



# ECONOMIC BENEFITS FROM AIR TRANSPORT IN COLOMBIA 2006





## EXECUTIVE SUMMARY

- The Colombian economy has grown strongly over the last four years, boosted by stable macroeconomic policies, increased trade and reduced security concerns. **The aviation sector has played a significant role in supporting the recent strong economic growth.** Air transport's direct contribution to GDP grew by 9.1% in 2006, one of the fastest growing sectors in the economy and well above the overall GDP growth of 6.8%.
- Air transport provides an essential link between Colombia and the global economy, creating significant wider economic benefits that would not exist in its absence. **Colombia's strong economic growth is increasingly attracting business travellers to the country.** The majority of these travellers will require widespread, efficient and reliable air services.
- Colombia's natural attractions and vibrant culture can also offer an appealing destination for tourists, especially in the fast growing sector of eco-tourism. **Air transport accounts for over 85% of international tourist arrivals to Colombia.** It has already provided a strong boost to the sector, accounting for almost all of the 0.5 million increase in tourists since 2003.
- **International air traffic to and from Colombia grew by over 50% between 2003 and 2006**, an average annual growth rate of around 15%, well above the rate of growth of GDP over the same time. As Colombia does not typically act as a hub for transfer traffic, the significant benefits generated by increasing the level of business and leisure traffic will be received directly by the Colombian economy.
- The demand-side and supply-side benefits generated and supported by the air transport sector are shown in Table ES1.

**Table ES1: Economic Benefits from Air Transport in Colombia**

	Impact (US\$m)	% of Colombia's GDP
<b>Economic benefits to passengers (consumer surplus)</b>	\$1,200 million	0.9%
<b>Supply-side benefits from a 10% increase in connectivity/GDP</b>	\$94 million	0.07%
<b>Demand-side benefits to GDP from air transport</b>	\$3,128 million	2.3%
- Air Transport direct impact	\$716 million	0.5%
- Air transport indirect and induced impacts	\$929 million	0.7%
- Air transport facilitated tourism	\$1,483 million	1.1%
<b>Jobs supported by air transport (inc. tourism impact)</b>	369,722	1.8% of employment
<b>Wage income generated by air transport (inc. tourism impact)</b>	\$1,277 million	2.8% of income
<b>Tax revenues generated by air transport (inc. tourism impact)</b>	\$502 million	2.1% of revenues
<b>Export earnings generated by air transport (inc. tourism impact)</b>	\$1,758 million	6.2% of earnings

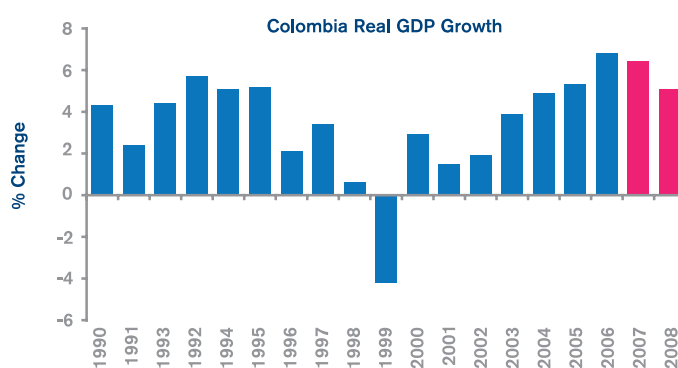
Source: Oxford Economics and IATA estimates

- The market for passengers flying to, from and within Colombia is estimated to total USD\$2.4 billion. This is estimated to generate economic benefits to passengers (consumer surplus) of **\$1.2 billion**, equivalent to 0.9% of GDP.
- For a country such as Colombia, air transport connections to key markets are vital for long-term economic development and growth. In terms of connectivity, i.e. weighting the number of available seats by the importance of the destination within the airline network, **Colombia saw its connectivity rise by 21%** between 2002 and 2007. This rise in connectivity provides substantial wider economic benefits for Colombia from its connections to the global air network.
- Increases in connectivity, relative to GDP, can create significant wider economic benefits. Each 10% rise in connectivity, relative to GDP, can increase long-term GDP by \$94 million (0.07%) per annum.
- Nevertheless, the connectivity of Colombia remains relatively low (as a proportion of GDP) compared to other countries, such as small, well-connected countries like Panama. This highlights not only the constraint that relatively low connectivity can place on future economic growth, but also the **substantial economic benefits that can be available through further increases in Colombia's connectivity levels.**

## ECONOMIC GROWTH IS STRONG, AIR TRANSPORT GROWTH EVEN HIGHER

The Colombian economy has grown strongly over the last four years, boosted by stable macroeconomic policies, increased trade and reduced security concerns. Average annual GDP growth of around 5% since 2003 has delivered a strong recovery from the low and negative growth of the late 1990s (see Figure 1). The outlook is positive. GDP growth is expected to remain strong in 2007 at around 6.5% before slowing to 5% in 2008 as tighter monetary conditions slow consumer expenditure growth.

Figure 1: GDP Growth, 1990-2008



The aviation sector has played a significant role in supporting the recent strong economic growth in Colombia. Air transport directly accounted for 0.5% of Colombia's GDP in 2006, though its role in facilitating growth across other sectors means that its total contribution will be significantly higher. Air transport has grown at a similar rate to the overall Colombian economy since 1994 (see Table 1). However, its contribution has grown at an increasingly faster rate in recent years. Air transport's direct contribution to GDP grew by 9.1% in 2006, one of the fastest growing sectors in the economy and well above the overall GDP growth of 6.8%.

- Air transport also has an important demand-side contribution to Colombia's GDP through the value-added it creates and the demand and employment that flows from that activity through its supply chain and other industries. Its direct impact is estimated to be **\$716 million** in 2006, with a total impact of **\$1,645 million** after indirect and induced impacts created by the demand it generates in other sectors are included. This total value-added has increased by \$642 million since 2001.
- Air transport also facilitates and supports the tourism industry. Over 1 million tourists arrived in Colombia in 2006, of which around 85% arrived by air. The impact from tourists is estimated to have boosted Colombia's GDP by a further \$1.48 billion in 2006, equivalent to around 1.1% of its GDP
- Adding the demand-side contributions from air transport to those facilitated in tourism gives a **total demand-side value-added of \$3,128 million, equivalent to 2.3% of Colombia's GDP**. It also supports nearly 370,000 jobs in Colombia, supports between 2.1% and 2.8% of Colombia's wage income and tax receipts and supports a very high 6.2% of its exports.
- Looking forward, **we expect the contribution to increase in both absolute and proportionate terms**, especially as the Colombian economy continues to develop its services and tourism sectors. However, the employment level may continue to face downward pressure as both the air transport and tourism sectors look to deliver further productivity and efficiency improvements among their workforce.
- **The importance of investing in improved connections to major overseas markets is shown by an analysis of the addition of a new service from Bogota to Atlanta airport.** This service generated over 49,000 passengers each way in 2006, representing around 0.7% of overall traffic to, from and within Colombia. This service is estimated to generate at least \$9 million in consumer surplus for passengers, \$13 million for GDP and supports at least 1,050 jobs. It also generates at least \$5 million in wage income and \$2 million in additional tax revenues for the government.
- **The importance of keeping airport charges and taxes in line with efficient costs is shown** by estimating the impact of a hypothetical 50% increase in departure charges from their current average level of \$14.4 per departing passenger. It is estimated that this would add 1.9% to the average return fare, reducing passenger departures by 136,000. This would cause economic costs to passengers, due to higher travel costs, totalling \$25 million. There would also be wider costs for the Colombian economy, with GDP down \$35 million, a loss of 2,920 jobs, wage income down \$15 million and tax revenues down \$6 million.

Table 1: Colombian GDP by Sector

Sector	Share of GDP, 2006	% growth 1994-2006 (real)	% growth 2005-2006 (real)
Agriculture and Fishing	12.6%	17.6%	3.1%
Mining	4.4%	75.3%	0.6%
Manufacturing	15.3%	43.0%	10.8%
Electricity, Gas and Water	2.9%	26.1%	3.0%
Construction	6.0%	11.9%	14.3%
Retail, Restaurants, Hotels	11.9%	32.2%	10.7%
Transport	5.6%	39.3%	7.0%
of which air transport	0.5%	38.5%	9.1%
Communications	2.8%	123.7%	14.5%
Financial Services	16.7%	35.5%	1.4%
Government Services	13.3%	73.1%	2.1%
Other	8.5%	28.3%	4.4%
<b>Total</b>	<b>100%</b>	<b>38.7%</b>	<b>6.8%</b>

Source: Departamento Administrativo Nacional de Estadística

## AVIATION PROVIDES AN ESSENTIAL GLOBAL LINK FOR COLOMBIA

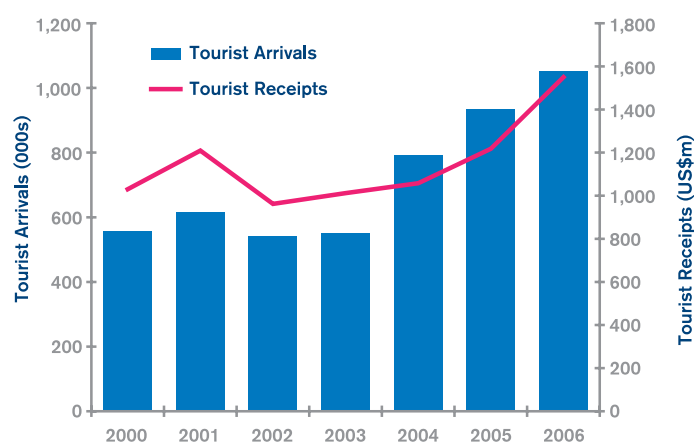
Air transport provides an essential link between Colombia and the global economy, creating significant wider economic benefits that would not exist in its absence. Air transport provides crucial connections to global markets for Colombia's businesses as well as greater access to Colombia for global tourists.

Colombia's strong economic growth is increasingly attracting business travellers to the country. The majority of these travellers will require widespread, efficient and reliable air services to access the capital, Bogota, and the main regions outside of the capital. Investment into Colombia by multi-national firms is often highly dependent on the availability of good air transport links. Although much improved in recent years, there are still some security concerns surrounding road links in some regions. Air transport can provide a more secure route for domestic connections for both passengers and freight.

Colombia's natural attractions and vibrant culture offer an appealing destination for tourists, especially in the fast growing sector of eco-tourism. International tourists to Colombia declined significantly in the late 1990s, largely due to security concerns. However, as security and the economy has improved, the number of international tourist visitors has almost doubled from 0.5 million in 2003 to 1.05 million in 2006 (see Figure 2). Direct tourism receipts are estimated to be US\$1.5 billion for 2006.

Air transport accounts for over 85% of international tourist arrivals to Colombia. It has already provided a strong boost to the sector, accounting for almost all of the increase in tourists since 2003. Further investment in air transport infrastructure and services can play a key role in developing significant further growth in tourism, especially from higher-spending tourists from the US, Europe and Asia.

Figure 2: International Tourist Arrivals to Colombia (000s)



Source: UNWTO

## INTERNATIONAL AIR TRAFFIC CONTINUES TO GROW AT A FAST RATE

The number of international air passengers to and from Colombia has almost doubled since 1995, reaching 4.6 million in 2006. The rate of growth has picked up strongly since 2003, reflecting the boost to business and leisure travel provided by a more stable economy and a more secure environment. International air traffic grew by over 50% between 2003 and 2006, an average annual growth rate of around 15%, well above the rate of growth of GDP over the same time (see Figure 3). IATA forecasts that international passenger growth will slow, but still remain strong with an average annual growth rate of 5.9% between 2007 and 2011.

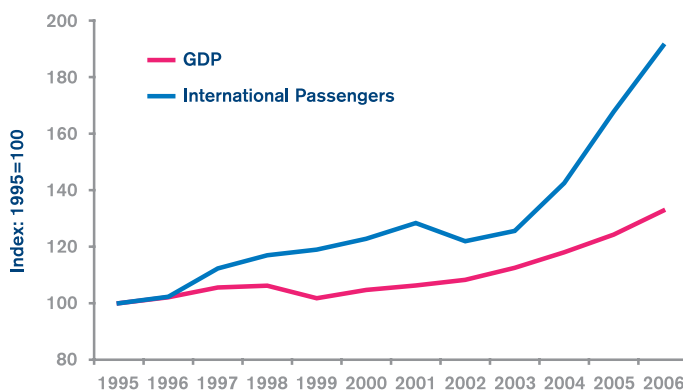
Colombia does not typically act as a hub for international transfer and connecting traffic. As such, the vast majority of the additional international air passenger traffic has Colombia as its final destination. Therefore, the significant benefits generated by increasing the level of business and leisure traffic will be received directly by the Colombian economy.

## SIGNIFICANT ECONOMIC BENEFITS TO AIRLINE PASSENGERS

The key economic value from air transport is the benefit received by airline passengers and shippers themselves. Passengers are obviously willing to pay their air fare. But a large number of passengers will also value the trip far more than the cost of the fare, for the pleasure of the tourist visit or for the value of the business contact achieved through the trip. Economists call the value received, over and above the cost of the fare, consumer surplus.

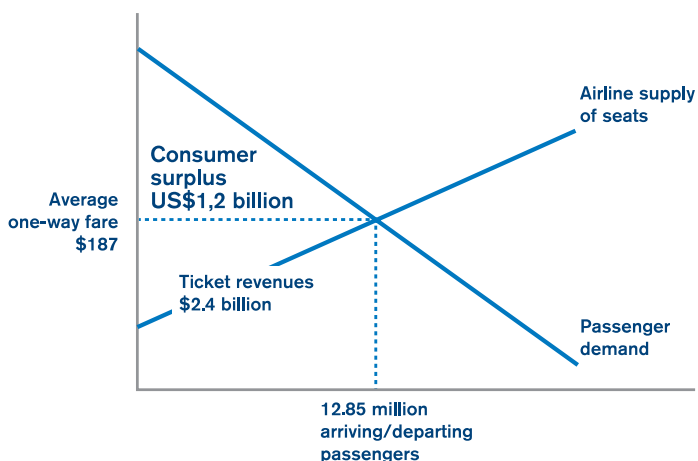
The market for passengers flying to, from and within Colombia is estimated to total US\$2.4 billion, with an average one-way fare of \$187 and 12.85 million passengers. Using an average price elasticity for passenger demand of -1, the consumer surplus for passengers is estimated to be worth \$1.2 billion (see Figure 4).

Figure 3: Colombia's GDP and International Air Passenger Growth



Source: EIU, ACI

Figure 4: The Consumer Surplus for Passengers, 2006



Source: Pax-IS Plus

# SUPPLY-SIDE BENEFITS FROM CONNECTIVITY

For a country such as Colombia, air transport connections to key markets are vital for long-term economic development and growth. As such, it is important to introduce or expand routes to major destinations within the global air transport network.

Figure 5: International Routes from Colombia, 2002



Figure 6: International Routes from Colombia, 2007



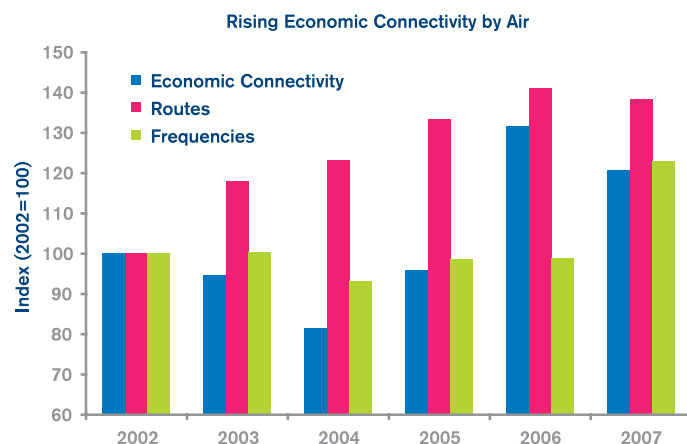
Source: SRS Analyser

In 2002, Colombia's international services were concentrated on Latin America but also had several routes to Europe and North America (see Figure 5). By May 2007, Colombia had slightly fewer international routes within Latin America and a couple less to Europe, but had added some new routes to North America (see Figure 6).

The overall number of international routes increased by 39% between 2002 and 2007. This was largely due to new international services from regional airports, rather than from Bogotá where the number of routes remained stable. For example in 2007 there was a route to New York JFK from five Colombian airports, compared with just three in 2002.

The overall frequency of international flights increased by 34% over the same period (see Figure 7). The number of available seats increased, in particular, on routes to destinations in North America. These destinations are not only economically important but also provide significant onward connections within the global airline network, providing greater access to a large number of new destinations and markets.

Figure 7: Colombia's Connectivity to the Global Air Network



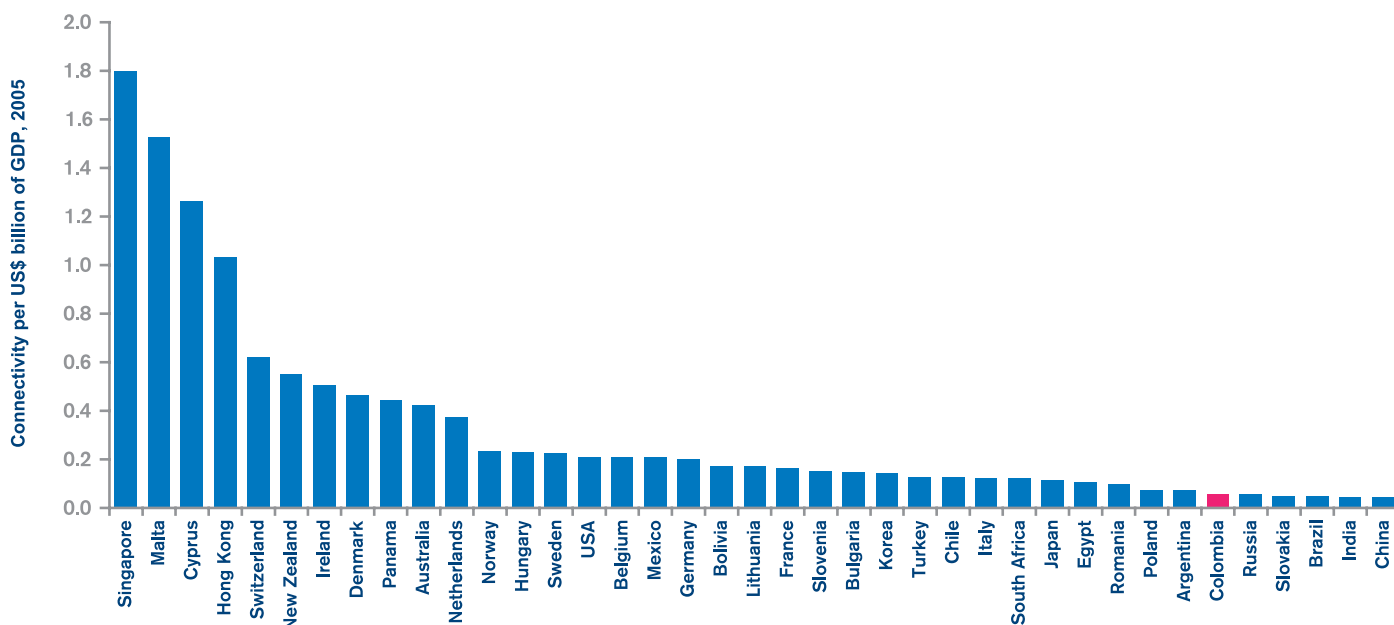
Source: SRS Analyser, IATA

In terms of connectivity, i.e. weighting the number of available seats by the importance of the destination within the airline network, Colombia saw its connectivity rise by 21% between 2002 and 2007. This increase in connectivity creates substantial wider economic benefits for Colombia, providing a boost to its long-run productivity and GDP growth. Recent research<sup>1</sup> has shown that there is a significant link between air connectivity and business productivity and long-term GDP growth.

<sup>1</sup> IATA Economic Briefing (2007), "Aviation Economic Benefits", see: [www.iata.org/economics](http://www.iata.org/economics)

Nevertheless, though the connectivity of Colombia has increased significantly since 2002, it still remains relatively low (as a proportion of GDP) compared to other countries (see Figure 8). Colombia's GDP-weighted connectivity within the global airline network is below several other Latin American countries, such as Panama and Mexico. However, it is higher than Brazil.

Figure 8: Air Connectivity by Country



Source: SRS Analyser, IATA

There are several major economic factors that determine the long-run level and growth of a country's economy. Assets such as natural resources, larger well-educated populations and energy resources are critical. However, all other things being equal, the level of air connectivity can also have an impact on long-run economic performance. IATA estimates that Colombia would receive a US\$94 million per annum increase in its long-run GDP from each 10% increase in connectivity, relative to GDP. This highlights not only the constraint that relatively low connectivity can place on economic growth, but also the substantial economic benefits that can be available through future increases in Colombia's connectivity levels.

Table 3: The Impact on Colombia's Long-run GDP from its Level of Air Connectivity

	Air connectivity per US\$ billion of GDP	Impact on GDP from a 10% increase
Colombia	0.065	+ US\$94 million (0.07%)

Source: IATA



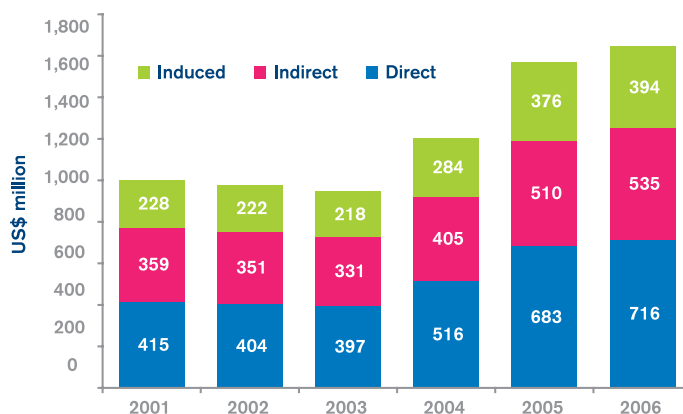
## DEMAND-SIDE BENEFITS FOR COLOMBIA'S ECONOMY

Air transport also has an important demand-side contribution to Colombia's GDP through the value-added it creates and the demand and employment that flows from that activity through its supply chain and other industries.

The contribution of air transport to the Colombian economy has increased significantly since 2001. Its direct impact – in terms of the benefits it creates through employment and economic activity in the airline industry – has increased by more than 70% from US\$415 million in 2001 to \$716 million in 2006 (see Figure 9). This reflects the expansion of traffic within the Colombian aviation industry over the period.

In addition to the direct contribution to Colombia's GDP from the airline industry, there are further impacts through the employment and economic activity that is stimulated within the industry supply chain (indirect impacts) and through the benefits generated by the spending of wage income earned within the aviation industry on goods and services in other industries (induced impacts). The total value-added created by air services in Colombia – including the direct, indirect and induced benefits – is estimated to be \$1,645 million in 2006, equivalent to 1.2% of Colombia's total GDP. This total value-added has increased by \$642 million since 2001 (see Table 4).

Figure 9: Colombia Air Services - Economic Benefits



Source: Oxford Economics

Table 4: Colombia Air Services: Economic Benefits

	2001	2002	2003	2004	2005	2006
<b>GDP Summary (US\$m)</b>						
Direct	415	404	397	516	683	716
Indirect	359	351	331	405	510	535
Induced	228	222	218	284	376	394
<b>Total</b>	<b>1.003</b>	<b>977</b>	<b>946</b>	<b>1.204</b>	<b>1.569</b>	<b>1.645</b>
<b>Employment Summary (jobs)</b>						
Direct	18.365	18.456	18.239	18.771	18.941	19.200
Indirect	48.674	53.735	50.886	53.135	62.540	60.454
Induced	47.555	47.566	49.869	54.363	60.241	58.232
<b>Total</b>	<b>114.594</b>	<b>119.758</b>	<b>118.995</b>	<b>126.270</b>	<b>141.722</b>	<b>137.886</b>
<b>Wages Summary (US\$m)</b>						
Direct	140	148	139	166	207	217
Indirect	126	124	113	133	165	173
Induced	80	79	74	93	121	127
<b>Total</b>	<b>346</b>	<b>351</b>	<b>325</b>	<b>393</b>	<b>493</b>	<b>517</b>
<b>Tax Summary</b>						
Direct	48	47	46	56	68	71
Indirect	63	61	58	75	91	95
Induced	40	39	39	52	67	70
<b>Total</b>	<b>151</b>	<b>147</b>	<b>143</b>	<b>183</b>	<b>226</b>	<b>237</b>

Source: Oxford Economics

Air transport is highly capital intensive but nonetheless remains a large employer. It also generates a number of additional jobs in the supply chain and supports jobs in other industries through the induced impacts it generates. Air transport directly employs an estimated 19,200 people in Colombia, but supports an estimated total of nearly 138,000 jobs within its economy.

The jobs that are supported by air transport are typically highly productive because of the high capital intensity of the industry and because of the specialist skills required in many job functions. Consequently, a large proportion of the employment generated also has relatively higher wages compared to many other sectors of the economy. Air transport is estimated to support 0.7% of employment within Colombia but 1.2% of its wage income (see Table 5).

There is also a strong contribution towards taxation and, therefore, to supporting government spending programmes. Direct payments of tax by the airline industry are estimated to be \$71 million in 2006. Adding indirect and induced impacts generates a total contribution to government tax revenues of \$237 million, equivalent to 1.0% of Colombia's total tax revenues.

Air transport also makes a significant contribution to export earnings, both directly through the activity of airlines and indirectly through the facilitation of exports by other sectors of the economy. It was estimated to generate \$384 million of exports in 2006, equivalent to 1.3% of Colombia's exports. Its share of exports has declined slightly from 1.7% in 2003 even though the total amount of exports it generates has increased. This reflects the impact of high commodity prices on other exports from Colombia.

**Table 5: Colombia Air Services: Economic Impact (includes direct, indirect and induced effects)**

	<b>GDP</b>	<b>Employment</b>	<b>Wages</b>	<b>Taxes</b>	<b>Exports</b>
<b>2001</b>	1.003	114.594	346	151	237
<b>2002</b>	977	119.758	351	147	241
<b>2003</b>	946	118.995	325	143	263
<b>2004</b>	1.204	126.270	393	183	273
<b>2005</b>	1.569	141.722	493	226	312
<b>2006</b>	1.645	137.886	517	237	384
<b>Contribution to Colombia's Totals</b>					
	<b>GDP</b>	<b>Employment</b>	<b>Wages</b>	<b>Taxes</b>	<b>Exports</b>
<b>2001</b>	1.2%	0.7%	1.2%	1.1%	1.6%
<b>2002</b>	1.2%	0.7%	1.2%	1.0%	1.7%
<b>2003</b>	1.2%	0.7%	1.2%	1.0%	1.7%
<b>2004</b>	1.2%	0.7%	1.2%	1.0%	1.4%
<b>2005</b>	1.3%	0.7%	1.2%	1.0%	1.3%
<b>2006</b>	1.2%	0.7%	1.2%	1.0%	1.3%

Source: Oxford Economics

## AIR TRANSPORT PROVIDES FURTHER BENEFITS FOR TOURISM

In addition to the direct and multiplier economic impacts generated from air transport, the industry also plays a key role in facilitating growth in Colombia's tourism industry. Over 1 million tourists arrived in Chile in 2006, of which over 80% arrived by air. Average spending per tourist was around US\$1,470.

The impact from tourists is estimated to have boosted Colombia's GDP by a further \$1.48 billion in 2006, equivalent to around 1.1% of its GDP (see Table 6). Tourism is labour rather than capital intensive. It is estimated to support over 230,000 jobs, equivalent to 1.2% of the total in Colombia. Wage income generated by the tourism industry is \$710 million or 1.6% of the total, i.e. higher than its proportionate share of employment. Tax income generated by tourism is 1.1% of the total, while it also generates a very high 4.8% of exports.

**Table 6: Colombia Air Services: Tourism Impact (includes contribution of air travellers' expenditure)**

	<b>GDP</b>	<b>Employment</b>	<b>Wages</b>	<b>Taxes</b>	<b>Exports</b>
<b>2001</b>	1.144	204.664	483	199	1,085
<b>2002</b>	923	197.323	457	160	865
<b>2003</b>	867	217.044	452	153	787
<b>2004</b>	1.029	213.475	513	190	938
<b>2005</b>	1.201	222.578	628	215	1,079
<b>2006</b>	1.483	231.836	710	265	1,374
<b>Contribution to Colombia's Totals</b>					
	<b>GDP</b>	<b>Employment</b>	<b>Wages</b>	<b>Taxes</b>	<b>Exports</b>
<b>2001</b>	1.4%	1.2%	1.7%	1.4%	7.2%
<b>2002</b>	1.1%	1.1%	1.6%	1.1%	6.1%
<b>2003</b>	1.1%	1.2%	1.7%	1.1%	5.0%
<b>2004</b>	1.0%	1.1%	1.6%	1.0%	4.8%
<b>2005</b>	1.0%	1.1%	1.6%	1.0%	4.4%
<b>2006</b>	1.1%	1.2%	1.6%	1.1%	4.8%

Source: Oxford Economics

Adding the demand-side contributions from air transport to those facilitated in tourism gives a total demand-side value-added of \$3,128 million, equivalent to 2.3% of Colombia's GDP (see Table 7). It also makes a contribution of between 1.8% and 2.8% of Colombia's employment, wage income and tax receipts, along with a very high 6.2% of exports.

The demand-side contributions have all increased in absolute terms since 2001, in some cases by almost 50%. However, their proportionate impact has declined in some cases. This reflects the strong growth in the Colombian economy since 2003 and its increase in overall exports rather than any decline in the importance of the air transport or tourism sectors.

Looking forward, we expect the contribution from both sectors to increase in both absolute and proportionate terms, especially as the service sectors within the Colombian economy continue to be the key generators of growth. However, the employment level may continue to face downward pressure as both the air transport and tourism sectors look to deliver further productivity and efficiency improvements among their workforce.

**Table 7: Demand-side Contributions from Air Transport and Tourism**

	<b>GDP</b>	<b>Employment</b>	<b>Wages</b>	<b>Taxes</b>	<b>Exports</b>
<b>2001</b>	2.146	319.258	829	350	1.322
<b>2002</b>	1.900	317.081	808	307	1.106
<b>2003</b>	1.813	336.039	778	296	1.050
<b>2004</b>	2.233	339.745	905	373	1.211
<b>2005</b>	2.770	364.300	1.121	441	1.391
<b>2006</b>	3.128	369.722	1.227	502	1.758
<b>Contribution to Colombia's Totals</b>					
	<b>GDP</b>	<b>Employment</b>	<b>Wages</b>	<b>Taxes</b>	<b>Exports</b>
<b>2001</b>	2.6%	1.9%	2.9%	2.5%	8.8%
<b>2002</b>	2.3%	1.8%	2.8%	2.2%	7.8%
<b>2003</b>	2.3%	1.9%	2.9%	2.1%	6.7%
<b>2004</b>	2.3%	1.8%	2.8%	2.1%	6.2%
<b>2005</b>	2.3%	1.8%	2.8%	2.0%	5.7%
<b>2006</b>	2.3%	1.8%	2.8%	2.1%	6.2%

Source: Oxford Economics

## ESTIMATING THE BENEFITS FROM NEW SERVICES

There have been several new routes opening from regional Colombian airports since 2000 and several changes in route structure and frequencies from Bogota airport. One of the key new routes is from Bogota to Atlanta airport in the US, the largest airport in the world in terms of passenger numbers. This route alone accounts for around a quarter of the increase in Colombia's connectivity since 2000. It provides a significant economic contribution within the overall totals (see Table 8).

**Table 8: The Economic Contribution in 2006 of the BOG – ATL Route**

	2006	Estimated contribution of the BOG-ATL route in 2006
<b>Departing passengers</b>	6,425,000	49,243
<b>Economic benefits to passengers (US\$m)</b>	1,200	9
<b>Boost to GDP (US\$m)</b>	1,645	13
<b>Boost to Employment</b>	137,886	1,050
<b>Boost to Wage Income (US\$m)</b>	710	5
<b>Boost to Tax Revenues (US\$m)</b>	265	2

*Source: Oxford Economics, IATA*

In 2006, the route from Bogota to Atlanta was estimated to have over 49,000 departing passengers (with a similar number on the ATL-BOG leg), representing around 0.8% of the overall total of passengers to, from and within Colombia. As an important route, the benefits of this service are likely to be proportionately greater than an average service.

However, in the absence of more detailed estimates, assuming a liner impact for a change in passengers can provide an indication of the minimum benefits associated with the route. Table 8 shows that the BOG-ATL route creates at least US\$9 million of consumer surplus for passengers, \$13 million for GDP and boosts employment by at least 1,050 jobs. It also creates wage income of at least \$5 million and \$2 million of additional tax revenue for the government.

## ESTIMATING THE ECONOMIC COST OF CHARGES

It is important that airport charges and taxes are kept closely in line with the efficient cost of providing services at the airport. Otherwise, increases in airport charges and taxes can have a negative impact in terms of offsetting any revenue through a significant reduction in the economic benefits that aviation generates. By way of illustration, we consider the impact of an hypothetical 50% increase in departure charges on passengers at Colombian airports (see Table 9). Currently, the charges are US\$32 per international departure and Peso 10,000 (US\$5) per domestic departure, equating to an average charge per departure of US\$14.4, or 3.9% of the average return fare.

**Table 9: The Economic Costs of Higher Airport Passenger Departure Charges**

	2006	50% rise in Charges	Change
<b>Aeronautical charge per passenger</b>	14.4	21.6	+ 7.2
<b>As a % of average return fare</b>	3.9	5.8	+ 1.9
<b>Departing passengers</b>	6,425,000	6,288,900	- 136,100(-2.1%)
<b>Economic benefit to passengers (US\$m)</b>	1,200	1,175	- 25
<b>Boost to GDP (US\$m)</b>	1,645	1,610	- 35
<b>Boost to Employment</b>	137,886	134,966	-2,920
<b>Boost to Wage Income (US\$m)</b>	710	695	- 15
<b>Boost to Tax Revenues (US\$m)</b>	265	259	- 6

*Source: Oxford Economics, IATA*

A 50% rise in departure charges would raise the cost of travelling to and within Colombia by 1.9%. Best practice academic studies show that on average there will be an 11% fall in passenger numbers for every 10% rise in air fares. Therefore, a 1.9% increase in fares would see a reduction of more than 136,000 in passenger departures.

There would be an increase in revenues from the departure charge of \$45 million but this would be more than offset by the economic costs to passengers and the wider economy in Colombia. The direct impact on passengers is estimated to be a loss of economic benefit (consumer surplus), due to higher travel costs, of \$25 million.

The impact of reduced air traffic and the reduced spending of these passengers is estimated to reduce annual GDP in Colombia by \$35 million, cause a loss of 2,920 jobs, reduce wage income by \$15 million, and reduce government tax revenues by \$5 million as a result of lower corporate and income tax payments.

## METHODOLOGY

- Economic benefits to passengers are estimated as shown in Figure 4.
- Supply-side benefits from connectivity were estimated based on the methodology published in 'Airline Economic Benefits: IATA Economic Briefing No.8, July 2007'.
- Demand-side benefits to GDP and benefits from tourism were estimated by Oxford Economics using their global economic model and satellite models.
- The benefits from new services was estimated by measuring the addition to passenger numbers and using the analysis provided by Oxford Economics, assuming a linear impact from a percentage increase in passenger numbers.
- The economic cost of charges were estimated as explained in the last section together with the use of the analysis provided by Oxford Economics, assuming a linear impact from a percentage increase in passenger numbers.



[www.iata.org/economics](http://www.iata.org/economics)