardstick of rejecting mergers. [52] But here it is important to consider the emphasis both the DOT and the Department of Justice place on the city-pair markets being affected by the prospective merger. An unusually high Herfindahl Index might be permissible if the market is contestable.

The second part of the Bauer and Zlatoper study attempted to determine if such contestability exists:

If the market were perfectly contestable, then the number of carriers serving a route would have no relationship to passenger fares. If potential competitors constrain the fare-setting abilities of existing carriers, then the market is imperfectly contestable and the effect of the number of carriers serving a route should have a significant, although small, effect on the fares charged. [53]

Data concerning direct flights into Cleveland, Ohio was used in the sample. First-class, coach, and discount fares were all separately considered on such variables as the number of carriers serving the route, carriers squared, number of passengers, miles (from Cleveland), miles squared, population of the origin city, whether the origin city has restricted slots, and the number of on-flight stops, among others.

Since it is estimated by the Air Transport Association that 90% of all travellers fly on some sort of discount ticket, [54] the results of the discount fare estimates were looked at as the most indicative of market contestability. [55] The data showed significantly that the first additional carrier added to monopolized routes would reduce fares by around \$11. But the carriers squared variable was positively significant, indicating that the effect of more entry by additional rivals does not reduce fares as much as the effect of the previous entry. If more than four carriers serve the route any entry would fail to have any impact on fares. [56] Thus the market is not contestable. Although other studies have

documented this fact, the Bauer and Zlatoper study is particularly relevant because it, unlike other studies, was conducted after the wave of mergers that began in 1986. By being more recent, this study is an accurate indication of the state of airline competition. As I have shown, the U.S. airline industry, for a variety of reasons, is not perfectly contestable. A danger of potential market power looms over the industry. Contestability and a low concentration ratio are functional substitutes for providing a competitive atmosphere. A situation of incontestability and a high concentration ratio now exists in the industry. The effect on consumers is likely to be detrimental. To assure the continuation of benefits received from deregulation, two issues must be addressed. An expansion of the basic infrastructure must occur and a more restrictive antitrust policy with respect to mergers must be enforced. More gates, ticket counters, and airports are necessary to allow competitors to expand and take advantage of the miscalculations of their rivals, this is the essence of competition. [57] The Bauer and Zlatoper study indicated that "flying into a slot restricted airport increases the one way fare by about \$18 ... ." [58] Clearly this represents excess demand. A supply increasing policy, such as building new terminals and ticket counters, would help to provide a solution. About \$6 billion exists in a trust fund exclusively earmarked for airport expansion and construction. But national debt considerations

currently prevent this money from being spent to help alleviate these problems. Or a demand reducing policy such as drastically increasing landing fees during peak travel hours would be helpful. [59] In either case the marginal social benefits appear to outweigh the marginal social cost.

A change in antitrust policy may well have already occurred. As of December 31, 1988 merger authority transferred from the DOT to the Department of Justice. Charles F. Rule, the Assistant Attorney General of the Antitrust Division has spoken of more concern to be expressed at mergers of carriers who have hubs in the same city. [60] The Department of Justice has also appeared to dismiss the notion of perfect contestability of airline markets by concentrating on its substitute, concentration: "... antitrust analysis will likely tend to focus on an assessment of an airline mergers' impact on national concentration levels." [61] Analysis will continue to determine the effect on city pair markets, also.

This change could well result in fewer approved merger applications. The continuation of these mergers will surely exacerbate the aforementioned problems. With one airline serving 75%, on average, of the traffic at a given airport, additional inefficiencies are a possibility. An antitrust policy of divestiture might be warranted. Companies could be forced to sell terminal space and landing rights in an effort to increase the number of participating firms. This would prevent big firms from garnering many



slots and charging excessive prices. Inaction and complacency, on the other hand is likely to have unfortunate ramifications for the American air traveller.

In conclusion, it has been shown that both incontestability and a high concentration ratio exists. This is not a viable atmosphere for competitive breath. This situation has resulted largely from the industry growing out of its infrastructure and an unrestrictive merger policy. Changing these two aspects of the industry will help to establish more competitiveness in the American airline industry.

## FOOTNOTES

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3. / 4. / 5. Ibid.
6. "Some Lessons from Deregulation", Lindley H. Clark Jr., Wall Street Journal, November 22, 1983, p.35; 3.
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8. "Competition and Airlines", p. 15.
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11. Ibid, p. 19.
12. Kahn, Alfred E., testimony before the Committee on the Judiciary United States Senate, One Hundreth Congress, March 25, 1987, United States Government Printing Office, Washington, 1988, 78-079, p. 68
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15. Scocozza, Matthew W., testimony before the Committee of the Judiciary United States Senate, One Hundreth Congress, March 25, 1987, United States Government Printing Office, Washington, 1988, 78-079, p. 7.
16. / 17. Ibid.
18. Ibid, p. 8.
19. / 20. Ibid.
21. "Some Lessons ... ." p. 35.
22. Andewelt, p. 36.
23. Scocozza, p. 9.
24. Ibid, p. 10.
25. Ibid.
26. Andewelt, p. 36.
27. Ibid.
28. Ibid, p. 37.
29. The issue of predation, particularly with the domination of computer reservation systems by United and American, is also a salient issue. But of course constraints exist and I will only specifically examine merger policy. Similiarly, I will not address other antitrust issues such as price fixing and collusion.
30. Scocozza, p. 12.

31. "Why Flying is Unpleasant", Walter Adams and James W. Brock, New York Times, August 6, 1987, I p. 27; 1.
32. "Competition and the Airlines", p. 26.
33. Scocozza, p. 20.
34. Ibid.
35. Andewelt, p. 44.
36. Ibid.
37. "Climbing Air Fares Stir Wide Concern", Agis Salpukas, New York Times, September 9, 1987, I p. 1; 3.
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48. "The Hubbub over Airline Hubbing", Martha M. Hamilton, The Washington Post National Weekly edition, February 13-19, 1989, p. 21.
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