

## CHAPTER 6

# Economic Aspects of Liberalizing Air Services in Africa

Africa is a large continent of about 30.37 million square km and a population of about 900 million (World Bank 2007, p. 42). However, while it is three times larger than Europe, its population density is low. Africa only has 33 people per square kilometer, compared with 128 in Europe and 307 in South Asia, and Africa's figure is about 30 percent below the world average of 50 people per square kilometer (World Bank 2007, p. 42). In addition, a much lower percentage of Africa's population is urban than in many other parts of the world, for example, in 2005 only 35 percent of Africa's population was urban, compared with a world average of 49 percent (World Bank 2007, p. 164). Africa also has the greatest share of people living in poverty: about 41 percent of Africa's population lives on less than US\$1 a day compared with 32 percent in South Asia and almost 10 percent in China (World Bank 2007, p. 63). Economic development to reduce poverty must therefore be considered one of the key priorities for the African continent.

A review of economic indicators for Sub-Saharan Africa reveals that Africa's overall gross domestic product (GDP) has one of the highest percentages of merchandise trade and trade in services: in 2005, merchandise trade accounted for 57.8 percent of Sub-Saharan Africa's GDP, compared

with a world average of 47.3 percent, and trade in services accounted for 13.1 percent of GDP, compared with a world average of 11 percent (World Bank 2007, p. 318). A large part of trade in Africa is undertaken at the local level. However, expanding economies aim at developing new markets, first at the regional level and then on a continent-wide basis. In addition, an increase in local trade depends on imports of goods, or at least of raw materials for production. For Africa, as for many other emerging regions, the transportation of goods and people is becoming an increasingly important element of economic development. This has been confirmed, especially in the case of Africa. A recent study showed that trade in Africa was highly sensitive to transportation costs: a 10 percent reduction in transport costs would increase trade by 25 percent (Gwilliam 2007, p. 39).

Africa's road infrastructure is for the most part less developed than in any other region of the world. A World Bank study (Gwilliam 2007, p. 5) shows that African countries have lower levels of paved roads per capita, per square kilometer, and per GDP per capita than any other low-income countries. Another study (Gwet and Rizet 1998, p. 80) reveals that transport costs in Africa are far higher than in other regions. For instance, for distances of up to 300 km the unit cost of road transport is 40 to 100 percent higher in Africa than in Southeast Asia. In addition, the fixed costs of trucking in Africa are low, while the variable costs are extremely high, which is different from most other regions. Given the less developed road network and bearing in mind that reduced transportation costs would stimulate trade, the pertinent question is what role air transportation plays in economic development in Africa. To address this issue we need to review the benefits generated by the liberalization of air transportation and to ask whether liberalizing air services is indeed one of the key issues for economic development in Africa.

## **Economic Benefits of the Air Transport Sector**

### ***Direct, Indirect, and Induced Effects***

Commercial air transportation started as early as during World War I, when bomber aircraft began transporting passengers or goods. For example, in the United States, regular passenger service across Tampa Bay started in 1914, and in the United Kingdom, regular service across the English Channel commenced in 1919 (Thomas and Smith 2003, p. 8). However, in its early days, the public viewed air transport as a risky endeavor both with respect to safety and economic stability, and

because of its high cost was reserved for a very few affluent passengers. Nevertheless, several air carriers were created between World Wars I and II, some of which still exist today such as American Airlines, Lufthansa, Air France, and South African Airways. Commercial air transportation of passengers and goods experienced increased growth after World War II because of the huge inventory of transport aircraft that had been built and operated during the war. In addition, the technology gained by building large bombers during the war strongly benefited the development of more efficient passenger and cargo airplanes. For example, the first aircraft with cabin pressurization (though restricted to crew areas) was the B-29 Superfortress, a bomber developed by Boeing.

Nevertheless, for many decades air transportation remained expensive. Expense then began to decline, especially when jets became widely used during the late 1960. For example, in 1940, passenger fares in cents per mile (expressed in 1978 cents) were 25 cents on the widespread DC-3 aircraft (Thomas and Smith 2003, p. 177). The fare halved to 12.14 cents per mile in the mid-1960s, when jet aircraft were introduced. Another decline to 6.37 cents per mile was achieved in the early 1990s with the introduction of more fuel-efficient aircraft, and the new Airbus A380 allows an estimated passenger fare of about 3 cents per mile. An illustrative example is the cost of flying from Sydney to London expressed in average weekly earnings in the United Kingdom (per capita, 2005). In 1945, the fare would have been the equivalent of 130 weeks' pay. By 1965, the cost had declined to the equivalent of 22 weeks' pay, and the current fare is equivalent to about 2 weeks' pay (Thomas and Smith 2003, p. 181). This example illustrates that the cost of commercial air transportation has reached a level that is affordable for a wide range of passengers and goods.

With the decline in airfares came rapid growth of the air transport sector. The introduction of jet aircraft resulted in worldwide passenger traffic nearly tripling in the 1960s and early 1970s, doubling in the 1980s, and growing at around 50 percent per decade in recent decades (Thomas and Smith 2003, p. 222). This rapid growth developed the global air transport sector into a major industry with a significant economic impact. The air transport industry consists of an aviation sector and a civil aerospace sector. The aviation sector includes airlines (passengers, cargo, general aviation), airports and related services (civil airports, handling and catering, freight services, aircraft maintenance, fueling, retail), and providers of air navigation services. The civil aerospace sector develops

and manufactures airframes, engines, and equipment and performs off-site maintenance.

The air transport industry generates about 5 million direct jobs globally (airlines employ 4.3 million people and the civil aerospace sector about 730,000) (Oxford Economic Forecasting 2005, p. 6). Its contribution to the global economy was around US\$275 billion in 2004, similar to that of the pharmaceutical sector. The air transport sector has an even greater indirect and induced effect with respect to the industry's supply chain, which includes suppliers (for example, off-site suppliers of fuel, food and beverages, and construction services), manufacturing (for instance, computers and retail), and business services (such as call centers, accountants, lawyers, and financial services). The induced effect is generated by the spending of direct and indirect employees on such items as food and beverages, recreation, transport, clothing, and household goods (Oxford Economic Forecasting 2005, p. 5). Oxford Economic Forecasting (2005, p. 6) estimates that the indirect impact of the sector in 2004 represented 5.8 million jobs, with a global contribution to GDP of US\$375 billion. The induced effect of the air transport sector generated another 2.7 million jobs and contributed US\$175 billion to global GDP (Oxford Economic Forecasting 2005, p. 6). Overall, in 2004, the air transport sector was a global industry with about 13.5 million jobs that accounted for well over US\$ 800 billion of global GDP.

### ***Effects on Other Industries***

In addition to its direct, indirect, and induced effects, air transportation also generates a significant catalytic effect that is the most important economic contribution of air transportation. This catalytic effect is the impact of air transportation on the performance and growth of a range of other industries, for example, international trade. Air cargo has become a key element of efficient, on-time delivery of many manufactured goods as well as a large range of perishables. Estimates indicate that about 40 percent of the value of all interregional trade is transported by air (Oxford Economic Forecasting 2005, p. 15). This translates on a global scale to 25 percent of the value of all goods being transported by air, which corresponded in 2004 to a value of about US\$1.75 trillion. Some developing countries have specialized in manufacturing high-value goods such as electronic components for the computer industry. These countries can only participate in the global trade of these products if they have access to a reliable and cost-effective transportation network. As many high-value computer components are time sensitive because of the successive development of newer

versions of such products, air transportation is often the most cost- and time-effective mode of transportation.

A good example is the Malaysian electronics export industry, which is dominated by semiconductor manufacturing and computer component production for major computer manufacturers such as NEC and DELL. The factors influencing a manufacturer to use air cargo are the degree to which production has been internationalized, the nature of the good produced, the importance of speed in a supply and distribution chain, and the degree of liberty of decision making on the part of the manufacturer in the production network. Air transportation has become the prime mode of transportation in the case of the production of high-value electronic components with the aforementioned factors playing a dominant role (Leinbach and Bowen 2004, p. 301).

The role of trade in economic development is another important element to examine when reviewing the economic aspects of liberalizing air services in Africa. In an extensive cross-country analysis involving all African, European, and Latin American countries and many Asian countries (a total of 150 countries), Frankel and Romer (1999, p. 394) conclude that a one percentage point increase in the trade share of a given country's GDP increases per capita income by 2 percent. Several subsequent studies confirm the effect of trade on per capita income, even though more recent research estimates that a one percentage point increase in trade share increases per capita income by only 0.48 percent, which is still significant (Aradhya, Rahman, and Seeivasan 2007, p. 25). One of the key elements of trade is transport. The development of trade, which leads to economic development, is only possible if the transport services used to ship the traded goods grow along with the growth in trade volume. Several studies conclude that high transport costs pose a barrier to trade that is at least of the same, if not a higher, magnitude than tariffs (see, for example, Feige 2007, p. 31). Low transport costs and the absence of trade barriers are commonly seen as the two most important ingredients for developing trade. As Feige (2007, p. 29) puts it, low transport costs are a "necessary but not a sufficient condition," indicating that efficient transportation is the basic element of trade, next to low tariffs.

Air transportation has become the mode of choice of many time-sensitive and high-value internationally traded goods as well as a powerful tool for the implementation of just-on-time procurement and production strategies. In addition to manufactured goods, perishables are also becoming increasingly dependent on a well-functioning air transport sector. Many developing countries have built a solid export

industry trading agricultural products, including cut flowers, exotic fruits, seafood, and meat, on a global scale. One of the prime examples of a strong perishables export industry is Kenya's cut flower exports to the EU. Over the past 40 years, Kenya has become the largest cut flower producer and exporter to the European market, maintaining a solid market share of 31 percent (Bofinger 2007a, p. 10). Since the industry's inception, the global distribution of Kenya's perishable goods has depended on air transportation. Even though Kenya's national air carrier does not have any dedicated freighter aircraft the airline transports about 90 percent of the country's air cargo exports in the cargo holds of regular passenger aircraft with destinations in the Netherlands and the United Kingdom. Only a small part of overall exports is transported on dedicated cargo aircraft (Bofinger 2007a, p. 11). This underscores the importance of passenger air services for air cargo, especially for countries that do not possess a large air cargo fleet or whose volume of cargo business is too small to support dedicated cargo operations.

Another illustrative example of perishables is the export of fresh fish and other seafood products. Traditionally, countries with shorelines have developed a fishing industry, providing opportunities for export. However, such countries have often developed their fishing industry over centuries and have well-established local distribution networks. Some nations have organized and managed fisheries exports by traditional means, such as transportation by sea or processing offshore and freight forwarding by land, while others have assigned fishing rights to foreign operators. Mauritania is an example of a developing country whose fishing industry remains dominated by foreign operators that control the sector's exports: estimates indicate that Mauritanian vessels account for only 2 to 3 percent of the total maritime catch. In some cases, foreign vessels have maintained some colonial fishing rights (for example, Spain), while others operate without any formal agreement with the state (Gibbs 1984, p. 81).

Air transportation has created a new export market for some landlocked countries and for countries with access to large freshwater reservoirs. The production of freshwater fish, such as West Nile perch or tilapia, has become a lucrative export sector for a few developing countries. A good example is Tanzania, where the West Nile perch was artificially introduced into Lake Victoria in the 1950s and 1960s. The processing and export industry that arose as a result created an export market of about US\$122 million by 2005 (UNCTAD and WTO 2008). The center for Tanzanian fishing operations and processing is the city of

Mwanza. According to the City Council of Mwanza, the fishing industry of Lake Victoria has created direct employment for more than 8,000 local processing workers and 300,000 indirect jobs. About 52,000 Tanzanian fishermen benefit directly from the West Nile perch (Bofinger 2007a, p. 19). The key logistics element for the timely export of the processed fish is air transportation. Mwanza has an airport with a 3,300-meter long runway and two nonprecision instrument approach procedures. This allows the use of medium-sized cargo aircraft that can transport the fish directly to destinations in Europe for distribution. About 400,000 kilograms of fish pass through the Mwanza airport each month. The declared value of the product is US\$3.20 per kilogram and the estimated overall cost of transport to the final destination as value added to the product is about US\$1 per kilogram (Bofinger 2007a, p. 20).

The industry for which air transportation has become indispensable is tourism. The tourism industry is probably the largest sector overall if all related services and activities are included. On a worldwide scale, tourism generated US\$7 trillion of economic activity (total demand) in 2007 (World Travel and Tourism Council 2007, p. 6). The demand for tourism activity is expected to grow to US\$13.2 trillion by 2017. In 2007, tourism accounted for US\$1.85 trillion, or 3.6 percent, of global GDP (World Travel and Tourism Council 2007, p. 11). The world's tourism and travel industry directly employed more than 76 million people in 2007, or 2.7 percent of global employment. This global direct employment is expected to grow to more than 87 million jobs by 2017 (World Travel and Tourism Council 2007, p. 12).

With regard to air transportation, a growing proportion of international tourists are traveling to and from their destinations by air. In 2002, more than 45 percent of all international tourists arrived by air, compared with only 35 percent in 1990 (ICAO 2004a, pp. 1–3). The direct effect of spending generated by tourists arriving via air transport was the creation of an estimated 6.7 million jobs in 2004, of which about 675,000 were in Africa (Oxford Economic Forecasting 2005, p. 19). An additional 5.7 million indirect jobs from industries that support the tourism industry were created globally as a result of air travel by tourists. Finally, the induced effect of tourism-related air transportation has generated 3.1 million jobs (Oxford Economic Forecasting 2005, p. 18). The total job creation effect (direct, indirect, and induced) of tourism related air travel is estimated at 15.5 million jobs, which generates an estimated US\$300 billion of world GDP (ICAO 2004a, pp. 1–7). However, the importance of spending related to tourists traveling by air varies greatly from region

to region. The largest impact of international tourism through the creation of jobs and increased prosperity is observed in several developing countries. For example, in North America, foreign visitors traveling by air only account for about 10 percent of overall tourism spending. By contrast, in Africa, more than 50 percent of tourism spending comes from visitors traveling by air (World Travel and Tourism Council 2007, p. 24). This explains why air transportation to and from developing countries has a proportionally higher economic impact than in the developed world.

### ***Social Impact of Air Transportation***

The social impact of air transportation is a significant factor that is quite easy to understand, but difficult to quantify with hard evidence. Air transportation is often the only practical mode of transportation, allowing the integration of remote populations of large countries. In that sense, air transportation plays an important role in shaping the global economy by facilitating the integration of new countries and regions into the global economy (Stevens 1997, p. 33). Travel and tourism are important elements of this international integration, which air transportation facilitates. The resulting increased understanding of different cultures and nationalities is necessary for opening up trade and movement of people, which are helping developing nations in their efforts to integrate into a global world (Air Transport Action Group 2005). Air transportation can even be seen as the key facilitator for creating multicultural societies by facilitating interaction and understanding between people of all races. Finally, a well-developed air transport infrastructure facilitates the delivery of emergency and humanitarian aid, including the timely delivery of medical supplies and organs for transplantation.

The provision of air services to remote areas of large and sparsely populated countries is one of the most significant social benefits of air transportation. A good example is Australia, where the government subsidizes regional air services to remote territories. The government of Australia considers support for air services a community service obligation. The prime argument is that people living in remote regions should have the same level of access to services that metropolitan communities provide and that they “should be able to engage with other Australians” (Standing Committee on Transport and Regional Services of the Parliament of Australia 2003, p. 29). However, developing countries often do not have the necessary funding to support regional air transportation to remote destinations, even though the social benefits are just as important as in developed

nations. This is, for example, especially the case in relation to conflict resolution or avoidance, where ongoing interaction between the parties involved is widely recognized as one of the most important factors (Azar and Burton 1986). In Africa, for example, air transport is often the only means of transportation that can quickly support the integration of, and interaction with, remote populations. Thus, fostering social cohesion, facilitating access to services, and maintaining the viability of remote and rural communities are benefits that air services can provide. The provision of air services is therefore a government responsibility that needs to be reflected in public sector policies.

### **Potential Impact of Liberalizing of Air Transport Services**

The current international air transport system has its roots in the Chicago Conference of 1944. The objective of this conference, held during the final stages of World War II, was to lay a liberal foundation that would have allowed all nations unrestricted operating rights up to the fifth freedom for international air traffic, to assure sustainable growth of the air transport industry (Dempsey and Gesell 2004, p. 751). However, several nations resisted this liberal strategy, which was proposed by the United States, because they felt that they would face a serious disadvantage given that their air transport fleets would not have sufficient capacity to compete. As a result, the Chicago Conference did not agree on the multilateral granting of all five freedoms or on market forces as determinants of capacities, frequencies, and fares for scheduled international air traffic. Instead, the conference resulted in the Chicago Convention, which reaffirmed the principle of exclusive sovereignty over each nation's airspace. The result was that international air traffic had to be agreed upon and regulated bilaterally between individual pairs of nations (Dempsey and Gesell 2004, p. 754). This led to numerous bilateral air service agreements, the first one being the so-called Bermuda agreement between the United States and the United Kingdom in 1946.

In 1978, the United States promulgated the Airline Deregulation Act, which called for gradual deregulation in order to create competition among domestic U.S. carriers. The move toward deregulation was driven by the notion that economic regulation of the airline industry had caused the high air fares, the misallocation of funds, the denial of price and service options to consumers, and the excess capacity in the industry. This criticism was voiced by Albert Kahn, who was nominated chair of the U.S. Civil Aeronautics Board in 1977 and who introduced several deregulatory

initiates (Dempsey 1987, p. 24). Deregulation of the domestic U.S. air transport market led to intense competition among carriers. On the positive side, tariffs decreased and connectivity grew, mainly because of the newly established hub system. On the negative side, many older, less solid airlines collapsed and a fierce battle ensued between new entrants and established carriers. While lower fares and higher connectivity are often attributed to deregulation, some argue that deregulation actually increased (or reduced decreases in) fares, because as a direct result of deregulation routes became increasingly circuitous, service became poorer, and fewer carriers operated. For example, Dempsey (1990, p. 33) states that 10 years after deregulation, passengers were paying 2.6 percent more for air fares that they would have given the observed decline in fares resulting from technology and market improvements prior to deregulation. He argues that the unprecedented level of competition among airlines resulted in the aging of the aircraft fleet, the disappearance of carriers, and a costly hub-and-spoke system that increased distances and time to final destinations. Occasionally, some suggest reregulating the U.S. airline market by noting that with the help of modern information technology, the regulatory tools of price regulation may be performed more efficiently than before deregulation in 1978 (Dempsey 2003, p. 12).

The EU undertook the first significant liberalization of international air services in 1992, when it created an open aviation area within the EU. The so-called Third Package of European Community regulations created a fully open and integrated air transport market for European carriers by removing all restrictions for airlines in relation to frequencies and destinations within the territory of the EU (both domestic and intra-EU international flights), provided that the carrier was majority owned and controlled by EU nationals. Similar open aviation areas were created between Australia and New Zealand, the Caribbean states, and some Latin American countries. However, according to IATA, only 17 percent of international air traffic is currently conducted in a deregulated environment and full liberalization to the eighth freedom has only been achieved within the EU (IATA 2007a, p. 16). IATA is calling for greater liberalization of the air transport sector, which should remove current constraints related to access, frequency, and capacity in existing bilateral air service agreements and constraints arising from ownership restrictions. IATA is also calling for more effective regulation of airports and air navigation service providers, because most of these entities enjoy a natural monopoly and economic regulation could improve efficiency and productivity (IATA 2007a, p. 18).

One approach that has been used to assess the potential economic impact of liberalizing air services was to analyze the effects of operational (for example, product market) and ownership (for example, capital market) liberalization in four different industries: (a) retail banking, (b) energy (gas and electricity), (c) telecommunications, and (d) media (OXERA 2006). Each industry has certain characteristics in common with the airline industry that were addressed when liberalizing these industries. For example, the EU and the United States experienced efforts to reduce regulation in the retail banking sector to allow the creation of a single market and remove restrictions on ownership and control. Similar liberalization occurred in the telecommunications and energy sectors, where markets were liberalized and ownership restrictions were lifted (OXERA 2006, p. 1). The OXERA (2006) study finds three sets of benefits of liberalization for consumers. First, liberalizing energy markets resulted in significantly lower prices. In EU countries, for example, electricity prices were 10 to 20 percent lower than before liberalization and gas prices were 35 percent lower. The effects on the telecommunications sectors of Japan and the Republic of Korea were even more significant: the cost of long-distance telephone calls fell by up to 50 percent. Second, liberalization of the media market has increased output and choices, as demonstrated in India and New Zealand, where television and radio broadcast services increased in quality and in the diversity of channels. Finally, a significant improvement of service quality resulted in the U.S. banking sector following the relaxation of interstate ownership restrictions (OXERA 2006, p. 23).

The study concludes that airline industry consumers could experience great benefits if the air transport markets were further liberalized in terms of access and ownership restrictions. The latter in particular is a key element of liberalization that would allow airlines to improve capacity utilization, for instance, by sharing optimal size aircraft; increase productivity, transfer best practices to associated carriers, and increase investment, including by foreign investors, which would result in improved profitability and market value of the firm. This, in turn, would allow better service at lower cost (OXERA 2006, p. 65). At the firm level, the strategic response in a liberalized industry is typically to focus on expansion into new markets (as occurred in the EU energy market), diversification into new products (as occurred in the Indian media market), specialization in niche products (as occurred in the U.S. banking sector), or market exit in response to stronger competition (as occurred in the German television sector) (OXERA 2006, p. 68). For airlines, the increased flexibility of strategic choices that come with liberalization is

important in both a developed competitive environment, such as the U.S. domestic market, and in a less developed market that has not yet reached maturity. The latter is highly relevant in Africa, where air transport sector remains underdeveloped in many regions.

Intervistas (2006) on behalf of IATA, carried out one of the most detailed recent research projects on the impact of liberalization of air services. Intervistas developed a mathematical model of air service liberalization that dealt with a variety of regulatory changes affecting numerous nation pairs and airlines. The model's overall objective was to estimate the effect of liberalizing air services on passenger traffic, air freight movements, employment, GDP, and tourism and the resulting catalytic effects for any country pair (Intervistas 2006, p. 9). The methodology applied in the research included two methods. First, in the time series or case history method, five representative country pairs with multiple destinations were selected: (a) the United States and the United Kingdom, (b) the intra-European Community market, (c) the United Arab Emirates and the United Kingdom and Germany, (d) Malaysia and Thailand, and (e) Australia and New Zealand (Intervistas 2006, p. 20). The study analyzed traffic and economic data and socioeconomic indicators by running various regressions on time series before and after a specific liberalization event.

The second method was the cross-sectional approach, which involved analyzing more than 1,400 country pair aviation relationships at the same point in time (more than 40,000 country pairs could have been included, but relevant and accurate data could only be obtained for about 1,400 pairs) (Intervistas 2006, p. 62). The analysis of these country pairs had to be based on the assumption that a particular relationship between traffic, the extent of liberalization, and socioeconomic conditions applied to every market. The data sample was also individually (per country pair) adjusted for variations in economic activity and other extraneous factors. Intervistas is confident that the large size of the sample as well as its inclusion of all regions of the world yielded an accurate estimate of the impact of liberalization for any arbitrary country pair (Intervistas 2006, p. 61).

The overall conclusion of the Intervistas research was as follows: "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 service agreements between countries stifle air travel, tourism and business, and, consequently, economic growth and job creation" (Intervistas 2006, p. ES-2).

The specific findings of the research include the following:

- The traffic growth after liberalizing air service agreements between countries typically averages 12 to 35 percent, but in several cases has exceeded 50 percent and even 100 percent.
- A simulation run on 320 country pairs that were not liberalized at the time of the study resulted in an estimated potential traffic growth of 63 percent, which is significantly higher than the typical world traffic growth of 6 to 8 percent. The simulation further revealed that liberalization of these 320 bilateral relationships alone could create 24.1 million full-time jobs and generate an additional US\$490 billion of GDP, which at the time of the study was almost equivalent to the economy of Brazil.
- The growth rate in the EU nearly doubled from 1990–94 to 1995–2000 following the creation of the single European aviation market in 1993. This alone produced about 1.4 million new jobs.
- The full liberalization of the aviation market between the United States and the United Kingdom would result in an estimated traffic increase of 29 percent, because of lower fares and multiple new destinations in the United States serving London directly. The expected economic impact would be the creation of 117,000 new jobs and an incremental increase in GDP of US\$7.8 billion.

The Brattle Group (2002) researched the potential economic impact of an open skies agreement between the EU and the United States in a study for the European Commission. The methodology to assess the impact of liberalization on restricted trans-Atlantic routes was based on a regression analysis that estimated changes in the volume of passengers changes based on observations following prior liberalization of certain routes between Europe and the United States, such as the open skies agreement between the Netherlands and the United States. The regression analysis also determined the relationship between passenger volumes and relevant economic factors using data from the period prior to specific open skies agreements, which created the necessary baseline for the entire European aviation area (Brattle Group 2002, p. A21). The assumption of an open EU–United States aviation area would remove a set of market restrictions that would result in

- no restrictions on ownership and control of U.S. airlines by European investors, including European airlines, and no restrictions on ownership and control of European airlines by U.S. investors, including U.S. airlines;

- EU investors or airlines having the right of establishment in the United States and U.S. investors or airlines having the right of establishment in the EU;
- EU and U.S. carriers enjoying up to full fifth and seventh freedom rights, as well as cabotage (based on foreign ownership of a domestic operator), and wet lease operations.<sup>1</sup>

The study concluded that the creation of an open EU-U.S. aviation area would increase trans-Atlantic travel by 4.1 million to 11 million passengers per year, which represented an increase of 9 to 13 percent. The resulting increase on intra-EU routes would result in an additional 13.6 million to 35.7 million passengers, an increase of 5 to 14 percent (Brattle Group 2002, p. 6-1). The liberalization would also create about US\$5.2 billion of consumer benefits per year as a result of lower fares and increased travel. The overall estimated increase in economic output of directly related industries was US\$3.6 billion to US\$8.1 billion per year. Finally, the estimated direct effect on employment ranged from 2,800 to 9,000 new jobs in the EU and 2,000 to 7,300 new jobs in the United States, representing a 1 to 3 percent increase in aviation employment in the EU and the United States (Brattle Group 2002, p. 6-4).

In 2007, the European Commission mandated a new study to update the findings of the 2002 report (Booz Allen Hamilton 2007). The analysis used updated parameters and a revised baseline, with changes such as including the countries of the European Free Trade Association and the new EU member states (Booz Allen Hamilton 2007, table 37). The conclusions of the study included the following:

- The number of traveling passengers would increase for five years following the signing of an open skies agreement. During that period, the liberalization would generate an additional 26 million passengers, an estimated increase in growth of 6.4 percent. At the end of the five-year period, the air transport market between the United States and the EU would be 34 percent larger than it would have been without the open aviation area (Booz Allen Hamilton 2007, p. 159).
- The air cargo market would also experience strong growth following the establishment of the open aviation area. Based on the assumption that the average air cargo per enplaned passenger on combination carriers (cargo transported in the belly of passenger planes) of 38 kilograms remains constant, the study estimated that the volume of cargo would

increase from 67,000 to 105,000 tons in 2006 and from 371,000 to 423,000 tons by 2010 (Booz Allen Hamilton 2007, p. 75). However, the liberalization of air services between the United States and the EU would also affect cargo freighter operations even though passenger flights handle most intercontinental cargo traffic. The study found that integrated carriers would benefit because they could improve and optimize their flight networks based on economics rather than on agreed traffic rights.<sup>2</sup> The study estimated that this impact would generate from 1,600 to 3,300 direct and 4,500 to 8,900 indirect jobs. The study estimated a smaller impact—because of the relatively small size of the market—for all-cargo carriers of about 140 direct and 411 indirect new jobs (Booz Allen Hamilton 2007, p. 75).

- Liberalizing air transportation between the United States and the EU will greatly stimulate trade in services and merchandise. In 2005, overall trade between the United States and the EU amounted to US\$880 billion, of which 71 percent resulted from merchandise trade and 29 percent from trade in services (Booz Allen Hamilton 2007, table 31). Even though air carriers were handling a relatively low share of import and export shipments in terms of weight, they transported about half of all goods exchanged between the United States and the EU in terms of value. Of the all the services traded between the two markets, 25 percent were essentially dependent on airline services (Booz Allen Hamilton 2007, p. 137). Given the importance of air transportation in the trade of services and merchandise, an increase in passenger and cargo traffic expected to result from the open aviation area will substantially promote trade and act as an economic stimulus on both markets.

Overall, the expected economic benefits of the open aviation area would be the result of three main effects: (a) additional GDP generated by increased demand for passenger and cargo air transportation, (b) increased employment in the air transportation sector and related industries, and (c) higher purchasing power for air transportation by existing and new consumers as a direct result of price reductions (Booz Allen Hamilton 2007, p. 143). The report argues that these effects are primarily generated by the removal of output constraints, such as regulatory restrictions on capacity, frequency, and designation (for example, which airlines may operate in a given market). The removal of such constraints would allow new entrants to serve formerly restricted markets and to compete on the basis of price and/or improved service (for instance, higher frequencies).

Additional cost reductions will result from closer airline relationships ranging from code sharing operations to mergers and acquisitions that will become necessary in a more competitive environment. Finally, the economic benefits of opening the aviation market would include the multiplier effects generated by additional air travel and cargo transportation for a wide range of economic activities (Booz Allen Hamilton 2007, p. 144).

In another recent paper, Micco and Serebrisky (2006, p. 45) conclude that signing an open skies agreement generally reduces air transport costs by 9 percent and increases the share of imports arriving by air by 7 percent. The paper further estimates that open skies agreements could increase trade by 12 percent. However, there are major differences between developed and developing countries. In developed and upper-middle-income countries, air freight rates declined 6.8 percent within three years of the signing of an open skies agreement, but in developing countries this reduction effect has been less than 1 percent (Micco and Serebrisky 2006, p. 40). The authors conclude that the weak effect in low-income developing countries is due to the limited market size and the existence of other barriers to competition that prevent market participants from taking advantage of an open skies regime.

While many experts have recognized that lower airfares and higher productivity of airlines are the key benefits of the liberalization of air transport, others criticize liberalization from several different viewpoints. From the sociopolitical viewpoint, fears exist that a global (or pan-African) push for liberalizing air transport might create asymmetrical pressure on certain states, especially those at a low level of development. The result could be that carriers of the latter countries would be less prepared to adjust their strategies and to make the necessary investments to respond to rising competitive pressures, which require a new business model. Governments tend to raise sovereignty as the key issue when defending their resistance to pressures to liberalize international air services, but in fact the authorities may be simply defending their political standpoint (for example, their view that public opinion favors protecting a national carrier) or may even be shielding relatives or friends who operate national airlines from competition rather than addressing the economic costs of maintaining and often subsidizing noncompetitive domestic carriers.

Nevertheless, Flouris (2003, p. 21) concludes that even if the economic costs of resisting liberalization clearly surpass the political costs, political considerations generally prevail and influence government policy. Governments fear the short-term political costs, which could result in social upheaval, labor action, and/or loss of political power. Politicians in

smaller or less developed African nations that operate a dominant but noncompetitive state-owned carrier sometimes cite additional arguments, such as the national pride that comes with “carrying the flag,” to resist the liberalization of air services or the privatization of the state carrier. This resistance motivates government officials to continue providing support and subsidies for their carrier, often at the economic costs of higher taxes or reduced government services. This is especially likely in less developed countries where governments have subsidized inefficient flag carriers for many years while providing insufficient support for the health, education, and/or nutrition sectors. A typical case is Cameroon, which supported its state-owned carrier, Cameroon Airlines, for decades. After years of pressure by international organizations to privatize the carrier to reduce the massive subsidies necessary to keep it operating, in 2007, the government finally had to commit to eliminating all budgetary subsidies (Inoni 2007). Soon after, the government had to initiate the process to liquidate the 36-year-old carrier.

According to Flouris (2003), the costs of economic intervention such as liberalizing markets may create public dissatisfaction during their initial stages, but eventually the measures will have positive effects and the political costs will gradually disappear. Flouris (2003, p. 22) concludes that resisting liberalization measures because of their short-term political costs is not a valid argument, given that the economic costs nearly always outweigh the political costs. This conclusion is especially plausible in poor countries, where often only a small minority of the population can afford to travel by air.

### **Economic Significance of Liberalizing African Air Transport Services**

The reports and studies generally suggest that liberalization of air services results in lower costs, increased traffic, and improved efficiency for participating carriers, but most of the studies discussed focus on mature markets, where competition was ready to respond to the new opportunities that arose when certain restrictions were lifted. In terms of the continent’s revenue passenger-kilometers, Africa currently has less than 1 percent of the global air service market despite having more than 12 percent of the world’s population spread across the second largest continent after Asia (World Bank 2007). Thus, one of the key questions to evaluate is whether liberalization of the thin air traffic in Africa would have the same impact as in developed markets.

As outlined in chapter 5, air traffic grew the most in East and southern Africa, while development in West and Central Africa was much slower. Southern Africa is a good region to examine because of the existence of a variety of bilateral relationships, from extremely restricted to de facto liberalized, as well as cases of domestic liberalization, that provide evidence about the impact of liberalization on the market. One recent study of southern Africa's air transport markets examined the importance of liberalizing air services in the SADC region to stimulate shared economic growth within the region (Myburgh and others 2006).

The study found the following evidence of impact in specific cases (Myburgh and others 2006, pp. 16–19):

- The Nairobi–Johannesburg route was initially liberalized in 2000 by agreeing to multiple designations of carriers and increasing daily flights from 4 to 14. The route was then fully liberalized in 2003. Following liberalization, the effect was a 69-fold increase in passenger volumes.
- The domestic market in South Africa was liberalized in 1990 by allowing new carriers to enter and compete. This led to the establishment of domestic low-cost carriers in early 2000. The overall passenger market grew by 80 percent between 1994 and 2004. One remarkable observation was that traffic on certain routes to remote destinations experienced strong growth even though they served small, low-income communities.
- The liberalization of traffic to destinations in the Eastern Cape region of South Africa was followed not only by passenger growth (52 percent), but also by an increase in tourists (13 percent) because of the entry of a low-cost carrier serving the Eastern Cape in 2004. The increase of tourists is economically significant for this region given that it is one of the poorest provinces in South Africa.
- The Johannesburg–Lusaka route is one where South African Airways enjoyed high ticket prices because it was the only carrier on this route following the liquidation of Zambia Airways in 1995. However, in 2006, newly established Zambian Airways signed a wet lease agreement with the South African low-cost carrier Kulula that allowed Zambian Airways to serve the route on behalf of Zambia. The immediate effect was a 33 percent drop in airfares at the top end (the most expensive full-fare economy class tariff), a 38 percent drop at the bottom end (the least expensive fare), and a 38 percent increase in passengers. Estimates indicate

that the outcome translates to an additional 6,300 tourist arrivals per year in Zambia, which has resulted in additional income of about US\$8.9 million per year from tourism (Schlumberger 2007, p. 201).

- The case of Mozambique is an example of the protection of a national carrier resulting in high airfares, in effect hindering the development of tourism. Airfares between Johannesburg and Maputo, Mozambique, were 163 percent more expensive in 2006 than the fares for the same distance flown within South Africa (the example examined was Johannesburg–Darwin). While Mozambique has significant potential for tourism, including more than 2,500 km of undeveloped coastline with white beaches and many national parks, game reserves, and hunting areas, high airfares are negatively influencing international tourists who can find cheaper vacation packages in neighboring South Africa.

Based on the examined cases of the observed effects of liberalizing air services in the SADC region, Myburgh and others (2006, pp. 22–24) applied two econometric models to estimate the overall drop in prices and increase in passenger volumes that occurred in the southern Africa region. The result was then used as a basis for calculating tourism expenditures likely to occur as a result of further liberalization.

The first model, a volume analysis, estimated the impact of entering into a liberalized bilateral air service agreement that would result from the large, one-time increase in capacity under the new agreement. Using data from 16 countries in Africa, Asia, and Europe, the study found that the one-time increase in passenger volumes was 12 percent, which eventually led to a 23 percent overall increase in demand for air travel. A second model, a price analysis, examined how much prices of air travel fell once the market was liberalized. It analyzed price changes on 56 routes within SADC by running various regression analyses. The analyses concluded that air fares on liberalized routes declined by an average of 18 percent. In cases where a low-cost carrier entered the market, air fares were generally 40 percent lower than before liberalization. The overall conclusions of the study, taking the findings of the case studies into account and consolidating the results of all the regressions, was that full liberalization throughout the SADC region would increase passenger volumes by 20 percent.

For assessment of the overall potential economic impact that liberalization would have on the region, both the direct and the indirect economic impacts had to be evaluated. The direct impacts result from traveling

passengers' expenditures on air fares, accommodation, and local travel. The indirect impacts are derived, for example, from manufacturing, construction, and additional government expenditures. The calculations demonstrated that liberalizing air services within the SADC region would result in a substantial increase in employment and economic activity throughout the region. The study estimated that more than 500,000 additional foreign tourists would arrive by air and would spend more than US\$500 million. This spending, taking the multiplier effect on SADC's economy as a whole into account, would increase the region's GDP by about US\$1.5 billion, which represents growth of 0.5 percent. In addition, 35,000 jobs in the tourism industry and an additional 35,000 jobs in the overall economy would be created.

The Myburgh and others (2006) study confirms that the conclusions drawn from studies of markets in other regions are also valid for Africa. Another study, which empirically measured the economic effects of progressive air transport liberalization of routes from 20 cities to and from Addis Ababa (effectively analyzing the African route network of Ethiopian Airlines), came to a similar conclusion (Abate 2007). The study found that more benefits can be unlocked in the form of improvements in service quality by abandoning the currently restrictive regulatory regimes in international bilateral air service agreements in Africa. These benefits are derived from a significant increase in departure frequencies. Moreover, there is no evidence that liberalization produced any damaging market dominance by a single carrier.

With regard to some critical considerations, such as Dempsey's (1990) conclusion that passengers are flying 2.6 percent more after deregulation, resulting in higher costs because of the concentration of carriers serving specific hubs, Africa must still be considered an underdeveloped continent, where in many cases inefficient state-owned carriers dominate routes and hinder development. The removal of these carriers and the opening of air traffic to destinations that were not served in the past would have a significant impact even on regions with less developed markets. This was demonstrated by the example of Ethiopian Airlines, which established a large intra-African network that even serviced remote destinations based on seventh freedom rights (see appendix A).

## **Conclusion**

The liberalization of air services in Africa would, in general, have a major impact on the development of the air transport sector, leading to

a significant economic impact on various other sectors. The air transport industry itself has a strong direct impact, as it typically employs a large range of personnel, from low-skilled laborers to highly specialized technicians. The industry further affects a wide field of commercial activities that directly (for example, catering) or indirectly (for instance, duty free shops in airports) depend on air transportation. Finally, the financial sector in poor countries typically depends only on a few activities that generate hard currency income. Air transportation provides several sources of hard currency income that can include airport and air traffic fees, fuel sales, maintenance of foreign aircraft, and tax revenues.

Given the large size of the African continent and its mostly low population density, air transportation also has the potential of further substituting for difficult and lengthy road travel by passengers and certain goods. This substitution has already resulted in increased trade, both on an intercontinental and a regional basis. Increased trade will support various sectors, from perishables to high-tech goods. In addition, increased economic exchange is fostering foreign investment in production and infrastructure. The most significant economic impact would be felt in the tourism industry. This is because about 20 percent of all tourism-related jobs in Africa (675,000 in 2004) are supported by international visitors arriving by air, compared with only 4 percent (310,000 jobs) in North America (Oxford Economic Forecasting 2005, p. 19).

Nevertheless, air transportation remains a relatively expensive mode of transportation for many people, especially in Africa, where a large part of the population lives in poverty. Lowering the cost of air transportation to a level where commercial activity would consider its gains in time, reliability, safety, and comfort a genuine alternative to road travel remains the most important element for the successful development of air transport services. Several studies have demonstrated that liberalization of air services, both in Africa and around the world, has resulted in a significant reduction in airfares. The increased competitive environment has nearly always resulted in strong growth of traffic, leading to a reduction in airfares for passengers and cargo. The only exception where liberalization reduced air traffic has typically concerned routes that until liberalization had been subsidized or had enjoyed a monopoly. Ending public subsidies of noncompetitive or unviable carriers in poor countries is itself a viable argument for liberalizing air services in Africa.

Finally, the full liberalization of air services would facilitate the inclusion of remote countries or regions in international trade, including the possibility of becoming low-cost manufacturing sites. This would not only

support economic development, but in large countries also facilitate social integration on regional and national levels. However, continued resistance to the liberalization of intra-African air services remains as yet another obstacle in the way of Africa's challenging path out of poverty.

## Notes

1. Wet lease operations in this instance are based on a leasing arrangement whereby a domestic airline provides an aircraft, complete crew, maintenance, and insurance to a foreign airline that handles actual operations and pays the domestic airline by the hour for hours operated. (Brattle Group 2002, pp. 1–14).
2. An integrated carrier is an air cargo operator that operates its own flights. Prior to deregulation, freight forwarders were limited to the functions of a common carrier, which had to rely on air carriers to perform the air haul (O'Connor 2000, p. 175). Prominent examples of integrated carriers include Emery and UPS (united parcel service).