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FINANCIAL IMPLICATIONS OF REGULATORY CHANGE IN THE AIRLINE INDUSTRY

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Federal economic regulation of domestic air transportation has existed in its present form since 1938, despite nearly overwhelming evidence that it has promoted inefficiency, hurt consumers by generating much-higher-than-necessary fares, and inhibited development of a true mass market in air travel.[1] Although suggestions for major regulatory change were made as early as 1951,[2] only recently has public, governmental, and congressional interest in the subject produced serious consideration of regulatory revision or elimination. Perhaps the most important manifestation of current willingness to reconsider airline economic regulation can be found in S. 2551,[3] an administration bill entitled the "Aviation Act of 1975", now before the Congress. This bill proposes major changes in regulatory arrangements designed to decrease governmental control over airline markets. It does, however, stop considerably short of full economic deregulation.

Among the most interesting aspects of the current situation is the fact that few firms in the aviation business or in the financial community favor the administration bill, and fewer still (perhaps none) favor complete deregulation, the policy to which an examination of the existing academic literature on the subject would probably lead a disinterested observer. Some of this opposition can be explained by reference to a general human dislike of uncertainty (especially where money is at stake), but much of this opposition undoubtedly stems from

participant fears of the financial implications for them of a substantially less regulated environment. Some of these fears may in fact be justified from the standpoint of an interested party, but others may not be. And of course losses to particular interests of benefits gained at public expense may not present a convincing public case for opposing changes in airline economic regulation.

In this article, I will attempt a fairly comprehensive, if somewhat cursory, examination of the financial impact of regulatory change on the major participants in the air transportation industry. I will summarize present regulatory arrangements and use existing knowledge to outline their effects on the industry. I will then summarize the provisions of the Aviation Act of 1975 and, drawing on the same body of knowledge, attempt to project two possible scenarios which might follow from the passage of that bill. Finally, I will attempt to project the impact on industry participants of complete deregulation. I have two principal purposes: First, to help assess the current positions of parties to the deregulation debate by outlining their respective financial interests in the outcome; and second, to attempt to provide common ground for that debate by projecting the future of the industry under different regulatory arrangements and by articulating the assumptions necessary to make such projections. My own views in favor of deregulation have been stated elsewhere [4] and I will not repeat them here.

The existing airline regulatory scheme was enacted in the Civil

Aeronautics Act of 1938[5] and reenacted without significant change in the Federal Aviation Act of 1958.[6] The statute was enacted largely at the behest of the industry and was designed to protect existing carriers from competition from new entrants attracted by the bright promise of air transportation.[7] Entry into the industry, then as now, was relatively easy, and carrier efforts extending back to 1930 had been unable to ensure profitability for all existing firms. The Depression of the 1930's had produced a favorable legislative environment for efforts to reduce the impact of competition throughout the economy and the air carriers had to go no farther than the Motor Carrier Act of 1935[8] to find a suitable model for the regulatory environment they sought.

The statute that emerged regulates both entry and rates. The Civil Aeronautics Board was created to administer the act. No one can engage in interstate, overseas, or foreign air transportation[9] without securing from the Board a certificate of public convenience and necessity for each route served.[10] Carriers in existence at the time of the passage of the act acquired "grandfather" certificates for routes actually served, but all additions or deletions[11] of service since and any service by new firms require CAB approval. In addition, all carriers subject to the CAB's jurisdiction must file tariffs with the Board,[12] which the Board may approve or suspend, and no service may be offered except at rates contained in an approved tariff.[13] Changes in existing tariffs require thirty days notice and may be suspended by the Board for

investigation of the "lawfulness"[14] of the new tariffs.[15] In addition, the Board is empowered, after notice and hearings, to prescribe rates at which service shall be offered.[16]

The statute gives the CAB regulatory authority over almost every aspect of airline economic matters, with the important specific exception that the Board may not "restrict the right of an air carrier to add to or change schedules, equipment, accommodations, and facilities. . . ."[17] (i.e., may not restrain capacity or service competition). Among the matters other than rates and entry over which the Board has control are: mail rates and schedules,[18] mergers and acquisitions,[19] statistical reporting,[20] agreements between carriers,[21] unfair competition or deceptive practices,[22] and exemptions from certain provisions of the statute.[23]

The Board does not regulate operating practices or other safety matters. All such regulation is provided by a separate agency, the Federal Aviation Administration (now part of the Department of Transportation), and none of the proposals discussed in this article purport to change in any way existing safety regulation. The Board's activities are entirely confined to economic regulation and this article will focus only on the financial effects of changes in economic regulation.

This statutory regime has produced a relatively concentrated industry with considerable excess capacity. No new trunk carriers[24] have been certificated since 1938,[25] and the number of trunks has been reduced by merger from the original sixteen to ten. The Board has

limited route certification so that there are no more than two or three potential competitors in all but a small handful of markets.[26] The small number of competitors has tended to encourage oligopoly pricing,[27] and the CAB's protective policies have strongly reinforced this tendency. A principal result has been high fare levels accompanied by capacity and service competition.

Air carriers operate at varying levels of efficiency, and the CAB attempts to set basic fare levels high enough to protect the less efficient carriers. Lower-cost carriers, prevented from competing in price, offer service amenities designed to attract passengers. Chief among these are frequent schedules at low load factors to maximize passenger convenience (which means fewer passengers per flight) and relatively spacious seating (which increases passenger comfort but spreads the cost of operating the flight over fewer seats per plane.). The efficient carriers can afford to offer these conveniences because their lower costs allow them to make a profit with fewer passengers per flight. Although passengers might prefer to sacrifice these conveniences for lower fares, the fare levels set by the CAB preclude their being offered this option. The result is that, fares being equal, passengers choose among airlines on the basis of schedule frequency and comfort. Thus the less efficient carriers are forced to match their more efficient competitors in these service dimensions, which raises their cost per passenger even higher. Since they cannot operate profitably at these higher cost levels, they petition the Board for fare increases, and since

they are not achieving a rate of return which the Board regards as adequate, the Board grants the fare increases and raises the overall fare level. At the new fare level, the efficient carriers can afford to offer still more schedule convenience and comfort, the less efficient carriers are forced again to match them, and the process repeats itself.[28]

There is, of course, a limit to this process. When industry fare levels are high enough so that further increases will drive away passengers representing more revenue than can be raised from the remaining traffic, further fare increases cannot help the inefficient carriers. At this point, the weaker ones seek merger partners or other forms of help (e.g., capacity reduction agreements) from the Board. Fare stability is also achieved temporarily during periods where the more efficient carriers make large profits while the less efficient carriers barely break even. The more efficient carriers make higher profits during these periods than they would under rate competition and the less efficient carriers survive. The relatively small number of carriers allows these fragile oligopoly arrangements to exist during stable or prosperous periods. During periods of poor business, however, the efficient carriers exploit their cost advantage by using excess capacity (produced by poor traffic growth) to avoid losses by capturing business from the inefficient carriers and the fare spiral[29] resumes.

The high fare levels and the accompanying service competition have produced considerable excess investment in aircraft. Although the reported load factor for the domestic trunklines has been quite low -- 50-55% over most of the last decade -- even the low reported figure considerably overstates the intensity of capacity utilization. High fare levels and high frequencies have allowed and competitively mandated low seating densities, so that most of the fleet operates with about 25-35% fewer seats installed than would probably be the case in an unregulated environment. I have crudely refigured the load factor for the year ended August, 1975, adjusting each jet type in the trunkline fleet to its likely seating capacity (which is still less for each type than the rather uncomfortable maximum allowed by the FAA), and conclude that the domestic trunkline load factor for the period was 39% of the available capacity, rather than the reported 53%.[30] Since evidence[31] suggests that an unregulated environment would probably produce average load factors in the range of 65-80%, depending on the mix between long-haul and short-haul service and between planeload and scheduled service, the present regulatory arrangements have produced enormous underuse of existing aircraft capacity.

This arrangement has tended to benefit airframe manufacturers, since it has required relatively large numbers of aircraft to service any given level of traffic. In addition, high fare levels without peak-hour differentials to encourage passengers to shift their travel time demands

from more popular times to less popular times have tended to encourage the purchase of large aircraft to accommodate traffic peaks. The low breakeven load factors produced by high fares allow the carriers to accommodate these peaks in demand and still achieve acceptable financial results with light loads at off-peak times. Finally, high per-mile fares have preserved the economic viability of inefficient aircraft whose relatively low capital value has permitted their continued use to maintain schedule frequency. Although the breakeven load factors for operating such aircraft may be higher than for the most efficient aircraft, the high fare levels permit attainment of these load factors on some schedules. Lower fares would raise the breakeven load factor to a figure which could be attained on fewer flights and would decrease the number of aircraft types on which breakeven loads could be achieved even at zero capital costs, thus retiring inefficient types from the fleet.

Notwithstanding this excess capacity, there has been relatively little capital risk in the trunkline industry. The CAB's protective route arrangements and fare policies have allowed most carriers to avoid even the threat of major capital loss, and those that have been so threatened have had their investments protected through merger. The acquisition and control provisions of the existing act have even tended to protect carrier managements from takeover efforts from the most likely sources (other firms "engaged in any . . . phase of aeronautics").[32] Although earnings have fluctuated widely, ultimate management and capital stability

have been extraordinary.

This, in turn, has encouraged debt investment in the industry. Lenders generally require a large enough equity base in a firm to ensure that fluctuations in financial results will be absorbed by equity investors who are more tolerant of risk and are compensated for risk through higher rates of return during favorable periods. The degree of "coverage" required is determined by the degree to which fluctuations in earnings can affect the security of the debt investment. The CAB's policy of manipulating fares and route awards so as to protect ailing firms and of protecting capital investments through merger if all else fails has encouraged lenders to supply relatively high percentages of the air carriers total capitalization in the form of debt, relying on the CAB's policies rather than a substantial equity base to provide the desired degree of debt protection. While much of this debt investment has been secured by mortgages on the aircraft themselves and is therefore to some degree independent of carrier health, much has been in the form of general investment in the firm, principally secured by the firm's going concern value and the economic value of CAB certificates. These, in turn, have been backed by implicit and explicit CAB commitments to maintain carrier health and certificate value.

Airport operators (mostly municipalities or public authorities) have also been affected by the present regulatory environment. The Board's restrictive entry policies have meant that terminal and financing

arrangements need only be made with relatively few carriers. Along with the CAB's commitment to preserving the financial stability of existing carriers, this has meant that the identity of the firms with which an airport operator must deal remains relatively stable over long periods of time, reducing administrative costs and facilitating long-term financing arrangements. These arrangements have frequently included carrier financial guarantees of airport debt obligations. Such guarantees are made much more valuable by the CAB's commitments to protect carrier earnings. For medium-size and smaller city airports, the service obligation and concomitant protection conferred by CAB certification has been of some help in guaranteeing the service continuity that would justify investment in airport facilities. On the other hand, a city served by only one or two carriers and without prospect of service from others due to CAB entry restrictions may find itself in a poor bargaining position in negotiating an airport operating agreement with a large carrier authorized to serve the city.

Another side of the financial guarantee coin is that some localities have been enabled to indulge a penchant for monument-building by the fact that they could rely on the ability of airline guarantors to generate the necessary revenues from CAB-protected fares. The new Dallas-Fort Worth airport is perhaps the most striking example of this phenomenon.

Finally, present regulatory arrangements have been highly

beneficial to unionized airline employees, particularly pilots. A relatively small number of large carriers is less costly to organize than would be a more fragmented industry. A strike against a large national or regional carrier is nationally disruptive and produces political pressures for compromise settlement. Route certification ensures that no firm will replace the struck carrier during the strike.[33] And route protection and protective rate regulation ensure that wage gains from strikes can be extracted from consumers in the form of monopoly rents without fear of competition from nonunion firms charging lower prices. Since these rents become part of carrier costs, they cannot be competed away through service competition. Pilots are especially benefited by regulation because those hired are few in number (which lowers organizing costs and raises the monopoly rents available per person), essential to the functioning of the carrier, and protected from competition from a very large labor pool of qualified potential replacements.

To guess at the financial impact of regulatory change, let me try to project environments which might be produced by new arrangements and compare them with the salient features of the existing financial environment briefly described above. I will discuss three possible scenarios: 1) The Aviation Act of 1975 with continued quasi-cartel behavior by existing carriers. 2) The Aviation Act with aggressive price competition by some existing carriers. 3) Complete deregulation,

with extensive new entry by firms not now holding certificates for interstate scheduled air transportation. For brevity's sake, this discussion will necessarily be conclusory and somewhat terse. It is, however, grounded in the existing state of the art in airline regulatory scholarship, extended to cover new circumstances.

A "Minimum Change" Scenario Under the Aviation Act of 1975

This projection proceeds on the following assumptions:

1. Trunkline oligopolists faced with little threat of entry recognize market interdependencies, and have learned to avoid vigorous price competition.[34]

2. The tariff mechanism retained in the proposed act will prevent sudden or hidden price reductions by one carrier and allow the other carriers to signal their responses to any filed tariff proposing fare cuts.

3. The route expansion and certificate liberalization provisions[35] of the new act, confined as they are to existing scheduled carriers, do not greatly increase propensity toward price competition and in addition are so limited in extent as to make impossible large amounts of new service by smaller carriers in the early years of operation under the proposed act.

4. These factors will largely mean that carriers will not make use of the rate freedom provisions[36] of the act to dramatically lower fares.

5. Under the new act, the CAB will continue to severely limit entry by new carriers who are not affected by existing interdependencies (are not members of the existing "club").

We could expect this scenario to have relatively little financial impact on all but the least adaptable carriers. Since one or two are so precariously balanced financially at present that any move toward more competition or lower fares would push them over the brink, we could probably anticipate some new mergers. After 1981,[37] the route expansion provisions would probably somewhat erode the financial value of route certificates. But significant certificate protection would remain and the absence of really dramatic fare changes would protect existing capital structures. In addition, new carriers, who have the greatest incentive to lower fares and disrupt stable market relationships, would still be excluded. Modest declines in fares, coupled perhaps with an initially cautious attitude on the part of capital sources, might limit new equipment orders somewhat until load factors stabilized. But continued low intensity of capital use would preserve intermediate-term prospects for new aircraft orders. This, coupled with increased schedule competition as more efficient existing carriers gained increased nonstop service opportunities, might favor the acquisition of aircraft smaller than the largest present types, and might allow aircraft manufacturers to adapt by offering such aircraft as further Boeing 727 derivatives or the proposed DC-X-200 twin. This trend would be most

favorable financially to manufacturers who could survive a temporary slowdown in equipment orders and develop new medium-sized derivatives at relatively modest investment expense. It would probably deliver the coup de grâce to Lockheed. Since merged carriers would remain liable for airport financial obligations and traffic growth would remain moderate, airport operators would not be significantly affected. This scenario would have little financial impact on labor.

An "Extensive Change" Scenario Under the Aviation Act of 1975

This projection proceeds on the following assumptions:

1. New market entry made possible by route expansion after 1981 and to a lesser extent by the certificate liberalization provisions before then will reduce the possibility of stable interdependencies[38] and ultimately result in fairly vigorous price competition.

2. Increased potential competition and decreased interdependency overcome the tendency of the tariff mechanism to discourage price competition.

3. The rate freedom provisions of the proposed act will facilitate such competition, producing substantial rate declines (in real terms) after 1981 and perhaps before if the projected end of stable interdependency leads efficient carriers to pursue independent profit maximizing strategies on existing routes. These rate declines would produce traffic growth rates considerably higher than those now projected.

4. Under these conditions, entry by new firms would be

unnecessary to stimulate existing carriers to engage in vigorous price competition.

This scenario would have much more financial impact on both carriers and airframe manufacturers. As lower-cost carriers began to set prices based on their own costs, they would exert substantial financial pressure on less efficient competitors who could not operate profitably at the resulting fare levels. This process would undoubtedly begin on routes served by carriers (e.g., Continental) who have at times been restrained by the CAB from reflecting their lower costs in their fare structures, but would gradually spread as these carriers expanded their route structures and as matching fares by competing carriers produced fare anomalies elsewhere on their systems. As the financial impact of this competition became widespread, inefficient carriers who could not adapt to the new lower fares might well become insolvent. Since both the degree of the financial impact and the number of carriers involved would be greater than in the preceding scenario, it is fairly likely that not all the insolvent carriers could be absorbed in mergers that preserved their existing investments. This would produce losses to equity holders and unsecured lenders. Any indication that such a process was beginning might accelerate it, since lenders might be reluctant to extend further unsecured credit and would attempt to minimize their losses. In addition, existing carrier managements would undoubtedly find themselves subject to replacement as stockholders

and lenders attempted to install managements which could adapt to the newly price-competitive conditions.

To the extent that carrier insolvencies terminated operations by the failed firms, the CAB either would be under enormous pressure to expand existing efficient carriers or (much less likely) to certificate new ones. The result might be some new firms entering, but more likely would be the expansion of efficient carriers and a considerable diminution of the number of firms in the industry. Of course, to the extent that carrier insolvencies simply resulted in capital and management reorganizations of the failed firms, operations would continue using the existing route certificates. The surviving firms might have some difficulty attracting unsecured investment until capital sources had adjusted to the uncertainties of the new situation, but equipment owned by secured creditors of liquidated carriers would certainly be available for lease or purchase by the survivors. And equipment owned by reorganized firms would continue to be used. Certificates would be less attractive as implicit collateral as the CAB's ability to provide earnings protection and capital security through merger to certificate holders was impaired. Debt/equity ratios for the industry as a whole would tend to change in favor of more equity as lenders sought "coverage" as a substitute for CAB protection. Although lenders might be reluctant to provide capital during the shakeout period, the ability of railroads to obtain capital through decades of substandard earnings and even insolvencies suggests that this might not

be a severe problem. In any event, individual firms with bright prospects probably would be able to raise debt capital without significant difficulty. Ultimately, of course, surviving efficient carriers with stable or improving earnings records would have no more difficulty securing investment capital for expansion than any other prosperous unregulated firm.

A significant decline in fares would undoubtedly lead to more intensive capital use as consumers opted for less convenient and comfortable price-quality options. Experience in markets where new entry has occurred, such as California and Texas intrastate markets or New York-San Juan, suggests strongly that most consumers prefer to pay less for less comfortable (higher-density seating, higher load factors, less inflight service) or less conveniently timed transportation than to purchase CAB-style service at CAB fares. (Of course, to the extent that sufficient numbers of travelers preferred other, more comfortable, service/price combinations to allow them to be offered at a profit, such options would be provided, in the same way that first-class service is provided now.) Since the calculations referred to earlier also suggest that a 78% increase in trunkline revenue passenger miles could be absorbed without requiring new equipment (assuming a load factor of 70%), a move to price competition at higher load factors would temporarily terminate new equipment orders to airframe manufacturers. This state of affairs would continue for whatever period was necessary to produce

actual or anticipated traffic growth requiring new equipment. If the price elasticity of demand for air transportation is as high as I and some others believe it is,[39] traffic would expand dramatically over time as fares came down. During this period airframe manufacturers would face severe cash flow problems, alleviated only by orders from international and foreign carriers. Manufacturer insolvencies might result, but these would almost certainly end in reorganizations rather than liquidations. Once existing capacity was absorbed, the manufacturers would face bright prospects. For one thing, much existing equipment, particularly older long-haul narrow-bodied jets, could not be operated economically in a high-density low-fare market environment. These aircraft would fall in capital value (producing losses to investors and lenders) as the market revalued them in an effort to keep their total operating costs competitive, but many would not be economic even at zero capital costs and would have to be replaced. Any further fuel cost increases (perhaps brought about by termination of domestic petroleum price controls) would accelerate this process. For another, the existing product lines of the domestic airframe manufacturers are well-suited in their present forms to high-density low-fare service, so no new capital investment in the airframe industry would be required to adapt them. Finally, traffic growth would be greatly stimulated by low fares, resulting ultimately in significant demand for new equipment.

Ironically, the gradual character of the deregulation provisions

of the proposed act would exacerbate the financial problems of airframe manufacturers. To the extent that these provisions produced a relatively gradual reduction in fare levels over a long period of time, they would extend the period during which traffic grew to meet capacity. As the prospect of vigorous fare competition became clearer and its effects remained uncertain, financing of new equipment acquisitions by some carriers might become quite difficult. Only after the future traffic growth rates were realized or anticipated would investment in new equipment become easily financed.

This scenario would also present a challenge to airport operators. As fares declined, traffic would increase dramatically, putting pressure on existing terminal facilities. At the same time, the financial weakness of the less efficient carriers would impair their ability to meet terminal space lease commitments and their ability to serve as financial guarantors for airport bonds. The more successful competitors would need increased space to accommodate expanding traffic. At airports with flexible terminal arrangements (such as Dulles or O'Hare), reassignment of gate and waiting areas could easily accommodate changes in carrier market shares. At airports like Kennedy or Logan (fortunately few in number) where some carriers operate exclusive terminals, rearrangements might create difficult physical and financial problems. And to the extent that rate flexibility allowed cost savings from using less congested or elaborate facilities

to be reflected in fares charged passengers, airport authorities that did not own local competing satellite airports might find their ability to pay transition costs or the costs of over-elaborate facilities impaired by competition from less convenient but cheaper satellite airports.

On the other hand, rising load factors would decrease the number of flights operated to accommodate any given level of traffic, thus reducing the demand for runway and gate facilities and alleviating environmental problems. Existing facilities would be used more intensely, reducing the need to build new airports. Investment would be directed toward passenger-handling, rather than aircraft-handling, facilities. And increases in the number of passengers handled for any given level of environmental disturbance would reduce the per-passenger impact of collecting monies from users to alleviate noise problems around airports. Finally, the more rapid introduction of efficient widebodied aircraft which are also quieter than existing narrowbodied equipment would tend to alleviate noise problems even if traffic grew rapidly.

Labor unions of the weaker carriers would find themselves with less rent to capture and members might suffer losses in real income. Successful reorganizations of insolvent carriers by creditors and management would undoubtedly require sacrifices by carrier employees. Labor agreements involving wage reductions and other adjustments recently negotiated between unions and troubled carriers such as Eastern,

Pan American, and TWA might be forerunners of the effects of vigorous price competition on employees of weaker carriers. Competitive pressure on fares would create pressures for increased labor productivity, ultimately reducing the number of employees required to handle any given level of traffic. On the other hand, as traffic grew, total employment might well rise. Increased load factors would mean that passenger-handling employees would make up a larger proportion of total airline employment, and aircraft-handling employees (e.g., pilots and mechanics) a smaller proportion.

A "Real Deregulation" Scenario

This projection proceeds on the following assumptions:

1. Entry by new firms is relatively easy. Equipment is available for lease or purchase, management talent is available from existing firms, and an adequate supply of skilled operating personnel is available.[40]

2. The minimum efficient size of an air carrier is quite small relative to existing trunklines,[41] and there are efficiencies available from market specialization.[42]

3. New firm entrants tend to rely on price competition as the principal means of attracting traffic.

Oddly enough, this scenario would produce more sharply adverse near-term financial impact on existing investors and managers, but substantially improved intermediate and long-term prospects for

carriers, investors, and aircraft manufacturers. It might, however, permanently affect adversely the wages paid labor. Many existing firms could not survive deregulation in their present form. The more efficient and adaptable carriers would survive, although some firm sizes might well be reduced, producing some disinvestment even in surviving carriers. Managements well adapted to the existing regulatory environment would find many of their skills obsolete and would have to adapt or be replaced. Unsecured investors and creditors of many existing firms would suffer severe losses as the industry reorganized and existing certificate and going-concern value disappeared. Secured creditors (equipment mortgagees) would suffer much less, although near-term adjustments might produce a distress market in aircraft. Over the longer term, traffic would grow much faster than in the previous scenarios as prices fell dramatically in response to competitive pressures from new entrants, and owners of relatively efficient equipment would find their investment protected or enhanced. As in the previous scenario, owners of less efficient equipment would suffer financial losses.

New entry would take place almost immediately, originally in the form of new operations by supplemental, intrastate, and perhaps some local service carriers. Dramatically expanded traffic response to lower fares would produce a true mass market in air travel. Existing aircraft available for sale or lease would be immediately available, and as existing inefficient carriers were forced to disinvest, their aircraft and personnel

would be available to new firms. Intrastate and supplemental carriers with surplus capacity would be another source of new capital equipment for interstate markets. A wide variety of new services, ranging from somewhat inconvenient accommodation in full aircraft to priority seats held in reserve at premium prices for last-minute travelers, would appear. Off-peak service at reduced prices would lead to more intense use of capital equipment. Existing efficient carriers would probably expand initially, but some would contract over time as carriers became increasingly specialized to survive. Perhaps a few large carriers would provide nationwide service primarily for business travelers (much as the major national car rental firms do), but each market would also be served by smaller firms adapted to particular markets and price-quality options.

Initially, capital sources might be reluctant to finance new or even existing carriers, but this would be counterbalanced by equipment available on a leased basis as secured lenders sought to put their existing aircraft to productive use. At first venture capital, and later more conservative equity and debt capital, would finance new operations as the level of uncertainty regarding the future structure and prospects of the industry declined. Ultimately, the rapid growth of air travel demand would attract new capital to firms demonstrating the ability to survive and prosper. A skeptic should bear in mind that the principal capital investment required to start a new carrier is tied up in the aircraft, and that the aircraft required for new service in the initial stages of deregulation

are already in being. Their owners will be forced to find operators for them, and leasing the aircraft to new or expanding domestic firms will be the principal means available to protect existing investment.

Aircraft manufacturers will do better than in the second scenario, since new traffic growth will occur more quickly and create a demand for new equipment. The principal long-term question for the airframe industry will be the ability to finance the development of aircraft types not now in existence without the support of quantity orders from large carriers. Aircraft types already in existence are financed now in sales of small numbers to relatively small carriers and there is no reason to expect that this would change under deregulation.

This scenario would produce even greater changes for airport operators than the preceding one. From a physical standpoint, it would produce greatly increased demand over a relatively short period of time for passenger facilities, and increased demand for runway and gate capacity as traffic growth outstripped the ability of airlines to accommodate it through increased load factors. Some of this growth could be accommodated through increased use of facilities at off-peak times. Much would have to be accommodated through new construction, which might create severe problems of landside access. This would lead to more use of existing satellite airports to spread the burden, particularly if airport congestion at primary facilities was reflected in the fees charged carriers, and hence in the fares charged passengers, and if

increased landside access problems negated the locational inconvenience to passengers of the satellite airports.

A mass market served by a larger number of carriers uncommitted by certificate obligations to particular routes would undoubtedly lead to simpler, more flexible airport arrangements. Operators would be forced to deal with more carriers and to build facilities which could be shifted from carrier to carrier as market shares shifted among competitors. The Dulles concept (a common terminal linked with aircraft by specialized vehicles) might well become more popular as its adaptability became more valuable and its drawbacks (the relatively poor opportunities for carriers competing in service rather than price to provide distinctive, well-identified passenger-handling facilities) became less important in a dynamic price-competitive environment.

Airport operators would become more like independent entrepreneurs and less like instruments through which the carriers provide ground services to the public. A larger number of smaller carriers not legally committed to serve any point and not guaranteed the protection of the CAB would become ordinary customers of, rather than long-term contractors with, airport authorities, who in turn would make their own financing arrangements without depending on carriers for guarantees. Capital would be supplied to airport operators based on long-term demand for their proposed facilities. Fewer, if any, carriers would be provided with terminals uniquely suited to their requirements in

return for long-term commitments, since long-term commitments on the part of the carriers would be less reliable than at present. On the other hand, civic monuments would be harder to impose on the carriers and the public if alternative service at lower fares reflecting lower airport charges was available at competing satellite airports. Smaller cities would make do with less elaborate airports than at present as fare levels directly reflected airport costs and could be compared with fares from cities with more realistic facilities. In addition, specialist carriers serving smaller cities would be less likely to use aircraft demanding costly and environmentally objectionable runway expansions.

There is no question that all these changes in the provision of airport services would require a dramatic restructuring of existing airport financing arrangements, many of them involving existing commitments for the next several decades. The transition period could be quite difficult, as existing carriers could not meet existing commitments and airport operators were required to exercise a flexibility denied to them by existing long-term agreements. Existing carriers might have to be excused from long-term agreements, and some would excuse themselves through insolvency. Airport operators would probably end up refinancing existing debt in a form that did not depend on existing long-term airline agreements. For large airport operators at busy traffic hubs, this would not be a serious problem, since demand for their facilities would attract investment. For smaller operators with facilities

too large for the traffic they must accommodate, the lack of backing by a large, CAB-protected carrier might prove to be a problem. Hopefully, traffic growth stimulated by lower fares would considerably alleviate these problems over the long run, but for these operators the transition period could be quite trying.[43]

Unionized airline employees, particularly pilots, might be sharply affected by this scenario. Smaller carriers are more expensive to organize, and multiple firms and free route entry make the strike weapon much less effective. A strike against a carrier whose service represented a relatively small percentage of the national total and could be replaced by competing carriers without route restrictions would not be sufficiently disruptive to generate political intervention. The level of wages which could be paid by a firm unable to recover its costs through an industry-wide fare increase would tend to be competitive.[44] Lack of route monopolies or oligopolies would eliminate monopoly rents available for capture by labor unions. And the existence of a large pool of eager and qualified unemployed pilots would make an attempt to organize the entire pilot population virtually impossible. The same would hold true for other classes of airline employees, although their present wages are undoubtedly much closer to competitive levels and the impact on their earnings would therefore be much less pronounced.

In sum, the financial impact of regulatory change in the airline industry is, not surprisingly, very sensitive to assumptions about the degree to which the new regime will differ in fact from the existing one.

To the extent that the proposed act produces an environment resembling deregulation, there will be maximum consumer benefits but substantial impact on the principal beneficiaries of the present regulatory arrangements -- existing managements, investors whose prosperity depends upon the protection of the CAB, and labor unions, especially pilots. To the extent that it produces only minimal changes in carrier behavior, its protective effects will continue. Unfortunately, the origins and effects of airline regulation ensure that, in this case, the degree of continued financial protection that can be maintained for some is inversely related to the degree of consumer benefit that can be achieved by reform.

FOOTNOTES

* Henry R. Luce Professor of Law and Social Change in the Technological Society, California Institute of Technology and Professor of Law, University of Southern California Law Center. An abbreviated version of this paper was prepared for the conference on "Regulatory Reform and the Federal Aviation Act of 1975", sponsored by the Transportation Center of Northwestern University and the U.S. Department of Transportation at Evanston, Illinois, February 29 - March 1, 1976. I wish to thank the Department of Airports of the City of Los Angeles for the assistance and information provided me. The views expressed here do not necessarily reflect the views of the sponsoring or assisting organizations.

1. See, e.g., L.S. Keyes, Federal Control of Entry into Air Transportation (1951), "A Reconsideration of Federal Control of Entry into Air Transportation", 22 Journal of Air Law and Commerce 192, (1955); R.E. Caves, Air Transport and its Regulators (1962); M.E. Levine, "Is Regulation Necessary? California Air Transportation and National Regulatory Policy", 74 Yale Law Journal 1416 (1965); W.A. Jordan, Airline Regulation in America: Effects and Imperfections (1970); T.E. Keeler, "Airline Regulation and Market Performance", 3 Bell Journal of Economics and Management Service 399 (1972); G.W.

Douglas and J.C. Miller III, Economic Regulation of Domestic Air Transport: Theory and Policy (1974); Report of the CAB Special Staff on Regulatory Reform, 1975 (hereinafter cited as Regulatory Reform); U.S. Senate Subcommittee on Administrative Practice and Procedure, Civil Aeronautics Board Practice and Procedure, 1975 (hereinafter cited as Senate Report).

2. L.S. Keyes, Federal Control of Entry into Air Transportation 340-346 (1951).

3. § 2551, 94th Congress, 1st Session; introduced October 22, 1975. Introduced also as H.R. 10261.

4. M.E. Levine, op. cit. supra n. 1, and "Alternatives to Regulation: Competition in Air Transportation and the Aviation Act of 1975", 41 Journal of Air Law and Commerce, Issue 4 (April, 1976).

5. 52 Stat. 977 (1938).

6. 72 Stat. 731; 49 U.S.C. 1301-1542 (1958).

7. For histories of the development of the regulatory scheme, see C. Rhyne, The Civil Aeronautics Act Annotated (1939); H.L. Smith, Airways: The History of Commercial Aviation in the United States (1942);

L.S. Keyes, Federal Control of Entry into Air Transportation (1951). See also Joseph C. Goulden, The Superlawyers: The Small and Powerful World of the Great Washington Law Firms (1972), 34.

8. 49 Stat. 543 (1935); 49 U.S.C. § 1 ff.

9. Defined in 101, 49 U.S.C. 1301.

10. § 401, 49 U.S.C. 1371.

11. § 401 (j), 49 U.S.C. 1371 (j).

12. § 403, 49 U.S.C. 1373.

13. § 403 (b), 49 U.S.C. 1373 (b).

14. § 404, 49 U.S.C. 1374, requires that rates be just and reasonable, and not give undue or unreasonable preference or advantage to any destination, person, or traffic category. By manipulating the concepts of "reasonableness" and "discrimination", the Board frequently rejects proposed fares as too low.

15. § 1022 (g), 49 U.S.C. 1482 (g).

16. § 1022 (d), 49 U.S.C. 1482 (d). The Board is empowered to prescribe minimum as well as maximum, fares. This power represents its ultimate weapon against rate competition, but is rarely used. Since carriers know that tariffs can be found unlawful and rates prescribed, they generally withdraw tariffs which the Board suspends for investigation.

17. § 401 (e) (4), 49 U.S.C. 1371 (e) (4).

18. §§ 405-6, 49 U.S.C. 1374-5.

19. § 408, 49 U.S.C. 1378.

20. § 407, 49 U.S.C. 1377.

21. § 412, 49 U.S.C. 1382.

22. § 411, 49 U.S.C. 1381.

23. § 416 (b), 49 U.S.C. 1386 (b).

24. A trunk carrier is a carrier with a certificate of the type issued to the original "grandfather" carriers. These carriers provide unsubsidized service in long-haul and high-density short-haul markets.

American, Braniff, Continental, Delta, Eastern, National, Northwest, TWA, United and Western are the surviving trunklines. All other carriers are limited in some way to providing specialized services. Examples are: local service carriers (e.g., Hughes Airwest), all-cargo carriers (e.g., Flying Tigers), and supplemental (charter) carriers (e.g., World Airways).

25. This record is not due to any lack of applications. Between 1950 and 1974, 79 applications for scheduled domestic service were received from prospective new entrants. None was granted. Senate Report 78-79.

26. Regulatory Reform 47; CAB, The Domestic Route System: Analysis and Policy Recommendations, a staff study by the Bureau of Operating Rights, Washington, D.C., CAB, October 1974, 103 ff.

27. Regulatory Reform 51-2, 61, 133.

28. This model of joint industry-Board pricing behavior is not specified in exactly this form in the existing literature, although it can be deduced by combining various accounts of Board and industry behavior. An account of service response to price level can be found in Douglas and Miller, op. cit. n. 1, Ch. 4 (see also references in Ch. 4, n. 13).

Douglas and Miller do not take into account the effects of differing carrier costs levels.

29. The same effect can be observed with constant or slowly rising prices during periods of declining costs (e.g., periods when more efficient new aircraft are produced). In that case, the "spiral" consists of opposition by less efficient carriers to proposals of lower fares by efficient carriers seeking to maximize profits.

30. The method used was to take an approximate census of the types in each trunk carrier's fleet, adjust for the approximate number of revenue hours operated by each type and calculate a new available seat miles figure for the industry. I then took the number of revenue passenger miles actually experienced for the period and computed a new load factor.

31. Jordan, op. cit. n. 1, 200-209.

32. § 408 (a), 49 U.S.C. 1378 (a).

33. Even for a strike as widely disruptive as the strike against United Airlines in December, 1975, the Board was only willing or able to approve the most limited exemptions for a few unadvertised air

services in a very few markets for a very few days. See CAB orders 75-12-77, December 17, 1975 (Pan American fill-up traffic on one round trip daily New York-San Francisco, December 18-23, 1975); 75-12-93, December 18, 1975 (Western permitted stops at Seattle on three round trips daily between California and Vancouver, British Columbia, December 18-23, 1975); 75-12-86, December 17, 1975 (Trans International, one New York-Denver round trip, December 19-20, 1975); and 75-12-87, December 17, 1975 (Evergreen International, three daily round trips Chicago-Omaha, December 17-23, 1975).

34. Caves op. cit. supra n. 1, 27-29, 362-369.

35. S. 2551, §§ 6, 9.

36. S. 2551, § 14.

37. S. 2551, § 9.

38. Caves, op. cit. supra n. 1, 369. For a basic theory of the determinants of oligopoly behavior, see G.J. Stigler, "A Theory of Oligopoly", 73 Journal of Political Economy 44.

39. See e.g., testimony of M. Lamar Muse, President, Southwest

Airlines, Hearings on Oversight of Civil Aeronautics Board Practice and Procedures, 94th Cong., 1st Sess. (hereinafter cited as Oversight Hearings) 1245.

40. For an extreme example of the easy availability of the factors of airline production, see Flight International, February 28, 1976, Vol. 109, 473-476, 485-488.

41. Regulatory Reform 103-7, and references cited 103, n. 1; testimony of W. A. Jordan before Senate Subcommittee on Administrative Practice and Procedure, Oversight Hearings 453-4, 465-6.

42. See, e.g., Statement of M. Lamar Muse to Senate Subcommittee on Administrative Practice and Procedure, Oversight Hearings 1251; and testimony of W. A. Jordan, ibid., 479-81.

43. This may explain the opposition of the Airport Operators Council International, which is numerically dominated by operators of smaller airports, to deregulation. See "Comments of the Airport Operators Council International on the Aviation Act of 1975 to the Civil Aeronautics Board". (January 9, 1976 [processed], may be found as part of the record in CAB Docket #28490).

44. But not necessarily lower than at present. Firms forced by competition to make more productive use of labor might find themselves able and willing to pay wages as high or higher than those paid now by CAB-certificated carriers. This has been the practice of at least some intrastate carriers. See Oversight Hearings 1250-51 (Statement of M. Lamar Muse), 462 (Testimony of J. Summerfield).