

The Economic Benefits of Aviation and Performance in the Travel & Tourism Competitiveness Index

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The aviation industry supports tourism and international business by providing the world's only rapid worldwide transportation network. Airlines transported 2.8 billion passengers and 47.6 million metric tonnes of air cargo in 2011, connecting the world's cities with 36,000 routes.¹ By providing these services, the aviation industry plays an important role in enabling economic growth and providing various economic and social benefits.

The International Air Transport Association (IATA) commissioned Oxford Economics to estimate the economic and social benefits of aviation in over 80 countries worldwide over the last three years. The analysis includes the traditional economic footprint of the industry, measured by aviation's contribution to gross domestic product (GDP), jobs, and the tax revenues generated by the sector and its supply chain. However, the economic value created by the industry goes beyond the value captured by these measures. Therefore the study also investigates the positive impacts of the connectivity provided by air transport services. The connections made between cities and markets produce an important infrastructure asset that facilitates activities that enhance a nation's productivity. More specifically, air transport enables foreign direct investment (FDI), business cluster development, specialization, and other spillover effects. The analysis produced by Oxford Economics is one of the first attempts to estimate these benefits of connectivity.

The objective of this chapter is twofold. First, the following sections will present some of the results of the Oxford Economics studies on the benefits of aviation, primarily in regard to aviation's economic footprint and connectivity benefits. Second, the chapter will explore whether there are any relationships between the performance of particular components of the Travel & Tourism Competitiveness Index (TTCI) and the outputs of the benefits of aviation studies.

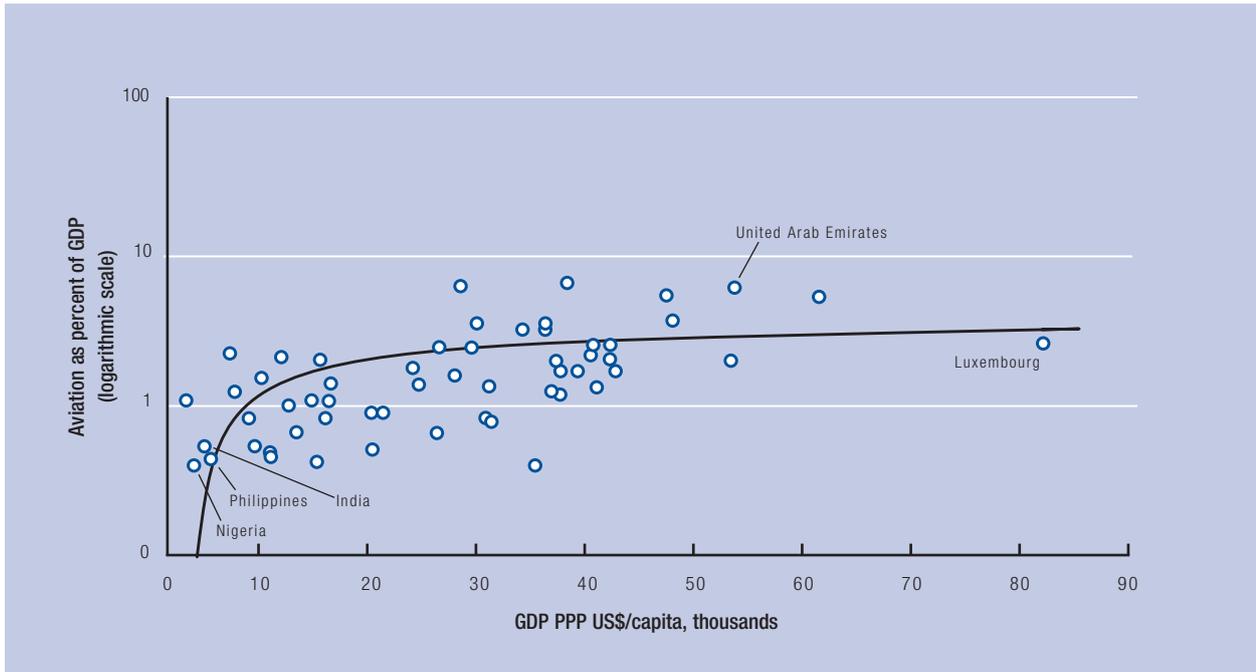
THE ECONOMIC FOOTPRINT OF AVIATION

The aviation industry *directly* generates employment and economic activity across several areas, including the operation of airlines and ground-based infrastructure. The aviation sector's direct impact on jobs and GDP in any given nation is reflected by the domestic resources used to deliver all such services.

The resources deployed by the aviation sector are measured by their gross value added (GVA). Oxford Economics estimated GVA either by considering the output created by the sector less the cost of purchased inputs (a net output measure), or by the sum of profits and wages (before tax) generated from the sector's economic activity (an income measure). This gives the sector's direct contribution to GDP.²

Worldwide, in 2010 the aviation sectors directly contributed 8.4 million jobs and US\$539 billion to global

Figure 1: The aviation sector as percentage of GDP and GDP per capita



Source: Data from Oxford Economics, 2010.
 Note: These data present the GVA of the aviation sector, including direct, indirect, and induced impacts.

GDP—a contribution that is about the same economic magnitude as that of Switzerland or Poland.³

The sector’s economic footprint is calculated by adding to this direct contribution the output and number of jobs from industries *indirectly* connected to aviation, as well as the output and jobs supported by the spending of those employed in aviation’s direct and indirect workforce. In addition, wider catalytic benefits induced by the aviation sector through tourism are also included in the total economic footprint of the industry. These benefits will be detailed in the next section.

Indirect industries are simply defined as the aviation supply chain, which includes businesses such as fuel suppliers, construction companies, and a host of professional service providers. The aviation industry supply chain supported 9.3 million jobs worldwide in 2010, and contributed US\$618 billion to global GDP in the same year.⁴ Other flow-on impacts of the aviation industry result from the spending and consumption of those directly and indirectly employed in the sector. The economic activity of those individuals supports jobs in other industries, such as retail outlets and a variety of consumer goods and services providers.⁵ Globally, the aviation industry has induced 4.4 million jobs through the spending and consumption of air transport’s direct and indirect employees. The induced contribution to GDP was estimated to be US\$288 billion globally in 2010.⁶

Together, these three channels provide the aviation sector’s total impact in terms of jobs and contribution to GDP—over 22 million jobs and US\$1.4 trillion in GDP.⁷

The Oxford Economics study of 80 plus nations revealed that aviation was also a significant contributor at the country level. Nations that are geographically isolated and island states showed a greater economic dependence on the aviation sectors. For example, countries such as Iceland and New Zealand have aviation sectors that generated more than 5 percent of their total GDP in 2010. But even nations without these geographical characteristics showed the importance of air transport. Aviation is critical to the economy of the United Arab Emirates (UAE), with the sector opening foreign markets to UAE exports, lowering long-distance transport costs, and increasing the flexibility of labor supply. In this nation, aviation contributes more than 6 percent to GDP.

In a majority of the developed nations studied, aviation was found to contribute at least 2 percent to GDP, suggesting that the aviation industry and a high level of development mutually reinforce each other. That is, as a nation develops, so does the aviation sector, and, as the aviation sector develops, economic activity and living standards are improved. Figure 1 shows that many countries with lower levels of development—including India, Nigeria, and the Philippines—have aviation sectors that contribute less than 1 percent to GDP. The opposite is true for nations with higher levels of development, where aviation makes a more significant contribution to GDP. As a result, one can infer that a well-established air transport industry might play a role in facilitating growth in a nation’s standard of living.

WIDER CATALYTIC BENEFITS: TOURISM

The aviation sector also contributes to other industries by facilitating their growth and supporting their operations, even if these industries are far removed from the direct or indirect components of the aviation sector itself. For example, air transport acts as a catalyst for wider benefits in its role as a critical component and facilitator of global business and tourism. Through its speed, convenience, and affordability, air transport has increased the opportunities for both leisure and business travelers to experience a host of geographies, cultures, and markets. With 51 percent of international tourists traveling by air,⁸ the aviation sector is critical to the tourism industry, which in turn is an important source of economic growth for many countries, particularly developing ones. Globally, air transport supports 34.5 million jobs within tourism, contributing around US\$762 billion per year to world GDP.⁹

When combining the direct, indirect, and induced benefits detailed in the previous section with its tourism catalytic benefits, aviation's global *economic footprint* is estimated to include 56.6 million jobs and contribute US\$2.2 trillion to global GDP. Considering its economic footprint results at the country level also presents some interesting findings. For example, through direct, indirect, and induced channels, aviation makes a significant contribution to GDP in both the Maltese and Lebanese economies, composing 2.5 percent and 2.0 percent of the GDP of those countries, respectively. But with a vast majority of visitors arriving by air to both these nations, when air transport's contribution to the tourism industry is added to estimate the total economic footprint, these figures rise to 18 percent of Maltese GDP and 17 percent of Lebanese GDP.¹⁰

BENEFITS OF AIR TRANSPORT CONNECTIVITY

IATA developed a connectivity indicator to measure the degree of integration a nation has within the global air transport network. The connectivity indicator reflects the number and economic importance of the destinations served from a country's major airports, as well as the frequency of service and the number of onward connections available through each country's aviation network. Connectivity increases when any of these parameters increases.¹¹

The development of the aviation industry over recent decades has led to an improvement in this connectivity. As a consequence, air transport passengers have reaped several benefits, including reductions in travel time, increased availability and frequency of services, improved scheduling, and better overall quality of service (including improved reliability and punctuality).

Moreover, improvements in connectivity have also resulted in a gradual drop in air travel costs. The cost of air transport services, in real terms, has fallen by around 1 percent per year over the past 40 years. Air transport

has also become more affordable when compared with other modes of travel: its relative cost has fallen by an estimated 2.5 percent per year since the 1990s.¹² These developments have contributed to the rapid expansion in passenger and air freight volumes over the past 40 years. Air transport has also steadily become more competitive relative to other modes of transport.¹³

Apart from the benefits to direct users of air transport services, the largest economic benefit of increased connectivity comes through its impact on the long-term performance of the wider economy.

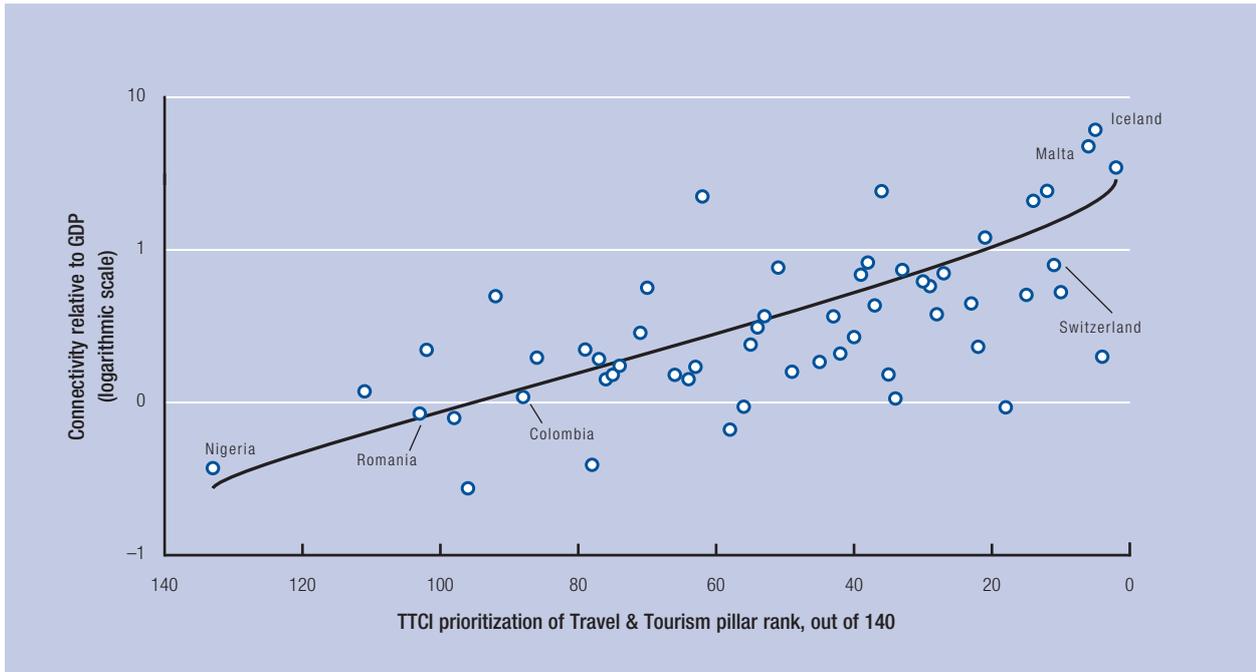
CONNECTIVITY AND ECONOMIC PERFORMANCE

Improvements in connectivity contribute to the economic performance of the wider economy by enhancing its overall level of productivity. Higher productivity in firms outside the aviation sector is achieved in two ways. First, productivity is enhanced for domestic firms by their increased access to foreign markets as well as increased foreign competition in the home market. Second, productivity improvements also result from the freer movement of investment capital and workers between countries.¹⁴

By giving domestic-based businesses greater access to foreign markets, air transport connectivity supports exports and simultaneously increases competition and choice in the home market from foreign-based producers. This in turn encourages firms to specialize in areas where they possess a comparative advantage, allowing for opportunities to exploit economies of scale, which reduces production costs and ultimately benefits domestic consumers. Costs can also be reduced by the exposure of domestic firms to international best practices in production and management and by encouraging innovation. Competition can further benefit domestic customers by reducing the markup over cost that firms charge their customers, especially in cases where domestic firms have previously experienced some shelter from competition.¹⁵

Increased connectivity can also improve economic performance by making it easier for firms to invest outside their home country. The clear link between connectivity and FDI is that foreign investment necessarily involves some movement of human resources to facilitate the transfer of technical knowledge and/or management oversight. Moreover, increased connectivity allows firms to exploit the speed and reliability of air transport to ship components between plants in distant locations, thus reducing the need to hold expensive stocks of inventory as a buffer. Finally, improved connectivity may favor inward investment because increased passenger traffic and trade that accompanies improved connectivity can lead to a more favorable environment in which foreign firms can operate.¹⁶

Figure 2: Air transport connectivity and pillar 5 (prioritization of Travel & Tourism)



Sources: Connectivity data: Oxford Economics, 2010; TTCI data: World Economic Forum.

Variation in the results of previous research suggests that measuring connectivity impacts on long-term economic growth is not straightforward. Because the supply-side benefits of connectivity come through promoting international trade and inward investment, any impact is likely to become evident gradually over time. This prolonged process makes it difficult to extract the specific contribution that improved connectivity has had on long-term economic growth from the many other variables that impact an economy’s performance. Based on a conservative estimate, a 10 percent increase in global connectivity (relative to GDP) would see a 0.07 percent increase in long-run GDP per annum.¹⁷ Given the increase in global connectivity from improved air transport over the last decades, Oxford Economics estimates this benefit is valued at over US\$200 billion to global GDP.¹⁸

BENEFITS OF AVIATION AND THE TTCI

In addition to presenting the results of the benefits-of-aviation studies, this chapter will next explore the relationships between performance in the TTCI and the economic benefits of aviation. One possible link between performance and aviation could be that countries performing strongly in particular components of the TTCI would have the government policy and agenda settings to support a more highly developed aviation sector.

The degree to which governments prioritize the Travel & Tourism (T&T) sector has an important impact on T&T competitiveness, and is also likely to have an impact on the development of the aviation sector. By making clear that Travel & Tourism is a sector of

primary concern, and by reflecting this in its budget priorities, a government can channel needed funds to essential development projects. This prioritizing signals the government’s intentions, which can have positive spillover effects—attracting further private investment into the sector. Prioritization of the sector can also be reflected by the country’s attendance at international T&T fairs and commissioning effective marketing campaigns.¹⁹ A component of TTCI subindex A (the T&T regulatory framework) pillar 5, entitled prioritization of Travel & Tourism, is a measure of how governments prioritize the T&T sector.

Figure 2 presents the relationship between a nation’s performance in TTCI pillar 5 and air transport connectivity relative to GDP.

The air transport connectivity measure reflects the range, frequency of service, and economic importance of destinations and the number of onward connections available through each country’s aviation network. Discussion in the previous section detailed the ways in which greater connectivity leads to economic growth through increases in overall productivity. Given the strength of the relationship presented in Figure 2, it is clear that, when governments place a relatively high emphasis on Travel & Tourism, the results can be far reaching and have important long-term benefits. Budget allocations, campaigns, and signals to the private sector that Travel & Tourism is an agenda priority can help support development of the aviation sector and thereby enable a nation to become more globally connected. This in turn can lead to increased trade and competition, cost reductions for consumer and producers, and

increased FDI—all of which will enhance productivity and standards of living in the long run. According to the relationship presented in Figure 2, nations such as Iceland, Malta, and Switzerland stand to benefit from the higher degrees of air transport connectivity that is being supported by strong government prioritization of the T&T sector. Colombia, Nigeria, and Romania could potentially see increased air transport connectivity—and thereby increases in long-term economic growth—if governments placed greater emphasis on developing the T&T sector.

The importance of air transport connectivity is also critical in the short term. Particular events in the recent past have made consumers and producers more aware of the costs of disruptions to the global air transport network—and the substantial benefit of connectivity. For example, when volcanic ash caused the closure of airspace throughout Europe in 2010, businesses of all types—from automotive to IT—experienced supply-chain failures and production delays, creating significant unexpected costs.²⁰

CONCLUSION

The aviation sector plays an important role in the global economy by providing connectivity through the only rapid worldwide transport network. In doing so, the direct and wider impact on jobs and GDP globally is enormous—contributing over 22 million jobs and US\$1.4 trillion in GDP. Moreover, the aviation sector makes contributions to other industries by facilitating their growth and supporting their operations. With a significant proportion of international tourists depending on air transport, the aviation industry supports 34.5 million jobs within tourism globally, contributing around US\$762 billion a year to world GDP.²¹

The benefits go beyond this economic footprint of aviation. The global connectivity that air transport facilitates has positive impacts that enhance overall productivity and economic growth in the long run. Given the increase in global connectivity over the last decades as a result of air transport, Oxford Economics estimates this benefit should be valued at over US\$200 billion to global GDP.

Exploring potential relationships between the results of the Oxford Economics studies on the benefits of aviation and the TTCl has found an interesting link. Figure 2 demonstrates the positive relationship between pillar 5, which considers the prioritization of Travel & Tourism within the context of subindex A (the T&T regulatory framework), and air transport connectivity relative to GDP. This suggests that making Travel & Tourism a government priority can enable the development of global connectivity through aviation, which in turn enhances the overall level of productivity and living standards in the long run.

NOTES

- 1 ATAG 2012.
- 2 Oxford Economics 2011.
- 3 ATAG 2012.
- 4 ATAG 2012.
- 5 ATAG 2012.
- 6 ATAG 2012.
- 7 ATAG 2012.
- 8 ATAG 2012.
- 9 ATAG 2012.
- 10 Oxford Economics 2011.
- 11 IATA 2007. The connectivity indicator is based on the number of available seats to each destination served (during a given time period). The number of available seats to each destination is weighted by the size of the destination airport (determined by the number of passengers handled each year). The weighting for each destination gives an indication of the economic importance of the destination airport and the number of onward connections it can provide. All the destination weightings are then summed (and divided by a scalar factor of 1,000) to determine the connectivity indicator. A higher figure for the connectivity measure indicated a greater degree of access to the global air transport network.
- 12 Oxford Economics 2011.
- 13 Oxford Economics 2011.
- 14 Oxford Economics 2011.
- 15 Oxford Economics 2011.
- 16 Oxford Economics 2011.
- 17 IATA 2007.
- 18 ATAG 2012.
- 19 World Economic Forum 2011.
- 20 Oxford Economics 2011.
- 21 ATAG 2012.

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