Airline Deregulation IS Working

David R. Graham and
Daniel P. Kaplan

CRITICS OF airline deregulation charge that we now have escalating air fares, huge industry losses, fare discrimination, and service cutbacks at small communities—and some of the statistics they cite do indeed paint a gloomy picture. But their statistics obscure the fact that competition is bringing fundamental improvements to the airline industry. Airlines are reconfiguring their route networks to provide better service; fares are now more cost-based than before; and the industry is becoming more efficient. Deregulation has not immediately removed all the burdens that regulation imposed. But progress is being made, and the situation is far better than the critics seem to believe.

The Legacy of CAB Regulation

The Civil Aeronautics Board (CAB) closely regulated airline routes and fares for nearly forty years. Not only did it restrict entry of new firms into the industry but also, in awarding routes, it frequently did not even try to determine which carrier could serve the route at lowest cost. And it deliberately established fares that exceeded the costs of service in many markets, thereby encouraging airlines to provide unneeded services.

Any airline operating in interstate travel markets had to have a CAB certificate listing the routes it was authorized to serve. Before any new firm could be "certificated," it had to be found "fit, willing, and able" to provide scheduled service, which few managed to do and those few were confined to small, short-haul routes. Before any airline could enter a route, it had to prove the added service was needed and that incumbent airlines would not be substantially harmed by entry of a new competitor. New routes were often awarded to a financially weak carrier in the hope of boosting its earnings.

Under regulation, major routes were served mainly by trunk airlines—the large airlines such as American, United, and Eastern. Local service airlines—such as Piedmont, Frontier, and Southern—were relegated to serving small, often subsidized, routes as well as a few

The authors are economists in the Civil Aeronautics Board's Office of Economic Analysis. Daniel P. Kaplan is director of that office, and David R. Graham is chief of its Policy Analysis Division. The views expressed here are theirs.

heavily traveled routes within their regional service areas. Usually no more than two or three airlines were allowed on a given route. Hence, carriers often could not go to cities where their passengers wanted to go. By imposing these limitations, the CAB forced a degree of regional specialization on the airlines, and thereby retarded the integration of the route system.

In exercising its pricing policy, the board maintained tight control over both the standard fares charged and the discounts airlines were allowed to offer. Although new technologies led to significant reductions in airline costs, the board's regulatory procedures limited the extent to which airlines could reflect these productivity gains in lower fares. This was especially notable in the 1960s when airline managements were rapidly switching their fleets to jet aircraft. The CAB's policies had the effect of encouraging them to compete by offering high-quality, high-convenience service—particularly by offering excess capacity—thereby driving up costs.

Some of the distortions that the CAB's policies created were easily corrected in the aftermath of deregulation when the board began granting airlines increased operating discretion. Prices could be readily changed to reflect the costs of service. Also, since entering or leaving markets is not especially costly, carriers could move relatively quickly to realign route structures. But not all changes were this easy. In particular, regulation had led to over-investment in big aircraft and inflated labor costs.

- The carrier networks created by the CAB had affected the airlines' choice of aircraft. Since trunk airlines served heavily traveled long-haul routes, they had purchased large aircraft suited for such markets. In 1978, over 35 percent of their capacity was provided in wide-bodied aircraft. The local-service fleet mix proved to be much more adaptable to conditions in the deregulated industry.
- Under regulation, airline employees had been able to capture a significant share of the gains of lower-cost technologies by obtaining restrictive work rules and progressively higher wages. Regulation reduced incentives to negotiate low-cost labor contracts, because an airline that was able to achieve a cost advantage was prohibited from translating it into a fare advantage and because a high-cost airline did not have to fear competition from airlines with lower costs. It was often considered much better to make generous labor settlements than to incur a strike and lose revenues during the long months before traffic returned to normal.

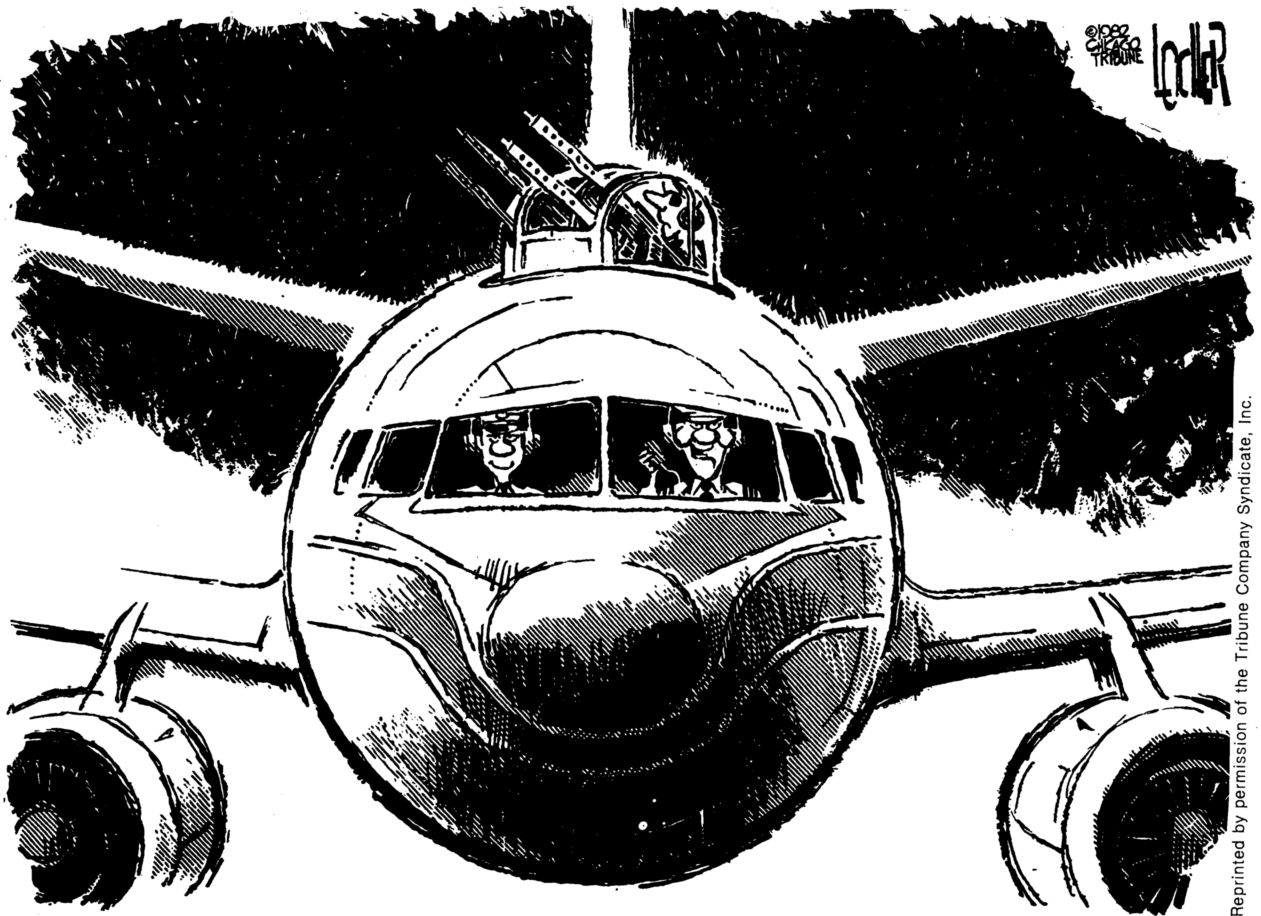
Neither the equipment nor the labor-cost problems disappeared with the advent of deregulation. Airline fleets cannot readily be changed. And airline employees are reluctant to forfeit the gains achieved over many years. In fact, we shall see that the industry's inability to reverse the policies and commitments inherited from the regulatory era is partly responsible for two of the major charges brought by critics of deregulation—industry losses and fare discrimination. Charges made by the critics that deregulation has brought about "excessive" fare increases as well as reduced air service for small cities are not borne out by the facts.

Routes: Why Trunk Airlines Are Losing but Small Cities Are Not

In several respects, the route realignments occurring today constitute reversals from the inefficiencies caused by CAB route policies. The market share of the trunk airlines—the group most favored by CAB regulation—has fallen rapidly since 1978. What has happened is that the air service network has become better integrated, as the airlines have moved rapidly to develop route networks that match traffic patterns. The old route network created by the CAB is unraveling, and a new network structured by competitive market forces is coming into being.

The market share of the trunk airlines—the group most favored by CAB regulation—has fallen rapidly since 1978.

Airlines have entered and left hundreds of routes. Many cities are now served by airlines different from those that served them before, while about half of all cities have gained service and about half have lost. Nevertheless, on balance, every class of city is benefiting from the better-integrated service network, either


Reprinted by permission of the Tribune Company Syndicate, Inc.

"There'll be a slight delay, ladies and gentlemen, while we rendezvous with the airline that just undercut our prices."

through increased flights or more direct service to major cities, and the beneficiaries include the smaller communities (which were considered vulnerable to service losses from deregulation). The broad outlines of the changing structure of the industry are illustrated by the changing market shares of the major airline groups (Table 1) and the changes in departure rates from major city groups (Table 2).

Between 1978 and 1981 the share of airline traffic carried by the trunks declined sharply, while the share carried by each of the other categories of airlines grew (Table 1). The plight of the trunks has been driven home by the recent bankruptcy of Braniff, the eighth largest U.S. airline. Why are the trunks losing out? One reason is management error. Braniff, for example, expanded its route network rapidly in 1979, foreseeing neither the recession nor the coming rise in fuel prices and interest rates. But other more fundamental changes have also been important.

The local-service airlines have moved into many long-haul markets. Under regulation, the CAB's artificial division of markets between trunk and local airlines meant that many local-service travelers had to make a connection with a trunk airline when traveling from one small

Table 1

MARKET SHARES BY INDUSTRY GROUP, 1978–81

Industry Group as Classified by CAB in 1978	**Percent of Industry Revenue Passenger Miles** 1978	1981	**Gain or Loss** (percentage points)
Trunks	87.2	80.1	−7.1
Locals	9.2	12.2	3.0
Commuters	.6	1.2	.6
Charters	.6	2.2	1.6
Intrastate	2.4	3.7	1.3
Newly Formed Airlines	0	.6	.6
	100.0	100.0	0

Source: Civil Aeronautics Board, *Air Carrier Traffic Statistics* and *Commuter Air Carrier Statistics;* and airline annual reports to shareholders.

city to another, or to a distant larger city. But passengers making connections prefer to stay on a single airline, because they are less likely to lose baggage or miss their connection.

Thus, the local-service airlines, because of their well-developed feeder operations, have enjoyed a significant competitive advantage over the trunk airlines in many of the long-haul markets that the trunks served under regulation. The locals now offer long-haul single-plane or on-line service to passengers who previously connected with a trunk airline. For example, USAir, which has added service to Phoenix, Dallas, Houston, New Orleans, and several Florida cities through its regional hub in Pittsburgh, now offers more nonstop flights between Pittsburgh and these cities than does any other

By 1981, nonstop routes of more than 1,000 miles accounted for 11 percent of the local airlines' traffic, though these airlines did not serve a single route of that distance in 1978.

airline. By 1981, nonstop routes of more than 1,000 miles accounted for 11 percent of the local airlines' traffic, though they did not serve a single route of this distance in 1978. And local-service airlines like USAir, Frontier, and Piedmont have been quite profitable.

At the same time that the locals have been expanding their connecting networks to compete against the trunks, twelve additional airlines have begun scheduled interstate air service between major cities in direct competition with the trunk and local airlines on the routes. Five of these carriers are totally new, as, for example, Midway and People Express; others are former charter operators, like World and Capitol; and others are former intrastate carriers, like Southwest and Air Florida. Although their service offerings differ widely, these airlines tend to provide somewhat simpler services than the lines long established on these routes. Their strategy typically emphasizes minimizing costs, fares, and extras.

Faced with this new competition, the trunks have been realigning their routes. They have expanded connecting service and have increasingly adopted the hub-and-spoke pattern. For example, American has substantially concentrated its operations in Dallas, Continental in Denver, TWA in St. Louis. But they have been hindered in their attempts to develop this pattern because their aircraft are the kind purchased for big long-haul routes. Thus, for most of the trunks the necessary development of feeder networks has been costly. It is noteworthy that Delta, the most profitable of the trunk airlines, has long had a hub-and-spoke operation centered in Atlanta and had already acquired a fleet of two- and three-engine jets suited for that kind of operation. Like the locals, therefore, it was well-positioned to take advantage of deregulation.

The result of the changes in route structure has been a better-integrated service network. Our analysis of traffic flows in a sample of 4,500 markets shows that the same fraction of travelers need to make connections today to complete their trips as in 1978. But of the connections being made, the proportion made on-line has risen by about 25 percent. This increase has come about despite the fact that the increasingly important commuter airlines do not offer on-line long-haul service—that is, the expansion of their service to small communities, replacing trunk or local airlines, reduces the availability of on-line connecting service to travelers from these communities.

To overcome this, several commuter airlines have entered into so-called interlining agreements with trunks or locals in order to provide passengers with some of the advan-

Table 2
CHANGES IN FLIGHTS
BETWEEN MAJOR CATEGORIES OF AIRPORTS, 1978–81

Airport Market Categories (markets include flights in both directions)		**Percent Change** (June '78 to June '81)
Between 24 *Large Hubs* and		
	Large Hubs	.5
Between 37 *Medium Hubs* and		
	Large Hubs	5.4
	Medium Hubs	6.2
Between 70 *Small Hubs* and		
	Large Hubs	−1.5
	Medium Hubs	−1.9
	Small Hubs	−12.4
Between 480 *Non-Hubs* and		
	Large Hubs	2.7
	Medium Hubs	.6
	Small Hubs	−12.5
	Non-Hubs	−18.2

Source: *Official Airline Guide.*

tages of on-line service. Indeed, although it was feared that small communities would lose significant amounts of their air service—and it is being charged today that this has happened—the fear has not been realized. Trunk and local service airlines have, of course, abandoned many routes. This does not mean, however, that small markets now have less service or none at all. A 1981 CAB staff study shows that, in fact, the seventy-two small communities where trunk and local carriers have pulled out experienced a 30 percent *increase* in flights between 1978 and 1981.

. . . in fact, the seventy-two small communities where trunk and local airlines have pulled out experienced a 30 percent increase in flights between 1978 and 1981.

It is true that, measured in total departures, big airports have gained and small airports have lost, but that is only part of the picture. While total departures at 480 non-hub airports fell 2 percent between June 1978 and June 1981, flights between those small airports and both large and medium hubs in that period increased, as Table 2 shows, 2.7 percent and 0.6 percent, respectively. The reduction in departures from small hubs and non-hubs chiefly reflects a shift to direct major-city flights and (particularly) away from "milk runs." It does not reflect a loss of needed service.

Fares: Why They Are Changing in All Directions

Like the route networks, the fare structure in the airline industry has changed dramatically with deregulation. The CAB had prescribed a fare structure in which prices were based almost exclusively on mileage. But now restricted discounts, promotional fares, and reduced off-peak fares are commonplace—and so are differences in fares for routes of the same distance. Because the industry is still undergoing rapid change, the sorting-out process has undoubtedly led to many cases where fare differentials do not always reflect cost differentials. Nevertheless, statistical analyses show that fares are now mainly determined by the costs of service.

Of course, mileage is not the only factor that determines costs. The amount of travel in a market, for example, is an important cost determinant because larger aircraft, which generally have lower average operating costs, are used on more heavily traveled routes. In addition, carriers can generally fill a higher percentage of their seats in these denser markets, which also reduces costs. (The cost of flying a passenger in an otherwise empty seat includes little more than a meal and a travel agent's commission.) Since denser markets have lower costs, they have lower fares. Moreover, the demand for convenient service also differs among markets, and the quality and cost of service will differ accordingly. Business travelers are willing to pay for convenient service—flights offered throughout the day—and for a high probability of securing a reservation for a preferred time. On the other hand, vacation travelers are less time-sensitive; carriers therefore can—and do—serve tourist markets with fewer flights operated at higher load factors with larger equipment. The low fares in tourist markets reflect the lower operating costs.

More important for our concerns, the cost structures of the carriers serving a market also influence the fares. In particular, the new airlines tend to have substantially lower costs than the airlines that grew up in the regulated environment. The number of airlines competing in a market and their relative sizes also have a moderate effect on fares. For example, an analysis of a sample of markets that we did with David Sibley shows that travelers in concentrated markets pay approximately 10 percent more than travelers in unconcentrated markets ("Efficiency and Competition in the Airline Industry," CAB Working Paper, May 1982).

Perhaps the most frequent criticism of the fare structure has been aimed at the relatively low prices often available in such transcontinental markets as New York to Los Angeles. In some cases, these fares are less than those for routes half the distance, and it is sometimes alleged that they are the result of cross-subsidization or destructive competition. In fact, they appear to be a natural consequence of a decline in demand coupled with a glut in wide-bodied capacity. Because many of the passengers in these markets are discretionary, demand has been strongly affected by the sluggish economy. At the same time, the decline of trav-

el in these markets and the lack of alternative uses for the wide-bodied aircraft have exerted substantial downward pressure on fares.

Even within a given market, the relationship among fares has changed as the industry has adopted various forms of peak-load pricing. In most cases, passengers' desired travel times are not spread evenly through the day, week, or year—for example, Friday afternoon is a desired time of departure for a disproportionate number of passengers. By offering lower fares for travel at less popular times, the airlines are now attracting some passengers to off-peak flights. The restricted discount fares available in many markets also embody a significant element of peak-load pricing. By varying the supply of discount seats from flight to flight depending on expected travel demand, airlines can ensure that a high percentage of full-fare passengers are accommodated on the flight of their choice. Moreover, by shifting the less time-sensitive passengers to off-peak flights, carriers make efficient use of aircraft capacity—more passengers can be accommodated with a given stock of aircraft.

Fares: Why Consumers Are Better Off

Despite off-peak reductions, fares are now higher (in most cases) than they were under regulation. There is little doubt, however, that they are lower than they would have been had regulation continued. Of course, no rigorous measures for this are available, because we cannot know for certain how the CAB or the airlines would have responded to the rapid fuel-price increases of 1979 and 1980 if deregulation had not taken place. Nevertheless, since the lower-cost airlines have grown the most rapidly and since the trunks have already taken many steps to reduce their costs of service, it is evident that deregulation has put downward pressure on costs and prices. The airlines have increased load factors, and they have begun to increase the productivity of their workers and their aircraft. And, as a result, the increases in fares have been significantly smaller than increases in costs.

Table 3 compares the changes in consumer prices, airline costs, and fares in late 1976 and late 1981. (Although the Airline Deregulation Act was not passed until late 1978, we have used 1976 as the base period for our comparison because fare liberalization began early in 1977 when competition-minded commissioners joined the board.) Note that consumer prices rose about 60 percent over the period, and trunk operating expenses rose more than 75 percent (mainly because the price of airline inputs such as fuel and labor more than doubled), but airline fares rose only about 50 percent. In other words, under deregulation, airline costs have risen far more than the overall rate of inflation, average fares significantly less. In part the explanation is changing travel patterns: an increasing proportion of trips are long-haul, which have lower fares per mile. But even after controlling for this, the data clearly indicate that competition has prevented the major airlines from passing their full cost increases on to the consumer in the form of higher fares.

. . . under deregulation, airline costs have risen far more than the overall rate of inflation, average fares significantly less.

The role of the low-cost new-entrant airlines in lowering fares is noteworthy. Their lower costs are partially due to their specialized operations, which allow more efficient aircraft utilization than the major trunks have achieved. Costs are also reduced because of less elaborate meals and simplified reservation systems. Perhaps most important, however, is the fact that the new entrants do not have the

Table 3

INFLATION AND TRUNK AIRLINE COSTS AND REVENUES, 1977–81

(percentage change)

Year (fourth quarter)	Increase in Consumer Price Index	Increase in Operating Expense per Available Ton-Mile	Change in Fare and Cargo Revenue per Revenue Ton-Mile
1976 to 1977	6.6	7.0	4.2
1977 to 1978	8.9	4.6	−0.8
1978 to 1979	12.7	22.7	18.2
1979 to 1980	12.6	18.5	24.3
1980 to 1981	9.6	8.6	0.7
1976 to 1981	61.5	76.7	51.2

Sources: CAB, *Quarterly Financial Review*, various issues, and Bureau of Labor Statistics.

high wages and restrictive work rules that the major airlines inherited from the protected business environment created by CAB regulation. In some cases, indeed, the entrants' costs of serving a market are only half those of the trunk or local-service carriers. Because of their lower costs, the new entrants can sharply undercut the fares of major airlines and still earn profits.

In many markets, these new entrants have come in with significant amounts of capacity and the established carriers have had to respond to lower fares. For example, when Southwest entered the Dallas-Oklahoma City market in April 1980, it established a peak fare that was 69 percent of the prevailing fare; Texas International and Braniff followed suit. Similarly, when People Express began serving the New York-Pittsburgh market in the spring of 1982, it offered an unrestricted fare of $40 in peak hours; the previous coach fare was $123.

. . . People Express . . . offered an unrestricted fare of $40 in peak hours; the previous coach fare was $123.

United, the nation's largest carrier, has decided to emulate the new-entrant airlines by offering low-fare, no-frills service in many of its markets. These "Friendship Express" flights use aircraft with high-density seating (scheduled for quick turn-around) and offer fares as much as 35 percent lower than previous coach fares.

The growth of the new entrants has also contributed to the major carriers' desire to do something about their labor costs. Beginning in 1981, a number of carriers cut wages and management salaries. More significantly, several are attempting to negotiate contracts that loosen the restrictive work rules that grew up during regulation. For example, until recently, United and Western were required by their union contracts to fly their two-engine Boeing 737s with three-man crews, while local service carriers like Piedmont and Frontier flew identical aircraft with two-man crews. The trunks now have an agreement with their pilots so that they too now use two-man crews. More generally, carriers are negotiating agreements to increase the number of hours per month that their pilots and cabin attendants work. Some airlines get half again as many flight hours per pilot as others do. Such differences help explain why some airlines are incurring losses while others are earning substantial profits.

Additional Gains Will Come

The rapid changes in the industry under entry and pricing freedom testify to the influence the CAB had in shaping the airlines during the forty years of regulation. Complex and lengthy legal proceedings no longer stand in the way of innovative pricing and route planning. Carriers are increasingly establishing fares on a market-by-market basis. Entry into markets is not prohibitively expensive, and new carriers have begun service, while existing carriers have made substantial changes in their route systems. Some are developing hub-and-spoke route patterns to offer increasing amounts of connecting service, and others are concentrating on providing low-cost point-to-point service. In most markets, the percentage of traffic held by the leading firms is declining. Since the CAB no longer inhibits carrier growth, efficient carriers are expanding, and inefficient carriers are contracting.

Moving from a regulated to a freely competitive airline system has not been painless, and the pain is not yet over. Some carriers inherited a fleet mix and a cost structure that were not well suited for a competitive environment. Some cities have lost significant amounts of air service, and on some routes fares are undoubtedly higher than the costs justify. The PATCO strike has contributed to these problems by limiting the growth of some airlines and barring the entry of others. Nevertheless, most air travelers are currently enjoying better and lower-cost air service, while the most efficient airlines are profitable and growing even during a period of sluggish economic performance. There is every reason to expect the benefits of deregulation to increase as the industry continues to adopt new policies in response to competition. Conversely, there is little reason to believe that re-regulation could eliminate the major airlines' problems—and no reason at all to think it could fashion a better air transportation system than the one now evolving. ■