

**DESTINATION APEC 2020: A CONFERENCE ON ENHANCING
TOURISM AND AIR CONNECTIVITY IN THE ASIA-PACIFIC REGION
27-28 February 2012**

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28 February 2012

In the past two days of the conference, we are very grateful for the sharing of experience provided by APEC member economies, international organizations, private sector and the academe.

For the first time, this conference has broken ground in making the convergence of tourism and air transport officials and stakeholders to address, if not respond, to the evolving changes in the market places where we are all critical players. We in the APEC Tourism Working Group is extremely delighted for the overwhelming support extended by the transportation sector from the region. With your kind cooperation this conference would not have been a great success.

As we conclude today's forum, let me draw you back to conference objectives outline in the souvenir program and espoused by our co-convenor, Ms Cherry Lyn Rodolfo:

This conference has given all of us an opportunity to learn the development and issues faced by the tourism and transport sectors in the region. Indeed, we need not look at the air liberalization issue in isolation but on a greater magnitude or package of reform towards what Secretary Jimenez and Mr Rifai stressed yesterday as enhancing Travel Facilitation both for our citizens and the markets we served. Addressing the visa and entry formalities, investment climate and regime, and infrastructure are vital components of the travel facilitation program.

Based on the sharing of experiences, we have recognized that each member economy is in different stages and phases of liberalizing their air policies and regulations in support not only of tourism but also other economic sectors and the general welfare of the consumers and our people. The case studies from Thailand, Malaysia, Chile, Australia, The Philippines, Peru, and New Zealand have clearly demonstrated that tourism and transport ministries and agencies have begun the process of collaboration and integration of their programs.

However, we hope that greater cooperation would be undertaken in the near future to fast-track, if not hasten, the resolution of remaining issues internally and across the border. As a region, we must collectively work to help each other achieve the common goal of free and open movement of people and goods. As government authorities, our mandate is to generate economic activities to create jobs and employment opportunities for everyone.

It is evident from the country case studies that changes in air policies would need political will, support from stakeholders, and resources. Changes do not occur overnight. Some

have taken the most unpopular scheme while others have taken a more calculated and precise move. Whatever it is, we need to change the way we operate especially in today's fast moving and evolving global market place.

The information shared by international organizations - the International Air Transport Association, the Pacific Asia Travel Association, the Association of Asia Pacific Airlines, the ASEAN Secretariat - and the academe during this conference have reinforced our knowledge and provided new insights on how air services liberalization has progressed over the years. Indeed, the APEC TWG and the APEC TPT would need to work more closely with these organizations to leverage and synchronize its activities to accelerate the pace of liberalization.

What comes next after this conference? At the forthcoming meeting of the APEC TWG in Taipei, through the kind indulgence of the Lead Shepherd, the following recommendations are requested to be submitted for discussion:

1. A regular meeting be convened among the TWG and TPT to draw a more concrete agenda towards enhancing integration of tourism and air transport policies;
2. A forum, similar to this conference, be organized to bring into the fold other relevant sectors and agencies, e.g. foreign ministry, immigration agency, investment agency, and airport authority. The objective is to harmonize policies and programs in support of tourism growth;
3. Through the collaboration of international organizations, a study may be undertaken on the pace of air services liberalization in APEC region. This will assist and guide the TWG and TPT in aligning its activities in the future.

Perhaps, through the cooperation of the TPT members here in attendance, namely: Australia, Brunei, Indonesia, Malaysia, Mexico, Thailand, Russia, and Viet Nam, the above recommendations could also be discussed at its next meeting Russia in August 2012.

Thank you.

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Ambassador Laura del Rosario
Undersecretary, Office of International Economic Relations
Department of Foreign Affairs
Philippines
28 February 2012

My speech brings to focus the good work that the tourism and transportation working groups have been doing. I understand that the TWG is one of the most active working groups in the APEC organization. I happen to be the senior official of the Philippines for APEC and we are very much familiar with your work. And of course in the SOM our real focus is connectivity not just in terms of you guys but also of air transport but also supply chain and everything else.

In your case tourism seems to be the low hanging fruit where we can get the most of amount benefits right now because it benefits everybody in their hometowns. It has come to address a lot of poverty issues across the world especially those that have decided to use tourism as means to lift the economic prospects of a particular country. And we do admire your work and we know the advocacy you are doing. My own government is trying to address air connectivity. We are improving our airport and hopefully we can address our own tariff measures. We would like to copy Mexico. I think they did a contest called the "most useless regulation." I hope we can have our own "most useless regulation contest" here so that we can do something in the field of tourism. I am sure the people from the tourism sector will welcome this. That would add more fun in the Phil. We can ask every visitor "what did you find most useless in the Philippines that you would like to get rid of?" We are also working on integration and visas. We were told, in the case of the visa on arrival, we cannot do that now due to the congestion that can be worse than the congestion you have seen at the airport. There is something like the e-visa, and perhaps we can learn from some kind of improvement or best practices on e-visa from your own countries. You are worried about taxes. We are trying to look at the lowering of tariffs especially for airlines, and hopefully we can succeed there. We are also looking at the creation of incentives for tourists and transport operators but also investors in the field of tourism. Every time we think of the 7,100 islands we hope we can attract more investors in these resorts.

The future belongs to the Asia Pacific and we can continue our growth. The whole world seems to be looking at Asia and Asia Pacific to really push the growth of the whole world and bring it back to where it was before. Thank you for being here in our country and for being part of this discussion. We are appreciative of you being part of this group and that our hosting has contributed to moving the work of the TWG. We look forward to being part of your ministerial meeting in the future. Thank you very much and good afternoon.

AVIATION DEVELOPMENTS IN VIETNAM

(Presented by the Civil Aviation Authority of Viet Nam)

1. Introduction

Vietnam is situated in Asia and Pacific Regions which are most densely populated, with strong and dynamic economic potentials and growth. Besides, as it is located on the East-West and North-South transport axis which is the most important and busiest route in the world, Vietnam has a great potential in transportation, especially in air transport. The territory of Vietnam stretches from North to South at the length of more than 1,600 km with the total area of 331,041 km² and present population of about 88 million.

The network of cities and provincial towns are evenly scattered throughout the country. Vietnam has a comprehensive transport network with all modes of transport with roads of more than 77,300 km, railways of 3.150 km, waterways of 41.000 km, coastal lines of 3.200 km with 92 ports and a system of 61 airports being planned of which 20 are serving civil aviation operations. The systematic and appropriate development of all modes of transport will facilitate the multimodal transport in support of the air transport.

2. Civil Aviation cooperation with other countries

During recent years Viet Nam has concluded agreements or amended them in the direction of modernization such as those with Kuwait, Oman, USA, UAE, New Zealand, Canada, Iran, Malaysia, Qatar, Singapore, Japan, Korea, Austria, Thai land, Australia, Russian Federation, the UK, etc. To date, Vietnam has concluded air services agreements with 60 countries and territories. These agreements reflect different levels of air transport liberalization to facilitate the operation to/from Viet Nam by both Vietnamese and foreign airlines. Besides, Viet Nam has signed the Horizontal Agreement with the European Union (EU) on certain aspects of air transport, including airline designation, tariff, aviation safety to replace related provisions in the bilateral air services agreements signed with individual EU member countries, in line with the liberalization trend in the world and the EU law recently promulgated.

In ASEAN, Viet Nam has signed three ASEAN Multilateral Agreement on Air Services to implement the ASEAN air transport liberalization policy and the Roadmap for ASEAN air transport integration toward the establishment of the ASEAN Single Aviation Market by the year 2015.

In APEC, Viet Nam has offered its voluntary commitments in air transport services in line with general requirements of the member economies and has been actively implementing the eight options in air transport liberalization which was adopted by APEC transport ministers in 1995 and the liberalization road map in the Viet Nam's Individual Action Plan towards Bogor Goals i.e. full liberalization by the year 2010 and 2020 for developed and developing economies respectively.

In WTO, Viet Nam has offered its opening of market access as required by the GATS, namely aircraft repair, sales and marketing, computer reservation systems (CRSs) and joined the Agreement on Trade in Civil Aircraft and negotiated to expand the market access as required by the Doha Round.

3. Air Transport Growth

Before 1989, there were only few flights connecting Vietnam to Laos, Cambodia, China and then Thailand. During that time the Vietnam civil aviation industry was gradually expanding its international cooperation mainly on bilateral basis, preparing legal and technical foundation for further, more active and effective integration in the international aviation community starting from the 1990s when the Vietnam civil aviation became an independent economic and technical branch.

During the period of 1990-1994, as the starting point of the Vietnam civil aviation industry was low, the growth rate was rather high. This period marked an important milestone for the new phase of development of the civil aviation industry of Vietnam - a phase of development and integration into the international aviation community.

From 1995 till now, the air transport of Vietnam has been developing rapidly, transport equipment changed for better, transport capability enhanced, international competitiveness step by step strengthened and steadily developed. During the period of 1995 to 2005, the air transport market of Vietnam witnessed a high growth rate as compared to those of the world and regional markets, totaling 63 million passengers (at annual growth rate of nearly 11%), 1.39 million tons of cargo (at annual growth rate of nearly 11.4%), with the expanding route networks operated by the four Vietnamese carriers and 40 foreign airlines from 20 countries and territories connecting Vietnam with 27 cities in Asia, Europe, America and Australia.

The prominent feature of the last 5 years is that the air transport market of Vietnam has been developing firmly. A number of new airlines have operated new routes to Vietnam such as Air China, Turkish Airways, Lion Air, Qatar Airways, Jetstar Airways, Royal Brunei Airlines, Vladivostok Air... together with other secondary airlines from current markets like Mandarin Airlines, Bangkok Airways, Hongkong Airlines and other low-cost carriers in Southeast Asia such as Thai AirAsia, Air Asia, Jetstar Asia, Tiger Airways... which have brought a new face to the air transport market of Vietnam. In parallel, the international air freight market has also had a big step forward with new cargo carriers such as Cargolux, Air Hongkong, FedEx, Air China Cargo (to HCMC), China Airlines, Cargolux and Cathay Pacific (to Noi Bai) ...

The vigorous growth of the regional air transport (from 2005 to 2010, passenger and cargo traffic increased by 15.2% and 14.9% respectively) and the fierce competition have place a lot of challenges before the Vietnam civil aviation in expanding and upgrading of its networks of airports, air navigation systems as well as the training of its staff. These requirements are becoming

more and more pressing when the CAAV has made determination to bring the Vietnam civil aviation to the top 5 in Southeast Asia by the year 2020.

4. Airport Network of Vietnam

The domestic airport network of Vietnam has been structured as “spokes and hubs” with routes to/from localities from major 3 cities of Ha Noi, Da Nang and Ho Chi Minh City. There are now 39 routes to 19 cities and provincial towns throughout the countries operated by Vietnam Airlines, Jetstar Pacific Airlines, Air Mekong, VietJet Air and VASCO.

To date, there are 51 foreign airlines from 22 countries/areas operating 54 international routes from 34 points to Ha Noi, Da Nang and Ho Chi Minh City. For Viet Nam, only Vietnam Airlines operates the international routes with 47 direct routes from 3 big cities (Ha Noi, Da Nang and Ho Chi Minh City) to 28 points in 17 countries/areas, of which 12 are in Northeast Asia, 8 in Southeast Asia, 2 in Australia, 4 in Europe and 2 in North America and co-operates with foreign airlines on other 21 code-share services.

In order to meet the traffic demand, the Government of Vietnam has directed the development of the nation-wide airport master plan since 1993.

Presently, the Vietnam civil aviation is managing 22 airports (20 in operation), of which 6 are international and 16 are domestic

Operations of airports

All international airports of Vietnam are of ICAO’s Grade 4E with runways installed with landing aids. International passenger terminals are of international standard with total capacity of more than 30 million passengers per annum (Noi Bai: 8 mil., Da Nang: 6 mil., Tan Son Nhat: 19 mil.). These three international airports have been upgraded or invested for enhancing capability and service quality, such as a new international passenger terminal in Tan Son Nhat Airport (in operation in 2008), second runway, a new passenger terminal (T2) and a cargo terminal of 260 thousand tons per year at Noi Bai International Airport; upgrading and expansion of the runways and taxiways, aprons in synchronization with the construction of a new passenger terminal with annual throughput capacity of 6 million passengers at Da Nang International Airport. Phu Bai, Cam Ranh and Can Tho airports have just been announced international recently.

Domestic airports of Vietnam are of ICAO’s Grade 3C to 4E, equipped with navigational aids and some with ILS.

During the period of 2000-2010, the traffic growth at airports reached an average annual increase of 15.8%, 16.2% and 8.4% in terms of passengers, cargo and traffic movements respectively.

In 2011, the total throughput passenger traffic at airports of Vietnam reached more than 35.7 million, 84.4% of which were at 3 major international airports.

5. Planned Infrastructure Development

Average annual forecast of traffic growth:

	Year	
	2010-2015 (%)	2015-2020 (%)
Passenger	13 - 15	7 - 9
Cargo	13 - 15	11 - 13
Passenger handling	12 - 14	9 - 10
Cargo handling	12 - 14	11 - 14
Air traffic control	6 - 7	6 - 7

Traffic volumes at airports:

	Year	
	Up to 2015 (mil)	Up to 2020 (mil)
Passenger	60.8	88
Cargo (tons)	1.1	2

6. Airport Planning

Objectives

to enhance capacity and operational capability of the whole airport network by 2.5 times by the year 2015 and by approximately 4 times by the year 2020. A comprehensive airport network will be completed by the year 2020 with anticipated scope, capability and quality that can serve as passenger and cargo hubs of international standard and can compete with other major regional hubs.

to maximize revenues by diversifying services at airports and rationalizing franchise contracts; to improve service quality at the airports by preventing monopoly and anti-competitive practices and by corporatizing some of the services that are justified.

to commercialize services at airports, facilitating competitive provision of non-aviation services; increase the proportion of non-aviation revenue (targeted for more than 50%) with involvement of private sectors in this area.

Measures to be taken up to the year 2015

By the year 2015, the airport network will have been planned in the “spoke and hub” manner that Ha Noi, Da Nang and Ho Chi Minh City will be three major points for feeding passengers and cargo for both domestic and international routes. Such planning will also take into account the appropriate development of local airports which play an

important role in the national economy and defense in order to develop these areas by means of opening trans-region routes as well as international routes if needed.

By the year 2015, 24 airports are expected to be put into operation, of which 10 are international (Noi Bai, Cat Bi, Phu Bai, Da Nang, Chu Lai, Cam Ranh, Tan Son Nhat, Can Tho, Phu Quoc) and 14 are domestic (Dien Bien, Na San, Gia Lam, Vinh, Dong Hoi, Phu Cat, Tuy Hoa, Pleiku, Buon Ma Thuot, Lien Khuong, Rach Gia, Ca Mau, Con Son, Vung Tau). All resources will be made available to invest into international airports. Other domestic airports of Lao Cai and Quang Ninh will be constructed and put into operation by the year 2016.

Based on the master plans for regions and localities by the year 2015, study will be made for the construction of some airports to serve helicopters and small-size fixed-wing aircraft in remote areas of Cao Bang, Lai Chau, Kontum, Daknong...

Development plans of international airports

(1) Noi Bai International Airport:

- to be the centre for both international and domestic traffic of the Northern region, one of the three major points on the domestic trunk route and one of the two biggest international passenger and cargos hub of the country.
- to be certified with ICAO's Grade 4E, capable of accommodating B747-400 or equivalent. Investment will be made to make use of all potentials of the existing infrastructure at the North side of the airport; to build the new passenger Terminal 2 at the North side of the airport aiming at increasing the throughput capacity of the airport up to 16 million passengers per year up to 2015 and 25 million by 2020 with the addition of another new passenger Terminal 3.

(2) Da Nang International Airport:

to be the centre for both international and domestic traffic of the Central region, one of the three major points on the domestic trunk route; investment will be made to promote Da Nang International Airport to be a true destination of the central region for international flights from countries in the region.

to be certified with ICAO's Grade 4E, capable of accommodating B747-400 or equivalent after the completion of the upgrading and expansion of the runway 35R/17L. The throughput capacity is expected to be 6 million passengers and 80,000 tons of cargo from the year 2012.

(3) Tan Son Nhat International Airport:

to be the centre for both international and domestic traffic of the Southern region, one of the three major points on the domestic trunk route and one of the two biggest international passenger and cargos hub of the country.

After 2020, the passenger hub of Tan Son Nhat International Airport will be moved to Long Thanh International Airport.

to be certified with ICAO's Grade 4E, capable of accommodating B747-400 or equivalent. The capacity will be up to 23.5 million passengers and 600,000 tons of cargo per year by 2015.

(4) Chu Lai International Airport:

- to be an international cargo hub and for other trans-area domestic flights linking Central, Northern and Southern regions of the country.
- to be certified with ICAO's Grade 4E, capable of accommodating B747-400 or equivalent. To make Chu Lai an international airport with the throughput capacity of 1 million tons of cargo and 300,000 passengers per year.

(5) Long Thanh International Airport:

to be the biggest international airport of the country and an international passenger hub of the region at international standard.

to be certified with ICAO's Grade 4F (the highest grade according to ICAO's standards), capable of accommodating A380 or equivalent, the capacity for the first phase will be 25 million passengers per year by 2020.

(6) Cam Ranh International Airport:

to be certified with ICAO's Grade 4E, capable of accommodating B777 or equivalent with the capacity up to 5 million passengers per year by 2020 with another runway to be planned.

Domestic airports

By 2015, investments will also be made in airports with high economic and tourist potentials (Vinh, Dong Hoi, Lien Khuong, Phu Quoc) and strategic areas in the North West, Central Highland, South West regions and islands (Dien Bien, Na San, Pleiku, Buon Ma Thuot, Con Dao) in order to promote economic development and national security. Necessary facilities will be made available to serve chartered tourist flights at airports of Dien Bien, Lien Khuong, Phu Quoc, Vung Tau.

- END -

OXFORD ECONOMICS

**Economic Benefits from Air
Transport in the Philippines**



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Through a survey conducted by IATA many organisations across the aviation industry supplied us with data that has formed an integral part of our analysis. In addition, the Airports Council International (ACI) very kindly provided us data on the economic activities at airports. We would like to thank all these organisations for their generosity in supplying this data, without which this report could not have been written.

A note on the data reported in the report

Unless otherwise stated, the numbers reported in this report relate to the calendar year 2009.

Oxford Economics 2011

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Facts & figures

Philippine aviation's economic benefits

Air transport to, from and within the Philippines creates three distinct types of economic benefit. Typically, studies such as this focus on the 'economic footprint' of the industry, measured by its contribution to GDP, jobs and tax revenues generated by the sector and its supply chain. But the economic value created by the industry is more than that. The principal benefits are created for the customer, the passenger or shipper, using the air transport service. In addition, the connections created between cities and markets represent an important infrastructure asset that generates benefits through enabling foreign direct investment, business clusters, specialization and other spill-over impacts on an economy's productive capacity.

1. Aviation's economic footprint

Contribution to Philippine GDP

The aviation sector contributes PHP 35.5 billion (0.4%) to Philippine GDP. This total comprises:

- PHP 17.6 billion directly contributed through the output of the aviation sector (airlines, airports and ground services);
 - PHP 9.7 billion indirectly contributed through the aviation sector's supply chain; and
 - PHP 8.2 billion contributed through the spending by the employees of the aviation sector and its supply chain.
- In addition there are PHP 156.7 billion in 'catalytic' benefits through tourism, which raises the overall contribution to PHP 192.2 billion or 2.4% of GDP.

Major employer

The aviation sector supports 123,000 jobs in the Philippines. This total comprises:

- 44,000 jobs directly supported by the aviation sector;
 - 42,000 jobs indirectly supported through the aviation sector's supply chain; and
 - 36,000 jobs supported through the spending by the employees of the aviation sector and its supply chain.
- In addition there are a further 751,000 people employed through the catalytic (tourism) effects of aviation.

High productivity jobs

The average air transport services employee generates PHP 865,000 in GVA annually, which is around 3.8 times more productive than the average in the Philippines.

Contribution to public finances

The aviation sector pays over PHP 7.0 billion in tax including income tax receipts from employees, social security contributions and corporation tax levied on profits, with a further PHP 17.0 billion of revenue coming from travel tax, an alien head tax and VAT. It is estimated that an additional PHP 1.4 billion of government revenue is raised via the aviation sector's supply chain and another PHP 1.2 billion through

taxation of the activities supported by the spending of employees of both the aviation sector and its supply chain.

2. Consumer benefits for passengers and shippers

From visiting family and friends to shipping high value products, 27 million passengers and 596,000 tonnes of freight travelled to, from and within the Philippines. More than 42,000 scheduled international flights depart the Philippines annually, destined for 43 airports in 23 countries. Domestically, more than 167,000 flights make over 18.6 million seats available to passengers annually, destined to 42 airports.

Air passengers resident in the Philippines comprise approximately 14 million of the passenger total. For the 27 million passenger flights in total, passengers pay PHP 947 billion (inclusive of tax), with Philippine residents paying around PHP 491 billion. This expenditure is likely to significantly understate the value passengers actually attach to the flights they use (see Section 1). Calculations by Oxford Economics suggest the value of the benefit to travellers from flying, in excess of their expenditure, is worth PHP 575 billion a year (PHP 298 billion for Philippine residents).

Air transport is crucial for the distribution of high value to weight products. Air freight may only account for 0.5% of the tonnage of global trade with the rest of the world, but in value terms it makes up around 34.6% of the total.

Shippers pay airlines PHP 81 billion annually to carry 596,000 tonnes of freight to, from and within the Philippines. The benefit to shippers, in excess of this expenditure, is estimated as PHP 34 billion. Based on the share of exports in total merchandise trade, Philippine shippers receive nearly half of this benefit (PHP 17 billion).

3. Enabling long-term economic growth

In 2010 there were 56 routes connecting major airports in the Philippines to urban agglomerations around the world. On average there were 4 outbound flights per day along these routes. A total of 18 of these routes were connecting the Philippines to cities of more than 10 million inhabitants, with an average of 5.5 outbound flights per day available to passengers. Frequencies are higher to the most economically important destinations. For example, passengers benefited from 16 outbound flights per day from Manila to Hong Kong International Airport, and from 13 flights per day from Manila to Singapore International Airport, providing high speed access for business and leisure purposes throughout the day. Many of these city-pair connections are only possible because of the traffic density provided by hub airports. The Philippines's integration into the global air transport network transforms the possibilities for the Philippine economy by:

- Opening up foreign markets to Philippine exports;
- Lowering transport costs, particularly over long distances, helping to increase competition because suppliers can service a wider area and potentially reduce average costs, through increased economies of scale;
- Increasing the flexibility of labour supply, which should enhance allocative efficiency and bring down the natural rate of unemployment;
- Encouraging Philippine businesses to invest and specialise in areas that play to the economy's strengths;
- Speeding the adoption of new business practices, such as just-in-time-inventory management that relies on quick and reliable delivery of essential supplies;

- Raising productivity and hence the economy's long-run supply capacity. It is estimated that a 10% improvement in connectivity relative to GDP would see a PHP 5.1 billion per annum increase in long-run GDP for the Philippine economy.

This report describes these channels in more detail.

Section 1 quantifies the benefits of air travel for air passengers and air freight shippers.

Section 2 examines the way in which the aviation sector supports long-run prosperity: by delivering supply-side benefits through a variety of different channels, which help to increase the economy's level of productivity, and hence its long-term sustainable rate of growth.

Section 3 analyses the economic footprint of the aviation sector - the airlines, the ground-based infrastructure, manufacturing and spillover effects on tourism and trade - to quantify the value of its output and the jobs it supports in the Philippines.

1 Consumer benefits for passengers and shippers

The aviation sector – comprising the airlines together with the airports, air navigation and other essential grounds services that make up the air transport infrastructure – carries over 27 million passengers¹ and 596,000 tonnes of air freight to, from and within the Philippines. More than 42,000 scheduled international flights depart the Philippines annually, destined for 43 airports in 23 countries. Domestically, more than 167,000 flights make over 18.6 million seats available to passengers annually, destined to 42 airports².

Among the many reasons that people and businesses use air transport, people rely on it for holidays and visiting friends and family; while businesses use air transport for meeting clients and for the speedy and reliable delivery of mail and goods often over great distances. For this reason, the air transport network has been called the Real World Wide Web³.

The most important economic benefit generated by air transport is the value generated for its consumers, passengers and shippers. Passengers spent PHP 947 billion (inclusive of tax) on air travel in 2009 and shippers spent PHP 81 billion on the transportation of air cargo⁴. With its speed, reliability and reach there is no close alternative to air transport for many of its customers. This means that many are likely to value air services higher than what might be suggested by their expenditure on these services. But this economic value will vary from flight to flight, and from consumer to consumer, making it difficult to measure.

1.1 Consumer benefits

The value of consumer benefit varies because as you fly more often, the value you attach to each additional flight will in general fall. As frequent flyers know, the more they fly, the less excited they get when they step on a plane. There comes a point when the fare exceeds the value we place on taking an additional flight, and we choose instead to spend our money on other things. For this reason the air fares that we are willing-to-pay do not reflect the value we place on air transport so much as the value we place on the last flight we have flown. Much the same applies to the market as a whole. Air fares reflect the value placed on the service by the marginal passengers - those who would forgo the flight were prices to rise - and not the value that passengers as a whole place on air transport services.

For this reason, valuing the consumer benefits for air passengers and air freight shippers can not be inferred simply from observed fares and shipping charges. In addition to the fares paid, we need an idea of how the passengers and shippers value air transport other than at the margin. Unfortunately there is no readily available data on this, and so we must rely instead on judgement, informed by economic theory, to guide us. Economics tells us that the estimated benefits hinge on the sensitivity of demand to changes in fares – the *price elasticity of demand*. Estimates of price elasticities are available from previous research. Economic theory also tells us that price elasticities will fall as we move away from the margin, but it offers less guidance on how much they may fall by. This matters, because lower the price elasticity – the less sensitive passengers are to a change in price – the higher the consumer benefit.

¹ This is a count of passengers on domestic flights as well as passengers arriving and departing on international flights. Each passenger connecting to another flight at a Philippine airport is counted once on their arriving flight and again on their departing flight.

² Annual estimate of international and domestic operations for 2010 based on airline schedules published by SRSAnalyzer.

³ “Aviation – The Real World Wide Web”, by Oxford Economics. Available at <http://www.oxfordeconomics.com/samples/airbus.pdf>

⁴ Passenger spending based on fares from IATA’s PaxIS database plus estimates for taxes and surcharges paid. Cargo spending based on freight rates from IATA’s CargoIS database.

It follows that taxation of air travel or cargo directly reduces the economic benefit of all passengers and shippers, as well as, at the margin, stopping a number of people travelling and stopping a number of shippers using air cargo services.

1.2 Estimated consumer benefits

Given its sensitivity to our assumption about how price elasticities vary, we have taken a very conservative assumption that probably understates the true benefits (see Annex). With this in mind, we calculate that air passengers and shippers valued the air transport services they used at over PHP 1,522 billion and PHP 115 billion respectively. Contained within these amounts, the consumer benefits derived on top of that measured by expenditure on travel and shipments were about PHP 575 billion for passengers and PHP 34 billion for shippers.

The total benefits accruing to passengers using the Philippine air transport system will include those related to residents and non-residents as well as passengers already being accounted for under the benefits associated with the economy at the other end of international routes. Some 14 million or 52% of the 27 million passengers using air transport services to, from and within the Philippines were residents. As for the share of freight shipped by firms based in the Philippines, data is not readily available. To give a broad indication we have used instead the share of exports in total merchandise trade. This is estimated to be 49.1% of the total trade in goods in 2009⁵. From this we estimate that, out of the consumer benefits generated by Philippine air transport and on top of that measured by expenditure, Philippine citizens derived PHP 298 billion in value and shippers around PHP 17 billion in value.

⁵ Oxford Economics Global Macroeconomic Model

2 Enabling long-term economic growth

2.1 Connectivity and the cost of air transport services

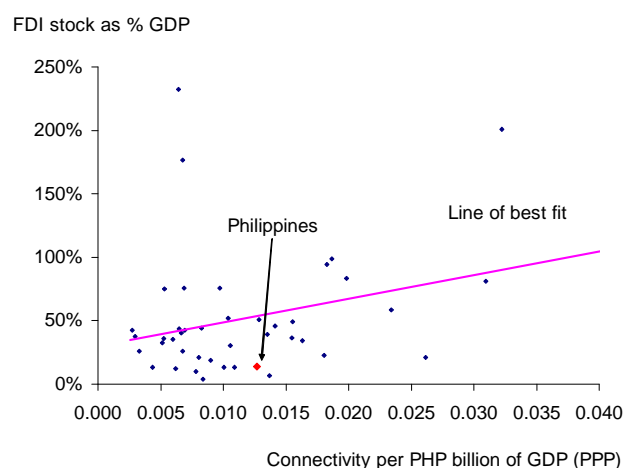
The air transport network has been called the Real World Wide Web⁶. Chart 2.1 gives an idea of how extensive the air transport network is for the Philippines. Out of this network, in 2010 there were 56 routes connecting major airports in the Philippines to urban agglomerations around the world. On average there were 4 outbound flights per day along these routes.⁷ A total of 18 of these routes were connecting the Philippines to cities of more than 10 million inhabitants, with an average of 5.5 outbound flights per day available to passengers. Frequencies are higher to the most economically important destinations. For example, passengers benefited from 16 outbound flights per day from Manila to Hong Kong International Airport, and from 13 flights per day from Manila to Singapore International Airport, providing high speed access for business and leisure purposes throughout the day.

Chart 2.1: Connectivity, 2010



Source : IATA

Chart 2.2: Foreign direct investment and connectivity



Source : IATA, Oxford Economics

These linkages represent the ‘connectivity’ of Philippine cities with major cities and markets around the world. Connectivity reflects the range, frequency or service, the economic importance of destinations and the number of onward connections available through each country’s aviation network. Improvements in connectivity achieved in recent decades has brought benefits to users of air transport services by: reducing time spent in transit, increasing the frequency of service, allowing for shorter waiting times and better targeting of departure and arrival times; and improving the quality of service, such as reliability, punctuality and quality of the travel experience.

A number of these city-pair connections have point-to-point services, where passenger flow density is sufficient to make the economics work. However, many of the city-pair connections that make up the Philippines’s connectivity to overseas markets can only be served by airlines aggregating flows from a number of origins through a hub airport in order to generate a sufficiently dense flow of passengers.

⁶“Aviation – The Real World Wide Web”, by Oxford Economics. Available at <http://www.oxfordeconomics.com/samples/airbus.pdf>

⁷ Route and frequency figures from airlines schedules published by SRSAnalyzer. Urban agglomerations defined as contiguous built-up areas of at least 1 million population. See <http://www.citypopulation.de>.

Improvements in connectivity have been accompanied by a steady fall in the cost of air transport services. The cost of air transport services, in real terms, has fallen by around 1% a year over the past 40 years, contributing to the rapid expansion in the volume of trade seen over this period⁸. Air transport has also steadily become more competitive relative to other modes of transport. For example, it is estimated that its relative cost has been falling by around 2.5% a year since the 1990s⁹. As its relative cost has fallen, air shipments have become increasingly important for international trade.

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.

2.2 How aviation enhances economic performance

Improvements in connectivity contribute to the economic performance of the wider economy through enhancing its overall level of productivity. This improvement in productivity in firms outside the aviation sector comes through two main channels: through the effects on domestic firms of increased access to foreign markets, and increased foreign competition in the home market, and through the freer movement of investment capital and workers between countries.

Improved connectivity gives Philippine-based businesses greater access to foreign markets, encouraging exports, and at the same time increases competition and choice in the home market from foreign-based producers. In this way, improved connectivity encourages firms to specialise in areas where they possess a comparative advantage. Where firms enjoy a comparative advantage, international trade provides the opportunity to better exploit economies of scale, driving down their costs and prices and thereby benefiting domestic consumers in the process. Opening domestic markets to foreign competitors can also be an important driver behind reducing unit production costs, either by forcing domestic firms to adopt best international practices in production and management methods or by encouraging innovation. Competition can also benefit domestic customers by reducing the mark-up over cost that firms charge their customers, especially where domestic firms have hitherto enjoyed some shelter from competition.

Improved connectivity can also enhance an economy's performance by making it easier for firms to invest outside their home country, which is known as foreign direct investment (FDI). Most obviously, the link between connectivity and FDI may come about because foreign investment necessarily entails some movement of staff: whether to transfer technical know-how or management oversight. But increased connectivity also allows firms to exploit the speed and reliability of air transport to ship components between plants in distant locations, without the need to hold expensive stocks of inventory as a buffer. Less tangibly, but possibly just as important, improved connectivity may favour inward investment as increased passenger traffic and trade that accompanies improved connectivity can lead to a more favourable environment for foreign firms to operate in. Chart 2.2 plots the total value of FDI built up in individual countries in relation to their GDP against an index of connectivity (produced by IATA), that measures the availability of flights, weighted by the importance of each of the destinations served. The chart shows that countries with higher connectivity (measured relative to their GDP), are in general more successful at attracting foreign direct investment. This is emphasised by the upward sloping line that confirms the statistical relationship between greater connectivity and greater FDI.

⁸ See Swan (2007), 'Misunderstandings about Airline Growth', *Journal of Air Transport Management*, 13, 3-8, and Baier and Bergstrand (2001), 'The growth of world trade: tariffs, transport costs and income similarity', *Journal of International Economics*, 53:1, 1-27.

⁹ See Hummels (2007), 'Transportation Costs and International Trade in the Second Era of Globalisation', *Journal of Economic Perspectives*, 21.3, Summer.

2.3 Connectivity and long-term growth

A thought experiment considering the impact on trade from eliminating the air transport network suggests the economic benefit of connectivity is substantial. Moreover, the experience of businesses in Europe during the volcanic ash-induced airspace closures of 2010, as just-in-time supply chains failed, provides a more concrete illustration of how dependent modern economies are on their air transport infrastructures.

A number of recent studies have attempted to quantify the long-term impact on a country's GDP that results from an improvement in connectivity. Measuring connectivity is not straightforward. Chart 2.3 shows one measure of Philippine connectivity, compared to other economies (see Annex for details)¹⁰. Given that the supply-side benefits of connectivity come through promoting international trade and inward investment, any impact is likely to manifest itself gradually over time. This protracted adjustment makes it very challenging to disentangle the contribution that improved connectivity has had on long-term growth, from the many of other factors that affect an economy's performance. This issue is reflected in the wide range of estimates that studies have reached for connectivity's impact on long-run growth. Three studies undertaken in 2005 and 2006 provide estimates of the impact that connectivity can have on long-run level of productivity (and hence GDP). The mechanisms through which connectivity generates this economic benefit are those described in Section 2.2. These studies suggest that a 10% increase in connectivity (relative to GDP) will raise the level of productivity in the economy by a little under 0.5% in the long run, with there being a fair degree of uncertainty around this average estimate¹¹. A much wider 2006 study, based on a cross-country statistical analysis of connectivity and productivity, derived a lower estimate of 0.07% for the elasticity between connectivity and long-run productivity¹².

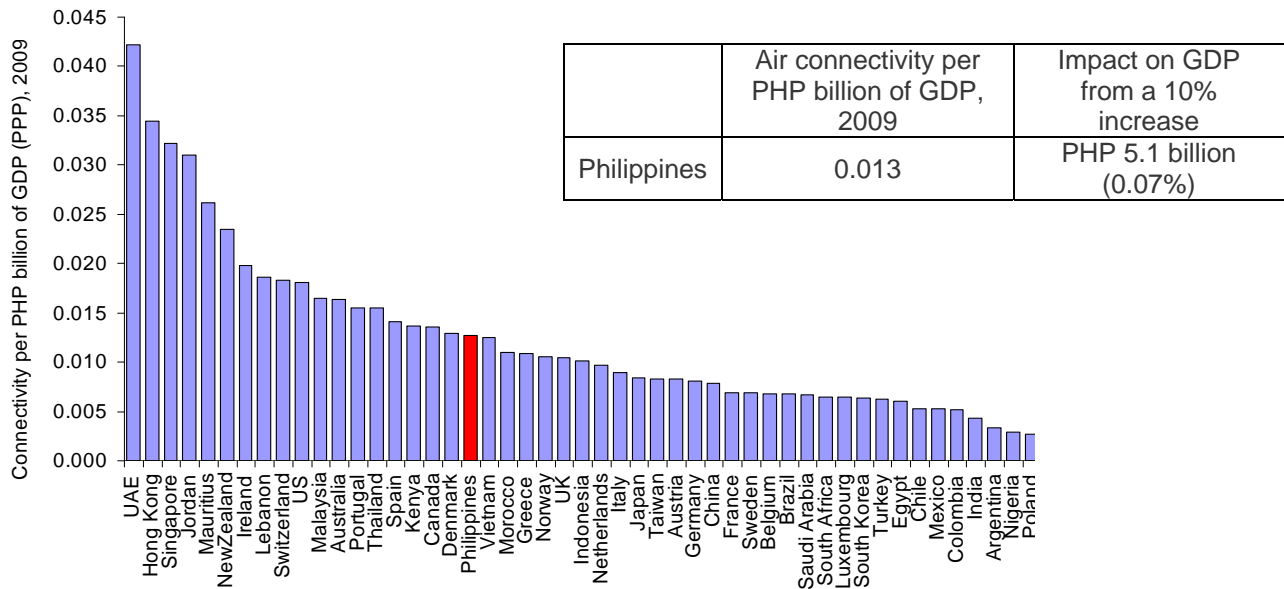
Given the uncertainty about the correct elasticity, here we adopt the elasticity of 0.07 derived from the 2006 study, as the lowest estimate among the available studies it provides a conservative estimate of the impact of connectivity on long-term GDP. Based on this estimate, a 10% improvement in the Philippines's connectivity (relative to GDP) would see a PHP 5.1 billion per annum increase in long-run GDP.

¹⁰ This measure emphasises passenger connectivity and as such will reflect the freight connectivity associated with belly cargo capacity in passenger aircraft but may not fully capture that provided by all-cargo operations or integrator networks.

¹¹ 'The Economic Catalytic Effects of Air Transport in Europe', by Oxford Economic Forecasting (2005) on behalf of the EUROCONTROL Experimental Centre and 'The Economic Contribution of the Aviation Industry in the UK', by Oxford Economic Forecasting (2006). These studies also allow for connectivity to increase the long-run level of GDP through increasing investment. Allowing for this additional channel raises the total impact of a 10% increase in connectivity relative to GDP on long-run GDP to over 1%.

¹² "Measuring the Economic Rate of Return on Investment in Aviation" by InterVISTAS Consulting Inc. (2006)

Chart 2.3: Air connectivity by country, 2009



Source: IATA, IMF for GDP (PPP basis)

3 Economic footprint

Sections 1 and 2 have looked at the benefits of air transport services for its customers, and the longer-term benefits that come through increasing long-term growth in the economy as a whole. In this section we turn to the domestic resources that the aviation sector currently deploys to deliver its services, together with the domestic goods and services consumed by the workers who depend on the sector for their employment. We call the value added and jobs supported by this economic activity the aviation sector's 'economic footprint'.

The resources deployed by the aviation sector are measured by its Gross Value Added (GVA). GVA is calculated either as the output created by the sector less the cost of purchased inputs (net output measure), or by the sum of profits and wages (before tax) generated from the sector's economic activity (income measure). The two approaches are equivalent. Using either approach, by adding the GVA of all firms in the economy, one derives an estimate for the economy's overall output (GDP)¹³. We refer to this as the sector's direct contribution to GDP.

From this direct contribution, the sector's economic footprint is calculated by adding to it the output (and jobs) supported through two other channels, which we refer to as the indirect and the induced contributions. The indirect contribution measures the resources deployed by the aviation sector through using domestically produced goods and services produced by other firms – i.e. the resources used through its supply chain. The GVA generated through the indirect and direct channels supports jobs both in the aviation sector and in its supply chain. The workers whose employment depends on this activity in turn spend their wages on goods and services. The induced contribution is the value of the domestic goods and services purchased by this workforce. Taken together, these three channels give the aviation sector's economic footprint in terms of GVA and jobs.

The aviation sector contributes to the economy in two other ways. Through the taxes levied on GVA (recall that it is equal to the sum of profits and wages), the aviation sector supports the public finances, and the public services that depend on them. Second, through its investment and its use of advanced technology, the aviation sector generates more GVA per employee than the economy as a whole, raising the overall productivity of the economy. These issues are discussed at the end of this section.

3.1 The aviation sector and its economic footprint

The sector is comprised of two distinct types of activity:

- **Airlines** transporting people and freight.
- **Ground-based infrastructure** that includes the airport facilities, the services provided for passengers on-site at airports, such as baggage handling, ticketing and retail and catering services, together with essential services provided off-site, such as air navigation and air regulation.

The aviation sector supports GDP and the employment in the Philippines through four distinct channels. These channels are:

- **Direct** – the output and employment of the firms in the aviation sector.

¹³ It is only true to an approximation that GVA is equal to the sum of profit and wages, or that the sum of GVA across firms equals GDP. The difference in each case, however, is small enough for us to proceed as if the equalities do in fact hold. The differences are explained in Annex A to this report.

- **Indirect** – the output and employment supported through the aviation sector’s Philippine based supply chain.
- **Induced** – employment and output supported by the spending of those directly or indirectly employed in the aviation sector.
- **Catalytic** – spillover benefits associated with the aviation sector. Some of these include the activity supported by the spending of foreign visitors travelling to the Philippines via air, and the level of trade directly enabled by the transportation of merchandise.

Table 3.1: Aviation’s contribution of output and jobs to the Philippines

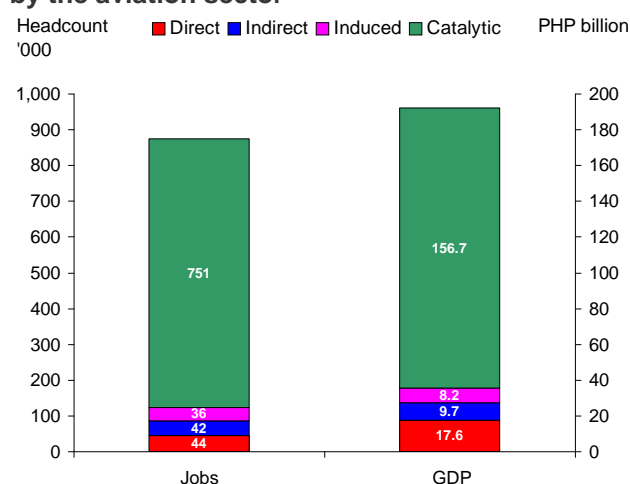
	Direct	Indirect	Induced	Total	% of whole economy
Contribution to GDP (PHP billion)					
Airlines	7.9	5.3	3.4	16.6	0.2%
Airports and Ground Services	9.6	4.5	4.8	18.9	0.2%
Total	17.6	9.7	8.2	35.5	0.4%
Catalytic (tourism)	50.8	75.0	30.9	156.7	2.0%
Total including catalytic	68.4	84.7	39.1	192.2	2.4%
Contribution to employment (000s)					
Airlines	11	23	15	49	0.1%
Airports and Ground Services	33	19	21	73	0.2%
Total	44	42	36	123	0.3%
Catalytic (tourism)	153	457	141	751	2.1%
Total including catalytic	197	500	177	874	2.5%

Source: IATA, ACI, Oxford Economics

The table above reports the economic contribution of the airlines and airports for each of the four channels. Contributions are reported both in terms of GDP and employment. In the following pages we look in turn at the airlines, the ground-based infrastructure and catalytic spillover benefits in terms of trade and tourism, and describe their economic contribution in more detail.

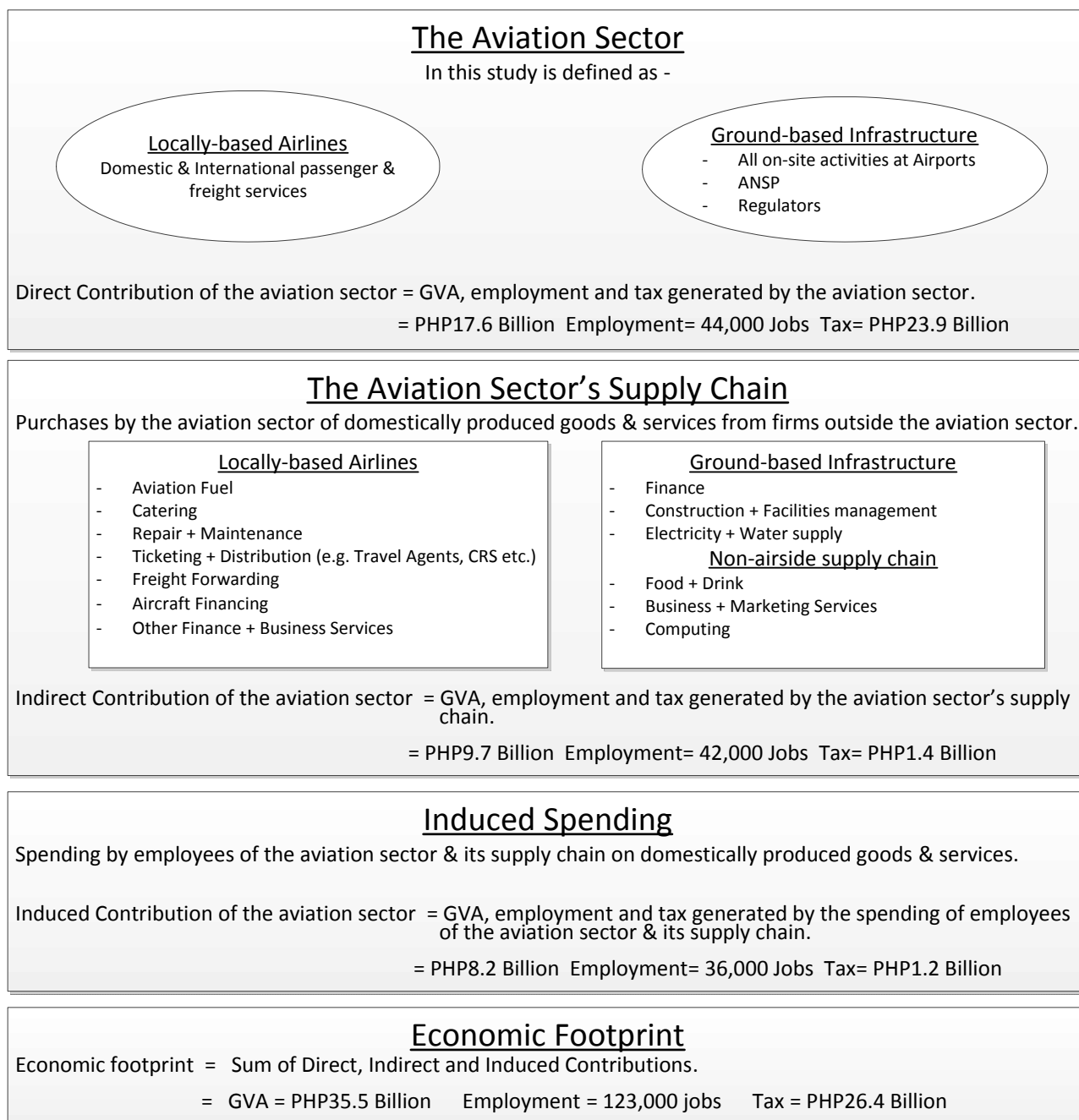
The way that we build up the aviation sector’s economic footprint is also illustrated in Figure 3.1. The top panel shows the two activities that comprise the aviation sector; the air transport services, and the airports and ground-based infrastructure. The panel below represents their supply chains with boxes that list the most important inputs purchased by each activity. The third panel from the top describes the induced contribution that comes through the spending by workers of both the aviation sector and its supply chain – represented by the arrows that link this panel with the panels above. The bottom panel, entitled ‘economic footprint’, reports the total GVA, jobs and tax contribution. These totals are the sum of the numbers reported in the panels above.

Chart 3.1: Philippine Jobs and Output supported by the aviation sector



Source : IATA, ACI, Oxford Economics

Figure 3.1: Philippine aviation sector¹⁴

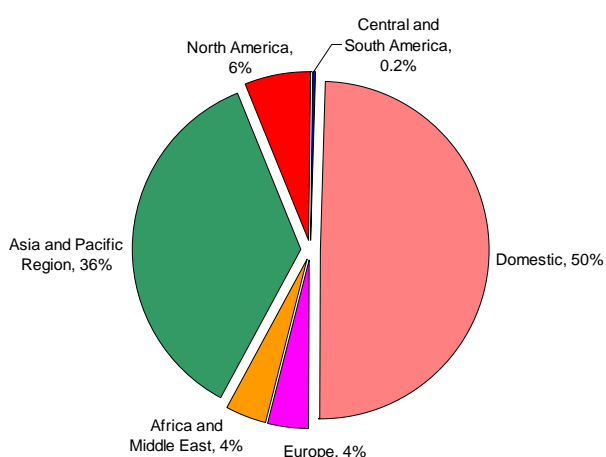


¹⁴ For a definition of GVA please refer to the Annex

3.2 The airlines

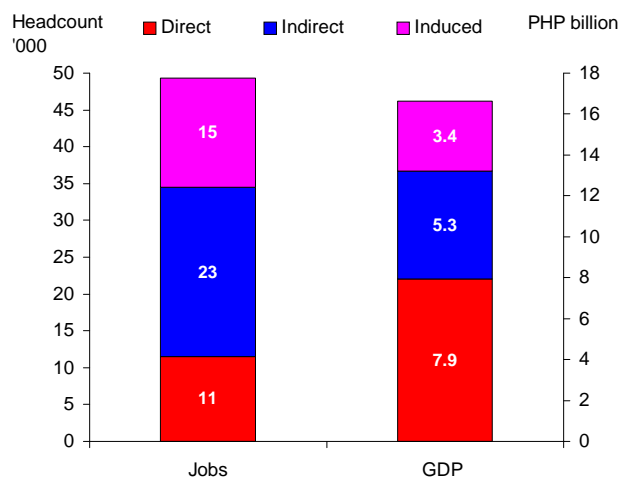
Airlines registered in the Philippines carry 20 million passengers and 381,000 thousand tonnes of freight a year to, from and within the Philippines¹⁵. Among the many reasons that people and businesses use air transport, people rely on it for holidays and visiting friends and family; while businesses use air transport for meeting clients and for the speedy and reliable delivery of mail and goods often over great distances. The air transport network, the “Real World Wide Web”, offers practical, fast and reliable transport across the globe. The regions which travellers fly to and from underline its global reach (see Chart 3.2).

Chart 3.2: Regional distribution of scheduled passenger trips originating in the Philippines



Source : IATA

Chart 3.3: Philippine jobs and output supported by airlines



Source : IATA, Oxford Economics

Airlines registered in the Philippines directly employ 11,000 people locally, and support through their supply chains a further 23,000 jobs. Examples of these supply-chain jobs include those in the distribution sector delivering aviation fuel; and jobs in the catering sector preparing the meals served on airlines. A further 15,000 jobs are supported through the household spending of those employed by airlines and their supply chain.

These airlines directly contribute around PHP 7.9 billion to the Philippine economy (GDP). The sector contributes indirectly another PHP 5.3 billion through the output it supports down its supply chain. A further PHP 3.4 billion comes from the spending of the employees of the airlines and their supply chains.

Overall, these airlines contribute over PHP 16.6 billion to the economy and support 49,000 jobs in the Philippines.

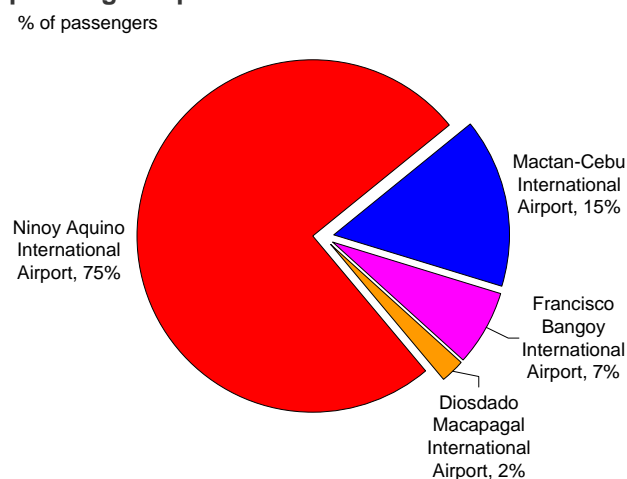
¹⁵ This figure relates to all passengers carried by Philippine airlines. Some of this total would be passengers carried on trips that originate and end outside The Philippines.

3.3 The airports and ground-based services

Airlines need ground-based infrastructure to operate. This infrastructure includes the facilities at Philippine airports that directly serve passengers, such as baggage handling, ticketing, retail and catering outlets. Less visible are the essential services which are sometimes provided off-site, such as air navigation and air regulation, as well as the local activities of freight integrators.

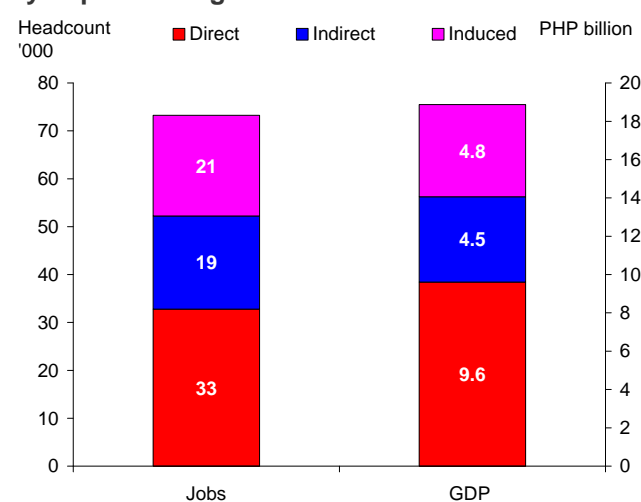
The four largest airports in the Philippines – Ninoy Aquino (Manila) International, Mactan-Cebu International, Francisco Bangoy (Davao) International and Diosdado Macapagal (Clark) International – handle nearly 28 million passengers a year (Chart 3.4). In total over 42 million passengers arrive or depart from Philippine airports each year¹⁶. Over 596,000 thousand tonnes of freight is handled annually.

Chart 3.4: Regional distribution of Philippine passenger trips



Source : IATA

Chart 3.5: Philippine jobs and output supported by airports and ground-based services



Source : IATA, ACI, Oxford Economics

Aviation's ground-based infrastructure employs 33,000 people and supports through its supply chain a further 19,000 jobs. These indirectly supported jobs include, for instance, construction workers building or maintaining facilities at airports. A further 21,000 jobs are supported by the spending of those employed by the aviation industry's ground-based infrastructure and its supply chain.

The ground-based infrastructure directly contributes PHP 9.6 billion to the Philippine economy (GDP). It contributes indirectly another PHP 4.5 billion through the output it supports down its supply chain. A further PHP 4.8 billion comes through the spending of those who work in ground-based facilities and its supply chain.

Ninoy Aquino International Airport in Manila is the Philippines's principal airport. As a hub airport for intercontinental passenger traffic, Ninoy Aquino International Airport can offer its Philippine residents and businesses better access to more destinations, at a higher frequency and at lower priced fares. As discussed in Section 2 of this report, such network benefits enhance a country's connectivity, which in turn can feed through to the economy's overall levels of productivity and GDP.

¹⁶ This figure is equivalent to the 27 million passenger number used elsewhere in this report but the larger figure also includes the count of passengers arriving at airports on a domestic flight, effectively counting these domestic passengers twice compared to international passengers with origin or destination airports outside of The Philippines.

3.4 Tax contribution

Aviation makes a substantial contribution to the public finances. In this section we estimate the corporation tax paid by aviation companies, the income tax paid by their employees, social security payments (both employer and employee contributions), and the revenue collected through aviation taxes. These estimates reflect the direct tax payments of the aviation sector. We also provide an indication of the taxes paid by the aviation sector's supply chain and taxes raised through induced spending channels. They do not include increases in the overall Philippine tax base driven by aviation's contribution to investment and productivity growth in the wider economy.

Table 3.2: Aviation makes a substantial contribution to Philippine tax¹⁷

	PHP billion	PHP billion
Taxes on Aviation Sector's GVA		7.0
	<i>Comprised of:</i>	
Corporation Tax	1.9	
Income and SS	5.0	
Travel tax, alien head tax and VAT		17.0
Aviation Sector's direct tax contribution		<u>23.9</u>
Tax generated through the aviation sector's indirect and induced impact		2.5
Total tax attributable to the aviation sector's economic footprint		<u><u>26.4</u></u>

Source: IATA, Philippine Tax Office, Oxford Economics

The aviation sector contributed over PHP 7.0 billion in taxes through corporation tax and the income and social security contributions (both employee and employer contributions). Air passengers paid a further PHP 17.0 billion in travel taxes, an alien head tax and VAT, bringing the total tax contribution to PHP 23.9 billion. This contribution is likely to increase further, as the sector recovers following a number of difficult years where many firms suffered losses. Very indicatively, it is estimated that a further PHP 2.5 billion of government revenue is raised via taxation through the indirect (PHP 1.4 billion) and induced (PHP 1.2 billion) channels. Not included in the table above are domestic aviation fuel taxes estimated to be in the range of PHP 0.8-1.2 billion.

3.5 Investment and productivity

Apart from these transformative effects on the wider economy, air transport services – the airlines, airports and ancillary services, such as air traffic control – form a capital intensive sector that invests heavily in aircraft systems and other advanced technology.

¹⁷ Indirect and Induced Tax contribution is approximated by applying an economy wide average tax figure (as a proportion of GDP) to the Indirect and Induced GVA estimates, using data from the Oxford Economics Global Macroeconomic Model.

Table 3.3: Investment by the aviation sector

	Investment as % value of output
Air transport services	83.0
Philippine Economy	19.1

Source: IATA, ACI, Oxford Economics

Table 3.4: Labour productivity in the aviation sector

	Productivity (GVA per employee)
Air transport services	PHP 865,000
Philippine Economy	PHP 229,000

Source: IATA, ACI, Oxford Economics

Table 3.3 reports the investment intensity of the aviation sector, as measured by its investment as a proportion of GVA. Investment in air transport services is equal to 83.0%, 63.9 percentage points higher than the economy average. Table 3.4 provides an indication of the productivity of the aviation sector versus the rest of the economy. Measured as GVA per employee, the productivity of air transport services (the airlines and the ground-based infrastructure excluding retail and catering services at airports) is estimated to be PHP 865,000. This is approximately 3.8 times higher than the average productivity for the economy as a whole (PHP 229,000). This high level of productivity implies that, were the resources currently employed in the aviation sector redeployed elsewhere in the economy, then this would be accompanied by a fall in overall output and income. For example, if productivity in the aviation sector was the same as the average productivity for the economy as a whole, then the level of GDP in the Philippines would be around 0.1% lower than it is (about PHP 7.4 billion in current prices).

3.6 Catalytic effects

3.6.1 Benefits to Philippine tourism

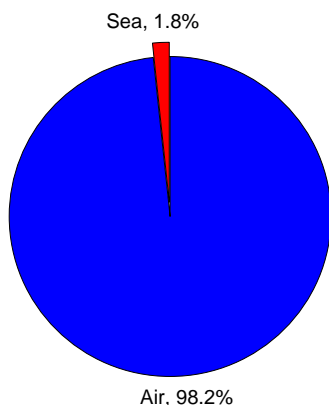
Air transport lies at the heart of global business and tourism. Through its speed, convenience and affordability, air transport has expanded the possibilities of world travel for tourists and business travellers alike, allowing an ever greater number of people to experience diversity of geography, climate, culture and markets.

Tourism, both for business and leisure purposes, makes a large contribution to the Philippine economy, with foreign visitors spending just over PHP 135 billion in the Philippine economy in 2009¹⁸. Over 98% of these visitors arrive by air (Chart 3.6)¹⁹, so that foreign visitors arriving by air spent approximately PHP 133 billion.

¹⁸ Based on IMF statistics

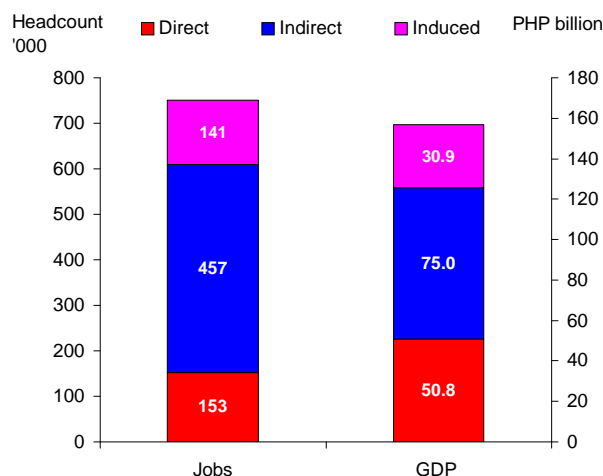
¹⁹ Includes foreign visitors arriving on both domestic and foreign carriers

Chart 3.6: Foreign visitor arrivals by mode of transport in 2009



Source : Oxford Economics, UNWTO

Chart 3.7: Travel and tourism's contribution to Philippine GDP and Employment



Source : Oxford Economics

Oxford Economics estimates that in 2009 the travel and tourism industry directly employed 771,000 people and supported indirectly through its supply chain a further 2,748,000 jobs. A further 794,000 people were supported through the household spending of those people directly and indirectly employed by the travel and tourism sector. Of these jobs, we estimate that 153,000 (direct), 457,000 (indirect) and 141,000 (induced) jobs were supported through the spending of foreign visitors who travelled by air.

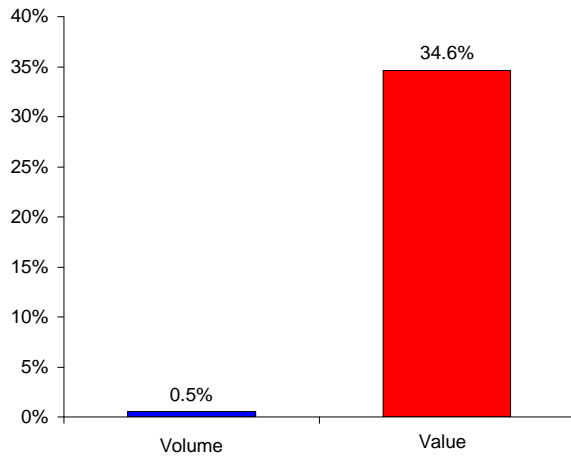
The travel and tourism industry directly contributed PHP 257 billion to the Philippine economy (GDP), PHP 451 billion indirectly through the output it supports down its supply chain and a further PHP 174 billion through the induced effects of consumer spending. When only considering the contribution linked to the spending of foreign visitors arriving by air on Philippine produced goods and services, the sector contributes PHP 51 billion directly to the Philippine economy, PHP 75 billion indirectly and a further PHP 31 billion through induced effects.

3.6.2 Benefits to Philippine trade

Compared to other modes of transport, air freight is fast and reliable over great distances. However, these benefits come with a cost attached. Consequently, it is mostly used to deliver goods that are light, compact, perishable and that have a high unit value.

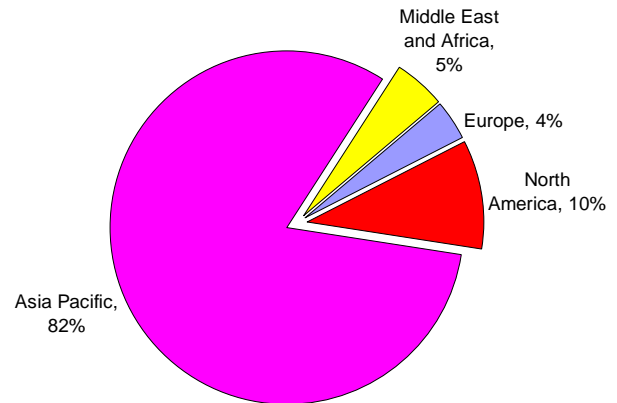
These key characteristics of air freight are most apparent in the data on the modes of transport used in world trade. For example, data on the weight (volume) and value of goods carried by air, sea and land transport is available for global trade. While air accounts for just 0.5% of the tonnage of global trade (Chart 3.8), air freight makes up 34.6% of the value of global trade.

Chart 3.8: Proportion of global trade transported by air



Source : The Colography Group²⁰, Oxford Economics

Chart 3.9: Regional distribution of Philippine air freight (tonnes)



Source : IATA, Oxford Economics

As with passenger services, air freight operations make up an essential part of the global transport network. Air freight's global reach is clearly illustrated from Chart 3.9. Measured in terms of tonnage carried to and from the Philippines, 82% is linked to trade with the rest of the Asia Pacific region, with a further 10% destined for North America. Freight shipments with the Middle East and Africa account for 5% of total trade, with the remaining 4% going to Europe.

²⁰ 'Global Cargo Market Projections for 2006', The Colography Group, Inc. (2005)

4 Conclusion

This study has described and quantified a number of channels through which aviation in the Philippines generates important economic benefits for its customers and the wider Philippine economy.

Studies of this kind usually focus on the 'economic footprint' of the industry, the GDP and jobs supported by the industry and its supply chain. We provide the latest estimates for these metrics. But the economic value created by the industry is more than that. It is not just jobs that are threatened if government policies are badly designed. The welfare of voting citizens and the effectiveness of infrastructure critical to the country's long-term success in global markets are also at risk.

The welfare of travelling citizens has been conservatively quantified in this study. Not all customers of airlines serving Philippine airports are Philippine residents, but approximately 52% are. They currently get an economic benefit estimated to be worth PHP 298 billion. Indicatively, nearly half the shippers using air freight services are Philippine companies. Taxing air transport directly reduces the welfare of these Philippine residents and Philippine businesses.

The study has also shown what a critical asset the Philippines's air transport network is, to business and the wider economy. Connectivity between cities and markets boosts productivity and provides a key infrastructure on which modern globalized businesses depend. Many of these city-pair connections are dependent on hub airports through which to generate the traffic density necessary to sustain them. All airlines supplying services at Philippine airports contribute to generating these wider economic benefits. These 'supply-side' benefits are hard to measure but are easily illustrated by the experience of the volcanic ash cloud, which closed much of European airspace for a week in early 2010. Travellers were stranded. Globalized supply chains and just-in-time manufacturing processes came to a halt.

More readily measured is the 'economic footprint' supported, mostly, by the activities of national airlines. Philippine-based airlines were responsible for carrying 74% of passengers and 64% of freight. The wages, profits and tax revenues created by these airlines flows through the Philippine economy, generating multiplier effects on Philippine national income or GDP. The economic benefits for the Philippines created by non-Philippine airlines are to be found in customer welfare and in the part these airlines play in providing the connectivity infrastructure between the Philippines and overseas cities and markets.

Aviation has a significant footprint in the Philippines economy, supporting 0.4% of Philippine GDP and 123,000 jobs or 0.3% of the Philippine workforce. Including the sector's contribution to the tourism industry, these figures rise to 2.4% of Philippine GDP and 874,000 jobs, or 2.5% of the workforce.

Also significant is the fact that these are high productivity jobs. The annual value added (or GVA) by each employee in air transport services in the Philippines is PHP 865,000, approximately 3.8 times higher than the Philippine average of PHP 229,000.

Tax revenues from aviation are substantial. Philippine-based aviation companies paid PHP 7.0 billion annually in direct taxes and social security payments. Passengers paid a further PHP 17.0 billion in travel tax, alien head tax and VAT. It is estimated that an additional PHP 1.4 billion of government revenue is raised via the aviation sector's supply chain and PHP 1.2 billion through taxation of the activities supported by the spending of employees of both the aviation sector and its supply chain.

All together these points demonstrate that aviation provides significant economic benefits to the Philippine economy and its citizens, some of which are unique and essential to the operation of modern economies.

Annex: Our methods

Benefits to passengers and shippers

In Section 1, we report estimates for the monetary benefits that air transport customers receive through the services provided by the aviation sector. These estimates are based on the economic concept of consumer surplus, the difference between the passengers' or shippers' willingness-to-pay and the actual airfare or freight rate they face. In order to calculate the overall consumer surplus for the various fare types and for freight, we need three pieces of information: (1) data on passenger numbers, freight tonnage and their respective average fares and freight charge; (2) an estimate of how sensitive passenger numbers and freight tonnage are to changes in fares and freight, known as the elasticity of demand; and (3) an assumption about customers' willingness to pay (airfare and freight charges), reflected through an assumption about the shape of the market demand curve.

The calculations are based on 2009 data on total passenger numbers and freight tonnage arriving and departing from domestic airports, together with the average fare and freight charge, broken down by the following market segments: first class, business class, economy, economy discount, and freight. The data are provided by IATA.

We apply an estimate for the elasticity of demand for each market segment. We draw on the findings of several recent studies that investigate elasticities of demand for air transport, to choose elasticities for each market segment that we believe are reasonable²¹. The elasticities that we use are: first and business class -0.38, economy -0.81, and freight -1.20. These indicate the percentage change in demand that would follow a one percent change in the average fare, or freight charge.

Based on these inputs, we calculate consumer surplus based on the approach proposed by Brons, Pels, Nijkamp, and Rietveld (2002) that assumes that the demand curve for each market segment has a constant elasticity of demand²².

Connectivity Index

The connectivity index is a measure of the quality of a country's air transport network that reflects both the volume of passenger traffic and the importance of the destinations served. For every destination country for which there are direct services, an estimate of total passenger seat capacity is derived from data on the frequencies of service and the available seats per flight. From this underlying data, an index is constructed by attaching a weight to each destination. This weight reflects the relative importance of the destination in the global air transport network, measured by the number of seats available for passengers from that airport relative to Atlanta, the largest airport. The connectivity index will therefore have a higher value, the more destinations are served, the higher the frequency of services, the larger the number of available seats per flight and the greater the relative importance of the destinations served.

Benefits to tourism

In quantifying the benefits from Travel & Tourism (T&T) we were seeking to capture the spending by tourists and businesses on accommodation, food etc outside of their airfare (which forms part of our estimate of the direct calculation). In doing this we relied heavily on the Oxford Economics Travel & Tourism model prepared

²¹ 'Estimating Air Travel Demand Elasticities', by InterVISTAS Consulting Inc (2007). Available at http://www.iata.org/whatwedo/Documents/economics/Intervistas_Elasticity_Study_2007.pdf

²² See http://www.ecad-aviation.de/fileadmin/documents/Konferenzbeitraege/Braun_Klophaus_Lueg-Armdt_2010_WCTR.pdf

on behalf of the World Travel & Tourism Council (WTTC) which simulates Tourism Satellite Account (TSA) data across over 180 countries. From the model we obtained an estimate of the level of value-added created by foreign visitors, and assigned a share of this to the aviation industry based on the share of foreign visitor arrivals travelling by air. We then used coefficients within the model to divide this between T&T providers (direct) and their supply chain (indirect). Finally, we attributed a share of the total induced effect to the aviation industry by dividing our estimates of aviation-related direct and indirect GDP by total T&T direct and indirect GDP. It should be noted that this is a gross measure of the benefit from tourism and therefore does not account for the spending which is effectively “lost” when domestic residents travel abroad by air.

Economic footprint

In Section 3 we report the contribution that the aviation sector makes to the economy. The contribution is measured in terms of the value of the sector’s output and the number of people it employs. For each measure, the contribution is built up from three components: direct, indirect, and induced.

The direct output component is measured by Gross Value Added (GVA). GVA is measured either as the firm or industry sales revenue less purchases from other companies, or equivalently, as the sum of employee compensation and gross operating surplus, measured before the deduction of depreciation, interest charges and taxation. In this report we treat gross operating surplus as equivalent to gross operating profit, however, the two concepts differ slightly with the former including income from land and a technical adjustment for the change in stock valuation. GVA differs from Gross Domestic Product (GDP) in the price used to value goods and services. GVA is measured at producer prices that reflect the price at the ‘factory gate’ together with cost of distribution. GDP is measured at market prices that reflect the price paid by the consumer. The two prices differ by the taxes less subsidies levied on the goods or services.

The indirect output component is measured using an Input-Output table that reports how industries use the output of other industries in the process of production, and how their final output is used, e.g. in final domestic consumption, changes in stocks or exports. For many countries, Input-Output tables are available as part of the national accounts. As Input-Output tables describe how an industry uses the output of other industries as inputs in the production of its goods or service, they describe its full supply chain – its direct suppliers, those industries that supply its direct suppliers, and so on. This is reported as the indirect output component.

The Input-Output table reports how much of final output is sold in the domestic economy. Using similar methods as that used to derive the indirect output component, the Input-Output table can be used to estimate how much spending on completed goods (known as final domestic consumption) is supported through the employees of the industry and its full supply chain. This is reported as the induced output component. Based on analysis at Oxford Economics, the ratio of induced output to the sum of direct and indirect output is capped at 30%.

We also calculate the contribution of freight integrator activity in countries where they have significant presence. Where reported, their contribution appears under airport and ground based infrastructure as a component of both the direct benefit (on-airport activity) and indirect benefit (off-airport activity), with the induced benefit adjusted accordingly. Our estimates are based on employment and market share information supplied by freight integrators (either directly or from company websites), and labour productivity estimates derived from Oxford Economics’ 2009 global express delivery industry study²³.

²³ See <http://www.oef.com/samples/oefglobalexpress.pdf>

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The three output components – direct, indirect, and induced – are converted to their respective employment components, using an estimate for the average labour productivity (GVA per employee) for the economy.

Passenger and freight volumes

Passenger and freight traffic is accounted for in different ways across the industry supply chain, depending on the focus of the operator and the purpose of analysis. For example, airlines generally count the number of passengers who board their aircraft, whereas airports often count the number of passengers arriving or departing their airport – which in some cases can lead to totals significantly larger than those reported by airlines, despite referring to the same inherent volume of passengers. The table below outlines the main passenger and freight volumes referred to in this report. In particular, it shows how the numbers used in the calculation of consumer benefit and the economic footprint were derived.

Passenger numbers 2009		Millions	Millions	
Number of passengers arriving or departing Filipino airports (A)		42		
Less domestic arrivals at Filipino airports (due double counting)		-15		
Number of passengers on aircraft flying to, from or within Philippines (B)		27	20	Carried by Filipino airlines (C)
			14	Filipino residents (D)
Freight tonnes 2009		Thousands	Thousands	
Tonnes of freight carried on aircraft flying to, from or within Philippines (E)		596	381	Carried by Filipino airlines (F)
			215	Carried by non-Filipino airlines

Passenger measure	Millions	Use in report	Source
A Number of passengers arriving or departing Philippine airports	42	Overall indicator of passenger arrivals and departures handled by airports in Philippines.	Derived from 27 million passenger figure (B), but doubles the count of domestic passengers to account for both their arrival and departure at a Philippine airport.
B Number of passengers on aircraft flying to, from or within Philippines	27	Overall indicator of airline passenger traffic associated with the Philippine market.	Civil Aviation Authority
C Passengers carried by Philippine registered airlines	20	Overall indicator of passenger output 'performed' by airlines in the scope of the economic footprint analysis in Section 3 of this report	Civil Aviation Authority
D Number of Philippine residents on flights flying to, from or within Philippines	14	Basis for calculation of passenger consumer surplus accruing to Philippine economy.	Estimate based on 52% of 27 million passengers (B)
Freight measure	Thousands	Use in report	Source
E Tonnes of freight carried on aircraft flying to, from or within Philippines	596	Overall indicator of freight loaded and unloaded at airports in Philippines.	Civil Aviation Authority
F Tonnes of freight uplifted by Philippine registered airlines	381	Overall indicator of freight output 'performed' by airlines in the scope of the economic footprint analysis in Section 3 of this report	64% of Philippine market scheduled capacity is operated by Philippine airlines

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