An Economic Analysis of Airline Fare Deregulation: The Civil Aeronautics Board's Proposal

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I. INTRODUCTION

This article will summarize the salient features of the costs of and the demand for air service and comment on the proposal issued by the Civil Aeronautics Board on April 13, 1978, which makes interim changes in the ratemaking policies developed in the Domestic Passenger Fare Investiga-

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EDITOR'S NOTE: On September 5th, after this article was set in type, the Civil Aeronautics Board enacted new pricing rules which closely resemble the proposal discussed here. Reg. PS-80, Amendment No. 59, 43 Fed. Reg. 39522. The enacted rules are slightly more liberal than the proposed rules. The main differences are that the new rules give the airlines freedom to raise fares 5%-10% above the Board's standard fare formula (the original proposal provided no such freedom) and to reduce fares as much as 70% below the formula (instead of 50%, as was originally proposed). Thus, the new rules' thrust and significance remain the same, and the analysis presented in this article is still up-to-date.

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tion (DPFI).[1] In this proposal, the Board outlines modifications in its approach to ratemaking that would cause significant changes in the character of airline competition.

The major features of the Board's proposal are:

(1) "*Zone of reasonableness*". Within an explicitly-defined zone, air carriers would be free to establish fares with little fear that they would be suspended.[2] Starting from a formula which defines the rate "standard" as a function of distance (a modified version of the present DPFI methodology), the zone "ceiling" would be set equal to the standard, and the zone "floor" would be set at one-half the standard.

(2) *Market-by-market variation.* For a given carrier, the fare charged in markets of equal distance would not have to be the same. Also, by implication, the fare in a market of given distance could be higher than the fare in a market of longer distance.

(3) *Discount fares and the profit impact test.* Discount fares would no longer have to meet the "profit impact test," which requires proof that the proposed discount would increase industry profits.

(4) *First-class/coach differential.* Carriers would no longer have to maintain a fixed, percentage relationship between the fare charged to first-class passengers and that charged to coach passengers.

(5) *Preference, prejudice and discrimination.* The Board's proposal addresses the "reasonableness" of air fares. It does not alter the prevailing standards with respect to preference, prejudice, and discrimination. Thus, these would not only be grounds for finding a fare unlawful, but suspending it as well.

(6) *Suspension versus lawfulness.* The Board's proposal is not clear on whether the policy developed with respect to suspension of fares would also apply to ultimate determinations of lawfulness.

This article will first outline salient characteristics of the costs of air service, as broken down into passenger servicing costs, capacity costs, overhead costs, and costs of passenger delay. These cost concepts are highly relevant to issues of setting rate ceilings or floors. Next, the major determinants of the demand for air service will be addressed, with the focus on the concept of demand elasticity. An analysis of the Board's proposed zone of reasonableness, several fare structure issues, and the ultimate grounds for suspension and lawfulness will follow.

II. Cost Characteristics of Scheduled Air Passenger Service

In analyzing the overall costs of producing air service, it is useful to distinguish among the following components: (a) passenger servicing costs,

1. CAB Docket Nos. 31290, 30890 & 30891 (April 13, 1978) [hereinafter cited as Proposed Rule].

2. Preference, prejudice, and discrimination would still be grounds for suspending a fare. See the discussion of the Board's proposal *infra*, "Grounds for Suspension and Ultimate Lawfulness."

(b) capacity costs, (c) overhead costs, and (d) passenger delay costs. The first three components appear directly in the carriers' cost reports, as shown in Table I. On the other hand, passenger delay costs appear only indirectly, as a function of the type of service offered.[3]

Simplifying only slightly, the air carrier can be viewed as undertaking two distinct operations in providing air service to passengers. First, there is the "processing" of the passenger. Costs associated with this activity include all of the direct expenses incurred while the passenger is on the ground or in the air, plus expenses of sales and promotion.

TABLE 1

Operating Costs of Domestic Trunk Air Carriers, Year Ending June 30, 1977

Cost Category	Total Cost (millions of dollars)	Percent of total	Cost per available seat-mile (cents)	Cost per passenger-mile (cents)
Passenger Servicing Costs				
Passenger service	1,220	10.1		
Promotion and sales	1,398	11.5		
Subtotal	2,618	21.6	1.03	1.85
Capacity Costs				
Flying operations	4,111	33.9		
Maintenance	1,614	13.3		
Aircraft and traffic servicing	2,114	17.5		
Depreciation, flight equipment	688	5.7		
Subtotal	8,527	70.4	3.38	6.04
Overhead				
General and administrative	497	4.1		
Transport related	306	2.5		
Amortization	29	0.2		
Depreciation, other than flight equipment	134	1.1		
Subtotal	966	8.0	.38	.68
Total	12,111	100.0	4.80	8.57

SOURCE: CIVIL AERONAUTICS BOARD, AIR CARRIER FINANCIAL STATISTICS (1977) and AIR CARRIER TRAFFIC STATISTICS (1977).

Most of these costs are incurred without respect to the given length of the trip.[4] Thus, they decrease on a passenger-mile basis for a type of service: although total passenger servicing cost is higher for longer trips than for shorter trips, the cost per passenger-mile diminishes with increasing distance. Passenger servicing costs also depend upon the type of service

3. *See* text accompanying note 8 *infra*.

4. *See* G. DOUGLAS & J. MILLER, ECONOMIC REGULATION OF DOMESTIC AIR TRANSPORT: THEORY & POLICY 13, Table 2-3 (1974).

provided. A "no-frills" service will cost less per passenger or per passenger-mile (for a given trip distance) than will normal coach service. But opportunities for significant savings in fares by reducing passenger servicing costs are somewhat limited, since, as shown in Table 1, they account for less than 22% of the total.

By far, the major portion of the cost of airline service is connected with the providing of capacity: that is, the actual conveyance of passengers. Included here are the salaries paid to flight crews (not including flight attendants), the costs of maintenance and aircraft servicing, fuel expenses, and depreciation of flight equipment.[5] As shown in Table 1, these costs account for a little over 70% of total costs.

It is important to understand that capacity costs—for convenience usually expressed in terms of cost per seat-mile—can vary markedly. First, the turbine (all-jet) aircraft has a much lower operating cost per seat-mile than has propeller driven aircraft. Second, capacity costs (per seat-mile) tend to be lower as aircraft size is increased. This is simply a technical phenomenon; the cost of operating a 300-passenger jet over a given distance will not be 300 times the cost of operating a single-passenger jet (presuming one exists). Third, capacity costs increase with the length of the trip, but at a decreasing rate of increase. Thus, capacity cost per seat-mile tends to be lower the greater the trip distance. There are several reasons for this. For example, a certain amount of expense is incurred in taxiing to and from the runway and this does not vary with the distance traveled. In addition, a certain amount of time and cost is incurred in climbing to cruising altitude and descending to landing altitude; moreover, jet engines operate less efficiently at altitudes lower than cruising altitude. Finally, the per-passenger capacity cost is very much a function of the average load factor.[6] If we assume that capacity costs are not increased when the average load factor increases (a minor simplification), then an increase in average load factor from the present average of around 55% to 65% would reduce the average cost per passenger almost 11%.[7] It should be noted that capacity costs are very much dependent upon average aircraft utilization. Since maintenance and operations costs vary less than in proportion to the number of hours per day the aircraft is in the air, one way of "spreading" capacity costs is to keep the aircraft in operation more hours per day.

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5. Not included in Table 1 is the cost of capital, most of which would be included under capacity costs.

6. Load factor is the percentage of seats filled. For example, if on a given flight an aircraft with 100 (passenger) seats carries 60 passengers it has a load factor of 60%.

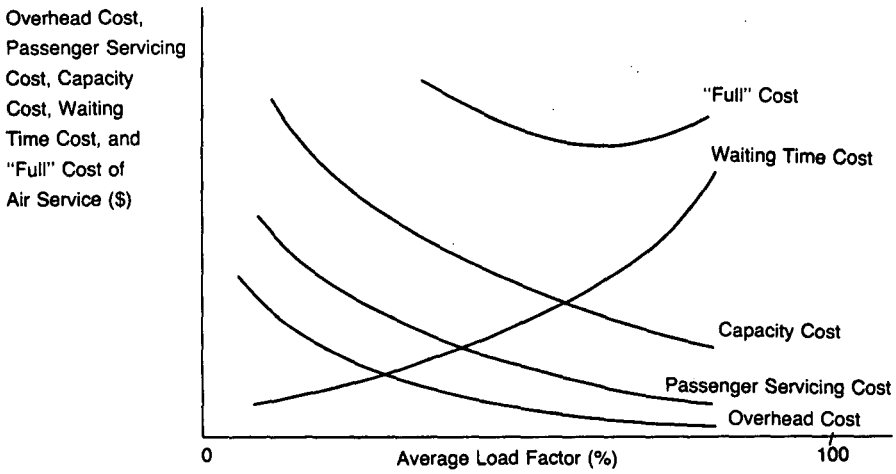
7. That is, with a 65% load factor capacity, cost per passenger-mile would decrease to 5.11¢ from 6.04¢, reducing total cost per passenger mile to 7.64¢ from 8.57¢; [(8.57−7.64)/8.57] = 0.109, or nearly 11%.

The third cost category is overhead. As shown in Table 1, these costs account for approximately 8% of the total. While many of these costs may properly be "allocated" to the passenger-servicing and capacity cost categories, it is notable that they do not represent a significant portion of the total cost of providing air service.

The final cost element is the delay the passenger experiences in obtaining a flight. As used here, delay is a measure of the inconvenience the passenger experiences from not having a flight scheduled at the most convenient time of departure. This is related to the frequency of scheduling and the average load factor, the former being a surrogate measure of the time between flights and the latter being a surrogate measure of the probability of having to catch a different flight because the most conveniently scheduled flight is booked.[8]

As shown in Figure 1, the actual (full) cost facing the passenger is the sum of the four kinds of costs: passenger servicing cost, capacity cost, overhead cost, the waiting time (delay) cost. Since the sum of the former three decreases as average load factor increases, whereas the latter increases (at an increasing rate), there appears to be an optimal load factor for a given market (provided we assume that the nature of costs is given, all passengers receive the same service *et cetera*).

Figure 1



(Drawn for illustration purposes only)

The historical configuration of interstate air service overall has been characterized by an average load factor which is less than the optimal, where the passenger pays more in terms of ticket price (vis-a-vis the price correspond-

8. G. DOUGLAS & J. MILLER, *supra* note 4, ch. 6.

ing with the optimal average load factor) than the value of the reduction in waiting time.[9]

Finally, we should note that for a given average load factor, waiting time is inversely related to the density (the number of passengers carried per unit of time) of the market. That is true because, everything else equal, a denser market characterized by a given load factor will have more frequent departures, and thus less time between them.

Another issue to address with respect to costs is that of scale economies. As the Board notes,[10] the preponderance of analytical studies conclude that the industry is characterized by reasonably constant returns to scale.[11] That is, for reasonable ranges of output, a large carrier will produce air service of a given character at about the same cost per passenger as that of a small carrier. In addition, from the standpoint of the individual firm, the extra or "marginal" cost of adding a passenger on a given flight is much lower than the (average) cost per passenger.[12] This relates to the point made above concerning the spreading of capacity costs over more passengers.[13] However, if the cost of service as perceived by the passenger is the sum of the costs experienced by the firm and delay costs, then, at the optimal price/service combination, marginal cost equals average cost. The full cost of service is at a minimum and thus, in this dimension as well, the airlines would appear to be characterized by reasonably constant returns to scale.[14]

A final point to note about the costs of producing air service is that while Table 1 summarizes total and average costs on an industry-wide basis, individual firms may vary significantly with respect to the costs they incur. That is, because of more efficient management, route characteristics, and so forth, one airline may be able to provide air service in a given market at considerably lower cost than another firm.[15]

The major purpose of this discussion is to emphasize that costs (appropriately measured) may vary markedly from one market to the next and ac-

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9. G. DOUGLAS & J. MILLER, *supra* note 4.

10. Proposed Rule, *supra* note 1, app. B at 1.

11. *See* M. STRASZHEIM, THE INTERNATIONAL AIRLINE INDUSTRY, Ch. 5 & App. B (1969); Gordon, *Airline Costs and Managerial Efficiency*, in TRANS. ECONOMICS 61 (1965); Eads, Nerlove & Raduchel, *A Long-Run Cost Function For the Local Service Airline Industry: An Experiment in Non-Linear Estimation*, 51 REV. ECON. & STATISTICS 258 (1969).

12. The extra passenger adds only minutely to capacity costs, and thus the cost increase is much less than the average cost per passenger—which includes a proportionate share of capacity costs.

13. *See* text following note 7 *supra*.

14. If at the present time, as Douglas and I have alleged, the price/service configuration is that of having an average load factor less than optimal, then it is apparent that for a given flight the passenger's perceived marginal cost is slightly less than the perceived average cost. G. DOUGLAS & J. MILLER, *supra* note 4.

15. On differences in carrier efficiency, *see id.* at 141-49.

cording to circumstances. As will be discussed in more detail in Section IV of this article, in certain cases some costs should be considered "sunk"[16] and are not relevant to a determination of efficient fares. This is particularly true of off-peak times of travel. At the other extreme, when there is excess demand for air service, the accounting costs summarized in Table 1 will *underestimate* the relevant costs of service. In short, the peak periods of service should have allocated to them a much higher proportion of costs than off-peak periods. Also, densely-traveled markets which can be served by larger, more efficient aircraft, will naturally cost less per passenger-mile than lower-density markets which may be more appropriately served by smaller, less efficient equipment. Finally, a very efficient carrier may be able to serve a given market at a cost considerably below that of a less efficient rival. All these cost variations should be taken into account when evaluating the reasonableness of fare proposals.

III. The Demand for Scheduled Air Service

The nature of the demand for scheduled air service has been of considerable concern to the Board and the subject of scholarly research. It is also pertinent to the Board's proposal for increasing price competition in airline markets.

For at least a decade, CAB rate proceedings have grappled with the price elasticity of the demand for air travel. This has flowed in part from the "Rule of Ratemaking" requirement that the Board take into consideration, among other factors, "the effect of . . . rates upon the movement of traffic."[17] It has also stemmed from a perception that demand elasticity[18] is very important in determining the effects of rate changes on carrier profits.

Over the past several years there have been a number of econometric studies of the demand for air service.[19] In most of these studies, total

16. Costs are "sunk" if they are incurred no matter what action is taken in the short run.

17. 49 U.S.C. § 1482(e)(1) (1976).

18. The price elasticity of air travel demand is the percentage change in traffic (passengers per time period) divided by the percentage change in price (fare). For example, if a 10% increase in price led to a 20% reduction in traffic, the price elasticity of demand is −2.0 (in other words, −20%/+10% = −2.0). But if a 10% fare increase leads to only a 5% reduction in traffic, demand price elasticity is −0.5 (that is, −5%/+10% = −0.5). In short, demand price elasticity is a quantitative measure of the *relative* effect on traffic of a given change in fare. If elasticity is greater than unity in absolute value terms, demand is said to be elastic; if it is less than unity in absolute value terms, it is inelastic.

19. *See* S.L. Brown & W.S. Watkins, *Measuring Elasticities of Air Travel from New Cross-Sectional Data*(processed August 1971); De Vany, *The Revealed Value of Time In Air Travel*, 56 Rev. Econ. & Statistics 77 (1974); Lave, *The Demand For Intercity Passenger Transportation*, 12 J. Regional Sci. 71 (1972); Schultz, *Studies of Airline Passenger Demand: A Review*, 1972 Trans. J. 48; Verleger, *Models of the Demand for Air Transportation*, 3 Bell J. Econ. & Management Sci. 437 (1972).

traffic between points A and B is hypothesized to be a function of the populations of points A and B, the distance between them, the average incomes of the people living at A and B, the price of air service between A and B, and other variables. Then, utilizing regression analysis and actual data, researchers estimate the hypothesized relationship.

The results of this econometric work have varied widely, with many of the differences depending upon the data sets used and the researchers' judgments as to what constitutes an appropriate model. Generally, however, most have concluded that, *overall*, air service tends to be price-elastic. The percentage change in traffic is greater than the percentage change in price. This finding is of considerable importance, for it means that lower fares overall would not only mean more traffic, but greater carrier revenue. While greater traffic would also mean somewhat greater cost, it appears likely that the increase in revenue would more than offset the increase in cost and thus the carriers as a whole would experience no diminution in profits during the transition period.[20]

While there is a general consensus that the demand for scheduled air service is price-elastic, there is also a strong recognition that different markets may be characterized by different demand elasticities. Interestingly, there seems to be no strong conclusion as to whether in short-haul markets price elasticity is greater or less than average. For example, De Vany hypothesizes that because price is a larger component of the full price of service in short-haul markets (counting travel time as a component cost of service), these will be less price elastic than the average. He finds some evidence of this,[21] as does Verleger.[22] On the other hand, Brown and Watkins hypothesize that since there is more competition from other modes of transportation in short-haul markets, these modes will be relatively more price elastic than average. However, they conclude, "[t]here appears to be no tendency for fare-elasticities to decrease (numerically) with the length of trip."[23]

A significant problem with the data used in all these studies is that the differences in air fares for similar markets are very small.[24] Because of the DPFI formula (and for other reasons prior to this formula's promulgation), air fares for similar distances are about the same. This means that cross-sectional analyses[25] have had to focus on very minor fare differences.

20. *See* Miller, *Effects of the Administration's Draft Bill on Air Carrier Finances*, 1976 TRANSP. J. 14, *reprinted in* P. MACAVOY & J. SNOW, REGULATION OF PASSENGER FARES AND COMPETITION AMONG THE AIRLINES 181 (1977).

21. De Vany, *supra* note 19, at 80.

22. Verleger, *supra* note 19, at 455-56.

23. S.L. Brown & W.S. Watkins, *supra* note 19, at 11.

24. *See* Miller, *supra* note 20, at 187-88.

25. These analyses utilized data from many markets for a given time period. An example would be data from the "Top-100" for the year 1976.

The time series analyses[26] are hampered by the fact that, largely due to regulation, air fares have been rather stable (in real terms) and changes typically come in small increments at frequent intervals. The significant exceptions are the intrastate fares in California[27] and Texas,[28] which are significantly lower than comparable CAB-regulated fares. In California, between 1965 and 1971, traffic on the intrastate carriers increased at an average annual rate of 23.3%, as contrasted with a growth rate of 4.7% in all domestic markets less than 500 miles in length.[29] Also, as the Board noted, traffic increased dramatically in the Dallas-Houston and Dallas-San Antonio intrastate markets as a result of the low fares charged by Southwest Airlines beginning in 1971.[30] One tentative conclusion that can be drawn from the Texas experience is that while the demand for short-haul air transportation may be only barely price elastic (or even price inelastic) for *small* changes in fares, it may have significantly greater price elasticity for large fare changes, at least in the downward direction.

Finally, on this issue of demand price elasticity, a few observations about the Board's conclusion in the DPFI that the price elasticity of the demand for domestic air transportation is -0.7 are appropriate. First, one cannot expect board members to be experts on all facets of airline economics; thus, with all due respect, one should not take this opinion as being final authority on this matter. Second, the Board's decision was the outcome of an adversary process—where the carriers argued strongly that demand is inelastic (-0.5 or less in absolute value terms) and the Board's staff argued that it was elastic (-1.3 or higher in absolute value terms)—and there is the natural tendency for a regulatory commission to compromise somewhere within the range advocated. Third, this elasticity figure was purported to be no more than an average across all markets; of course price elasticity may vary by individual market. Finally, the elasticity finding was not all that important, since in the DPFI the Board departed from its former practice of "cost-plus ratemaking" and adopted instead a methodology basing fares on a reasonable quality of service.[31] The elasticity

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26. These analyses utilize data from a single market, covering many years. An example would be the Chicago-Washington market using data from each year 1950-1976.

27. *See, e.g.*, W. JORDAN, AIRLINE REGULATION IN AMERICA: EFFECTS AND IMPERFECTIONS (1970).

28. *See, e.g.*, P. MACAVOY & J. SNOW, REGULATION OF PASSENGER FARES AND COMPETITION AMONG THE AIRLINES 41-49 (1977).

29. *Id.* at 43.

30. Proposed Rule, *supra* note 1, app. B, Exhibit 2, at 1.

31. Prior to the DPFI, the Board's rate-setting methodology was roughly one of determining the costs the carriers incurred in providing service, adding to this a reasonable return on investment, arriving at a rate level and structure that would meet the "revenue need." In the DPFI, the Board recognized that in setting the fare level and structure it was also determining the extent of non-price competition and the quality of service that would be provided. It thus set out to deter-

figure adopted was more a device for adjusting *costs* than for estimating the reasonable level of fares.

To summarize, it is generally conceded by researchers that, overall, the demand for scheduled air service is price-elastic. This means that if the overall level of fares were lowered traffic would increase by a greater percentage. The result would be an increase in carrier revenue and a sustaining of profits. Individual markets would, however, differ with respect to their response to lower fares; in some markets traffic might increase only slightly, whereas in others the increase might be quite dramatic.

IV. The Civil Aeronautics Board's Proposal

In this section portions of the Board's proposal to enhance price competition in air service will be discussed, drawing on the description of cost and demand just presented.

The Fare Floor

The first question with respect to the proposed fare floor is, "Is it low enough?" That is, will the 50% (of modified DPFI formula) floor allow the kind of price competition the Board envisions and accommodate efficient fares?

As the Board points out, a number of intrastate and interstate fares are at or slightly below the 50% of DPFI levels. While the Board makes clear that rate proposals below the 50% floor would not be suspended if justified, the existence of the floor could be constraining in some instances. For example, in high density, long-haul markets the average optimal fare is quite low in comparison with that assumed in the DPFI formula.[32] In other cases, the optimal fare might reflect very low opportunity costs[33] on aircraft and other resources. Examples would include flights scheduled at the very end of and at the very beginning of the day, flown for the purpose of not only generating traffic but "spotting"[34] equipment. Such off-peak fares would reflect some passenger servicing costs, aircraft operating costs, and maintenance costs, but not much else. Thus, it is easily conceivable that a combination of factors—high-density travel, long-haul market, and low opportunity costs on equipment—would reveal the need for a fare below the 50% DPFI standard.

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mine the appropriate service characteristics and to establish the rate level and structure that would bring these about. *See* G. Douglas & J. Miller, *supra* note 4, ch. 8.

32. G. Douglas & J. Miller, *supra* note 4, ch. 6.

33. That is, the value of an asset in its best alternative use.

34. For example, placing an aircraft at night where it is needed to begin scheduled service the following morning.

The second question with respect to the proposed fare floor is, "Is it high enough?" The reasons for concern, as the Board notes, is fear of predatory pricing. As various researchers have pointed out, predation is a reasonable profit-maximizing strategy when there are impediments to entry. Thus, for example, on occasion a large firm might drive a smaller firm out of business because once this has happened the larger firm can raise prices and earn sufficient excess profits to offset the losses incurred during the predation period. But the firm can realize this reward only if there are barriers to the entry of new firms.[35] In this context, it is particularly important to note the existence of legal entry barriers into airline service. To enter a new interstate market a carrier must obtain a "certificate of public convenience and necessity" from the Board. Because of this, predation may be a rational strategy, depending on the existence of a viable threat of entry, and this in large measure depends on the Board's policies.

In any event, it should be noted that the pricing flexibility proposed by the Board would represent only an incremental increase in the prospect for predation. The reason is that under the existing regulatory regime predation may take place in the form of *service* predation rather than *price* predation. Such a strategy may have made some sense in the past because the Board might have been relied upon to restrain re-entry into the market once a carrier had been forced to exit. In addition, there is some evidence that predation has taken place in isolated instances.[36]

It is quite difficult to establish on *a priori* grounds an operational rule for policing predatory pricing in airline service. Obviously, some measure of marginal cost is the relevant concept. One problem is that costs are incurred in flight increments whereas the fare is revenue per passenger. The price per passenger established by the carrier depends upon the average load factor achieved or expected to be achieved. For example, one could argue that a fare would be predatory if established on the basis of a 50% load factor but not predatory if the load factor were 80%. Diabolically, one reason for lowering the fare would be to achieve a higher average load factor. A markedly lower fare proposal could thus be based on the carrier's anticipation of being able to realize a substantial increase in average load factor or could be a case of attempted predation. Either case would be difficult to prove.

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35. *See* F. SCHERER, INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE 198-206 (1970). Of course, a more efficient strategy for the predatory firm would be to buy out (rather than drive out) the rival firm.

36. *See* Hamilton & Kawahara, *Predatory Non-Price Competition: The Case of Hawaiian Interisland Air Transportation*, 7 ANTITRUST L. & ECON. REV. 83 (1974); W. A. JORDAN, SOME PREDATORY PRACTICES UNDER GOVERNMENT REGULATION? (University of Toronto-York University Joint Program in Transportation Research Report No. 26, 1975); Air California, Inc. v. Pacific Southwest Airlines, Civ. No. 73-429-E (S.D. Cal., filed April 19, 1973).

There is a need to be concerned about the possibility of predatory price competition but it would be easy to place too much emphasis upon it for the purpose of establishing standards for reasonableness. For one thing, carriers alleging that they are victims of predation could protest not only on grounds of reasonableness but could rely upon Section 411 of the Federal Aviation Act ("methods of competition").[37] The key, however, would appear to be the Board's willingness to certificate new entry where there is evidence predation has occurred. In this context, there are several strategies the Board may wish to consider. One would be to establish a policy of granting expedited consideration of any proposal to enter a market which had been exited following a round of price reductions. While this might constitute a minor restraint on carrier initiatives to reduce fares (the initiating carrier might be reluctant to have a replacement competitor who received expedited consideration), it would go far in assuring that predatory price action did not occur.

Fare Ceiling

The issue with respect to the fare ceiling is balancing the need to constrain monopolistic pricing with the need to avoid constraining certain fares from rising to efficiently high levels. It is possible to identify markets where the efficient fare would be higher than the modified-DPFI standard. For example, while the overall level of fares generally exceed optimal levels, there are instances where the efficient fare exceeds the DPFI standard. This is particularly true of short-haul, low-density markets, which might optimally be operated with smaller equipment and characterized by fairly frequent departures and lower-than-average load factors.[38] Also, a fare ceiling at the DPFI standard level could restrain new, innovative, high-class services which, though higher in cost, might nevertheless be in the consumers' interest.[39] More importantly, there would seem to be a need for increased use of peak-load pricing techniques that would not be fully accommodated by the suggested ceiling. Of course, it is difficult, if not impossible, to establish *a priori* the appropriate peak fare in any market, but it would seem appropriate to have some dispensation in the Board's program to accommodate this need. Finally, if the ceiling is placed too low, there may be a tendency for carriers to collude implicitly on that rate. That is, it may be tempting in many instances for carriers simply to adopt the DPFI standard because it is the ceiling. If a higher ceiling were established, the probability of having prices set at the ceiling fare would be considerably less.

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37. 49 U.S.C. § 1381 (1976).

38. G. Douglas & J. Miller, *supra* note 4, ch. 6.

39. An example might be a highly commodious, "luxurious" service in a predominantly business market.

In assessing the need for maximum fares, evidence from markets where fares are not subject to maximum levels is revealing. An example is the commuter market. For distances up to 94 miles, the commuter carriers[40] have lower fares on average than the DPFI formula, and for almost any distance they have lower fares than the local service carriers' allowable standard of 130% of the DPFI level.[41] In other words, without maximum fare regulation, the prices charged by commuters were, overall, less than those charged by the carriers subject to maximum rate regulation. This was true despite the use of inherently more costly (on a seat-mile basis) equipment. Similarly, in the California and Texas intrastate markets, where maximum rate control has not been a major issue, fares are significantly lower than the DPFI standard.[42]

The Board has requested comments on the suggestion that the ceiling be modified by raising it 5% or by allowing it to be 15% higher on any 52 days of the year of the carrier's choosing. Both approaches seem reasonable, the latter taking specific recognition of the need for peak-load pricing. However, there are several other suggestions the Board may wish to consider. One is that, since the major concern is for the monopoly markets, the Board may wish to exempt from maximum rate control all competitive markets.[43] Another suggestion would be to establish a policy of allowing a maximum percentage rate increase each year for fares above the DPFI standard. In such cases, there would be no suspension, but the burden of proof of lawfulness might be greater than for fares within the zone.

Fare Structure Issues

Market-by-market variations

The Board notes that within the proposed zone, fares could vary on a market-by-market basis. The DPFI formula and various predecessors all establish the fare as a function of distance. But since the optimal price/quality option is not only a function of distance but of market density, passengers' opportunity cost on time, opportunity cost on equipment, *et cetera*, this would mean that the appropriate fares for two markets of equal distance might well not be the same. This proposed policy is also conducive to price competition. The alternative to allowing market-by-market variations is requiring individual carriers to raise or lower all their fares to-

40. Carriers in interstate scheduled service operating equipment with less than 7,500 lbs. net payload and no more than 30 passengers. They are exempt from federal rate, entry, and exit regulation by the Board.

41. *See* P. MacAvoy & J. Snow, *supra* note 28, at 74-75.

42. *See generally* W. Jordan, *supra* note 27; P. MacAvoy & J. Snow, *supra* note 28.

43. Such a policy, incidentally, might have the additional effect of reducing carrier resistance to new entry.

gether; however, this would severely limit the incentive to take price initiatives and would make it easier for carriers to collude.

First-class fare differential

The Board proposes to eliminate established differentials between first-class and coach service. Historically, the role of first-class service has been to give passengers the option of more commodious accommodations and increased attention from flight personnel. It has also served as a means for allowing a passenger expressing a strong preference to be accommodated on a particular flight the option of doing so by paying more than the coach fare.[44] Given the institution of having the two types of service, the fare differential is important.[45] The optimal differential will vary by market, depending on such factors as the distance of travel, the age and income distribution of the passengers, and personal preferences about service. Thus, it would seem wise in a regime where carriers are allowed to price compete in individual markets also to allow them to adjust the first-class differential in response to market forces.[46]

Discount fares and the profit impact test

Another major departure from historic policy is the Board's proposal to eliminate the "profit impact test" as a necessary condition for the approval of discount fares.

Discount fares have several roles. First, during the 1960's they were the primary means for lowering the average level of fares as the carriers realized the economies of turbine-powered aircraft.[47] Discount fares were also, arguably, the only means available for incipient price competition. A carrier wishing to take competitive price action would usually stand a much better chance of having such an initiative approved by the Board if it were characterized as a discount than if it were viewed as a simple case of price-cutting. Another very useful role of discount fares is to acquaint passengers with a new service. This is similar to advertising in the following sense: in

44. The system thus, in a rough way, approximates the scheme outlined by William Vickery. Vickery, *Responsive Pricing of Public Utility Services*, 2 BELL J. ECON. & MANAGEMENT SCI. 337 (1971). Notably, load factors in first class average less than load factors in coach service.

45. Another decision variable is how to divide the aircraft space allocated to each section, by moving the bulkhead.

46. This position should not be viewed as inconsistent with the view that a first-class differential should be established on the basis of the average (and marginal) costs of the two types of service. The difference is that under the Board's proposal carriers would be allowed to make changes in the differential unilaterally (that is, compete), whereas heretofore the first-class differential has been established on an industry-wide basis. A similar caveat applies with respect to the discussion of discount fares in the next subsection.

47. One reason for this is the subsequent relative ease of eliminating a discount fare (to raise average yield) as opposed to increasing the level of normal fares.

order to attract newcomers a carrier may advertise the existence of the new service and/or offer a lower, "get acquainted" fare.

Another role of discount fares has been to discriminate among passengers on the basis of price elasticity.[48] An example would be lower fares for (price-sensitive) students than for normal coach passengers. As discussed in the section on cost, the provision of air service is characterized by reasonably constant returns to scale, both in terms of the production of service of a given quality and in terms of variations in quality as perceived by the passenger. Under such circumstances, discount fares, other than those of a "get acquainted" variety, cannot be justified on efficiency grounds.

In the past, carriers appear to have proposed discount fares whenever market circumstances were such that the result would be to increase industry profits. This is the crux of the profit impact test. Superficially, such a proposal would seem to be in the public interest: the carriers would earn higher profits, and at least those consumers taking advantage of the discounts also would be made better off. But over the longer run, the existence of the excess industry profits would lead to their being bid away by increases in scheduling and other amenities. Thus, for a given quality of service, some passengers would pay in excess of the average (and marginal) cost of that service, while others would pay less. In short, there would be ("dead weight") inefficiency losses in both the discount and regular-fare markets.[49]

The Board's proposal, however, would not lead to this type of inefficient outcome. Each carrier would be allowed to make unilateral decisions about which discounts to offer and how much differential is appropriate. Just as one does not find price discrimination in competitive markets, one would not expect to observe widespread instances of inefficient discount fares under the reformed regime outlined by the Board. The result would be discounts for off-peak travel, similar to those in the intrastate markets in Texas and California. These are very desirable. But differential fares for a given service based on perceived groupings of passengers and their demand elasticities would be the exception rather than the rule.

Grounds for Suspension and Ultimate Lawfulness

In its proposal, the Board clearly indicates that the new standards for suspension would apply to *reasonableness* grounds only, and not to preference, prejudice, and discrimination.[50] This raises questions about whether the proposal as outlined would fulfill completely the Board's intent

48. This is what economists call third degree price discrimination.
49. G. Douglas & J. Miller, *supra* note 4, at 65, 97-98.
50. Proposed Rule, *supra* note 1, at 16 n.37.

of bringing about a price-competitive market for air service. First, in the past, preference, prejudice, and discrimination have seldom been used as grounds for suspending a tariff, the reason being that it was easier to protest a competitor's lower rate on grounds of reasonableness. If it were made more difficult for carriers to protest on reasonableness grounds, they might be expected to increase their reliance on preference, prejudice, and discrimination arguments. Second, historically, significant rate changes have been of an *Ex Parte* nature—across-the-board increases or decreases, that preserved the existing rate structure. The Board's proposal for market-by-market variations, plus freedom with respect to the first-class fare differential and discount fares, would undoubtedly raise more significant questions about preference, prejudice, and discrimination. This is not in any way to criticize the Board's proposal to reform the reasonableness test. It is, however, to suggest that the Board may wish to establish a similar, more liberal policy with respect to preference, prejudice, and discrimination to assure the goal of enhancing price competition in air service.

Perhaps more important is the standard for the ultimate lawfulness of fares. Although the Board's proposal is not altogether clear on this issue, it would appear that the zone of reasonableness, the liberal rule with respect to market-by-market variations *et cetera*, are designed to be standards for *suspension* only. The question thus arises over the standards for determining whether a fare is lawful once it has been the subject for investigation.[51] Obviously, if the reasonableness criterion for ultimate lawfulness is the same as that proposed for suspension, the likelihood of a significant increase in the price competitiveness of air service is much greater than if the existing (or even modified) DPFI standard prevails.[52] The market for air service would be much more efficient if the liberalized standards for suspension were also adopted as the test for lawfulness. If such a per se approach were not feasible, then the adoption of a policy making such fares prima facie reasonable (thus putting the burden of proof that they were not reasonable on the protesting party or parties) would be significantly better than having as the standard some version of the DPFI standard. For if the latter is the case, carriers would have much less incentive to price compete, knowing there is some probability of having to incur litigation costs. Many lower fares would survive only during the investigation phase, and the Board might find its workload increased dramatically because of a need to investigate numerous fare initiatives.

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51. It also relates to the revised grounds for successfully obtaining suspension outlined in the Proposed Rule, at 16. (The first of three requirements is that "there [is] a high probability that the fare would be found to be unlawful.")

52. More competition also would be generated if the standards for preference, prejudice, and discrimination were relaxed.

V. Conclusion

The Board's proposal represents a timely and significant initiative, one that is very much in the public interest. As the Board notes, the airline industry is characterized by cost and demand conditions which make relying on market forces to determine fares and services an efficient approach. There is not only evidence of the efficiency of price competition in intrastate air markets, but such evidence is also available from numerous markets having similar characteristics. For example, restaurants, movie theaters, barber shops, and many other service industries are characterized by fluctuating, "unstable" demands and "perishable" outputs—two phenomena often cited in differentiating the airline industry and justifying for it special treatment. Yet, these other industries operate very efficiently, and few could propose price controls as a means of improving their performance. In short, the Board's reasoning is sound in finding that the public interest would be served by increasing carriers' freedom to compete on the basis of price.

Within a broader context, the Board's initiative should be viewed in terms of its importance in changing the competitive "rules of the game." Since in the airlines, as in many industries, decisions made today affect service years from now, it is important that carrier management have firmly in mind the circumstances that will govern competition in the coming years. In this connection, the force of the Board's resolve to implement new rules is laudable. But more important is the need for the Congress to change the basic regulatory statute.[53] For a Board that can use its discretion under the Act to change policy so much for the better might under different circumstances discharge its responsibilities in a way which was not consistent with the public interest.

53. *See* 49 U.S.C. §§ 1371-1387 (1976) (Subchapter 4: Air Carrier Economic Regulation).