



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*



JOURNAL OF THE TRANSPORTATION RESEARCH FORUM

Volume XXXI Number 1

1990

TRANSPORTATION LIBRARY

DEC - 4, 1990

NORTHWESTERN UNIVERSITY



TRANSPORTATION RESEARCH FORUM

Transport Deregulation: What Are The Universal Truths?

^{John}
by Kenneth Button*

ABSTRACT

Much mythology has grown up about the impact of recent reforms in the transport sector. Certainly the reforms have been widespread both in terms of their geographical coverage and the modes which have been involved but much of the research work has been narrow in its orientation. In particular, there has been a natural inclination towards national studies and towards looking at modes independently. The aim of this paper, which stems from extensive work on transport deregulation in both North America and Europe, is to bring together the experiences of reform to date and to see what general lessons are to be found.

The paper will provide only a very brief - even bland - account of events since the objective is analysis not description but will focus on similarities and differences in experience. The main mode considered (space precludes comprehensive coverage of all transport forms) will be air transport since major reforms have taken place not just in the U.S., Canada, Australia and the UK but also within the wider European Communities. There has also been a liberalization trend in terms of international aviation.

A detailed comparative examination of the nature of the focus of control which have been applied on both sides of the Atlantic (and, to a lesser extent, Australia) will include consideration of the impact of change on such key parameters as: market concentration, fare levels, mergers, discounting, service withdrawals etc. While aviation is the main mode for exploration where appropriate other modes - e.g. trucking, bus transport - will be brought within the framework of analysis. Some consideration will also be given to the various market forms which have been postulated as explaining the underlying behavior of aviation supplies (e.g. contestable, competitive, workably competitive, oligopolistic, etc.).

The ultimate aim is essentially to see if there are common underlying market structures in the transport sector and, if so, if there is a need for any form of (possibly uniform) regulatory system to maximize social welfare. To this end the style of presentation will be to set up a variety of

possible market structures and see how the aviation sector, in particular, measures up against them.

INTRODUCTION

The past two decades have seen remarkable changes in the way that economic regulation has been viewed - see papers in Button and Swann (1989a). This has been particularly true in the context of transport. The long-standing tradition had been one of market intervention by government to regulate entry and/or price with the intent on the one hand of protecting consumers, third parties and those working in the industry together with, on the other hand, the achievement of social objectives such as service to remote communities and the integration of spatially disparate markets. With one or two notable exceptions (e.g. the deregulation of the UK trucking industry in 1968), the controls which had been built up from the nineteenth century and developed and rationalized in the inter-war period continued to dominate into the 1970s. From the mid-1970s economic liberalization has spread through transport markets with supplying industries being freed from price and entry constraints and privatization taking effect in many sectors.¹

The objective of this paper is to consider whether our experiences of deregulation reveal any common threads. In particular, whether they reveal any broad, universal indications of how underlying transport markets function; how management responds to new stimuli; the degree to which transport users and third parties really need protecting from the antics of supplying industries; and the nature of transition processes from regulation to liberalization. This is not just an issue of academic interest. Deregulation has been pursued at different rates in different countries and for different modes and there has clearly been something of a bandwagon effect in operation. Indeed, in many instances a demonstration effect is discernible in the debates surrounding reforms. Separation of the general effects from the contextual, therefore, seems important for on-going policy development. Ideally, in this context, one would seek to

cover all modes in such an analysis, if for no other reason than that modal substitution can influence the behavior of a particular sector, but pragmatism leads us to focus primarily on aviation in this short paper.

The paper initially provides a very cursory overview of the background to the regulation debates and the nature of the changes which have taken place. They are well documented elsewhere and are included here merely to set out the historic record of changes across countries and, in the case of the European Communities (EC), economic groupings. We then look at some of the problems of comparing experiences before attempting to tease out any similarities of experience and divergences. Finally, we seek to see exactly what we have learned about the general nature of the aviation market and the ways that actors involved in it perform when confronted with freer market entry and pricing environments.

BACKGROUND TO AVIATION DEREGULATION

Aviation has changed remarkably in the post Second World War era. Technical advances in aircraft design and engines combined with improved navigation and air traffic control systems have expanded the range of services which can be offered, improved safety and reduced costs. In addition to this there have also been significant changes to the way the sector has been regulated. In particular, the period since the mid-seventies has witnessed considerable liberalization of aviation markets and a reduction in government regulation and public ownership of airlines and associated infrastructure. This trend can be observed in most countries although the nature, speed and commitment to change has varied between them - e.g. see Barone, et al. (1986); Gillen et al. (1986) and Heaver (1990) for an account of the Canadian changes; Forsyth (1990); and Kirby (1981) for Australia; Button and Swann (1989b); McGowan and Seabright (1989); Pelksman (1986 and 1990); and Sorenson (1990) for European changes; Bailey et al. (1985); Keeler (1990); Levine (1987) and Morrison (1989) for U.S. changes; UK Civil Aviation Authority (1988) for UK changes; and Doganis (1989) and Kasper (1988) for changes in the regulation of international aviation.²

The situation in the early 1990s is generally viewed as dramatically different to that prevailing only fifteen years earlier. At that time domestic aviation in most industrialized countries was highly regulated and was characterized (in general terms) by constraints on market entry, regulation of fare levels and, in many instances, public ownership of the airlines (e.g. the 1946 Civil

Aviation Act in the UK; the 1928 Civil Aeronautics Act in the USA; the 'Two-Airlines' policy initiated in Australia in the late 1940s; and the 1922 Aeronautics Act in Canada). International aviation was regulated via systems of bilateral agreements between countries established at governmental level. The International Air Transport Association (IATA) acts as a forum and serves a lubricating function in facilitating international agreement. Of course national systems differed, as did the rigidity of specific bilateral international arrangements operational at the time, but as a general observation it would be reasonable to describe aviation as a highly regulated industry. Indeed, Lissitzgen (1968) went as far as to contend that, "...probably no other worldwide economic activity of comparable magnitude is more thoroughly regulated, less free of official restraint and guidance than is world air transport."

This pattern of regulation was not unique to aviation at that time and extended across most modes of public transport. Entry controls were almost universal in the road freight sector and the bus industry; and railways, with some exceptions such as Canada, were statutory, publicly owned, legal monopolies in most countries (see the case studies in Button and Swann, 1989a). Rate controls were also widespread in both passenger and freight transport and regulations over safety standards and operating practices were virtually universal. Of course, the details of these regulations, their interpretation by administrators and the commitment to their enforcement varied considerably between countries.

Outwardly the rationale for government regulation of transport industries and, at the extreme, the taking of them into public ownership, lay very much in the notion that this the best way to serve the public interest. How the public interest was defined varied both between modes and countries. In Canada, for instance, the regulation of long distance transport (aviation and the railroads) was seen as an essential ingredient of policies to introduce cohesion into a new, large and sparsely populated country (Heaver, 1990). In the UK and the USA regulation of long distance transport was seen as a way of containing potentially damaging levels of competition, in the case of road freight and to a lesser extent aviation, and limiting monopoly, in the case of the railways. Again, motivations were somewhat different in the majority of Continental European countries where transport is treated as an input into a wider social and economic system rather than as in the U.S. and U.K. (and other countries favoring the so-called 'Anglo-Saxon Philosophy') where transport efficiency is seen more as an objective in its own right. State ownership and

the regulated supply of heavily subsidized transport services to achieve regional, industrial and social objectives characterized these former countries.

As one may gather from the comments at the beginning, significant changes have occurred to these regulatory regimes in recent years. Looking at aviation, the 1978 Airline Deregulation Act effectively brought legislative deregulation in the USA, though de facto change had been set in motion some two years earlier; de facto liberalization began in the UK domestic aviation market in 1980; the Air Canada contract was ended in 1977 although really effective liberalization only came about after the passing of the 1988 National Transportation Act;³ and the EC began liberalizing intra-member aviation services in the mid-1980s.⁴ International aviation has generally become more liberal as the result of freer bilateral agreements - the U.S. 'Open Skies' policy embedded in the International Air Transportation Competition Act 1977 being a cornerstone for this movement.

In part, these changes, and those experienced by other modes, have come about as a process of natural evolution as new modes of transport have emerged. In terms of surface transport, for example, the automobile, has altered the balance of importance between the transport modes. The newer forms of transport are less suited to regulation and, once allowed into the market place, the older established modes are at an inherent disadvantage if they have only limited control over their pricing, service level provision and long-term planning. In part liberalization has also been in response to developments on the demand side as personal travel demands and the demands of industry have changed. Rising incomes, increased leisure and new life-styles have both increased the diversity of the transport services demanded and brought into question the ability of regulators to be flexible enough to meet the fresh challenges. On the freight side, the nature of goods produced and the increased value-to-weight ratio has put a premium on service quality and reliability, rather than haulage costs, and these are more difficult components of the overall freight transport package for administrators to regulate for.

These are developments common to all industrial countries and, hence, it is not surprising that regulatory pressures have transcended national boundaries. In a sense these may be seen as long-term difficulties and frictions which would ultimately have led to some degree of retreat by regulators. Essentially, conditions had changed and the need for regulation had become outweighed

by the need for the greater flexibility and dynamism which market forces engender. There has, in fact, however been a little more to it than this.

First, there was increasing evidence that in some sectors regulation, far from protecting the users of transport (or possibly third parties in the case of safety) was actually serving the interests of the transport industries themselves. A degree of 'regulatory capture' was perceived to have occurred - see Keeler (1990) and Morrison (1989) on U.S. aviation. While in some instances this may have come about once regulation had been initiated, especially in circumstances where the supplying transport firms were the main source of data upon which regulators made on-going administrative decisions concerning fare levels, capacity provision, etc., if one looks back to the actual time much of the legislation was framed one can often observe a heavy involvement of incumbent transport undertakings implicitly, and in some cases openly, influencing the way controls were defined.⁵

Second, in some instances, liberalization came about as part of wider macroeconomic strategies. In the USA, for example, it occurred at a time of high inflation and the withdrawal of 'big government' was seen as a way of reducing the cost-push element in this process. In Canada, there were general knock-on effects from the liberalization of markets in the U.S. leading to general measures of reform, of which those in transport were but an element, to stimulate the economy. In Europe, the move towards a 'Single European Market' by 1993 (European Communities Commission, 1986) as part of a wider economic integration process has called forth changes in transport policy especially with respect to trucking and aviation.

Finally, one might point to the intellectual changes which have occurred in economic and political thinking. As John Maynard Keynes once said, "Practical men, who believe themselves to be quite exempt from any intellectual influences, are usually the slaves of some defunct economist... I am sure that the power of vested interest is vastly exaggerated compared with the gradual encroachment of ideas." In fact, the actual impact of such changes in thought can sometimes be equally exaggerated but they have, nevertheless, been important. In the context of reforms in UK transport policy and to a lesser extent the EC (Tucci, 1985), for instance, the notion of creating contestable markets, or at least markets approaching a contestable state, has been relevant although, as Kahn (1988) points out, such theoretical developments had little to do with changes in U.S. domestic aviation policy.

THE TRANSFERABILITY OF LESSONS RELEVANCE OF THE U.S. EXPERIENCE

Much has been written on the impact of transport, and in particular aviation, deregulation in the USA. This literature has formed a cornerstone of debate about both the desirability and nature of reforms which might be enacted elsewhere. It is, therefore, a useful bench-mark. It cannot but have affected, for instance, the attitudes of policy makers in Canada. It had an important impact in Australia and the decision to end the two airline policy. (Forsyth, 1990). There are, also, strong pressures for liberalizing European aviation, and supportive evidence from the experiences of the USA has been drawn upon to argue that, on balance, a liberalized market may prove more efficient. Since the latter is an on-going issue it is perhaps interesting to see just how the European aviation market differs from that of the U.S. domestic market and how this may influence the outcome of regulatory change in the former - see also Pryke (1988 and 1990); Pelkaman (1990); Button and Swann (1990); and Sawyer (1987). These differences tend to indicate that liberalization in Europe may not produce an identical result to that experienced across the Atlantic and that simple emulation may be inappropriate. For example one can point to-

- **Domestic/International Traffic Split.** The deregulated US market is domestic whereas that within Europe is predominantly international - some 80 per cent of European flights are cross-border. This means that the majority of European carriers are essentially international airlines. Aviation activities between states is, therefore, subject to bilateral agreements which are often of forms not found in the US prior to deregulation. Revenue pooling agreements have been, for example, quite usual on the major routes.

The creation of a Single Market within the EC by 1993 will still leave many European nations outside of the liberalization process⁶ and even within the EC not all constraints are likely to be removed given the variety of economic, social and political objectives which underline nations' aviation policy. The changes in the US were sudden and uniform, those taking place in Europe are gradual and, to some extent, variable. For example, even before the recent developments within the EC there were piecemeal liberalizations of some bilateral agreements. Table 1, for instance, shows the situation with regard to the UK and other European states.

- **The Non-scheduled Market.** The internal structure of the European market differs significantly from that of the USA. Europe has a substantial charter market

which did not exist on the same scale in the U.S. prior to deregulation. Further, not only have non-scheduled operators the scope for relatively easy market entry, albeit with conditions attached, but many of them have relatively new fleets and have an established market image. Unlike the situation prevailing in the U.S. until the mid-1970s, this means there are powerful countervailing forces in some markets already restraining the actions of scheduled operations. Indeed, McGowan and Seabright (1989) note the more 'innovative' pricing strategies of scheduled operators on routes where they co-exist with charter carriers. But there is also another way of looking at this. Charter services, although cheap, are less flexible and hence less useful for business travellers. Where markets are mainly for leisure travel these are dominated by charter carriers and in many cases no scheduled services are offered.⁷ Deregulation here could permit a more efficient traffic mix to develop with lower costs and less stringent discount conditions. This could generate benefits of a type not found in many U.S. markets. One might add to this, that the existence of a pool of experienced airline operators, albeit in the charter market, may combat the advantages of 'economies of experience' enjoyed by incumbent scheduled airlines which seem to have limited effective market penetration in the USA (Baker and Platt, 1989).

- **Market Size.** The size of the European market is significantly smaller than the domestic U.S. market. The average route length in Europe is some 750 kilometers whereas in the USA it is 1300 kilometers. Taking the top 75 routes in Europe only 17 have a flight time of two hours or more and for ten of these the flight time is between two and two and a half hours (Pryke, 1988). U.S. flights tend to be much longer and this is important. If flights are short then there is much less scope for hubbing because any time spent changing plane during a trip takes up a relatively large part of the overall journey time. In terms of market competition, it means that indirect flights in Europe, even if fares are lower, are seldom going to offer effective competition to direct services as has occurred in the U.S. For example, Pryke (1988), deploying a set of assumptions regarding levels of hubbing and demand, finds that while liberalization in Europe is likely to reduce the degree of monopolistic power over many routes (e.g., on short haul routes while single carrier supply will remain at about 48 per cent of services, the number of two carrier routes will fall from 32 per cent to about 25 per cent as multiple supply expands), the eventual outcome will fall short of the U.S. situation (where only 38 per cent of routes have one supplier and 25 per cent have two suppliers).

TABLE 1
Liberalized U.K. Bilaterals With Other European Countries

Country	Route Access	Liberalization of Capacity Constraint	Tariff Constraint
Netherlands (1964)	Yes	Yes	No
Netherlands (1985)	Yes	Yes	Yes
Fed. Rep. of Germany	Yes	Yes	Limited
Luxembourg	Yes	Yes	Yes
Belgium	Yes	Yes	Yes
Switzerland	Yes	Yes	Limited
France	Limited	Limited	No
Spain	Limited	Limited	No
Italy	Limited	Limited	No

The relative size of the European market is also reflected in the size of the European Communities' airlines. The merger of British Airways (doing 46.3 billion scheduled passenger-kilometers) and British Caledonian (doing 8.8 billion) in 1987 made it the largest European carrier in terms of passenger-kilometers done at the time and yet this must be set against the 106.7 billion passenger-kilometers of United Airlines and 91.3 billion of American Airlines not to mention the 213.3 billion of Aeroflot.

● **Production Costs.** Production costs are different in Europe to those which prevail in the U.S. While it is difficult to make direct comparisons, there is some general evidence (see Table 2) that scheduled airline costs are higher in Europe than in the USA - Barrett (1987); McGowan and Seabright (1989); Sawyers (1986). European airlines are confronted with some costs which are outside of their control and are higher than those encountered by their U.S. counterparts. For example, IATA has estimated that landing fees in the U.S. represent between 10 per cent and 30 per cent of the European level. But even allowing for this, some of the higher costs stem from lower productivity rather than generally higher unit input prices. While deregulation in the U.S. resulted in substantial reductions in labor costs (Morrison, 1989) and enhanced productivity, mainly brought about by wage reductions, labor shedding, changes in working practices, etc., it seems unlikely that the somewhat different attitude towards labor relations prevailing in most European

countries would permit the same thing to happen there - or, at least, not so rapidly and dramatically.

● **Computer Reservation Systems.** The CRS systems in the USA are owned by the largest airlines (e.g. United with Apollo and American with Sabre) while in Europe each is owned by a consortium of airlines (e.g. Galileo is owned by British Airways, KLM and seven other airlines). They are, therefore, unlikely to be open to quite the same degree of potential exploitation as was found to have occurred after deregulation in the U.S. (Levine, 1987). In particular, U.S. owners are able to access to rivals' data bases while the European systems are designed to prevent such 'keyhole' activities. Recent moves by both the EC and ECAC have also resulted in legal codes of practice designed to prevent deliberate massaging of the information presented on the screen.

● **Ownership of Airlines.** While the U.S. aviation industry is entirely in private hands, there is substantial, although very slowly contracting, public sector participation in the ownership of European airlines. For example, Air France, the largest European airline is 100 per cent government owned, as is Olympic, TAP, Aer Lingus, Iberia, Luxair, etc. with many other airlines having majority government holdings in them - e.g. Lufthansa (74 per cent), Alitalia (67 per cent) and KLM (37 per cent). In many countries there is a 'preferred vehicle', namely a dominant airline which is normally either partly or entirely publicly owned and

Generated at University of Minnesota on 2021-11-09 17:51 GMT / https://hdl.handle.net/2027/ien.35556023495724 Creative Commons Attribution-NonCommercial-NoDerivatives / http://www.hathitrust.org/access_use#cc-by-nc-nd-4.0

TABLE 2
Airline Labor Costs and Productivity
(Average Per Employee, 1987)

	Labor costs (\$000)			Productivity*
	Pilots/ Co-Pilots	Other Cockpit Staff	Cabin Crew	
Eight U.S. majors	92	40	28	1.6
BA/BCal (Britain)	65	48	19	1.1
Lufthansa (W. Germany)	na	130	40	0.8
SAS (Scandinavia)	na	103	41	0.6
UTA (France)	164	119	45	0.8
Alitalia (Italy)	na	93	59	0.7
Iberia (Spain)	109	80	37	0.7

* Revenue passenger kilometers, millions

Source: McGowan and Seabright (1989)

is seen as the instrument for advancing national aviation policy. While several U.S. carriers have gone bankrupt, public sector involvement inevitably affects the way an airline is treated and it is difficult to conceive of a government owned carrier being allowed to go bankrupt in a competitive European aviation market.

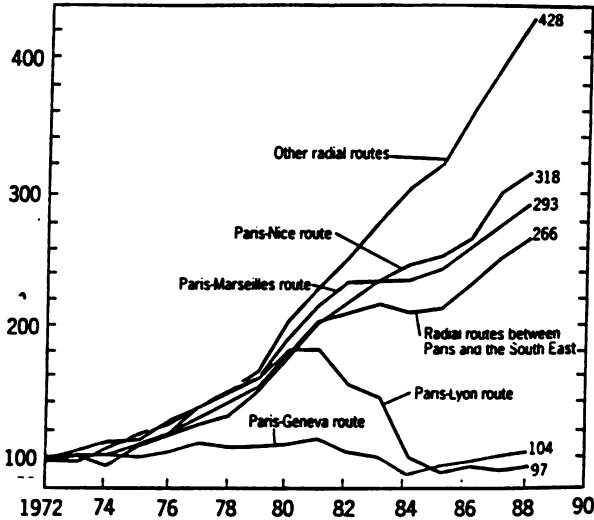
• **Intermodal Competition.** There is substantial inter-modal competition in Europe over medium distances, especially from high-speed train services such as the French TGV system. The U.S. rail system, save for some services on the North-East corridor, is essentially a freight system - less than 0.05 percent of U.S. passenger traffic is by rail. The situation is different in Europe. Some 13 percent of passenger-kilometers done in the EC are by rail. This is because rail is heavily subsidized in many countries and, in addition, in many instances rail services can compete with air on the basis of door-to-door journey time for trips up to 500 kilometers. The expansion of the high-speed rail network in Europe, the completion of the Channel Tunnel, etc. (Button, 1989) suggests that this competition will expand to more routes over the next decade. There is already evidence that the development of such services can affect air travel demand. The ability of high-speed trains to attract air passengers has been proven first in Japan at 240km/h then in France at 270km/h. In the latter case, for instance, Figure 1 shows the growth in demand for air travel on the main French

domestic routes. The opening of the TGV rail service between Paris and Lyon has clearly contained air traffic growth on this route as has the Paris-Geneva service.

High quality roads in Europe, especially coupled with faster permitted driving speeds in many countries, also means that road passenger transport competes rather more effectively on some corridors than would be the case on comparable routes in the U.S. The gradual evolution of an EC infrastructure fund coupled with national investment programmes (albeit differing in scale between EC members) also means that the European road network will continue to develop in the future. This contrasts with the relatively small U.S. road building programme.

• **Infrastructure Availability.** There were a number of major bottlenecks in the U.S. air infrastructure system at the time of deregulation and the period immediately after it. These were associated mainly with airport capacity and the air traffic control system. As liberalization proceeds within Europe, however, the scales of the infrastructure constraints are more substantial and the mechanisms for dealing with them are more cumbersome. Capacity has already been reached at 10 of the largest 46 airports (see Figure 2) and being approached rapidly at another 16. The air traffic control system in Europe, unlike that for domestic U.S. aviation, has traditionally been a national concern and is frequently heavily congested. There is co-ordination between the various

FIGURE 1
Air Travel on the Main French Routes
 (Index with 1972 = 100)



Air Traffic Flow Management Units but many of the links are not direct and rely on telephone contact and the electronic systems used to monitor air traffic differ between countries. Additionally, the flight paths for air traffic in Europe, including those over the most densely trafficked areas, are constrained by the demands of military aviation. Since the quality of infrastructure is essentially only as good as its worst link, and there is no overall mechanism for automatically investing in new systems, it seems probable that Europe will suffer somewhat more from capacity constraints than has the USA.

● **The Advantage of Hindsight.** European policy makers already have the U.S. experience to guide them and they are, therefore, likely to react against some of the perceived difficulties which have been encountered in the U.S. The Directorate General for Competition of the EC, for example, would seem to be fully aware of the potential problems airline mergers may cause under a more liberal regime and the latent market power which exists through flight code sharing and domination of CRS systems (Argyris, 1989). The implementation of policies to counter potential problems, how-

ever, will itself cause reaction amongst operators as they naturally seek some degree of shelter within the more competitive environment. Given the different institutional constraints confronting them, however the airlines may well behave differently to their U.S. counterparts.

SOME COMMENTS ON THE OUTCOMES OF DEREGULATION

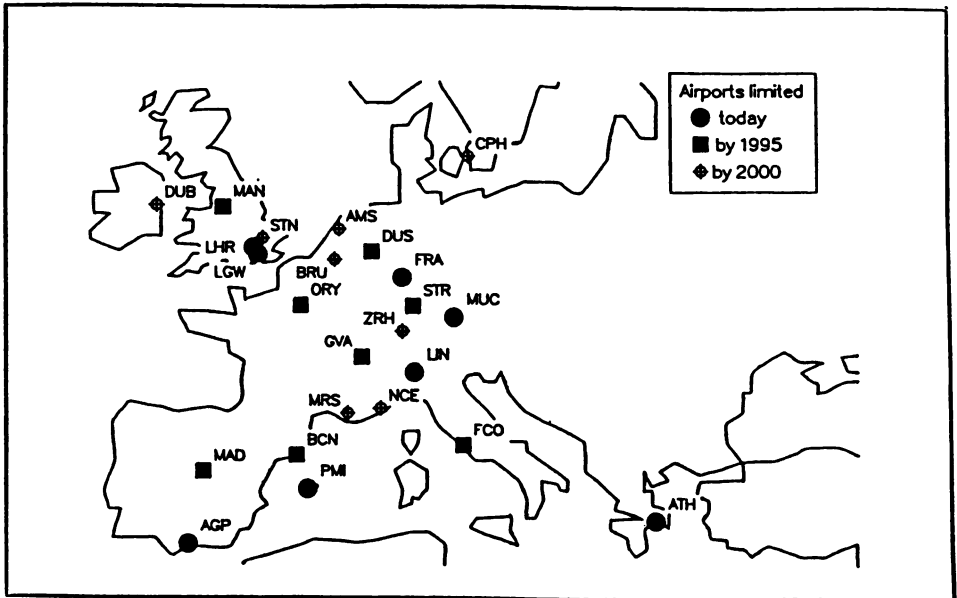
While there are, therefore, a number of significant differences between the U.S. and European situation from a policy perspective, the real question is whether these are important enough to mean that adoption of U.S. style liberalization would result in an outcome for Europe which would be markedly different to that on the other side of the Atlantic. Since there has already been gradual reform of sorts in Europe, with further liberalization planned before 1993 (Button and Swann, 1990),⁸ and the airlines are themselves seemingly anticipating freer markets in the 1990s, one can glean some information about just how general the U.S. outcome is.⁹

If one looks at the U.S. experience, then in the jargon of welfare economics there has

Generated at University of Minnesota on 2021-11-09 17:51 GMT / https://hdl.handle.net/2027/ien.35556023495724 / Attribution-NonCommercial-NoDerivatives / http://www.hathitrust.org/access_use#cc-by-nc-nd-4.0

FIGURE 2

Airports at or Reaching Capacity in Europe



been a noticeable improvement if measured by the Kaldor compensation criteria. The overall picture indicating that while there have been losers - especially in terms of business travellers seeking direct flights (Keeler, 1990) - these are more than offset by the benefits to those who have gained. Fares have fallen, flight choices have risen and safety standards do not seem to have diminished. While changes have been slower in Europe, the liberalization of bilateral agreements which have taken place to date have produced fare reductions and deeper discounting (McGowan and Seabright, 1989).

What is also apparent from the experiences of the U.S., Europe and, in an extreme way, Canada, is that in a liberalized aviation market there is a tendency for airline ownership to become highly concentrated. In a sense this may be seen as a device to develop and subsequently protect market power. In the USA, for example, there was a period when the number of airlines grew quite rapidly peaking at 123 in 1984. Subsequently we have moved towards the era of, what Frank Lorenzo has termed, 'The Megaline Phase', as successive mergers and takeovers have reduced the number of

truly independent carriers to 27.¹⁰ A more extreme picture has emerged in Canada where there is effectively a duopoly.

Mergers in Europe have also taken place although, given the more extensive involvement of governments coupled with a degree of uncertainty about the attitude of the EC Competition Directorate, these have been less dramatic (IFAPA, 1988). Domestically, looking at major mergers, British Airways has taken over British Caledonian and more recently Air France has bought UTA and with it gained a majority share-holding in Air Inter to make it Europe's largest carrier (see Table 3). At the international level within Europe, the Netherlands' carrier KLM teamed up with British Airways to acquire a 20 per cent each stake in the Belgium carrier KLM. KLM also has a 14.9 per cent stake in Air UK. Air France and Lufthansa have operational agreements which include the formation of a joint East-West German carrier. More broadly, the Scandinavian carrier SAS has moved outside of Europe to acquire a 10 per cent equity holding in Texas Air and has made alliances with All Nipon Airways, Thai International, Lan-Chile and CAI. At a slightly different level, British

TABLE 3
Scheduled Passengers Carried by Western Europe's Airlines (1988)

	Share of West European Market (000s)	%
Air France (with Air Inter)	28,519	13
British Airways	22,516	11
Lufthansa	17,791	8
Iberia	15,109	7
Alitalia	14,602	7
SAS	13,320	6
Swiss Air	7,087	3
Olympic Airways	6,660	3
KLM	6,219	3

Sources: ICAO, *Air Transport World*, *Economist* estimates.

Airways made an aborted attempt to purchase United Airlines but still has an integrated flight schedule with it.

Scale itself has not been seen as the primary motive for mergers and alliances in U.S. aviation but rather scale tends to coincide with the ability of airlines to exploit fully economies of scope and density especially if it results in market domination of key hubs. Indeed, the increased hubbing which has occurred since 1978 in the USA is generally recognized, along with reduced labor costs, as one of the main contributors towards the real fare decrease from 4.4 cents per mile to 3.2 cents between 1976 and 1987 (Keeler, 1990). The long term danger that goes with this is that hub dominance can also lead to carriers exploiting their market position at such hubs.¹¹ In Europe hub dominance already exists (British Airways position at Heathrow, where there is an exclusion rule, and its control of Terminal 4 is a case in point) and allocation of slots etc. is based upon grandfather rights. The lack of market mechanisms to allocate slots at European airports gives incumbent carriers a natural advantage. Mergers, however, are less likely to be for reasons of acquiring airport control in Europe than in the U.S. quite simply because both the EC Commission and most national governments tend to be stricter in their approach to hub domination.¹²

While one can point to this similarity between the European situation and that in North America one or two caveats should be added. First, while the Department of

Transportation (which was given responsibility to approve mergers after the enactment of the 1978 Airline Deregulation Act) has been rather passive until recently in terms of restraining airline merger activity,¹³ the EC is particular has developed a more aggressive attitude towards takeovers and mergers. While in the past the system has essentially involved retrospective actions to force divestiture if mergers were felt to be leading to excessive market dominance, more recent actions have initiated proactive measures with potential mergers between large undertakings being brought before the Commission.¹⁴ Further, at the national level some countries, such as the UK, have developed policies designed to prevent predatory behavior within their domestic markets. The mergers which are taking place in Europe may, in consequence, result in higher levels of efficiency rather than market exploitation.

Second, aviation is an international industry and, as pointed out above, the European airlines are relatively small players. Linked with this, improvements in the productivity of European airlines has tended to lag behind that of deregulated U.S. carriers (see Table 4). The result of this is concern that a more liberal international aviation market may become dominated by U.S. airlines, indeed U.S. airlines are already trying to develop international networks to maximize the economies of density and scope they can reap from their mainland hubs. Mergers may, therefore, be seen as important

TABLE 4
Average Annual Percentage Decline In Unit Costs
and Sources of Unit Costs for U.S. and Non-U.S. Carriers,
Pre- and Post-Deregulation

Sources	Pre-deregulation (1970-1975)		Post-deregulation (1975-1983)	
	USA	Non-USA	USA	Non-USA
Productive efficiency				
Operating characteristics	1.6	3.3	2.2	2.4
Technical efficiency	1.4	1.2	1.1	0.4
Total productive efficiency	3.0	4.5	3.3	2.8

Source: Caves, D.W. et. al. (1987)

in developing genuinely global European carriers to compete with U.S. airlines on an equal footing.

Finally, mergers within Europe may in the long-term help to erode the notion of national carriers and permit a more natural internal aviation market to develop initially within the EC but ultimately across the whole of Europe.

In other areas some of the experiences of the U.S. are not so clearly visible in Europe. Frequent flyer programmes are, for example, extremely rare although some of the international carriers do have agreements to tie-in with North American airlines' schemes. One could explain this lack of intra-European programmes in terms of the possible actions of the EC Commission if a major carrier did try to initiate such a programme, especially given the differential tax regimes within the Communities whereby some countries would tax frequent flyer credits gained on business trips and others would not. Issues of national discrimination could arise in such circumstances. But equally, it could be added that the major European airlines have observed overseas experiences in these matters and seem to have reached a mutual conclusion that frequent flyer programmes essentially constitute a 'zero-sum game' and that the risks of entering are not worth the potential, and ultimately small, gains in market share.

MARKET STRUCTURES

Although we now have considerable experience of deregulated aviation markets in the USA there is still no real consensus on the natural market form for the sector. The development of contestability theory in the 1970s led many to believe - e.g. see Bailey and Panzar (1981) - that once entry to and exit from aviation markets was made ultra free then, because of the ease with which airlines can reallocate aircraft and adjust services at nominal cost, the full benefits of contestability could be reaped. Subsequent, retrospective, studies in the USA have thrown up rather conflicting stories of just how valid this perception has been - see Sinha (1986).¹⁵ Certainly, the notion that one can make the aviation market perfectly contestable at a stroke now seem to have evaporated. Indeed, rather than looking at some utopian vision of how aviation might be supplied at maximum efficiency, the focus has switched first to whether deregulation has led to an improvement in the efficiency in the sector and second to whether there might be additional ways of tinkering with the system to improve things further.¹⁶

Notions of contestability were certainly influential in the early thinking about both the need for and, subsequently, the form liberalization in Europe should take. As a

modelling framework for developing policies, however, the nature of the European market, with its national interests, airport capacity and air traffic constraints, and legacy of established routes and networks suggests that incumbents will ensure that free entry and exit is not possible. It also seems that workable competition, at least as defined by Keeler (1990) - viz that 'level of performance (which) can practically (be) achieved by the marketplace' - is a difficult bench-mark to work with given the problems of specifying the relevant counterfactuals needed before one can decide if a particular set of market institutions represents the best practical arrangement possible.

What does seem clear from what has happened in North America, and is gradually occurring in Europe and Australia, is that incumbent airlines naturally seek to manipulate whichever type of regulatory regime confronts them. By gaining control of complementary inputs (e.g. airports slots, CRS systems, etc.), acquiring competitors, forming alliances and constructing barriers to entry (e.g. frequent flier programmes) they seek to limit the powers of both actual and potential competition. Consequently, the deregulated aviation market behaves rather more like an oligopoly than any other market form. In these circumstances the issue becomes one of containing oligopoly power while at the same time ensuring that the maximum possible economies of scale, scope and density are enjoyed. In terms of overall resources allocation, which brings in all forms of economic activity including that outside of the transport sector, there is much to be said for uniformity of control and regulation. The development and implementation of common anti-trust and mergers policies are, therefore, a more rational way of dealing with the general problems of market exploitation than is the use of specific aviation based regulation. The difficulty encountered, and still to be resolved in doing this, is the criteria upon which to refer company actions or mergers for assessment - predatory pricing being a particularly difficult practice to clearly define in this context.

One can perhaps see here one of the major advantages of recent EC policy which has, in part for practical reasons, only slowly unwound. It has enabled the legislators to review what has happened elsewhere where there have been almost revolutionary changes in policy, and to seek general policy solutions covering both air transport specific issues (such as the EC code of conduct with regard to CRS displays) and broader industrial matters (such as the criteria upon which mergers are evaluated).

CONCLUSIONS

There are clearly and discernible cycles (or some might say 'fashions') with regard to the way transport regulation is viewed. Bandwagon effects are pronounced. The issue then is really one of deciding how sensible it is for everyone to follow these cycles and to what extent there is a need for local variation and adaption. While economic theory provides useful guidelines, the theory is itself based upon assumptions regarding behavior and constraints which in reality may differ with circumstance. In the case of regulating transport the issue then becomes one of deciding to what degree the outcome of change in one country is of general applicability and to what extent is it peculiar.

It seems unlikely that the recent spate of market liberalization of transport supply will be reversed in the near future - indeed at the international level the trend is a continuing one. What we observe from our experience to date is that there are certain underlying features of transport markets - or at least aviation markets - but that these must be tempered both by the geographical and other technical influences on supply and demand, and by the ultimate set of institutional constraints which control the market. On this latter point, while one frequently uses the term 'deregulated' markets such markets never exist. All transport markets are subjected to a variety of regulations, be they of a social kind, over land use matters, or as part of general industrial policy. The important issue is, therefore, the nature and intensity of the regulations which fit into these portfolios of policy instruments. It would seem that it is important that a degree of fine tuning is necessary to meet the needs of local conditions and aspirations.

REFERENCES

- Argyris, N. (1989), *The EEC Rules of Competition and the Air Transport Sector*, *Common Market Law Review*, 26, 5-32.
- Baker, S.H. and Pratt, J.B. (1989), *Experience as a Barrier to Contestability in Airline Markets*, *Review of Economics and Statistics*, 71, 352-56.
- Bailey, E.E., Graham, D.R., and Kaplan, D.P. (1985), *Deregulating the Airlines* (Cambridge, Mass: MIT Press).
- Bailey, E.E., and Panzar, J.C. (1981), *The Contestability of Airline Markets during the Transition to Deregulation*, *Journal of Law and Economics*, 44, 125-45.

- Barrett, S. (1987), *Flying High, Airline Prices and European Regulation*, (Aldershot: Avebury).
- Baumol, W.J. and Willig, R.D. (1986), Contestability: Developments Since the Book, *Oxford Economic Papers*, 38, 9-36.
- Borenstein, S. (1989), Hubs and High Fares: Dominance and Market Power in the U.S. Airline Industry, *RAND Journal of Economics*, 20, 344-65.
- Brone, S.S., Javidan, M., Reschenthaler, G.B. and Kraft, D.J.H. (1986), Deregulation in the Canadian Airline Industry: Is there Room for a Large Regional Carrier?, *Logistics and Transportation Review*, 22, 421-448.
- Button, K.J. (1989), Infrastructure Plans for Europe, *CERUM Working Paper*, CWP-1989.10, (Umea, Umea University).
- Button, K.J. and Swann, D. (eds) (1989a), *The Age of Regulatory Reform*, (Oxford: Clarendon).
- Button, K.J. and Swann, D. (1989b), European Community Airlines - Deregulation and its Problems, *Journal of Common Market Studies*, 27, 259-82.
- Button, K.J. and Swann, D. (1990), Aviation Policy in Europe, in Button, K.J. (ed.), *Deregulating Aviation* (London: David Fulton).
- Caves, D.W., Christensen, L.R., Tretheway, M.W. and Windle, R.J. (1987), An Assessment of the Efficiency Effects of U.S. Airline Deregulation via an International Comparison, in Bailey, E.E. (ed.), *Public Regulation: New Perspectives on Institutions and Policies*, (Cambridge: MIT Press).
- Doganis, R. (1989), Regulatory Changes in International Air Transport, in Button, K.J. and Swann, D. (eds), *The Age of Regulatory Reform*, (Oxford: Clarendon).
- European Communities Commission (1985), *Completing the Common Market*, COM (85), 310 Final (Brussels: European Commission).
- Forsyth, P.J. (1990), The Regulation and Deregulation of Australia's Domestic Airline Industry, in Button K.J. (ed.), *Deregulating Aviation* (London: David Fulton).
- Gillen, D.W., Stanbury, W.T. and Tretheway, M.W. (1988), Duopoly in Canada's Airline Industry: Consequences and Policy Issues, *Canadian Public Policy*, 16, 16-31.
- Hawk, B.E. (1989), Airline Deregulation After Ten Years: The Need for Vigorous Antitrust Enforcement and Intergovernmental Agreements, *Antitrust Bulletin*, 34, 267-305.
- Heaver, T. (1990), Transportation Deregulation in Canada: The Forces for Change in Banister, D. and Button, K.J. (eds), *Transport in Free Market Economy*, (London: Macmillan).
- International Foundation of Airline Passenger Associations (1988), *European Airline Mergers*, (Geneva: IFAPA).
- Kahn, A.E. (1988), Surprises of Airline Deregulation, *American Economic Review Papers and Proceedings*, 78, 316-322.
- Kasper, D.M. (1988), *Deregulation and Globalization: Liberalizing International Trade in Air Services* (Cambridge, Mass: American Enterprise Institute/Ballinger).
- Keeler, T.E. (1990), Airline Deregulation and Market Performance: The Economic Basis for Regulatory Reform and Lessons from the U.S. Experience, in Banister, D. and Button, K.J. (eds) *Transport in Free Market Economy* (London: Macmillan).
- Kirby, M.G. (1981), *Domestic Airline Regulation: The Australian Debate* (Sydney: Centre for Independent Studies).
- Levine, M. (1987), Airline Competition in Deregulated Markets: Theory, Firm Strategy, and Public Policy, *Yale Journal on Regulation*, 29, 1-28.
- Lissitzyn, O. (1968), Freedom of the Air: Scheduled and Unscheduled Services, in McWhinney, E. and Bradley, M. (eds), *The Freedom of the Air* (New York: Oceana).
- McGowan, F. and Seabright, P. (1989), Deregulating European Airlines, *Economic Policy*, 9, 283-344.
- Morrison, S. (1989), U.S. Domestic Aviation, in Button, K.J. and Swann D. (eds), *The Age of Regulatory Reform*, (Oxford: Clarendon).
- Morrison, S.A. and Winston, C. (1987), Empirical Implications and Tests of the Contestability Hypothesis, *Journal of Law and Economics*, 30, 53-66.
- Morrison, S.A. and Winston, C. (1989), Enhancing the Performance of the Deregulated Air Transportation System, *Brookings Papers on Economic Activity: Microeconomics*, 61-122.

Organization for Economic Cooperation and Development (1988), *Deregulation and Airline Competition*, (Paris: Organization for Economic Cooperation and Development).

Pelksman, J. (1986), *Deregulation of European Air Transport*, in de Jong, H.W. and Shepherd, W.G. (eds), *Mainstreams in Industrial Organization*, (Dordrecht: Martinus Nijhoff).

Pelksman, J. (1990), *Deregulation in European Air Transport: Issues After 1992*, in Banister, D. and Button, K.J. (eds), *Transport in Free Market Economy*, (London: Macmillan).

Pryke, R. (1988), *European Air Transport Liberalization, Travel and Tourism Analyst*, 6, 5-18.

Pryke, R. (1990), *American Deregulation and European Liberalization*, in Banister, D. and Button, K.J. (eds), *Transport in a Free Market Economy* (London: Macmillan).

Sawer, D. (1987), *Competition in the Air: What Europe can Learn from the USA*, Research Monograph 41, (London: Institute of Economic Affairs).

Sinha, D. (1986), *The Theory of Contestable Markets and U.S. Airline Deregulation: A Survey*, *Logistics and Transportation Review*, 22, 406-19.

Sorensen, F. (1990), *The Changing Aviation Scene in Europe*, in D. Bannister and K.J. Button (eds), *Transport in a Free Market Economy*, (London: Macmillan).

Stanbury, W.T. and Tretheway, M.W. (1986), *Airline Deregulation: A Bibliography*, *Logistics and Transportation Review*, 22, 467-539.

Tucci, G. (1985), *Regulation and Contestability*, in *Formulating an Air Transport Policy for the European Community*, *Rivista di Politica Economica*, 19, 3-23.

United Kingdom Civil Aviation Authority (1988), *Statements of Policies on Air Transport Licensing - June 1988*, CAP 539, (London: CAA).

ENDNOTES

* Professor of Applied Economics and Transport, Department of Economics, Loughborough University, England

1. We tend to use the terms "deregulation", "liberalization" and "regulatory reform" interchangeably. In fact, the European

convention is to speak in terms of regulatory reform, since in many instances social regulations have often been reinforced as economic regulations have been relaxed and also, in some cases, privatization has been accompanied by new economic regulations. The North American convention seems to talk of deregulation even if some regulations still remain.

2. A useful bibliography of the literature on airline regulation and deregulation is contained in Stanbury and Tretheway (1986).
3. Although services in the northern part of the country remain regulated.
4. Interestingly, much of the change has been forced on the governments of member states by actions of outside parties (especially *Nouvelles Frontières Case*) and by the Communities' civil service (see Button and Swann, 1989 and 1990).
5. For instance the Salter Conference which drew up the proposals leading to the regulation of entry to the UK trucking industry was composed of railwaymen and incumbent trucking operators.
6. There are, for example, currently 12 members of the EC but there are 22 members of the European Civil Aviation Commission (ECAC).
7. Of the 51 most significant city-pair routes on which there was charter traffic from the UK in 1987, 23 had no scheduled traffic. On the remaining 28 routes, only 23 percent of traffic was scheduled.
8. Changes in EC aviation policy have in effect progressed to allow automatic freedom rights within the Communities, removal of national discrimination in allocating licenses, the banning of capacity sharing agreements, and the phased introduction of fare setting freedom, providing both countries do not object, but controls over cabotage, pilots qualifications, etc. remain (see Button and Swann, 1990).
9. The situation in Canada and Australia may be thought to be somewhat different because of the geographical nature of the markets involved. In particular, the linear market in southern Canada and the population distribution along it may have contributed to the duopoly which has emerged (Heaver, 1990).

Generated at University of Minnesota on 2021-11-09 17:51 GMT / https://hdl.handle.net/2027/1en.35556023495724 / Creative Commons Attribution-NonCommercial-NoDerivatives / http://www.hathitrust.org/access_use#cc-by-nc-nd-4.0

10. This concentration should, however, be compared with the pre-deregulation situation. In 1972 the top four carriers accounted for about 60 percent of the revenue passenger-kilometers and the top eight for about 85 percent. The associated Herfindahl-Hirschman Index (H-HI) was 1206. In 1988, the H-HI was 1120 with the top four carriers accounting for about 58 percent of the passenger-kilometers and the top eight for 88 percent (see Breyer's discussion in McGowan and Seabright, 1989). However, if one looks at the welfare effects of the particular mergers which have occurred in the USA the evidence seems to suggest that about half of them increased welfare and the remainder decreased it (Morrison and Winston, 1989). No comparable studies have yet been attempted for Europe.
11. It has been estimated, for example, by Bailey et. al. (1985), that an airline with 50 percent of the departures from a hub can charge 7 percent higher fares than one with only 25 percent of the departures. But as Borenstein (1989), in his study of hub dominance, points out, "Though the link between airport dominance and high fares seems clear, a welfare analysis of increased airport concentration must also include the benefits that may accrue from hub operations".
12. For example, British Airways was forced to surrender some of its slots at Gatwick Airport as a condition of merging with British Caledonian.
13. Responsibility for acquisition policy passed from the CAB to the DOT for a transition period until 1989 when the Department of Justice took over responsibility. There has been a general disquiet in the U.S. about the way the DOT approached issues of airline merger - see Hawk (1989).
14. In 1989 it was agreed that all mergers involving worldwide turnover of ECU 5 billion, falling to ECU 2 billion in 1992 would be examined. The takeover of UTA by Air France, for instance, was referred to the EC authorities in early 1990.
15. Indeed some of the early advocates of attempting to make aviation markets contestable seem to have subsequently revised their positions, e.g., "We now believe that transportation by trucks, barges and even buses may be more contestable than air transportation . . ." (Baumol and Willig, 1986).
16. This, at the theoretical level, leads to issues of whether and to what extent the market is imperfectly contestable (Morrison and Winston, 1987) or to the degree to which it might be deemed workably competitive (Keeler, 1990).