Journal of Air Transportation World Wide **Vol. 3, No. 1 – 1998**

AIR TRANSPORT LIBERALIZATION IN EUROPE: THE PROGRESS SO FAR

Peter Morrell
Cranfield University, UK

ABSTRACT

In April 1997, the final phase of a series of measures were implemented which were aimed at liberalising air transport within the European Union (EU). These measures were introduced on a phased basis, the first package coming into force in 1988, the second in 1990, and the most significant third package in 1993 (which included a delayed 1997 lifting of cabotage protection). These applied on a multilateral basis within the European Community (with some exclusion clauses), and followed progress towards liberalization on a bilateral basis between 1985 and 1988, most notably on routes between the UK and a number of EU countries.

This paper examines the progress so far in the achievement of liberalization and greater competition within Europe. It is based on extensive research carried out by the author and a team from Cranfield University over 1995 and 1996. This included desk research, a survey of and interviews with EU airlines and aviation authorities, and five more-detailed airline case studies. This has been updated by the author to take into account more recent developments, especially regarding new entrant airlines.

Some of the expectations following the introduction of EU liberalization have not been met: there have been few serious challenges to the flag carrier duopolies, there has been a consolidation of the major airlines in their home markets, and business and fully flexible fares have continued to climb. However, many of the airlines' strategic changes were more in response to developments in global rather than EU markets.

On the other hand, consumers have benefited from greater competition in promotional fares, and more dynamic pricing tactics overall have led to higher intra-EU traffic growth in the early 1990s than would have been the case without liberalization. There was also a substantial growth in the number of EU cities served by non-stop services, and some encouraging trends from new entrant airlines in some countries. On balance, it is argued that the net result has been disappointing; but this is hardly surprising given the timing of the final stage of liberalization in the middle of an economic recession, the concern of the larger airlines with more global events, and the time needed to change some of the more deep-seated structural barriers, such as airport slot availability, input market monopolies and state aids.

INTRODUCTION

The gradual liberalization of intra-community air services began when Europe's airlines were going through a profitable period (1983–1989), but the more fundamental changes arising from the second (effective November 1990) and especially the third (effective January 1993) liberalization packages

Journal of Air Transportation World Wide Vol 3 No 1 1998 Page

occurred at a time when economic recession and a downturn in demand growth pushed many airlines into deficit and several into a loss making spiral. Against that background, airlines would have taken a variety of actions to improve their worsening economic fortunes.

This paper considers recent research that has attempted to distinguish responses and actions which would have occurred anyway from those that arose directly as a result of the liberalization process and the Community liberalization. It thus seeks to draw some preliminary conclusions as to the success of the EU measures, particularly in its impact on scheduled services and competition, air fares, and air traffic. It will conclude with an examination of some of the barriers which still remain and which prevent moves to a more competitive industry. The scope of the analysis will be restricted to cross-border intra-European air services. Domestic services have thus been excluded. This is because these markets were only fully liberalized in April 1997, and because of the large variation in timing of national initiatives. Exciting domestic developments in Italy, Spain, France, and Germany will not be discussed, although changes in the last two countries will be mentioned in relation to cross-border investments by British Airways.

This paper is based on extensive research carried out by the author and a team from Cranfield University over 1995 and 1996. This included desk research, a survey of and interviews with EU airlines and aviation authorities, and five more detailed airline case studies. This has been updated by the author to take into account more recent developments, especially regarding new entrant airlines. Two other studies on European liberalization have also been widely consulted: the somewhat earlier reports from the UK's Civil Aviation Authority (CAA, 1993 and 1995), and the European Commission's own, less extensive, survey (European Commission, 1996).

There is clearly a considerable body of research that has examined the impact of deregulation on the U.S. domestic airline industry. Levine (1987) concluded that deregulation appeared to have resulted in a workable degree of competition in the system as a whole, and had brought very substantial benefits to the travelling public and airlines willing to adapt to it. An examination of the years immediately following U.S. deregulation concluded that airlines had used their pricing freedom selectively, with leisure passengers gaining from promotional discounts but business segments paying proportionately higher fares. Airlines increased average sector lengths, load factors, and aircraft utilization, and moved to higher density seating, but the authors attributed part of the reasons for these changes to sharply increased energy prices (Meyer et al, 1981).

However, the difference between U.S. and EU approach to liberalization was the more gradual EU introduction of measures. Perhaps more importantly, the expected impact of the liberalization on intra-EU scheduled air services was less than the U.S. First, the more self-contained nature of the U.S. market meant that deregulation applied to a large part of U.S. airline networks. In contrast, Figure 1 shows that European airlines such as Air France, British Airways and KLM

Journal of Air Transportation World Wide Vol 3 No 1 1998 Page

derive less than 50 percent of their revenues from intra-European air services. Distortions could arise from this significant external dimension, through the more favourable arrangements for some EU countries/carriers with third countries. Previous studies have argued that this is a justification for an increased role for the European Commission (Stasinopoulos, 1993). Furthermore, around one half of intra-EU air services, the charters, were already operating under extremely liberal rules and had been for many years.

Figure 1: The Importance of Intra-European Passenger Revenues for Major EU Airlines in 1992

Source: Author from Association of European Airlines' data

Australia also introduced deregulation of domestic markets in October 1990, and the early impact was similar to the U.S. in terms of higher business and lower leisure fares, although disappointing in terms of any serious and lasting challenge forthcoming to the existing airline duopoly (BTCE, 1995).

EU MEASURES FOR A SINGLE MARKET IN AIR TRANSPORT

Bilateral Liberalization

From the late 1970s through the 1980s the trend towards increasing liberalization of the airline industry spread from the domestic United States industry to international markets. Liberal bilateral agreements were signed in 1978 between the U.S. and various European countries (the Netherlands, Germany, Belgium) and in the following two years between the U.S. and various Asian countries (Thailand, Singapore, Korea). In Europe, the Netherlands and the UK effectively deregulated air transportation services between the two countries in

1984/85 with the adoption of an ultra-liberal bilateral and both countries subsequently endeavoured to sign relatively liberal agreements with other states in Europe. More liberal agreements were signed over the next three to four years between the UK and West Germany (1984), France (1985), Belgium and Switzerland (both 1985), and Ireland (1986). Such liberal bilaterals pre-dated the Community's first liberalization package of 1988 and, by going much further than this first package, had a more direct impact on air services between the countries concerned (Cranfield, 1997).

The impact of the bilateral liberalization of European air services has been analysed in a number of studies (see OECD, 1988 and Button & Swann, 1991). The OECD study suggested that air traffic on the UK/Netherlands routes was three to five percent higher as a result of the bilateral liberalization. The same study found that the effect on air fares was to increase the normal economy and business fares and to reduce significantly the lowest discount fare available. A recent study of UK/Ireland experience highlighted the increases in traffic and reduction of fares that bilateral changes produced, identifying new entrants airlines as the key to the achievement of gains from liberalization (Barrett, 1997).

European Community Measures

The creation of a single aviation market in Europe can be seen as a continuation of the liberalizing trend that had occurred bilaterally in the 1980s. The final move, which came into effect on 1January 1993 with the so-called third package of measures, had been preceded by a number of developments at a European Community level. The first significant step dated back to the 1974 European Court of Justice ruling which judged that the Treaty of Rome's competition rules applied to air transport and the 1975 recommendation by the Commission for the establishment of a European market in aviation. The Commission's Memorandum 1 of 1979 (COM 79/311) called for a liberalization of the bilateral restrictions and a review of state subsidies. This led to the Inter-regional Directive, which introduced free access on inter-regional routes over 400 kilometres operated by aircraft smaller than 70 seats. This had little impact on air transport services in Europe as a whole. It was estimated that only 14 new services were started between regional airports, and many of these would probably have been allowed under existing bilaterals (Wheatcroft & Lipman, 1986).

The Nouvelles Frontières ruling of April 1984 ([1986] ECR 1425), the entering into force of the Single European Act and action by the Competition Directorate of the Commission against airline pooling agreements together provided the catalyst which led to the first package of December 1987. This package, and the second package of 1990, loosened the constraints of bilaterals between European Community Member States by freeing capacity limitations, allowing additional airlines to be designated and creating additional route rights.

The UK CAA study (1993) concluded that this first package allowed a number of smaller airlines to enter some of the most important intra-Community routes, offering the mix of capacity and fares that they wished. These included

cent between 1989 and 1992, rising to 25 percent between 1992 and 1995, both

existing airlines such as British Midland and Hamburg Airlines, and new entrants such as Air Europe and Ryanair. However, the initial 55:45 overall country-pair capacity limit was a constraint for UK airlines on French and Portuguese routes (although not Italy or Spain). A number of fifth freedom routes were started, notably by Aer Lingus via a Manchester hub, but some carriers thought that the 30 percent upper limit on the capacity offered to such traffic was too restrictive (CAA, 1993).

The second package allowed for some reduction in the thresholds for multiple designation, and a further loosening of capacity share restrictions. Route access was also significantly improved and a greater range of fares were subject to automatic approval.

These two packages left the fundamentals of the bilateral system in place. However, only those elements of individual bilaterals that were less restrictive than Community legislation were allowed to continue. In contrast, the third package of 1992 for the first time replaced the bilateral system with a multilateral system of air transport regulation. It established common rules for the award of an air operator's certificate, open access to air transport routes within the Community, and the freedom to set air fares and rates according to commercial criteria.

These rules moved away from the requirement of national ownership and control by creating the concept of a Community air carrier. They also removed the regulatory distinction between scheduled and charter airlines. These liberal rules open up traffic rights on all intra-Community routes for all Community air carriers (with full cabotage from April 1997), with a few exceptions, and remove capacity restrictions.

There was to be some protection for single carriers operating small aircraft on thin routes, and states could impose a public service obligation on scheduled air services to an airport serving a peripheral or development region in its territory, or a thin route to a regional airport of vital economic importance to a region.

DEVELOPMENTS IN SCHEDULED AIR SERVICES

Liberalization should benefit consumers through improvements in air services. These may be described in terms of increased choice of destinations served by non-stop flights, a greater number of flight frequencies on each route, and a greater choice of airlines.

The total number of non-stop cross-border routes served increased by 11 per-

Journal of Air Transportation World Wide Vol 3 No 1 1998 Page

Journal of Air Transportation World Wide Vol 3 No 1 1998 Page

in load factors and real yields over the worst part of the recession.

The average frequencies offered on all intra-EU routes increased from 13.9 departures per week in 1989 to 15.5 in 1992, subsequently declining to 14.5 in 1995. This indicates some frequency competition in the first period, with the decline since 1992 explained by the addition of new non-stop regional services (and some charters switching to scheduled) with below average frequencies, rather than by any reduction in frequency on the denser routes. This is evident from the sharp increase in number of routes served by only one carrier between June 1992 and 1995 (Table 1).

Average aircraft seat capacity did not change very much between 1989 and 1992, but increased between 1992 and 1995 on routes with competition from up to three carriers. Those routes with over three carriers competing were already served by larger aircraft, in part because of some fifth freedom operators with very large B747s. For these routes a decline in fifth freedom operators with large aircraft was compensated by an increase in average aircraft capacity from the third/fourth freedom airlines.

There is strong evidence that airline competition at the route level can only be effective if the number of actual competitors is greater than two (a good summary of work both in the U.S. and U.K. can be found in Dodgson, 1994). Competition is best captured by the number of effective competitors, rather than just the number of carriers serving the route. This takes into account the limited ability to compete of low frequency leisure or fifth freedom flights, the latter often serving the higher density routes in Europe. A capacity share index provides a good measure of effective competition, calculated by summing the squares of the shares (fractions or percentages) of seats provided by each airline on the route. Some studies have used the inverse of this index (based on shares expressed in fractions), which shows the number of effective competitors (Morrison & Winston, 1990). Figure 2 shows the trends in this number for key EU countries.

Figure 2 shows that there was an encouraging trend in the number of effective competitors between 1989 and 1992, especially in the countries of France, Belgium, and the UK. However, between 1992 and 1995, the trend was reversed in France and the UK, principally due to acquisitions by the flag carrier of the second largest airline in each country, and the failures of new entrants.

The European Commission's own study also concluded that competition has had little effect on routes run as a monopoly or duopoly, which represent 94 percent of intra-Community routes. Competitive developments had, however, occurred on routes with more than two carriers: these routes' share of total intra-EU routes had only increased from four percent in January 1992 to six percent in January 1996, but from 12 percent to 16 percent in terms of flights operated (European Commission, 1996).

The number of routes with sufficient origin destination traffic for new entrants is very limited in Europe, given both airport capacity constraints and surface transport competition (Pryke, 1991). Flag carriers such as KLM, and

Figure 2: Number of Effective Competitors on Services Generating 50% of Total Intra-EU Seats Offered, Summer 1989, 1992 and 1995

Source: Derived from Cranfield (1997)

their acolytes such as Air UK, are much better placed to develop new routes with feed traffic to and from their hubs. Competition between flag carriers has so far been limited, with little scope for competing on indirect routes within Europe, and only some attempts at direct attacks on others' national markets (e.g. British Airways with Lufthansa and Air France). Surface transport has up to now tended to provide competition for the less time sensitive leisure passengers, but high speed trains have a greater potential for doing so in the future for business travellers.

Established Carriers

Following European liberalization, established flag carriers moved to consolidate their position by share purchase of and alliances and franchising with smaller airlines. Together with the strengthening of their hubs through flight coordination, these changes might be seen either as defensive (i.e. to deter new entrants) in the intra-EU context. However, for carriers such as KLM and British Airways, they might also have been aimed more at improving their competitive position in long-haul markets. Between 1992 and 1994 the number of flights to/from hub airports rose by six percent, while those to non-hub airports declined by 19 percent (CAA, 1995).

The first and third packages gave EU airlines more opportunity to carry traffic both between two other EU countries (fifth freedom) and within another EU country (consecutive cabotage), both operated as an extension of a cross-border service from their home country. Considerable use was made of these freedoms

Journal of Air Transportation World Wide Vol 3 No 1 1998 Page

initially, especially by airlines based in peripheral EU countries, but many of these services were subsequently discontinued due to poor economics. An alternative way of serving routes out of other EU countries is available through the right to establish or acquire an airline based in another country. Airlines such as British Airways (TAT in France and Deutsche BA), Lufthansa (Lauda Air in Austria and others) and KLM (Air UK) have done so, but only on a minority basis, the maximum stake being 49.9 percent.

New Entrant Airlines

Excluding those airlines based outside the EU, there was a net increase of six in the number of airlines serving intra-EU cross-border scheduled routes between 1992 and 1995, compared to a net loss of four carriers between 1989 and 1992. The majority of these airlines served principally low density regional routes, although a small number of formerly charter airlines, such as EuroBelgian in Belgium and Air Liberté in France, started scheduled services in direct competition with national flag carriers. Competition has also increased significantly in French, Italian, and Spanish domestic markets as a result of EU liberalization, in some cases accompanied by allegedly predatory pricing from the former monopoly flag carrier.

The most notable survivors are Ryanair in Ireland, EasyJet and Debonair in the UK (although the latter with Italian shareholding), and Virgin Express in Belgium. Ryanair has been making steady inroads into the UK/Ireland scheduled market since the late 1980s, and now has 26 percent of the London-Dublin market. Following financial difficulties in the early 1990s and some intervention from the Irish government (CAA, 1995), it has recently sold a 25 percent stake in the airline to an American investor. Since acquiring an all B737-200 fleet its current strategy is to apply the U.S.'s Southwest concept to European markets using, where possible, secondary airports.

The success of EU measures to encourage new entrants is so far modest compared to the U.S., where around 15 percent of the domestic air travel market is offered by low cost, low fare new entrants (U.S. Department of Transportation, 1996). This sort of penetration has so far only been achieved in Europe on a small number of city pairs, with their current share of intra-European seat capacity less than two percent (McMullan, 1996). Their impact and influence in Europe, however, has been more significant than this figure would suggest.

In 1995, EuroBelgian accounted for 13 percent of the Brussels-Madrid scheduled market, 27 percent of Brussels-Barcelona, 20 percent of Brussels-Vienna, and 19 percent of Brussels-Rome, and only around three percent of Brussels-Milan (Flight International, 1996). It was acquired by Virgin Express in 1996, and the Vienna route was withdrawn. From 1997, the airline operated the Barcelona and Rome routes on a code sharing basis with Sabena, with the latter selling business and economy seats and Virgin selling only economy class.

This arrangement was also extended to Brussels-London Heathrow and Gatwick (using Sabena's slots). Virgin Express intend to add Nice and Copenhagen under their own code in 1997.

In the UK, EasyJet and Debonair took about 12 percent of the London-Barcelona market in 1996; EasyJet accounted for nine percent of the London-Nice market in the same year, and four percent of London-Amsterdam, while Debonair achieved only two percent of London-Munich. These shares were based on the start-ups operating for only five or six months of the year.

After building up a large share of the UK/Ireland market, the Dublin-based Ryanair established a subsidiary airline, Ryanair UK to compete on scheduled routes out of London Stansted airport. So far they serve only Dublin/Stansted, Dublin/Glasgow Prestwick and Prestwick/Stansted, but they plan to add Kerry and Stockholm in 1997.

Charter Airlines

European charter airlines were faced with a number of strategic options as a result of liberalization (Lobbenberg, 1995), such as going scheduled head-to-head with flag carriers; going scheduled on leisure routes; or staying with core charter business and developing long-haul.

Many airlines decided on the third options, particularly after the unfavourable earlier experiences of charters going scheduled. Some airlines, especially in Germany and the UK converted leisure charters into scheduled services. This was driven by the market requirements for some seat-only sales, greater control over their marketing, and, earlier on, the risk of losing slots at key airports. Those that tried to compete directly with flag carriers' scheduled services, earlier on under the loosening of bilateral restrictions, failed (e.g. Air Europe and Dan Air in the UK and Trans European in Belgium). A later failure was Air Liberté on Paris-London (subsequently acquired from the receiver by British Airways).

Those that were relatively successful either operated on a very limited number of routes (e.g., Maersk Air on Copenhagen-London, Transwede on Stockholm-London, Braathens on Oslo-London, Transavia on Amsterdam-London), or had strong flag carrier links (e.g., Lauda Air linked first to Lufthansa and later to Austrian Airlines, out of hubs at both Vienna and Milan), or a combination of the two (e.g., Transavia).

EuroBelgian Airlines had previously been a charter airline and began to compete successfully with Sabena on five routes out of Brussels. They were subsequently acquired by Virgin Express, and in 1997 joined forces with Sabena on two of these routes and others.

It must be concluded that, although charter airlines might have been considered as ideal low cost candidates to mount a serious challenge to the status quo, this does not now seem very likely to happen. This main reason for this is that they lack the right image and marketing experience, and the change in the nature of the service inevitably results in increased costs.

AIR FARE AND YIELD DEVELOPMENTS

The average revenue per RTK (yield) on air services within Europe has declined in real terms since 1991. This could have been due to a change in traffic mix to lower discount fares, the effects of the economic recession or an increase in the level of fare competition. The first factor certainly played a part over the first part of the 1990s. European airlines were better placed to offer price reductions in the first half of the 1990s, given the downward trend in unit costs, and in particular unit labor costs (Alamdari & Morrell, 1997)

Figure 3: Trends in European Promotional Fare Usage and Discounts

Source: Association of European Airlines' Yearbooks

The economic recession would have had the effect of reducing demand and causing overcapacity. The evidence above suggests that airlines increased the size of the fare discounts as well as the availability of these discounts, especially over the years 1991–1993. This reaction to overcapacity contrasted with behaviour over the previous recession. Figure 3 confirms this acceleration in the downward trend of European yields. Furthermore, a projection of the time trend of average fares between 1970 and 1989 suggested that the 1992 fares were four percent below trend, 1993 fares ten percent below trend, and 1994 13 percent below trend.

The European Commission also noted that the trend towards lower fares had not effected the most flexible fares, which had risen slightly, notably on routes operated by only one or two carriers (European Commission, 1996).

New entrants have introduced large reductions in fares on the limited number of routes that they served: EasyJet offered a one-way fare of Fl.99 on Amsterdam/London, compared to the lowest existing fare of Fl. 405 return. KLM retaliated with a Fl. 95 one-way offer, but EasyJet has complained to the European

Figure 4: Average Passenger Revenue per Passenger—European Routes

Commission that this fare is predatory. EasyJet started on their Luton/Nice route with one-way fares between £49 and £99, which caused one of the incumbent carriers, British Midland, to drop their lowest return fare from £159 to £99, albeit with travel restrictions. Ryanair entered the London-Glasgow market with a £59 return fare available across about 70 percent of total seat capacity, and a maximum of £99. The lowest previous return fare was £74 with conditions, or a fully flexible £236, but the two incumbents undercut Ryanair's fare by £1 prior to the launch of the new service. Ryanair have argued that the competing carriers' low £58 fare can only make a very small contribution to costs after paying the higher airport charges at London Heathrow and Glasgow Abbottsinch airports. They are more concerned, however, at the practise of such airlines making their low fare capacity dramatically more available than before (Jeans, 1995).

AIR TRAFFIC DEVELOPMENTS

Because it is difficult to obtain comprehensive data on the European charter and regional airlines on a consistent basis, the analysis of traffic trends to identify the impact of EU measures focuses on the larger scheduled airlines. AEA members' scheduled traffic within the geographical Europe region has grown strongly over the past few years in terms of passenger numbers. The European traffic of AEA members covers a somewhat broader geographical area than intra-Community, and excludes the smaller regional airlines and airlines such as British Midland (who have only recently joined the AEA).

In the past, traffic has been driven almost entirely by economic growth, the most commonly used measure of which is Gross Domestic Product, with a smaller contribution from yields since around 1987. In the early 1990s, Euro-

Journal of Air Transportation World Wide Vol 3 No 1 1998 Page

pean scheduled traffic has increased at a faster rate than would be expected from the past relationship between real GDP and traffic, which is given by the following equation calibrated on 1965-1990 data:

$$\begin{array}{lcrcr} \text{Passengers (Number)} & = & -32{,}510 & + & 68{,}973 \text{ Real GDP (Index)} \\ & & (-19.0) & & (+38.3) \end{array}$$

Both the t-statistics were significant at the .05 level, and adjusted r^2 is 0.983. Forecasts of air traffic using 1990–94 actual European real GDP data can be seen in the next chart to fall well below the actual traffic outcome. Actual traffic exceeded forecasts by 8.2 million passengers in 1992 (+14 percent), 12.9 million in 1993 (+23 percent), and 14.6 million in 1994 (+25 percent).

One possible cause of the divergence is the early 1990s recession and its effect on traffic through overcapacity and lower air fares, rather than through GDP alone. A second model was therefore calibrated on 1965–79 data, and used to predict traffic over the previous 1980–84 recession. For this model, real GDP variation again explained almost all traffic variation (adjusted r^2 was 0.995 and significant t-statistics); it also provided reasonably accurate forecasts of traffic over the 1980–84 recession period, contrary to the 1990–94 situation.

Over the previous recession European airlines managed to maintain real yields by limiting capacity increases, but over the latest recession capacity has not been restrained and real yields have had to fall to maintain seat factors. Overcapacity was also more serious in the early 1990s with AEA carriers increasing available seat-km's by 12 percent between 1991 and 1992, six percent in 1993 and five percent in 1994.

This compares with broadly unchanged capacity offered by AEA carriers over the years 1981, 1982 and 1983, and only a two percent increase in 1984. Over both periods seat factors have been maintained at between 57 percent and 60 percent, and even increased somewhat overall in the 1990s recession (leaving aside the sharp fall immediately following the Gulf War).

The question still remains as to how far EU measures and increased intra-EU competition might have influenced this complex mixture of traffic, capacity, yield and load factor. Real yield has become a significant determinant of passengers travelling within Europe, and this is reflected in a model calibrated on 1980 to 1994 data (yield was not a significant explanatory variable in regression models calibrated on periods ending before 1990):

$$\begin{array}{lcrcrcr} \text{Log (Passengers)} & = & 14.222 & + & 1.948 \log(\text{real GDP}) & - & 0.754 \log(\text{real Yield}) \\ & & (+24.1) & & (+20.2) & & (-6.4) \end{array}$$

All t-statistics (shown in brackets below the equation) are significant, and the adjusted R^2 is 0.990. The Durbin-Watson statistic is 1.56, from which it can be concluded that, at the 99 percent level of confidence, serial correlation was not present. This suggests that almost all passenger variations were explained by variations in real GDP and real yield. Frequency competition is likely to have

Figure 5: AEA European Air Passengers—Actual vs Predicted

1. 1980 to 1984 Economic Recession

Source: Cranfield (1997)

2. 1990 to 1994 Economic Recession

Source: Cranfield (1997)

Journal of Air Transportation World Wide Vol 3 No 1 1998 Page

had little effect on the overall market size, but would have been used to increase market shares of individual carriers.

Attempts were also made to insert a competition or liberalization dummy variable into the equation from 1989 onwards, with poor results. This was hardly surprising given the gradual introduction of liberalization within Europe, starting as early as 1985 for some country pairs.

The analysis of air fares in the previous section suggested that levels have risen overall with some increase in the availability of deeper discount fares. It can thus be concluded that lower yields overall in real terms (unchanged or somewhat lower in current prices) was caused largely by a change in the mix of traffic in favor of passengers travelling on promotional and discount fares; it is this that has appeared to have played a very much stronger role in generating traffic over the early 1990s, compared to the previous recession. The available evidence suggests that this came about through:

- Premium traffic (club and full economy fare passengers) trading down to lower available fares, possibly accepting some booking or travel time restrictions,
- More seats being available at the lower economy and discount fares.

The first effect above was the result of the general business climate, and was not dependent on the degree of competition in EU air transport. The second, however, would indicate a more competitive response by airlines, only insofar that airlines were actively promoting these lower fares to maximise revenues and raise load factors, rather than merely reacting to altered booking patterns and the external economic environment. It is also possible that the more liberal regime covering fare filing and tariff approval from 1989 onwards made it easier to offer tactical discounts to generate additional demand. Furthermore, revenue pooling agreements were gradually dismantled from 1988 onwards, thus allowing for greater fare competition on intra-EU routes.

REMAINING BARRIERS

There are still some very significant barriers to entry in intra-EU markets; they can be categorized as:

- Administrative
- Infrastructure capacity constraints
- Imperfect or monopolies in input markets
- Economies of scale

The first category relates to administrative obstacles that prevailed in certain countries and prevented the full implementation of the three packages. Many of these have now been solved, such as the reluctance of the French government to

Journal of Air Transportation World Wide Vol 3 No 1 1998 Page

open up Orly airport to competitive air services in 1994. Other examples concerned resistance to an application by Lufthansa to operate consecutive cabotage (Italy) and Greek delays in processing applications for operating licenses (Cranfield, 1997). State aids to national airlines might also be included under the first barrier, providing both barriers to entry and a distortion of the marketplace. Airlines receiving state aids have been accused of unfair pricing on some routes, and entry opportunities have been limited because they have continued to operate unprofitable services (and monopolized scarce slots).

The second category relates to the airport slot problem, and to a lesser extent air traffic control capacity bottlenecks. This is more difficult to solve, given growing environmental opposition even to existing flights. Niche carriers have made use of secondary airports such as Luton (for London), Prestwick (for Glasgow), Charleroi (for Brussels), Mönchengladbach (for Düsseldorf) and Beauvais (for Paris).

Monopolies in input markets significantly increase the cost of new entrant operations. A prime example is ground handling, but government supply of airport and ATC services also come into this category. The first should improve, albeit slowly, as a result of the new EU directive, but this could be slow and subject to lengthy court cases. The second can only be avoided again by using secondary airports which are to some degree competitive with the major capital city hubs.

Economies of scale depend on the nature of the industry, and might require some legislation to promote a more competitive industry. Examples of this are distribution channels, which tend to be dominated by large carriers, and frequent flyer programs that confer advantages of size on large airlines.

Figure 6 ranks the remaining barriers according to industry expert views on their relative importance. Some, such as FFPs or agent override commissions, do not constitute a formidable barrier by themselves, but taken together do.

Some observers have also cited lack of finance as a barrier to entry, based on their estimate of the minimum scale required to compete successfully, and relatively poor record of industry profits (Powell, 1994). The committee set up by the European Commission to reflect on the future of aviation in Europe recommended that access to financial markets would be helped by easing the restrictions resulting from the effective ownership and control requirements found in most Air Services Agreements (Comité des Sages, 1994). Another study for the European Commission mentioned operating leases as a source of finance for second tier airlines, with bank finance generally restricted to good name airlines (Jet Finance SA, 1995). Some new entrants with sound business plans have clearly failed to get started through their inability to meet EU financial fitness criteria, but others have been funded by large industrial groups (e.g., Virgin Express and EasyJet).

Figure 6: Importance of Various Barriers to Entry

Source: Interviews with European airlines and aviation authorities in Cranfield (1997)
† Reluctance of some states to enforce EU measures

CONCLUSIONS

Because of Europe's geography and distribution of population and wealth, a limited number of routes of sufficient density are available to potential new entrant airlines. Those with potential are characterised by having airports at at least one end of the route which are:

- Increasingly dominated by flag carriers and alliance groups;
- Slot constrained; or
- Expensive to operate at because of little competition in input markets.

Some hope remains for indirect competition using secondary airports. Direct flag carrier competition at major hubs outside their own country is becoming increasingly difficult. The problems encountered by British Airways in competing using local carriers in France and Germany (and also Lufthansa in the UK and Austria) may discourage further such developments.

The overall impact of liberalization on air fares has been more positive in terms of the availability and size of discounts offered. This can be observed from the introduction of the first package onwards, and these lower fares are estimated to have generated almost 12 million more (+ 20 percent) passengers a

year on average between 1992 and 1994 than predicted. Fully flexible fares, however, have remained immune to any widespread discounting, with only British Midland offering premium class travel in Europe at lower fares. It is estimated that air fares were on average a little more than ten percent below the levels that they would have been without liberalization.

It is difficult to see new entrants providing any serious threat to fully flexible and business class fares, given the constraints outlined above. It is more likely that, as flexible/discount fare differentials widen, airlines will find it increasingly difficult to enforce the restrictions attached to some of the promotional fares. Reductions in flexible fares will be obtained by larger purchasers of business travel and agents will obtain similar reductions on behalf of lower volume customers. High speed rail will also increasingly provide competitive services and fares for business passengers between many major cities.

REFERENCES

Alamdari, F. & Morrell, P. (1997). Airline labour cost reduction: post-liberalization experience in the U.S. and Europe, *Journal of Air Transport Management*, Vol.3, No.2

Barrett, S. (1997). The implications of the Ireland-UK airline deregulation for an EU internal market. *Journal of Air Transport Management*, Vol.3 No.2, June

Bureau of Transport and Communications Economics (BTCE) (1995). Deregulation of domestic aviation in Australia, 1990–1995, Information Sheet 6

Button, K. & Swann, D. (1991). Aviation policy in Europe. *Airline deregulation international experiences*, Button, K., & Fulton, D. (Eds.). London

CAA (1993). Airline competition in the single European market, CAP 623, Civil Aviation Authority, UK, November

CAA (1995). The single European aviation market—Progress so far. CAP 654, Civil Aviation Authority, UK, September

Comité des Sages (1994). Expanding horizons: civil aviation in Europe, an action programme for the future. A report for the European Commission, Brussels, January

Cranfield (1997). Single Market Review: Impact on Services—Air Transport. Published by Kogan Page, London, on behalf of the European Commission

Dodgson, J. S. (1994). Competitive policy and the liberalization of European aviation. *Transportation*, 21

European Commission (1996). Impact of the third package of air transport liberalization measures, *COM*(96) 514 final

Flight International (1996). Virgin Express builds on EBA's success, 19–25 June, p.16

Jeans, T. (1995). Barriers to entry—the Ryanair experience. Paper presented at a conference entitled Europe's New Wave: Barriers to Entry. Avmark International, 11 December

Jet Finance SA (1995). Analysis of the comparative ability of the European airline industry to finance investments. Report for the European Commission, June

Levine, M. E. (1987). Airline competition in deregulated markets: theory, firm strategy and public policy. *Yale Journal on Regulation*, Vol.4 No.2

Lobbenberg, A. (1995). Strategic responses of charter airlines to single market intergration. *Journal of Air Transport Management*, Vol.2 No.2, June

McMullan, K. (1996). European challenge: making waves. *Air Transport Progress* 1997, Lookturn, December

Meyer, J. R., Oster, C. V., Morgan, I. P., Berman, B., & Strassmann, D. (1981). *Airline deregulation: the early experience*. Auburn House

Morrison, S. & Winston, C. (1990). The dynamics of airline pricing and competition. *American Economic Review*: Papers and Proceedings 80

Powell, C. (1994). Financial barriers to market entry. Open Forum. *Journal of Air Transport Management*, Vol.1 No.3, September

Pryke, R. (1991). American deregulation and European liberalization. Bannister and Button (Eds) *Transport in a free market economy*. Macmillan

OECD (1988). Deregulation and Airline Competition. Paris

Stasinopoulos, D. (1993). The third phase of liberalization in community aviation and the need for supplementary measures. *Journal of Transport Economics & Policy*, Vol.XXVII No.3, September

U.S. Department of Transportation (1996). The low cost airline service revolution, April

Wheatcroft, S. & Lipman, G. (1986). Air transport in a competitive European market. EIU Special Report No. 1060

Journal of Air Transportation World Wide Vol 3 No 1 1998 Page