

2/96



Universidade Técnica de Lisboa  
INSTITUTO SUPERIOR DE ECONOMIA E GESTÃO



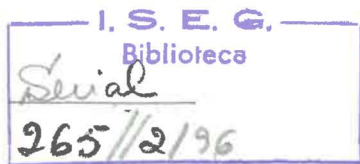
## CADERNOS DE ECONÓMICAS

DOCUMENTO DE TRABALHO Nº 2/96

GLOBALIZATION, REGIONALIZATION AND  
STRATEGY CHOICES FOR EUROPEAN  
AIRLINES

RAVI SARATHY

DEPARTAMENTO DE GESTÃO



**Globalization, Regionalization and strategy choices for  
European Airlines**

**Prof. Ravi Sarathy.**

Professor, College of Business, Northeastern University, and,  
Visiting Fulbright Professor, Instituto Superior de Economia e  
Gestao, Universidade Tecnica de Lisboa.

Presented at the conference on Globalization and  
Regionalization, Univ. of Paris I Pantheon-Sorbonne, May 1996.

Revised, May 1996.

---

\* Special thanks to my colleague and collaborator, Prof. Ravi Ramamurti, with whom I have had extensive discussions about the airline industry over the past two years leading to some of the ideas developed in this paper.



Globalization, Regionalization and strategy choices for European Airlines.

Prof. Ravi Sarathy.

1994 was a year of recovery for the world's airlines, after combined losses for the world's top 100 airlines of \$14 billion during the 1990-93 period. Even so, there was a collective net loss in 1994 of \$177 million for the top 100 airlines<sup>1</sup>. However, operating profit was \$10.9 billion, about 4.5 % of revenues and exceeding their operating profit from the 1990-93 period. In 1994, IATA member airlines had total operating revenues of \$247.5 billion, and collectively flew 2086 billion RPKs, while offering 3152 billion ASKs on their scheduled services<sup>2</sup>.

### **Relative size of markets:**

Domestic markets of N.A., Europe and Asia were respectively 556.3, 45.9 and 74.6 billion RPKs respectively in 1994. International traffic within Europe was an additional 93.7 RPKs, giving a potential domestic European market, with Open skies, of 168.3 billion RPKs. International traffic within Asia was 71.1 b.. RPKs, and N.A.-Europe was the largest chunk of international routes with 235.1 b. RPKs, followed by N.A.-Asia and Asia-Europe with 129.8 and 120.1 b. RPKs respectively. The other important focus of international traffic is the SW Pacific, with total international traffic to/from the SW Pacific totaling 97.6 b. RPKs<sup>3</sup>.

It is against this backdrop that we need to consider the move to open skies and deregulation sweeping across Europe and to a lesser extent in Asia, after having been implemented in the US in 1979. European deregulation fits in with the creation of a Single European market and the EU has issued directives announcing Open Skies within Europe by 1997<sup>4</sup>.

### **The Bilaterals regime.**

International airline traffic has been governed since 1945 by a system of bilateral government accords which grant permission for international flights between the two countries. Such accords restrict which airlines are permitted to fly, the capacity and frequency, as well as restricting or prohibiting entirely further onward traffic either within the country or to onward international destinations in third countries. As a result, many nations created flag carriers, national airlines such as Air France, to offer international air services from that country under multiple bilateral accords. When the US implemented airline deregulation in 1978,

<sup>1</sup> Airline Business, Sept. 1995

<sup>2</sup> p. 10 and 12, World Air Transport Stats, IATA No. 39, WATS 6/1995.

<sup>3</sup> (IATA op. cit. p. 19)

<sup>4</sup> See EU white paper, Liberalization of European Air Space, COM (96) 57. Also, The Future of Civil Aviation in Europe, COM (94) 218 final, and COM(94) 106; the "third package" of measures for European aviation, described in JOL 240 of 24.8.92.

they created conditions within the domestic US airline market that created freedom of entry and exit and intensified competition, Fares fell, weak airlines went bankrupt, airlines consolidated and after a decade in which the airline market in the US grew more concentrated with five airlines accounting for about 85% of all US traffic, these same dominant airlines acquired international route authorities from weak and failing international US carriers such as Pan Am and TWA, to begin offering greater competition on international routes. Their greater efficiency and lower cost structure allowed them to cut air fares creating troubling financial consequences and losses for more protected European and other international airlines.

As part of this drive, the US government began pressing for open skies regimes, liberalizing air traffic between countries in the same fashion as had already occurred in the US. The carrot was of course the world's largest domestic market, the US. However, other restrictions on limits on foreign control of US airlines at no more than 25% of equity have remained in place.

Airlines around the world have reacted to the restrictions created by bilateral agreements and ownership restrictions to develop a system of code-sharing alliances, whereby airlines with route authority cede a portion of their seats, their capacity on the route to a partner airline which markets those seats on the route as if it were its own flight;<sup>5</sup> for example, Delta has a code share agreement with TAP under which Delta markets a portion of the capacity on the New York-Lisbon route as its own flight, with a Delta airlines flight number. To the passenger, and on the computer reservation system, it appears as a Delta flight, with the actual flight taking place on a TAP plane served by TAP flight crew and personnel.

Several smaller nations such as Holland have signed open skies agreements with the US, giving the Dutch airline KLM special advantages through the anti-trust immunity that it received for its alliance with the US carrier Northwest airlines, allowing it to jointly set air routes and fares. The alliance immediately opened up the US market to KLM and world destinations to Northwest, allowing them to raise their market share on transatlantic routes and overall revenues from international air services. Most recently, Germany and the US have signed an open skies agreement, subject to Lufthansa and United Airlines receiving antitrust immunity for their code-sharing agreement, similar to that received by KLM.

Within Europe, European airlines had been predominantly government owned, and hence, are at different stages on the way to deregulation. Midttun<sup>6</sup>, drawing on institutional economics and economic sociology, has characterized the European airline industry as a complexly organized market,

---

<sup>5</sup> Joan M. Feldman, "Alliances: are we making money yet?", **Air Transport World**, Oct. 1995.

<sup>6</sup> A. Midttun, "The European Market for Aviation: A Sociological Inquiry into the Political Economy of a Complexly Organized Market", **Journal of Economic Issues**, 26(4), Dec. 1992, p. 1063-94.

characterized by long-term exchange horizons, high interorganizational linkages, complex transaction patterns, extensive politicization and bureaucratization, and market outcomes that are quite different from what would happen in a competitive market. We have airlines such as British Airways which has been deregulated and privatized since the early eighties, Lufthansa which was recently privatized and airlines such as Air France, Tap and Iberia, which are still almost completely state-owned. While the EU insists on and is committed to deregulation of European airlines, several nations are of mixed minds concerning airline deregulation. The US experience is viewed with a mixture of awe and caution, as European govt. officials do not wish to see a recurrence in Europe of the bankruptcies, job losses and financial losses at airlines such as TWA, Eastern, Pan Am and US Air. Several authors have pointed to the mixed though overall positive results of US airline deregulation<sup>7</sup>, such as lower prices, increased service and improved productivity. Yet, deregulation brings in its wake greater efficiency and lower prices as well as better service to the airline flying public. For example, Ehrlich et. al. studied state vs. private ownership over the 1973-83 period and found that state ownership results in a reduction in the long run annual rate of productivity growth<sup>8</sup>. A study of Australian airline deregulation found that consumers benefited from lower fares and better service quality while carriers costs were reduced, enhancing their competitiveness<sup>9</sup>. A specific comparison of technical efficiency and productivity growth among European and US airlines by Good et. al. for the 1976-86 period, found that European liberalization would lead to efficiency gains<sup>10</sup>. Antoniou found that profitable airlines had high passenger load factors, a relatively low proportion of capacity related

<sup>7</sup> See for example: D. Kasper, **Deregulation and Globalization, Liberalizing International Trade in Air Services**. Cambridge, MA. Ballinger 1988; M. Brenner, "Airline Deregulation: A Case Study in Public Policy Failure", **Transportation Law Journal**, 16(1988). M. Levine, "Airline Competition in Deregulated Markets. Theory, Firm Strategy and Public Policy", **Yale Journal on Regulation**, April 1987; Alfred Kahn, "Airline Deregulation- A Mixed Bag", **Transportation Law Journal**, May 1988; Alfred Kahn, "Surprises of Deregulation", **American Economic Review**, 78(2), May 1988; and V. Golich, "Airline Deregulation. Economic Boom or Safety Bust", **Transportation Quarterly**, 42 (2), April 1988.

<sup>8</sup> Productivity Growth and Firm Ownership: An Analytical and Empirical Investigation. Ehrlich, Isaac, Georges Gallais-Hamonno, Zhiqiang Liu, and Randall Lutter. **Journal of Political Economy**; 102(5), October 1994, pages 1006-38.

<sup>9</sup> Australian Domestic Aviation Deregulation: Impacts and Implications. Grimm, Curtis M.; Molloy, Hugh B. **Logistics and Transportation-Review**; 29(3), September 1993, pages 259-73.

<sup>10</sup> Efficiency and Productivity Growth Comparisons of European and U.S. Air Carriers: A First Look at the Data. Good, David H. M., Ishaq Nadiri, Lars Hendrik Roller, and Robin C. Sickles. **Journal of Productivity Analysis**, 4(1-2), June 1993, pages 115-25.

costs, younger and more efficient fleets and supplemented their passenger loads with freight<sup>11</sup>.

A major fear is the ability of European airlines, specially those still owned and dominated by governments, to compete in a completely liberalized European aviation economy with the larger and more efficient US airlines. Beyond the bureaucratic and govt. acceptance of deregulation, is the issue of whether infrastructure and institutional considerations permit a truly liberalized airline industry within Europe, and if complete deregulation is embraced, what steps are needed to permit European airlines to compete in a more competitive airline industry<sup>12</sup>. Some European nations may also be motivated by an ideological distaste for the anti-competitive effects of deregulation, specially at airports where slots are scarce. Such views find sympathy in the US, for example, in the views of Judge Cudahy, who argues that slumping economies undercut enthusiasm for deregulation. He suggests that market efficiency that comes at a price of bankruptcies, oligopoly, lost jobs and chaotic pricing, may lose favor and the pendulum may swing back to greater regulation<sup>13</sup>.

As Table 1 below shows, comparing private and state-owned airlines from among the world's largest airlines shows rather large differences in market share, revenues and profits. It is worth exploring these differences in greater detail to understand how state-owned airlines differ from privately held for profit airlines as these differences highlight the challenges of deregulation as well as the possible gains from deregulation.

Airline: 16 privately held, 18 state-owned.	Revenues, \$ millions	Operating Income, \$ millions	RPKs, billions Kms.
All Airlines	5113	145	45.2
Private Airlines	6388	239	65.1
State-owned Airlines	3980	61	27.5

In this paper we study a cross section of 1994 data for 34 of the worlds largest airlines. We concentrate primarily on operating performance, financial results as well as operating statistics. Clearly, one year's results do not address the

<sup>11</sup> Andreas Antoniou, "The Factors determining the Profitability of International Airlines", **Managerial and Decision Economics**, 13(6), Nov.-Dec. 1992, p. 503-514.

<sup>12</sup> M. Ashworth and P. Forsyth, "British Airways: Privatization and Airline Regulatory Policy", in **Privatization and Regulation: the UK Experience**. Eds. John Kay, C. Moyer and D. Thompson. Oxford: Clarendon Press 1986.

<sup>13</sup> Cudahy, Richard D. The Coming Demise of Deregulation. **Yale Journal on Regulation**; 10(1), Winter 1993, pages 1-15.

Table 2: Airline Financial and Operating Data, Comparison of Means and significance of differences.

1994 Mean.	All Airlines, n=34	N. America, n=11	Europe, n=13	Asia, n=10	Sig., Diff. Regions	Private, n=16	State-owned, n=18	Sig. Diff. Ownership
Revenues, \$ Mill.	5113	6634	4430	4328		6388	3980	*
Expenses, \$ Mill.	4968	6467	4324	4156		6149	3918	
Oper. Income, \$ Mill.	145	167	106	171		239	61	
Net Income, \$ Mill.	15	-81	-20	165		41	-8	
No. Employees	26037	39521	21572	17009	**	32958	19885	*
Total RPKs, Mil. Kms.	45179	75521	28409	33602	***	65063	27504	***
Total ASKs, Mil. Kms.	66510	113704	39739	49398	***	95913	40373	***
Load Factor %	66,9	65,9	67,2	67,6		66,8	66,9	
Yield/RPK \$/Km.	0,1227	0,0881	0,1556	0,1181	***	0,1052	0,1383	*
Cost/RPK \$/Km.	0,1199	0,0857	0,1539	0,1133	***	0,1014	0,136	*
Cost/ASK \$/Km.	0,081	0,0564	0,1081	0,076	***	0,069	0,091	*
RPK/Employee Mil. Kms.	1,706	1.814	1,387	2,003		2,125	1.334	***
ASK/Employee Mil. Kms.	2,367	2.744	1,595	2,955	***	2,793	1.988	***
Revenue/Employee \$ Mil.	0,199	0,157	0,189	0,258		0,216	0,184	
Oper. Margin %	2,66	2,75	1,28	4,36		3,63	1,8	
Net Income, %	0,6	-1,53	-1,1	5,1	*	0,6	0,5	
Intl. Traffic, % of total	65,5	29,4	87,4	80,5	***	45,6	83,1	***

Prof. Ravi Sarathy,  
May 1996

\* difference sig. at .10 level;

\*\* sig. at .05 level;

\*\*\* sig. at .01 level



Sa

whole situation. But 1994 is a useful year to study as it marks the revival of airline industry fortunes after a long recessionary period, and studying how private and state-owned airlines were able to take advantage of industry recovery sheds light on the differences in the two groups of airlines, differences relevant to the deregulation debate.

### **Airline sample and Data.**

Our sample consist of 34 of the world's major airlines, drawn from N. America, Europe and Asia, with all but two of them among the 50 largest airlines in the world. Basic data for 1994 were gathered for these airlines, consisting of :

- 1) Revenues, Expenses, Operating Income and Net Income, in millions of \$s.
- 2) Volume indicators, including total Revenue Passenger Kilometers (RPKs) and Total Available Seat Kilometers (ASKs), being indicators of total demand for the services of and total supply offered by each airline in their scheduled services. RPK and ASK were broken down by the portion derived from international and domestic traffic.
- 3) The number of employees at the airlines, an indicator of size and also useful in deriving productivity indices.

From the foregoing, several indicators of financial and operating performance and efficiency were derived as follows:

- i) Load Factor, being **the percentage of capacity**, derived by dividing total RPKs by ASKs.
- ii) Yield per RPK, being the **effective price** earned by each airline, derived by dividing total revenues by total RPKs.
- iii) **Cost of service**, calculated as Cost per PRK and cost per ASK; cost per ASK is a more realistic cost of production, as it reflects the cost of the capacity made available by the firm, while cost per RPK is more useful as an indication of overall operating efficiency, i.e. the operating margin derived by the airline from each kilometer flown. Cost per ASK is Expenses divided by Total ASKs, while cost per RPK is Expenses divided by Total RPKs.
- iv) **Employee productivity** can be gauged in three ways, measured as revenues per employee (total revenues divided by number of employees); RPKs per employee (Total RPKs divided by number of employees) and, ASKs per employee (Total ASKs divided by number of employees).
- v) **Airline internationalization**, measured by the proportion of international traffic to total traffic, i.e., international RPKs divided by total RPKs.
- vi) **Financial performance**, measured by operating income margins, and, net income margins, i.e., Operating Income divided by Revenues, and, Net Income divided by Revenues; the main difference here is that net income includes the effect of interest charges and other expenses.

The above data represent a bare minimum for exploring airline productivity and performance. Windle calculated total factor productivity for a sample of international airlines for 1983, recognizing both input factor prices and productivity in their



use as contributing to cost differences at airlines. He broke down cost into five categories, labor, fuel, flight equipment, ground equipment, and materials, and related them to a multiple output indicator, consisting of scheduled service, charter service, freight and mail. He found that overall superior US airline productivity was reduced somewhat by higher input costs compared to several Asian carriers. Overall, while US firms faced higher labor prices, they made up for it with higher traffic density<sup>14</sup>.

Using the above data, analysis of variance was used to test for difference of means in the variables outlined above, for two sample subdivisions: **one**, whether there were significant differences between airlines, by **region**, i.e., between airlines from N. America, Europe and Asia; and **two**, whether there were significant differences between **private capital owned airlines and state-owned airlines**; airlines were categorized as state-owned if partial or majority ownership was held by the government. **Table 2** summarizes the results of this analysis.

As can be seen from Table 2, there are significant differences between airlines across regions and by type of ownership.

### **Regional differences.**

1. As explained earlier in discussing the relative size of markets, the N. American market dwarfs all other markets in size. It is also the most deregulated market in the world and perhaps in consequence, home to the world's largest airlines. This is borne out by the significant difference in total RPKs and Total ASKs offered by airlines from each of the three regions, and by the difference in the average number of employees. NA airlines on average offer 113.7 billion ASKs, more than the combined average ASKs offered by Asian and European airlines. Similarly, the average NA airline's RPKs of 75.5 billion exceeded the combined average RPKs of Asian and European airlines. This volume difference is also borne out by the number of employees at NA airlines, on average hiring 39,521 employees, which is more than double that of Asian airlines and almost 18,000 employees more than the average European airline. Given the fundamental need to create jobs in Europe, this raises the question of whether following the path forged by NA airlines can result in more jobs in the airline industry in Europe. The largest European airline, British Airways, had achieved 86.2 billion RPKs in 1994 and generated 48,823 jobs. BA was privatized in the early eighties.
2. Yields are also significantly different, with NA airlines charging about 9 cents a kilometer, compared to about 12 cents in Asia and 15.6 cents in Europe. Seen in a different light, consumers pay the least per Km. To fly in NA, and 66% more in Europe per Km, with Asia in between. The lower fares in NA could be the result of scale economies, which is an argument for consolidation and growth in Europe; it is also likely that the lower NA fares are the result of intense

<sup>14</sup> Robert J. Windle, "The World's Airlines", **Journal of Transport Economics and Policy**, 35(1), Jan. 1991.

competition unleashed by deregulation.

3. There are also significant differences in cost per ASK, with NA costs at 5.6 cents per KM. Vs. 7.6 cents/Km. In Asia and 10.8 cents in Europe. European costs are nearly double NA levels, and one could argue that competitive markets set prices which in turn forces competitors to be efficient; thus the competitive NA market drives down yields which in turn forces down costs as NA airlines strive to become more efficient.

Also interesting is the difference between yields and costs per rpk, which are .0024 in NA, .0017 in Europe and .0044 in Asia. The higher margin per kilometer in Asia is intriguing in suggesting that Asian airlines have achieved a better balance between competition and efficiency; Asian airlines are more efficient than Europe but less competitive than NA markets; it could also be that an inherently lower wage structure allows them to take advantage of yields set by competition that comes in part from higher wage locations.

1. Productivity as measured by ASK per employee is also significantly different between the three regions, with Asian airlines displaying the highest productivity, at 2.95 million Kms per employee, followed by NA airlines at 2.74 million Kms and Europe, third, with 1.6 million Kms per employee. Part of this difference may be due to the longer routes flown by Asian airlines, both within Asia, and between Asia and Europe, and Asia and NA.
2. There are somewhat significant differences in net income, (significant at the 10% level), with Asian airlines being solidly positive, with a 5.1% margin, while both NA and European airlines on average showed net income losses. Fast growth and bilateral agreements based duopolies on many routes might explain high Asian profits; while NA loss might in part be due to the large losses at major NA airlines: Continental (\$613 m. in losses), TWA (\$451 m. loss) and US Air (\$716 m. in losses). All three airlines have significantly restructured their operations in the face of a fiercely competitive environment, and taken significant write-offs as well as endured bankruptcy, in the case of Continental and TWA (twice). Parenthetically, it is the loss experience of these airlines that most scares governments contemplating deregulation.
3. Lastly, significant differences in the percentage of international traffic, which is at least in part due to the large NA market and the fact that major NA airlines had until recently mostly served the NA domestic market. International expansion at airlines such as United, American and Delta came about through the acquisition of international routes from loss making airlines such as TWA, Pan Am, Eastern and Braniff. An interesting implication is the importance of a significant domestic market as providing balance, scale possibilities and feeder traffic for international routes. This suggest that moves to Open Skies, such as in Europe might bring about an enlarged domestic market which can help airlines become more competitive.

**Differences between state-owned and private capital owned airlines.**

**Table 2** also sets out the differences between state-owned and private capital owned airlines, with airlines being classified as state-owned when governments held partial or controlling ownership in the airline.

1. There were significant differences in size with state-owned airlines being significantly smaller, in terms of total revenues, number of employees, total RPKs and total ASKs. RPKs also measure market acceptance and marketing success, and private capital owned airlines were able to generate significantly higher levels of traffic.
2. Yields were significantly higher at state-owned airlines, at 13.8 cents versus 10.5 cents at private airlines. Consumers paid more to travel on state-owned airlines and the higher price could reflect higher value and service, or simply, the price extracted by market concentration and power.
3. Costs are also significantly higher at state-owned airlines, at 13.6 cents vs. 10.1 cents per RPK, and 9 vs. 7 cents per ASK. The higher cost structure may require that higher air fares be charged; or, higher fares allow the state-owned airlines to accept higher costs; in any case, competition with private airlines puts the state-owned airlines at a disadvantage as consumers would presumably seek the lower fares, if available, and the higher costs would prevent the state-owned airlines from cutting fares to meet that of competition, unless prepared to accept losses.
4. Productivity is significantly higher at private airlines, about 700,00 Kms additional per employee, or about 35%. The reasons for the productivity difference may lie in the lack of pressures to be efficient, and work agreements that restrict flexibility and the ability to adjust workforce to demand. The net result, again, is competitive disadvantage for state-owned airlines.
5. Lastly, private airlines obtain about half their traffic- 55%, from domestic markets, which is significantly different from state-owned airlines that obtain nearly 83% of their revenues from international traffic. This may reflect the fact that many private airlines are from NA, with its large domestic market.

In summary, state-owned airlines suffer from smaller size, lower demand, have fewer employees, charge higher fares and have higher costs, are less productive, and derive most of their traffic from international markets. Privatization may be of great help in making these airlines more competitive while lowering fares to the consumer and increasing their welfare<sup>15</sup>. The great fear of course is that jobs may disappear and that several national flag carrier airlines might also disappear as they are absorbed by more competitive private sector airlines. The relatively inferior performance of state-owned airlines and of European airlines can be attributed in part to high

---

<sup>15</sup> See for example, L.H. Roller and R.C. Sickles, "Competition, Market Niches and Efficiency", INSEAD Working Paper, Dec. 1993, in which the authors show that European airline liberalization should bring airline prices down gradually as efficiency increases and market niches are abolished.

cost, smaller scale and less productive operations, resulting in lower market shares compared to their Asian and NA competitors. Other areas that could contribute to sub-standard performance which have not been examined in the paper and need to be addressed in future studies include:

- overly rapid capacity expansion, resulting in unutilized capacity, unabsorbed fixed costs and eventual larger losses;
  - the extent of leverage used by the airline, with high debt resulting in high interest charges and weakening cash flow and flexibility in future years;
  - the route structure of the airline, with bilateral agreements and political influences, particularly in state-owned airlines, restricting the ability of airlines to freely offer services most demanded by customers; however, all airlines face such restrictions, and code sharing has developed as a way for the world's airlines to bypass bilateral restrictions in catering to their customers' needs. Airlines from countries with open skies policies become more attractive as potential code share and alliance partners as the deregulated domestic markets offer greater market potential.
  - diversification strategies, allowing the volatility and cyclicity of the airline industry to be offset by other operations such as hotel operations, cargo, and computer reservation systems. Granted, that diversification brings with it the need for further financial and managerial resource investments, and such resources may be strained in the face of numerous demands on a scarce pool.
  - aircraft fleet management, with newly emerging high potential routes and shifts in market demands perhaps necessitating the use of larger and more fuel efficient planes. Aircraft with older fleets, constrained by high debt and poor profitability from acquiring new aircraft, may find their competitive disadvantage worsening. High costs may also result from multiple makes of aircraft in the fleet, requiring greater investment in parts, engines and training of maintenance specialists.
  - the quality and sophistication of computer reservation systems (CRS) may play a central role in achieving higher load factors as travel agents sue CRS to scan and book flights for their clients. An airline owning its own CRS, such as American Airlines' Sabre system, has a competitive advantage in being able to list its own flights in preferential order, thus potentially gaining a larger market share.
  - yield management, being the use of demand modeling and operations research tools to allow the use of a variety of prices and airfares for the same flight, so as to practice an optimum level of price discrimination as between leisure travelers and the business passenger. Such techniques allow selective discounting based on time of day, day of week, season and routes, enhancing overall capacity utilization without inviting competitive retaliation.
- the rise of substitutes, which is particularly important in Europe, where the Eurostar Channel train has been able to significantly affect air traffic demand on the busiest airline route in the world, London-Paris. By offering first class

seats to the business traveler at about Pounds 220, about a 25% discount to airfares, while also offering comfortable service and a 3 hour downtown to downtown service, Eurostar becomes a viable and perhaps preferred alternative to the airline service<sup>16</sup>. As high speed trains are developed across Europe, they will become a viable alternative to the high yield short distance flights which provide a considerable source of income for Europe's airlines.



- a particular problem facing European airlines are the several incompatible air traffic control regimes governing European airspace, adding to costs and causing flight delays, while monopoly positions and sole sourcing of ground handling facilities at several airports also result in high costs and competitive disadvantage.

While European airline deregulation seems to be the correct response to the competitive disadvantage of European airlines, as well as in keeping with the creation of a single European market, there are structural and institutional impediments to the creation of truly open European skies<sup>17</sup>. The single biggest impediment is the reluctance of governments to accept open skies in Europe. Concrete evidence of this is the continuing **subsidies** to European airlines: in the past few years,

Air France has received FF20 billion (\$4 billion) in subsidies as have

Iberia which received 120 billion pesetas in 1992, and is scheduled to receive an additional 100 billion pesetas in 1996, in return for selling off its deficit-laden S. American operations, such as majority ownership of Aerolineas Argentinas.

Greece's Olympic Airways received \$2.4 billion, and

Portugal's TAP received \$ 2.25 billion;

in all, since 1990, national subsidies to European airlines totaled nearly \$15 billion<sup>18</sup>. These airlines are clearly among the weakest airlines, with high cost structures and poor productivity, as outlined in **Table 3** below:

**Table 3: European Airlines, Comparative Performance, 1994.**

European Airline	Yield per RPK	Cost per RPK	Productivity RPKs per employee	Productivity ASKs per employee	Operating Income Margins
Air France	0,195	0,203	1,259	1,722	-3,98%

<sup>16</sup> "Eurostar, an oncoming train", The Economist, Oct. 7, 1995.

<sup>17</sup> British Civil Aviation Authority, **The Single European Aviation Market: Progress so far**".

<sup>18</sup> The Economist, "S. Europe's airlines, on a prayer", July 30, 1994; "Alitalia: where eagles dare", Feb. 11, 1995; and Wall Street Journal, "Capital infusion in Iberia by Spain likely to grow", Nov. 27, 1995.

Alitalia	0,151 0,148	1,160	1,692	2,04%
British Airways	0,120 0,108	1,766	2,483	9,51%
Finnair	0,152 0,139	1,057	1,649	8,27%
Iberia	0,146 0,144	0,948	1,383	1,19%
KLM	0,101 0,093	1,698	2,345	8,47%
Lufthansa	0,213 0,210	1,300	1,914	1,55%
Sabena	0,237 0,234	0,738	1,229	1,41%
SAS	0,217 0,211	1,050	1,600	2,94%
Swissair	0,195 0,195	1,010	1,594	0,14%
TAP	0,129 0,153	0,866	1,250	-18,95%

Aside from the subsidy problem, there are other barriers to contend with:

-the incumbency advantage, in that domestic flag carriers control perhaps 80% of traffic in the domestic market. Evans and Kessides showed that US airlines are more reluctant to engage in price wars when their competitors also contest many other jointly served routes<sup>19</sup>. In the same vein, Kim and Singal show that prices increased on routes served by airlines that merged, suggesting that while mergers may lead to more efficient operations, they are also accompanied by increased market power<sup>20</sup>. More recently, Joesch and Zick<sup>21</sup> examined 19 destination markets in the US and found that market contestability had declined. One should not however overestimate the effects of such possible concentration, as Dresner and Windle suggest that a 28 point higher airport market share for an airline leads to only a one or two percent premium in yields, with an estimated total effect of airport concentration of about \$450 million in 1987<sup>22</sup>. In any case, the EU's efforts to open up all air routes within Europe to competition has led to a spate of new entrants such as British Airways' creation of TAT and Deutsche BA to compete in the domestic French and German markets respectively. Similarly, Iberia faces domestic competition from Air Europa and Spanair, in Italy new entrants such as Air One and Noman, in France the newly formed Air Liberte, and in the UK from new airlines such as RyanAir, EasyJet, British Midland<sup>23</sup>. Overall, there are over

<sup>19</sup> Evans, William N. and Kessides, Ioannis N. Living by the "Golden Rule": Multimarket Contact in the U.S. Airline Industry. **Quarterly Journal of Economics**; 109(2), May 1994, pages 341-66.

<sup>20</sup> E. Han Kim and V. Singal, "Mergers and Market Power: Evidence from the Airline Industry", **American Economic Review**, 83(3), June 1993, p. 549-569.

<sup>21</sup> Jutta M. Joesch and C.D. Zick, "Evidence of Changing Contestability in Commercial Airline Markets during the 1980s", **Journal of Consumer Affairs**, 28(1), Summer 1994

<sup>22</sup> M. Dresner and Robert Windle, "Airport Dominance and Yields in the US Airline Industry", **Logistics and Transportation Review**, 28(4), Dec. 1992, p. 319-339.

<sup>23</sup> The Economist, "Europe's airlines, New Departures", Dec. 9<sup>th</sup>, 1995.

50 densely traveled inter-EU routes such as Paris-Amsterdam and Rome-Frankfurt on which more competition is possible and could emerge with EU's 1997 Open Skies that allows European airlines to treat all of Europe as their own domestic market<sup>24</sup>.

-landing and takeoff slots are scarce at Europe's busiest airports, notably Heathrow and Frankfurt, which means that even with an opening up, new entrants will find it difficult to fly in competition against the established incumbents. One solution is the forced freeing up of a certain number of slots, as was the condition imposed by the EU in exchange for accepting the alliance between Lufthansa and SAS. Saunders and Shepherd similarly suggest that limits on hub dominance might improve overall efficiency<sup>25</sup>. Abramovitz and Brown also find diminution of market contestability on US airport-pair routes, modeling variables such as congestion, consumer brand preferences, barriers to entry at airports and multiple airport availability in a city<sup>26</sup>. In other words, the issue is how to make markets more competitive and *contestable*, and when tendencies exist to create natural monopolies, one response is enlightened state regulation; but the past experience of airline regulation in Europe has shown that regulatory discretion may end up protecting national flag carrier airlines rather than enhancing market contestability, which is why deregulation may make more economic sense. Evans and Kessides demonstrate that it is airport dominance rather than route dominance that seems to confer market power on an airline. The authors suggest that the best public policy course would be to ensure equal access to scarce airport facilities<sup>27</sup>.

Another major development that spells the increase of competition in Europe is the rise of alliances. The best known is perhaps the KLM-Northwest alliance in which KLM owns 21.5% of Northwest, and the alliance has allowed the combined companies to increase their share of the transatlantic market from 7 to 12% over the 1991-95 period, while adding between 3 to 5% additional revenues to each company<sup>28</sup>.

The EU recently approved an alliance between Lufthansa and SAS in which they would code share on over 370 flights and more tightly link operations in return for giving up slots at key airports and allowing greater competition on eight of their busiest routes<sup>29</sup>. Kahn similarly notes that within hub and

<sup>24</sup> Aviation Week and Space Technology, "Airline Competition Sluggish in Europe", Nov. 1995.

<sup>25</sup> Saunders, Lisa F. and Shepherd, William G. Airlines: Setting Constraints on Hub Dominance. **Logistics and Transportation Review**; 29(3), September 1993, pages 201-20. A

<sup>26</sup> Abramowitz and S. Brown, "Market Share and Price Determination in the Contemporary Airline Industry", **Review of Industrial Organization**; 8(4), August 1993, pages 419-433.

<sup>27</sup> W. Evans and I. Kessides, "Localized Market Power in the U.S. Airline Industry", **Review of Economics and Statistics**, 75(1), Feb. 1993, p. 66-75.

<sup>28</sup> The Wall Street Journal, "Successful Northwest, KLM partnership hits the skids", Nov. 2, 1995.

<sup>29</sup> New York Times, "Europe clears Lufthansa-SAS link:", Jan. 17,

spoke systems, which have characteristics of a natural monopoly, carriers with a strong hub presence attract a disproportionate share of traffic, including high fare-paying traffic that originates at the hub<sup>30</sup>. More recently, Germany and the US agreed to an open skies pact which would enter into force once anti-trust immunity was granted Lufthansa in its alliance with United Airlines, an alliance which would potentially create the world's largest airline by far.

Swissair had also initiated an alliance in the early nineties termed the European Quality Alliance, which ended as SAS left the alliance because of what it deemed too high market share losses. More recently, Swissair acquired a 49% interest in the loss-making Belgian airline, Sabena. Delta too has an alliance with Swissair and Austrian airways and is also seeking antitrust immunity in the US for concerted marketing efforts. It is clear that alliances are resulting in de facto rationalization and mergers within the European airline industry, making survival even more problematic for the inefficient state-owned European airlines.

One of the predictable reactions to the threats facing Europe's airlines is growing labor discontent. Given the high likelihood that restructuring Europe's inefficient airlines will involve job reductions, Europe's airline workers have answered with a series of job actions strikes and slowdowns. For example, Alitalia pilots have on occasion refused to take off on a scheduled flight, leaving passengers stranded and delaying other flights, as a sign of their disgruntlement with Alitalia's attempts to increase working hours and obtain more flexibility; at one point Alitalia was flying the Rome-NY route with hired Ansett Airlines plane and crew. Similar job actions have occurred at Sabena, Iberia and Air France<sup>31</sup>. While such moves are to be expected and require drawn-out and painstaking management negotiations, it is not likely that such actions will deter the growing deregulation and drive to efficiency gripping Europe's airlines. What is more likely is the continuation of govt. subsidies to permit the hobbled airlines to continue to survive with excess and high wage labor, falling further behind their privatized competitors.

### **What is to be done?**

The analysis described in Table 2 and the move to Open Skies leaves little doubt over what needs to be done. A 'Comite des Sages' appointed by the EU to advise them over Europe's airline industry suggested that<sup>32</sup>:

Europe's airline industry should be opened up and deregulated;

---

1996.

<sup>30</sup> Kahn, Alfred E. The Competitive Consequences of Hub Dominance: A Case Study. **Review of Industrial Organization**; 8(4), August 1993, pages 381-405.

<sup>31</sup> Aviation Week and Space technology, "Strike threats loom at European airlines", Dec. 4, 1995.

<sup>32</sup> The Economist, "European airlines, Flights of Fancy", Feb. 5, 1994.



that Europe's airlines need to cut costs and reduce workforce; increase the productivity of management and staff to catch up to Asian and NA levels;

liberalize ground handling and allow the entry of private firms and competition so as to reduce costs'

and, let the EU negotiate on behalf of all European airlines in reaching Open Skies agreements with other countries.

The EU has had difficulty in trying to negotiate for Europe, at least in part because governments in countries such as the UK and Germany and France are loth to open up Heathrow, Frankfurt and Orly to competition that could injure their leading airlines.

Beyond these measures, outsourcing is increasingly seen as a way to reduce costs and increase productivity. McKinsey consultants<sup>33</sup> suggest that airlines in the future will need to re-examine the value chain of activities and choose between being a 'network manager', a 'capacity provider', and a 'service provider'. A network manager designs the air route network, controls marketing and yield management, and is the brains of the system. Capacity provider provide the aircraft and crew, and may often be new secondary carriers with low cost structures, leased new aircraft and considerable job flexibility, perhaps with motivation enhanced by employee ownership. Service providers provide services in areas such as catering, maintenance, ground handling and information technology. The central idea here is that many of the airline's functions can be sub-contracted out to low cost efficient providers without a legacy of state protection and inflexible work rules. If such a system were to develop, even in part, it would further spell the end of state-owned integrated service airlines.

Looking around the world at airline practices, several innovations stand out. There is the Southwest example, which has survived and grown over more than twenty years. Southwest Airlines began competing against the majors with an entirely different air service concept. As the majors began developing a hub and spoke system that allowed greater efficiency and frequency in serving an increasing number of destinations, passengers began to experience longer flying times because of waiting at hub airports for connections, and delays because of bad weather and missed connections as well as irritants such as lost baggage caused by incorrect handling at the changeover at hubs. In response, Southwest launched its operations around the central premise of non-stop point to point flights for one low price. Southwest's recipe is quite simple:<sup>34</sup>

1. Concentrate on offering only direct short to medium range flights (average flying time, one hour) to less crowded airports between cities.

---

<sup>33</sup> Clive Barton, Lar Bradshaw, Remo Brunschwiler and Thomas Bull-Larsen, "Is there a future for Europe's airlines?", **McKinsey Quarterly**, 1994, No. 4

<sup>34</sup> Southwest Airlines Co. 1995 Annual Report.

2. Simple operations: no assigned seats, no meals, only one aircraft type, the Boeing 737.
3. Low price fares, backed by low cost operations. SW has the lowest cost per seat mile in the US.
4. Great service, SW calls it "treat customers like guests".
5. Fast turnarounds allowing SW to achieve the highest aircraft utilization rates in the US airline industry.
6. Very selective hiring, 5500 people hired in 1995 from 124,000 applications; backed by competitive wages and profit-sharing.

Employee ownership is another idea, with Northwest airlines selling part of the company to its pilots and other staff in return for pay cuts and changed work rules. United Airlines went even further, selling majority ownership of the airline to its workers in return for job and wage concessions.

Airlines have also begun to place a greater stress on marketing, with airlines such as British Airways seeking to distinguish their different classes of services and create high levels of repeat business and consumer loyalty; for example, their creation of sleeper first class seats (reducing the total number of seats in the process) with an office ambiance to allow passengers to meet with a colleague and share meals with some privacy<sup>35</sup>. Airlines have also begun to experiment with reducing travel agent commissions, using electronic ticketing and marketing direct to travelers over the Internet as a way to reduce costs and boost yields. And of course, few airlines today do not seek to bind the customer to their services through the enticement of frequent flyer programs and the offer of free future travel in return for customer loyalty and repeat business.

To summarize, deregulation is inevitable. Airlines are getting bigger, cutting costs and becoming more productive and trying to enhance customer loyalty while increasing yields. Europe's airlines do not have much choice. They can enter the age of efficiency and seek to be the survivors, the network managers around which major European and global airlines are formed, or, gradually waste away to become small domestic and regional players living on the morsels of captive traffic from their governments and citizens who lack other choices.

---

<sup>35</sup> Aviation Week and Space Technology, "BA to revamp first-class sections",