

The Economic Impact of Air Service Liberalization

Executive Summary



InterVISTAS-ga² would like to thank the sponsors, listed above, for their support in this study. The study results further illustrate the benefits to communities that have liberalized, or plan to liberalize and expand their air services agreements.



EXECUTIVE SUMMARY

This study found extensive and significant evidence that supports the generally accepted “conventional wisdom” that liberalization of air services between countries generates significant additional opportunities for consumers, shippers, and the numerous direct and indirect entities and individuals affected by such liberalization. Conversely, it is also evident that restrictive bilateral air services agreements between countries stifle air travel, tourism and business, and, consequently, economic growth and job creation.

Prominent findings of the study are:

- Traffic growth subsequent to liberalization of air services agreements between countries typically averaged between 12% and 35%, significantly greater than during years preceding liberalization. In a number of situations, growth was at rates exceeding 50%, and in some cases reached almost 100% of the pre-liberalization rates.
- A simulation of the likely results of liberalizing 320 country pair markets that are not today in an Open Skies (deregulated) mode indicate traffic growth, on average, of almost 63%. This is substantially higher than typical world traffic growth of around 6%-8%. Liberalizing only these 320 bilateral agreements of the 2,000 in our database would create 24.1 million full-time jobs and generate an additional \$490 billion in Gross Domestic Product. This corresponds to an economy almost the size of Brazil.
- The creation of the Single European Aviation Market in 1993 led to an average annual growth rate in traffic between 1995 and 2004 that was almost double the rate of growth in the years 1990 to 1994. This produced about 1.4 million new jobs.
- A simulation of full liberalization of the United States-United Kingdom market under a Comprehensive First Step Air Service Agreement (ASA) between the United States and the European Union would produce an almost 29% increase in traffic. Some of the increase results from the impact of lower fares, while the remainder would result from allowing any U.S. city to obtain nonstop service to London’s Heathrow or Gatwick airports.

*Liberalizing only 320 bilateral agreements of the existing thousands would create **24.1 million full-time jobs** and generate an **additional \$490 billion in Gross Domestic Product**. This corresponds to an economy almost the size of Brazil.*

The economic benefits of this liberalization would be substantial. There would be an additional 117,000 new jobs generated, and the incremental GDP impact to both the U.S. and to the UK would be roughly \$7.8 billion.

- An examination of 190 countries and 2,000 bilateral air service agreements suggests that there are still a number of countries that place a priority on protecting their flag carrier(s), rather than enhancing the overall welfare of the broader public interest.



A. BACKGROUND

Commercial aviation owes its existence to the rapid development and application of technology. Modern aerospace technology allows aircraft to operate efficiently and safely under a very wide range of conditions, to areas and climates throughout the world. Air service is widely available, and allows even the poorest nations access to the most advanced products. The new, ultra-long range aircraft can operate nonstop flights to points so distant that airlines must decide whether to fly east, over the Atlantic and northern Europe, or west across the Pacific and the Far East, to reach their destination. But the most important contribution of technology has been to lower the cost of air travel. Fuel-efficient engines and aerodynamic surfaces, low maintenance and modular components, and improved materials have progressively allowed airlines to lower air fares, thereby allowing more and more people to use air transportation on a routine basis. This diffusion has permitted commercial aviation to play a far more important role in peoples' lives.

However, commercial aviation still faces a challenge common to many of the newer and more technically advanced areas of our society. Our transportation political and trade institutions have not kept pace with the evolution of technology or the needs of the public. Commercial aviation remains encumbered by well meaning but outmoded and arcane rules, principles and institutions. These rules and regulations often prevent fit, willing and able airlines from fully serving passengers and shippers who are completely willing and able to pay. They also impose protective machinery that frustrates innovation, and has in the past directed the evolution of the industry into a contrived and artificial structure. By sheltering airlines from market forces, they reduce the incentives for them to pass the benefits of improved technologies on to passengers, shippers and investors.

International air commerce today is still, in many respects, governed by a framework of rules laid down in the post World War II era. Despite today's trend toward global markets, free trade, the internet, and the economic integration of entire continents, one of the most globalized, technology-intensive industries remains encumbered by rules that stifle competition and prevent airlines, communities, passengers, and shippers from benefiting to the fullest. The "bilateral air service agreements" (ASAs) that continue to govern much of world trade in aviation define the terms under which airlines will link their two home territories. These ASAs often frustrate market growth, force users to pay a price premium, and create a series of vested interests.

The proponents of continuing protection are often large, powerful vested interests, who consider that they have much to lose from its abolition. The beneficiaries are often small and fragmented. They include actual and would-be passengers and shippers, hotel operators, airports, and the huge numbers of people who could or might be employed in the tourism, transportation, or manufacturing industries. The collective benefits, while very large, are so widely distributed that few persons or organizations perceive that they have a major interest in reform. The benefits, permeating throughout the economy, are

often so difficult to trace that many are not even aware that they could benefit. Often, even those who oppose liberalization could gain, but would face certain transitional risks, and would have to modify their business methods.

This imbalance has fostered a “comfortable status quo,” in which the wide but diffuse benefits of air liberalization are subordinated to the interests of the minority. A society that is unaware of the magnitude of the benefits, whose individuals are unaware that a change could help them, and cannot estimate the payoffs in any meaningful way, is unlikely to be able to reap the full rewards of liberalization.

These factors suggest that a key to reforming the regulatory environment surrounding international air travel is **education**. Specifically, a society can only make a rational choice between protectionism and competition if it knows:

- That the incremental benefits can be very large;
- That the benefits are widely diffused among many individuals and organizations;
- That many sectors could benefit, such as the tourism industry, trade/transportation and manufacturing;
- That many persons who may not perceive themselves as actually benefiting could in fact be made better off;
- That even those most opposed to the change could benefit if they can change their behavior accordingly; and
- That these benefits can often be gained at minimal public expenditure.

B. OBJECTIVES OF THE STUDY

The broad objective of this study is to attempt to quantify the results of both historical and prospective bilateral air service agreement (ASA) liberalization. In order to accomplish that objective, a number of subsidiary programs have been pursued. Thus, InterVISTAS-ga² examined the economic consequences of the liberalization of air transport throughout the world. Specific subsidiary objectives were:

- To examine recent instances of air service liberalization, or lack thereof, and identify their most important consequences on competition, traffic growth, carrier behavior and national economic benefits;
- To develop a flexible and robust analytical model, with all associated databases, so that the benefits of liberalization can be quantified prospectively for any arbitrary country-pair, or groups of country-pairs; and

- To promote a more informed public debate on the historical and potential benefits of liberalization of air services agreements between countries.

This study summarizes the research performed in pursuit of these objectives. This project has created a mathematical framework of worldwide applicability. While the model is unique in its sophistication and versatility, the project is still but one of a large group of analyses of the consequences of liberalization. While the assumptions, methodologies and results vary widely, the models clearly demonstrate the importance of high quality and reasonably priced air service to world economic development and job growth.

C. FINDINGS & CONCLUSIONS

This study demonstrates that air service liberalization can promote traffic growth, with an accompanying growth in non-aviation sectors. The sheer scale of the largest airports, and the global reach of the industry, and its technological innovation, support the often cited statistic that the travel and tourism industry drive 12% to 15% of the world output of goods and services.

This report summarizes the development of a methodology to quantify the benefits of international air service liberalization.

1. THE ECONOMIC IMPACT OF AIR SERVICES – CURRENT EVIDENCE

This report summarizes the development of a methodology to quantify the benefits of international air service liberalization. The approach developed is unique in that it can apply to any arbitrary country-pair and any level of liberalization. Extensive research attests to the importance of commercial aviation to nations in all states of development. Air service liberalization, which replaces a set of strict and arcane rules with the primacy of the market, has repeatedly proven a decisive influence in expanding the industry, and making its benefits available to more people. Many airports, airlines, academic institutions, governments and private organizations have documented the relationship between liberalization and economic growth. These efforts have contributed greatly to our knowledge of liberalization. However, most research has been narrowly focused in one or a very few specific markets. Most of the work has been *ex poste* and retrospective; contrasting a situation before and after liberalization. The data and models have been very situation-specific, and could not be quickly and simply applied to other markets.

This study describes a framework to assess the economic benefits of international air service liberalization in any market, anywhere in the world. Its approach is *ex ante*; it estimates the impact of liberalization on any market that is presently restrictive. Its global applicability depends on the use of data generated throughout the world, involving over 190 nations and 1,400 country-pairs. The various statistical relationships that form the model not merely accommodate, but, indeed, require this diversity. The model has a wider

applicability, greater robustness, and better statistical properties than those developed from more limited and homogeneous sets of data.

In keeping with the worldwide focus of the research, the study draws on, to the fullest extent possible, experience obtained throughout the world. The United States, because of its size, and the relatively lengthy period since its domestic market was deregulated, offers among the best examples of market liberalization. Furthermore, American communities and airports have been most active in pursuing new services, and in evaluating the economic impacts of aviation.

Section III of this study examines recent evidence on air service liberalization. It does not purport to provide a detailed review of the literature. Rather, it summarizes the highlights of recent research, and establishes a point of departure for the approach to developing the model and related framework.

This study, and most others, is based on a causal chain that links changes in air service regulation to changes in the broader economy (Figure 1).

Figure 1: The Causal Relationship Between Air Service Liberalization and Economic Growth



The failure of any one link can halt the process of expansion. Sometimes, the current regulations, however restrictive, may not constrain market behavior. Policy makers may authorize new services, but if airlines do not wish to operate it, the liberalization would be irrelevant. Many bilateral agreements are rife with “unused authority”; services that are allowed but that have no commercial value. The logical and empirical link between better air services and traffic growth is much stronger, and all evidence suggests that the market responds to improved service. The link between traffic growth and economic growth depends on the level of employment, the propensity to import, and whether the increased air travel diverts expenditures from other forms of consumption, savings and investment.

2. AIR SERVICE LIBERALIZATION AND TRAFFIC GROWTH

Airlines are continually fine-tuning their routes to accommodate traffic growth, changes in aircraft technology, airport congestion and other factors. In a mature market, this results in a never-ending “trickle” of schedule changes. When the market fundamentals experience a sudden and dramatic change, a “torrent” of new routes often results. Such

events can include rapid economic growth of the type being experienced in China and India, the availability of new air routes, and, most importantly, market liberalization.

As of 2006, many nations have allowed market forces to govern their domestic routes, while a slow, erratic process of “creeping liberalization” has prevailed on many international air corridors. Liberalization has promoted many new services around the world, as testified by Table 1.

Table 1: Liberalization and Air Service Growth

Event	Results
U.S. deregulation, 1978	Emergence of hub and spoke systems, low cost carriers with nationwide route networks, new entrants and integrated cargo carriers.
U.K Liberalization of Secondary Airports	Growth of international services to Manchester, Birmingham, Glasgow, etc.
Open Skies Agreements for United Arab Emirates	Growth of Dubai as major international hub.
Domestic deregulation in India	Development of low cost carriers and aggressive, expansion-oriented airlines.
U.K-India Bilateral and Creation of New Frequencies	Growth of capacity, new gateways and additional carriers operating U.K.-India service.
Domestic deregulation in Brazil	Growth of low cost carrier Gol and others.
Single European Market	Growth of low cost carriers. Ryanair, Easyjet, etc. New services, traffic growth, new gateways throughout European Union.

Published aviation statistics testify to the ability of new air service to stimulate traffic. Table 2 portrays how new services have stimulated traffic. It compares traffic levels in the year immediately preceding inauguration of the new service to volumes in the first full calendar year of operation. Most of the examples result from changes in bilateral air service agreements, or from specific governmental decisions to relax the restrictive provisions of current agreements.

Table 2: New International Services and Traffic Growth

City-Pair	Service	Liberalization Event	Passengers/Year		Gain
			Before	After	
Vancouver-Phoenix	America West	1995 Canada-U.S. Bilateral	31,216*	76,910	146.4%
Toronto-Minneapolis	Air Canada 1995, Northwest	1995 Canada-U.S. Bilateral	53,020	82,320	55.3%
Toronto-New Orleans	Air Canada 1998	1995 Canada-U.S. Bilateral	31,390	44,320	41.2%
Ottawa-Chicago	Air Canada/ American 1995	1995 Canada-U.S. Bilateral	14,720	30,870	109.7%
Montreal-Atlanta	Delta 1995	1995 Canada-U.S. Bilateral	39,690	61,730	55.5%
Atlanta-San Jose CR	Delta 1998	1997 U.S.-Costa Rica	-	-	118.5%
Dallas/Fort Worth-Santiago	American 1996		-	-	336.6%
Chicago-Hong Kong	United 1996 (not daily)	U.S.-Hong Kong Bilateral	-	-	21.1%
Chicago-London	United 1995	U.S.-U.K Mini Deal, 1995	545,152+	774,504+	42.1%
Chicago-Sao Paulo	United 1997		-	-	80.4%
Chicago-Buenos Aires	United 1998		-	-	41.1%
Houston-Sao Paulo	Continental 1999		-	-	120.5%
Atlanta-Guadalajara	Delta 1999		-	-	169.5%
Washington-Buenos Aires	United 2002	Reassignment of routes	-	-	208.7%
Washington-Sao Paulo	United 2002	Reassignment of routes	-	-	88.4%
Detroit-Beijing	Northwest 1996		-	-	174.3%
Dallas/Fort Worth-Lima	American 1996		-	-	482.0%
Houston-Tokyo	Continental 1998	1998 U.S.-Japan	-	-	116.6%
Atlanta-Rome	Delta 1999	1998 U.S.-Italy	-	-	110.8%
Dallas/Fort Worth-Zurich	American 2000	1995 Open Skies	-	-	115.3%

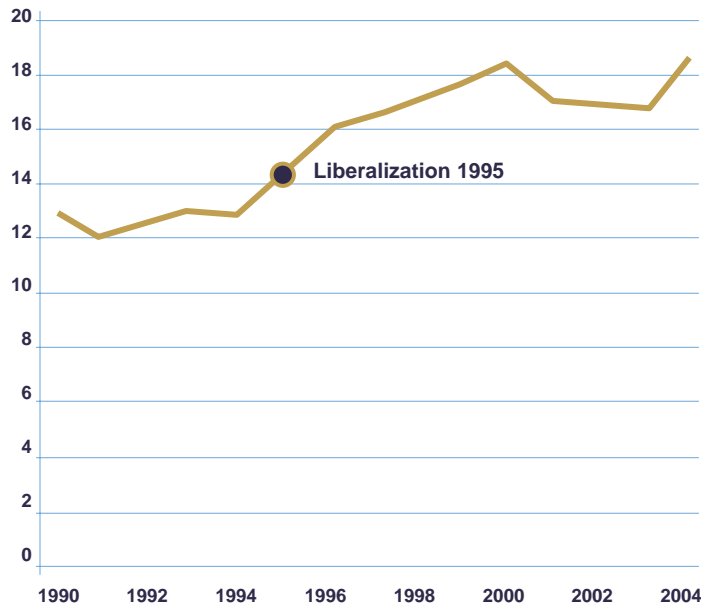
Sources: United States Department of Transportation Databases 1B and 28IS; Statistics Canada Report 51-205, "Air Passenger Origin and Destination, Canada-United States Report." The U.S. Department of Transport provides public disclosure of raw international origin-destination traffic statistics. Some city-pairs shown have a significant foreign airline presence. The DOT databases do not include traffic volumes submitted by foreign airlines.

* Includes charter traffic

+ Onboard traffic

Table 2 understates the stimulation of new traffic into a market by using a strict "year before/year after" timeframe. Traffic usually requires several years to adjust fully to a new service. Despite the conservative approach, nonstop international services can often cause international traffic to double in only a year, even for city-pairs that already have a profusion of one-stop connecting services. Any mechanism that allows international services to proliferate to non-traditional gateways can be a powerful stimulus to traffic. Restrictive bilateral agreements, through confining service to a few named points, can thwart the growth. They also exacerbate the airside and groundside congestion at the largest gateways.

Figure 2: Growth of United States-Canada Traffic, 1990-2004
Passengers (in Millions)



Source: United States Department of Transportation Database 28DM

Figure 2 depicts United States-Canada passenger flows. Until 1995, this market was governed by a very restrictive bilateral, negotiated in 1966 and updated in 1975. It prohibited nonstop scheduled services on a large number of routes, including Toronto-Washington, Atlanta-Montreal and Vancouver-Denver. Notwithstanding that the two countries had concluded a free trade agreement in 1988, extended to Mexico in 1994, aviation functioned under a constrained bilateral air services agreement. The liberalization of air service in 1995 allowed carriers of either nation to serve any route desired, at commercially determined prices. As shown by the graph, the previously stagnant traffic saw rapid growth after liberalization.

3. AIR TRAFFIC AND ECONOMIC GROWTH

Tables 1 and 2 indicate a strong causal relationship between liberalization, air service improvement, and international traffic. Table 3 explores the final step of the causal chain; the relationship between traffic and economic development. Many airports have prepared “economic impact statements” to quantify their influence on their communities. Several measures are used, including Gross Domestic Product, output, employment, investment, and tax revenues. Several methods are available, and assumptions vary widely between each such project. Despite the methodological differences, the studies have reached a worldwide consensus that airports and civil aviation can have an enormous and positive

impact on regional prosperity. Table 3 summarizes economic impact statements for a cross-section of airports and civil aviation activities throughout the world.

Table 3: Economic Impact of Commercial Aviation

	Passengers	Employment	Output	Source
Des Moines, 1998	1.7 million	2,352	\$182 million US	Des Moines International Airport
Newcastle, NSW 2005	.76 million	3,336	\$540 million AU	Newcastle Airport Limited
Cincinnati 2004		89,536	\$5 billion US	University of Cincinnati
Reykjavik	1.8 million (2006)	1,156	11.4 Billion IKr	University of Iceland Institute of Economic Studies
Geneva, 1999	7 million	24,000	9.0 Billion SFr	Aéroports Internationale Geneva
World Aviation, 2005	2 billion	29 million	\$2.96 trillion U.S., 8% of world GDP	Air Transport Action Group
UK Airports, 2004		580,000	£22.2 billion gross value added	Airport Operators Association, 2005
Toronto	29.9 million	138,000	\$14 billion CD	Greater Toronto Airports Auth.
Auckland 2001	8.5 million	235,780	\$14.2 billion NZ	Auckland International Airport
All United States, 2005		12.3 million	\$1.37 trillion US	Air Transport Association
European Airports			2.6% of European GDP	
Inverness Airport, 2005	.5 million	2,297	£ 120 million	Inverness and Nairn Enterprise, Highlands and Islands Enterprise and Highlands and Islands Airports Limited
UK Air Freight Industry, 2000		80,000-100,000	£ 4.99 billion	U.K. Air Freight Study Report, U.K. Department of Transport

The instances shown in Table 3 describe the impacts of facilities operating with a given level of service. A further refinement involves measuring the incremental impact of a specific improvement in air service.

4. CATALYTIC EFFECTS FROM AIR SERVICE DEVELOPMENT

The relationships explored in Table 3 view the various impacts as the response of a pre-existing economy to incremental changes in civil aviation. It assumes that there will be no changes to the underlying structure of the regional economy. Growing evidence indicates that new air services can lead to changes in the underlying structure of the regional economy by creating new capabilities, and forming a different set of transactor expectations. These reactions can literally create new industries in a region, and allow the area to compete for economic opportunities throughout the world. These “catalytic

impacts” are the most difficult to quantify. Although most evidence is anecdotal, there is growing evidence that these effects can be large:

- A 10 percent increase in the supply of intercontinental flights creates around a 4 percent increase in the number of headquarters of large firms located in the corresponding urban area ... headquarters of knowledge-intensive sectors are much more influenced by the supply of direct intercontinental flights than are those of non-knowledge-intensive sectors.¹
- Nine foreign-owned companies in Northern Kentucky cited air service as an important factor in their choice of location. The nine firms collectively employ 1,470 persons.²
- In 2003, Kenya exported 50,000 tonnes of flowers by air freight.³
- The growth of European air transport since 1995 has boosted European Union GDP by 4 percent. The expected growth to 2025 will boost GDP of the 25 European Union nations by a further 1.8 percent.⁴
- Air service liberalization in Egypt could increase the GDP of the Travel and Tourism industry by 12 percent by 2011, adding 260,000 full time jobs. Furthermore, the total GDP for all sectors would increase by 1.8 percent.⁵

The evidence cited demonstrates a strong causal link between air service liberalization, traffic growth and economic development. It lends further strength to the need for air service liberalization by illustrating the benefits of successful efforts, and the harmful consequences that have resulted from retaining the status quo.

5. THE ENVIRONMENT

Commercial aviation industries are driven by the business realities of competitive market forces that drive continuous innovations in technology that increase airplane efficiencies and minimize environmental impacts. The aviation industry also recognizes that its members must share the leadership required to minimize environmental impacts resulting from air travel growth.

¹ Germà Bel and Xavier Fageda, “[Getting There Fast: Globalization, Intercontinental Flights and Location of Headquarters](#)”, Unpublished. September 2005

² George Vreddevel, Marie Haney, Pooja Sharma and Anthony Apostolides, “The Influence of International Airports on Regional Economic Growth”, Economics Research Group, Center for Economic Education, University of Cincinnati, Cincinnati (1997)

³ Oladele Samson Fatokun, “African Air Transport in the 21st Century: A Case Study of the Contrasting Experience of Nigeria and Kenya”, MSc Thesis, Department of Engineering, Cranfield University

⁴ The Economic Catalytic Effects of Air Transport in Europe,” Eurocontrol Experimental Centre, Bretigny sur Orge Cedex (2005)

⁵ “Aviation in Egypt: The Impact on Travel & Tourism, Jobs and the Economy”, World Travel and Tourism Council, (2005)

Industry Environmental Initiatives – Some of the current industry initiatives designed to minimize environmental impacts include:

- The industry is improving fuel efficiency and minimizing emissions
 - > fuel efficiency and associated emission reductions have improved by more than 70% over the last 40 years, and aircraft generate only between 2% and 4% of global CO2 emissions
 - > manufacturers continue improvements in aerodynamics and reductions in weight, including new technologies such as winglets, raked wing tips, and composite materials
 - > flying on today's new airplanes is one of the most fuel efficient ways to travel – the newest airplanes are as or more fuel efficient than the average car
 - > the industry is pursuing conservation technologies and alternative fuels, operating research and technology centers and contributing technical patents to research institutions

- The industry is minimizing noise
 - > manufacturers are making quieter airplanes – the newest airplanes have achieved noise footprints that fit within the airport boundaries of most airports
 - > industry partnerships are developing and implementing quiet arrival and departure techniques, including the continuous descent approach that will achieve noise reductions by as much as 35%

- The industry is achieving business efficiencies that minimize environmental impacts
 - > manufacturer fleets deliver new airplanes for every market to minimize empty seats and are cleaner, quieter and more efficient
 - > new airplanes are creating greater opportunities for point-to-point travel that reduces takeoffs and landings and typically saves fuel over the hub-and-spoke, connecting flight approach

- The industry is promoting efficient air traffic management (ATM), recognizing that ATM efficiency benefits represent the greatest short-term opportunities for minimizing emissions and noise impacts. Aircraft manufacturers, airlines, regulators and airports are working together in partnerships to increase capacity and at the same time improve environmental performance through:
 - > Priority departures
 - > Continuous descent

- The industry is addressing global aviation environmental impacts in systemic ways

- > the industry is using life cycle management approaches to environmental considerations that incorporate opportunities to minimize environmental impacts of aviation growth and aircraft development over the entire life cycle – from research/development through retirement
- > the industry recognizes that all components of transportation systems need to be included when considering the environmental impacts of transportation vehicles, including:
 - infrastructures – roads, railways, airports, etc.
 - energy sources – fuel production processes/facilities, electrical production processes/plants, etc.

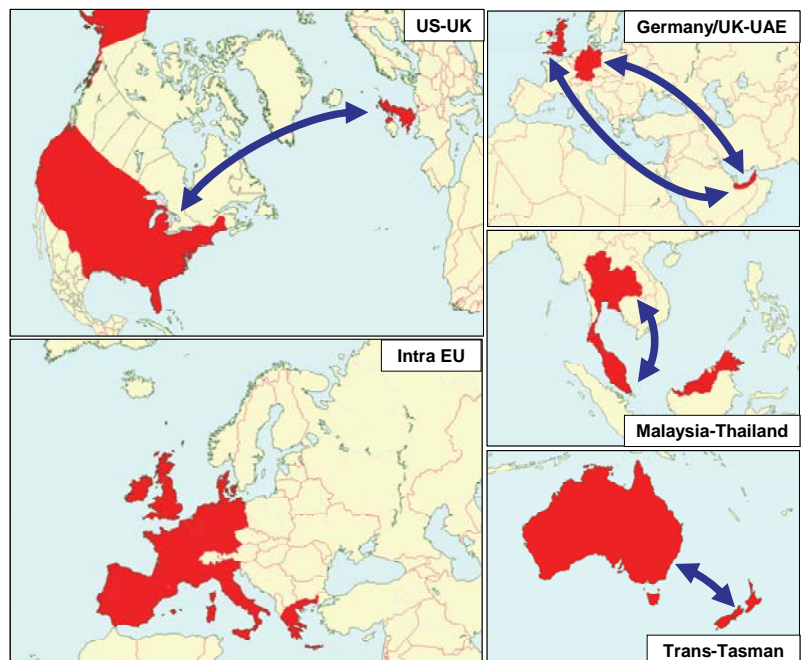
On balance, there are a number of system and technology driven initiatives that are being developed and implemented by the aircraft manufacturer and commercial airline industries to minimize environment impacts through fuel efficiency and associated emissions reductions, and minimizing noise.

D. AIR SERVICE LIBERALIZATION –CASE STUDIES

1. GENERAL RESULTS

In order to confirm the intuitive sense that liberalization leads to market growth and economic expansion, and to validate the results being generated by the economic model, we studied five separate cases.

In each case, we examined the background of the bilateral relationship, the history of traffic growth, and its relationship to benchmark parameters such as GDP growth. In all cases studied, it was apparent that, depending on the size and development of the economies, there was substantial incremental passenger traffic and economic growth after air service agreements between the countries had been liberalized. In some cases, the liberalization was of a “transitional” nature, that is from a rigid Bermuda I type agreement to something



less than “Open Skies,” while in other cases the liberalization was from a transitional to an Open Skies regime. In one case, we found that liberalization occurred as a result of informal understandings between governments, with no accompanying modifications to the air services agreement.

Post liberalization traffic growth tended to exceed pre-liberalization growth levels by anywhere between 12% and 35% and up to 50%, depending on the periods measured. In all cases, the traffic growth produced significant increases in economic output and job growth.

A short summary of the individual cases is outlined below.

2. SPECIFIC CASE STUDIES

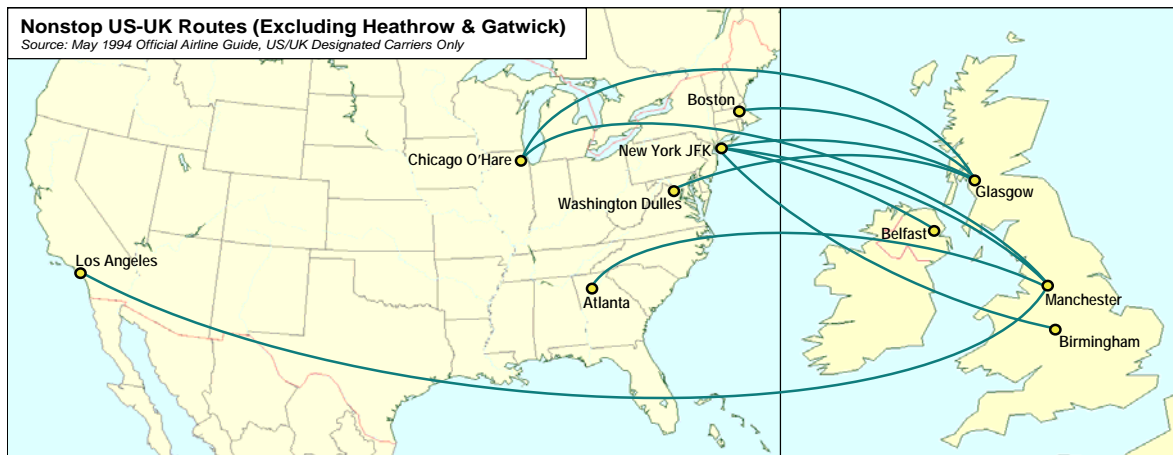
United States-United Kingdom

In 1995, the restrictive Bermuda II agreement saw a partial easing. Airlines of both the United States and the United Kingdom obtained unlimited access between any set of airports, with the conspicuous exceptions of London Heathrow and Gatwick. United Airlines obtained Chicago-London rights.

These steps caused a steady expansion of air services and traffic. Since 1995, traffic between Chicago and London has more than doubled. Services have expanded at Manchester, Birmingham and Glasgow, while Bristol, Edinburgh and Belfast have emerged as trans-Atlantic gateways.

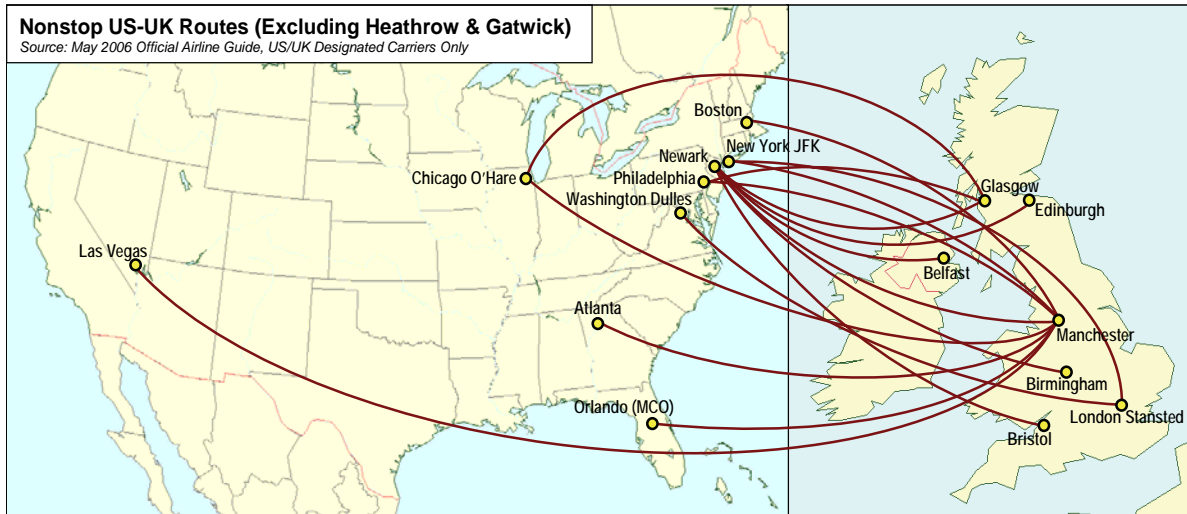
The economic benefits have been significant. By 2004, the additional traffic and services generated 9,197 full-time jobs in the United States and over 16,700 in the United Kingdom. The Gross Domestic Product of the United States expanded by \$747 million million; the United Kingdom saw a \$970 million increase.

May 1994





May 2006



With respect to the future, should there be a Comprehensive First Step Air Transport Agreement between the U.S. and the EU, we can expect the impact on the economies of the U.S. and the U.K. to be significant.

A simulation of full liberalization of the United States-United Kingdom market as a result of a Comprehensive First Step Air Transport Agreement between the U.S. and the European Union would result in a 29% increase in traffic. The increase would derive in part from lower fares, and in part from allowing any U.S. city to obtain nonstop service to London's Heathrow or Gatwick airports.

The economic benefits of this liberalization would be substantial. Over 117,000 new jobs would be created, and incremental GDP would approximate \$7.8 billion.

Intra European Community

The liberalizations that created the Single European Aviation Market dramatically increased intra-European air travel.

The 1992 package that created the Single European Aviation Market did away with bilaterals for services within the Community. Its main provisions were:

- Community air carriers were permitted to exercise traffic rights on routes anywhere within the Community. Until 1997 this included en route cabotage (e.g. Air France flying Paris-Frankfurt-Berlin) provided that no more than 50% of the capacity was used for the cabotage service. Freestanding cabotage was liberalized from 1997.
- Safeguards were provided to protect routes where a public service obligation existed, particularly thin routes operated by small aircraft. There was also a provision to enable

Member State A to refuse access to a service using an airport in Member State B to which the airlines of Member State A could not get access for reasons of congestion. It was also possible to refuse or limit the use of traffic rights where serious congestion or environmental problems exist. None of these safeguards has been extensively used and they can be ignored for the purpose of this exercise.

- Capacity limitations were made illegal except in cases of congestion or environmental problems.
- Community carriers were “free to set airfares”. Charter fares and seat and cargo rates charged by Community air carriers were to be set “by free agreement of the parties to the contract of carriage”.
- Safeguards were provided to deal with excessively low or excessively high fares. They have never been used.

A significant impact of the 1992 package was the stimulus it gave to the development of low-cost airline services. The fact that an operator could order aircraft confident in the knowledge that he had access to a large market without legislative restrictions was (and is) a major encouragement to investment in new services and in the aircraft necessary to carry them out. The table below sets out the low-cost operators’ share of capacity from 1996 to 2003. It will be clear from this that their impact on the market did not begin until 1996; and we think it is fair to assume that until about 2000, its impact was concentrated on routes from the UK.

Year	Low-Cost Operators’ Share of Capacity ⁶
1996	1.4%
1997	2.8%
1998	3.7%
1999	4.2%
2000	6.0%
2001	6.4%
2002	11.1%
2003	20.2%

The Single European Aviation Market resulted in the generation of an incremental 44 million passengers, an increase in post-liberalization years of over 33 percent as contrasted with historical Intra-European market growth of between 4% and 6% per annum. The additional traffic required an additional 681 daily return flights.

⁶ Percentage of weekly available seats provided by low-cost operators between 1996 and 2003; Source: European Commission (2005). DG TREN: Analysis of the European Air Transport Industry 2003 (Contract number B2-7040B-S07.17962). Brussels: Office for the Official Publications of the European Union.



The traffic expansion spurred development of both the travel/tourism sector and other industries. Fully 1.4 million full-time jobs resulted from the liberalization, and the European GDP grew by \$US 85 billion (109 Euro).

United Arab Emirates to the United Kingdom and Germany

Liberalization of the Germany-UAE market in 1986 resulted in high growth rates (both in terms of ASKs and passengers carried), although the absolute traffic figures are not large.

Although the UK-UAE route was liberalized much later, the commercial situation on the two routes in 1998 was similar. There were only nine weekly flights by Emirates / Gulf Air between Germany and the UAE. On UK-UAE routes, British Airways ran a double daily service and Emirates / Gulf Air a similar one. But in 1998, Emirates was beginning its expansion; in the case of the UK, Virgin Atlantic was pressing for Gulf route authority.

The conclusion we draw from this analysis is that the major impact of the liberalizing of the two bilaterals lies in the scope they gave to the development of Emirates and in particular to the development of Dubai as a hub for traffic between Europe, on one hand, and the Far East and Australasia on the other. Without Emirates' expansion, we would expect the growth rates to have increased as a result of the development of Dubai as a financial, trading and tourist center, but not to the same extent. Thus, it is reasonable to conclude that the liberal bilateral arrangements between the UAE and the two major financial centers of the EU contributed to some degree to the confidence which is necessary for such developments.

Germany

In 2004, over 1 million persons traveled between Germany and the United Arab Emirates. The liberalization of 1986, allowing a proliferation of direct services between the two countries, prompted a market expansion of almost 167,000 passengers. Traffic was fully 19.7 percent higher than it would have been in the absence of liberalization.

The expanded traffic benefited both nations. In the United Arab Emirates, the equivalent of 745 new full-time positions were created, with a \$15 million increase in GDP. The 2,600 new full-time positions in Germany accompanied a \$152 million growth in GDP.

United Kingdom

The 1998 liberalization, combined with a rising price of oil and rapid expansion by Emirates Air and Etihad, prompted a 59 percent increase in total United Kingdom-United Arab Emirates traffic. By 2005, total country-pair traffic exceeded 3.2 million passengers, of which 1.1 million could be attributed to the more liberal air service agreement.



Both nations benefited significantly. In the United Arab Emirates, over 5,300 persons found full-time positions, and GDP expanded by over \$110 million. The expansion created over 18,700 positions in the United Kingdom, and over one billion dollars additional GDP.

Malaysia-Thailand

The original agreement between the governments of Malaysia and Thailand was signed in 1969. This agreement type (Bermuda I) is still seen in many bilateral relationships around the world today. While not exactly like the American style of Open Skies, the agreement's Bermuda I style does allow for new services to be introduced to the market. Subsequent agreed upon Memorandum of Understandings (MOUs) between Malaysia and Thailand have allowed services and frequencies to increase, thus driving an increase in overall traffic.

When analyzing the current aviation relationship between the two countries, many aspects of a liberalized market can be found within the rights of the agreement (September 2001 was the last time it was updated with open capacity). This includes no restrictions on points served in the market, multiple designations allowed on routes, code sharing rights and open frequencies. Fifth freedom, intermediate or beyond, rights in addition to seventh freedom cargo operations are not included in the agreement. As in many other bilateral agreements found throughout the world, cabotage is not included.

Malaysia and Thailand have numerous air service agreements with third countries. They have both concluded Open Skies agreements with the United States and other major trading partners. Both currently support a multiple designation policy as a way of increasing their country's respective role in global tourism and trade. With a new international airport in Kuala Lumpur and one planned to open soon in Bangkok, a liberal designation policy helps remove barriers for new carriers seeking access to major international gateways. With regards to points served, Malaysia and Thailand have set up open policies not only in their Open Skies agreements, but in other bilateral agreements. The key restriction on the Malaysia-Thailand bilateral agreement is beyond rights and seventh freedom cargo operations. Code sharing rights have allowed Malaysia and Thai Airways to cooperate on key routes between the two countries. In addition, both countries heavily promote secondary international destination access rights for tourism (Phuket, Thailand – Langkawi, Malaysia – Penang, Malaysia).

In 2005, 1.3 million passengers traveled between Thailand and Malaysia. Of this total, over 370,000 can be attributed to the combination of the liberalized regime and the entry of low cost carriers. This suggests that the direct and indirect effects of liberalization have caused a market expansion of over 37 percent.

The economic and tourism impacts of this increased traffic demand on Thailand and Malaysia are identical. Each nation obtained more than 4,300 full-time positions and a stimulus of over \$114 million to GDP.



Australia-New Zealand (Trans-Tasman)

The first steps towards economic liberalization between these neighbors can be traced to 1966, when the New Zealand and Australia Free Trade Agreement was signed. This agreement was in place for 17 years until March 28, 1983, when the Australia-New Zealand Closer Economic Relations Free Trade Agreement (ANZCERTA) was concluded. The ANZCERTA set a foundation as an innovative agreement, which not only created a liberal business and economic regime for goods and services, but also set a collaborative umbrella to deal with customs, transport, regulatory, product standards and business law issues. The ANZCERTA established a market that continues one of the most open economic trade relationships between any two countries in the world. The ANZCERTA is continually reviewed to ensure that the agreement remains effective in all sectors of the economy.

This analysis focuses specifically on the effects of the Single Aviation Market that was established in 1996, preceding full Open Skies in 2000.

Single Aviation Market

Australia and New Zealand concluded a Single Aviation Market (SAM) agreement, effective as of November 1, 1996. The goal of the Single Aviation Market was to bring the two countries closer together within the elements of the ANZCERTA. The main components of the agreement included the opening of ownership and control regulations in the bilateral market, the introduction of unlimited frequencies for Trans-Tasman services and a provision that allowed airlines of either country to operate domestic flights within the other country. While the SAM agreement opened up many new opportunities within the Trans-Tasman market, it did not address beyond markets to third countries. Those markets were still under the original 1961 Australia – New Zealand Air Services Agreement and the subsequent 1992 Memorandum of Understanding. Two different definitions of air carriers were created from the agreement: the “Domestic” and the “SAM” airline. The Domestic airline designation allowed carriers to fly domestic services in each others domestic market and the SAM designation harmonized ownership, control, technical and safety certifications from each countries regulatory agencies.

The importance of the Single Aviation Market agreement was that it broke barriers in the carriage of cabotage traffic, created ownership and control flexibilities, and deregulated capacity, designations, and frequencies. More importantly, the SAM agreement established the foundation for a more liberal agreement that, in the future, would open markets beyond the Trans-Tasman.

The liberalization of 1995 spurred a rapid growth in traffic between Australia and New Zealand. Other factors, including the entry and exit of domestic airlines in both nations, and changes resulting from fifth freedom activity, confound any effort to measure the

distinct impacts of the relaxation of third/fourth freedom restrictions. However, these events themselves are the direct or indirect results of other liberalization efforts.

By 2005, Australia-New Zealand traffic was fully 56 percent higher than it would have been in the absence of any liberalization. The relaxed market controls increased total traffic by over 1.7 million passengers per year. The additional volume would require a further 27 flights daily.

Each nation gained more than 20,600 full-time positions from the liberalization and the ensuing traffic increase. The GDP of each country grew by \$726 million U.S.