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AIR TRANSPORT INFRASTRUCTURE: A POLICY BRIEF

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AIR TRANSPORT INFRASTRUCTURE: A POLICY BRIEF

I. INTRODUCTION

“Well-developed infrastructure reduces the effect of distance between regions, integrating the national market and connecting it at low cost to markets in other countries and regions. In addition, the quality and extensiveness of infrastructure networks significantly impact economic growth and reduce income inequalities and poverty in a variety of ways. A well-developed transport and communications infrastructure network is a prerequisite for the access of less-developed communities to core economic activities and services.”

~ **World Economic Forum (WEF) Global Competitiveness Report 2014-2015, p.6**

This policy brief is about the state of the three “A’s” of Philippine air transport infrastructure—airlines, airports, and air traffic management—and the regulatory and institutional infrastructure that binds these pillars together. As humanly devised constraints, institutions are supposed to create order and reduce uncertainty in the process of exchange (North, 1991) between air transport and its users—tourists, overseas Filipino workers, Philippine residents, and shippers. The regulations and functions of transport agencies influence the ability of

airlines to connect destinations and compete in the global marketplace. Destinations need connectivity to access markets and to become part of global value chains in air transport; tourism; high value added manufacturing and services (i.e. maintenance, repair, and overhaul (MRO); logistics; research; and training). Citizens need connectivity to expand their choices as they participate in the development process.

This brief explores recommendations in addressing key issues affecting the Philippines’ ability to be a preferred investment destination for air transport and related industries such as tourism. It is organized into four sections. The first two present the economic importance of the air transport industry worldwide and in the Philippines, as well as developments in regional air transport infrastructure. The third focuses on the Philippine situation. Finally, the last section presents (1) recommendations raised by stakeholders in position papers and during roundtable discussions and public hearings; and (2) recent actions implemented by the current administration of President Rodrigo R. Duterte.

II. AIR TRANSPORT, ECONOMIC GROWTH, AND PERFORMANCE

Studies underscore the importance of air transport to economic growth and sustainable development.¹ Air transport facilitates cross-border travel, enables the growth of trade and tourism, and provides the vital link of peripheral island economies to economic, social, and political centers. In 2015, according to the Air Transport Action Group (ATAG, 2016), the world’s airlines served 52,964 routes globally and carried nearly 3.6 billion (B) passengers. From 2015 to 2034, passenger traffic is projected to grow by 38% per year and reach 7.3B by 2034.

Economic Impacts. Perovic (2013) provides cross-country empirical evidence of the mutually reinforcing relationship between a high level of economic development and a well-established air transport

industry, resulting in improvements in living standards. Air transport’s contribution is greater for countries with higher levels of development. On the other hand, the opposite is true in the case of developing countries—like the Philippines, India, and Nigeria.

In 2014,² the Oxford Economics estimated that global air transport contributed US\$2.7 trillion (T) in economic activity (direct, indirect, induced, and catalytic), equivalent to 3.5% of world gross domestic product (GDP). It helped sustain nearly 63 million (M) jobs in air transport and aviation-enabled tourism (ATAG, 2016).

The catalytic effects of air transport through tourism, trade, investments, and labor productivity accounted

¹ See studies by the International Air Transport Association (IATA) and ATAG cited in Section VII Bibliography.

² As reported by the ATAG (July 2016), all figures are for 2014 to give a single set of data for one year and provide a snapshot of the sector’s performance.

for at least one-third of its total impact on economies including:

- **Tourism.** According to the World Tourism Organization (UNWTO), international tourism is one of the largest industries worldwide. It accounted for 10% of the world GDP in 2015. It generated \$1.5T of receipts,³ equivalent to 7% of worldwide exports. These receipts made tourism the third largest global export revenue earner, next to petroleum and chemicals. Global airlines transported 640M international tourists - 54% of the 1.19B globe-trotters, - who spent \$620 B⁴ in 2015.
- **Trade.** Enhanced connectivity supports global supply chains for the production of high value commodities. In 2014, while the 51M metric tons of cargo shipped by air represented only 0.5% of the volume of world trade shipments, these are mostly high-value, time-sensitive, and physically perishable products worth \$6.4T—accounting for over 35% of global merchandise trade value (ATAG, 2016). In 2015, based on IATA's estimates, the value shipped by air was lower at \$5.7 T because of the distortion from 2015's stronger US dollar.
- **Productivity.** Efficient air transport connectivity supports firms, particularly regional headquarters, in

deploying their skilled people with ease and flexibility to respond to client needs around the globe. Air transport is also critical for technology industries that rely on mobility and availability of highly-skilled technicians, installers, and maintainers of specialized equipment.

- **Impacts on investments.** Air transport stimulated the investment of at least \$37B in airport infrastructure in 2014, with most in the Asia-Pacific region. Air transport promotes innovation resulting from clustering of firms (i.e. those involved but not limited to logistics or supply chain solutions companies, maintenance repair and overhaul, value-adding and just-in-time manufacturing, training and research centers) within airport complexes and its environs, as evidenced in the case of aerotropolis development models.

Based on studies (WEF, 2015), consumers have benefited from the improved connectivity resulting from the liberalization of air transport markets in past decades. These benefits came in the form of lower transport costs, greater reliability, shorter travel times, and market accessibility. IATA estimated that in 2015, real transport costs have more than halved compared with 20 years ago (IATA Annual Review, 2016).

Box 1. The Philippine Air Transport Industry and Its Impacts⁵

In 2015, the Philippine air transport industry directly generated Php268B of gross value-added (GVA) in real terms, equivalent to 11.6% of the GVA of the transportation sector, and 0.35% of the GDP. Among the transportation industries, air transport ranked second to land transport in terms of GVA contributions. IATA (2016) reported that air transport's share to Philippine GDP in 2014 was roughly 3.5% due to its indirect, induced, and catalytic effects. The Philippine air transport industry supported 1.4M jobs including 69,800 direct air jobs and 1.2M jobs from the wider economic benefits – tourism, productivity, and trade (Figure 1). By 2035, the industry is expected to generate 3.4 M jobs and contribute \$23B to the Philippine GDP.

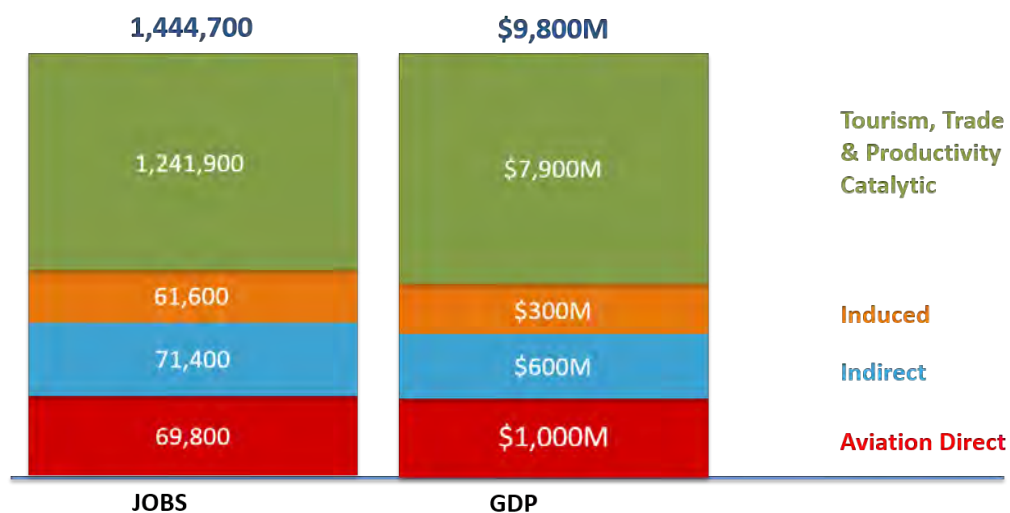
Air transport supported the Php1.5T tourism industry that accounted for 8.2% of Philippine GDP and 12% of national employment in 2015.⁶ It transported 99% of the 5.36M international tourists who spent Php306.7B during their stay in the country. Adding airline receipts amounting to an estimated Php48.5B, international tourism ranked as the 4th largest export revenue earner of the Philippines, next to electronics and semiconductors, overseas remittances, and information technology and business process management. Sixty-six percent of international tourists entered via the Ninoy Aquino International Airport (NAIA) and the rest via the secondary gateways of Mactan-Cebu (16%), Kalibo (11%), Clark (3%), and Iloilo (0.4%). While the share to total trade volume is a meager 0.5%, air transport moved at least 34.5% of the dollar value of merchandise trade shipments. Air transport supported the mobility of the Overseas Filipino Workers (OFWs) (and their families), who contributed around US\$28B to the Philippine economy.

³ Tourism receipts include expenditures by tourists of destinations and receipts generated by the airlines from international passenger transport services rendered to non-residents. In 2015, the global air transport industry contributed \$211B out of the \$1.5T tourism receipts.

⁴ IATA Annual Review 2016, p. 16

⁵ Unless stated, the data sources include: (1) Philippine Statistical Authority (PSA) for the economic contributions air transport and tourism, (2) Philippine Department of Tourism (DOT) for visitor arrivals and share of arrivals by port of entry, and (3) Bangko Sentral ng Pilipinas (BSP) for export values. In terms of tourism's economic contributions, the main source of data is the Philippine Tourism Satellite Accounts developed by the PSA in partnership with the DOT.

⁶ In terms of multiplier effects, based on the 2006 Input-Output tables of the PSA, every 1 peso increase in the final demand by consumers, government, or shippers for air transport services translates to an additional 2.49 pesos to the Philippine economy. The multiplier is derived from the Leontief global inverse matrix and represents direct and indirect effects only.

Figure 1. Economic contributions of the Philippine air transport industry, 2014

Source: IATA

III. REGIONAL DEVELOPMENTS

Southeast Asia in particular is considered as one of the fastest growing sub-regions, posting a 6.1% increase in revenue passenger kilometer—almost double North America’s 3.1% and Europe’s 3.8% in 2014 (DBS, 2015). Several factors contributed to the robust demand for air transport including: improvements in living standards, population and demographics (particularly the expanding middle class of Asia), liberalization of air transport markets, and the low cost carrier (LCC) phenomenon that pushed the boundaries of air travel by using secondary airports and democratizing leisure travel, lack of efficient alternative modes of transport across the region, and easing or removal of travel restrictions.

However, if the region is to reap the benefits from economic integration and the ASEAN Open Skies, governments need to speed up investments in air transport infrastructure.

Connectivity. There are various measures of connectivity (e.g. direct seat capacities, availability of direct flights or seats, fares, and airline concentration) that can be used to describe developments in the region. In terms of seats offered by domestic and international airlines in Southeast Asia, the number increased from 33.6M in 2005 to 188M in 2014 (ASEAN Investment Report, 2015). The number of intra-ASEAN routes increased

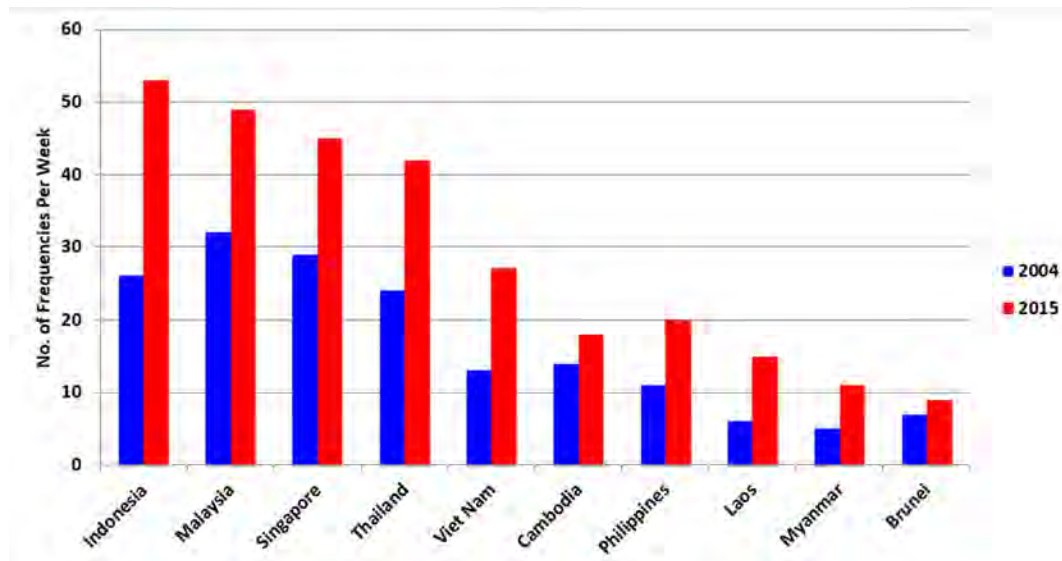
from only 92 in 2004 to 140 in 2015. In the past decade, governments allowed multiple designation policies, opened up secondary gateways, and removed restrictions in terms of frequencies and aircraft type. Secondary gateways of the region—especially in the case of Indonesia, Laos, Malaysia, Philippines,⁷ Thailand, and Vietnam—gained substantial capacity because of the LCCs that used secondary airports not previously served by traditional air carriers (Figure 2).⁸ The number of ASEAN-based airlines more than doubled during this period due to the rise of LCCs.

Mandri-Perrott (2015) notes that the ASEAN Open Skies initiative significantly increased intra-ASEAN air passenger flows and bilateral flows by an estimated 70.5%. These results provide evidence that—at least in the onset of air services growth—institutional infrastructure (i.e. liberalized air policies) influences air traffic flows to a greater degree than physical infrastructure. However, as the market grows, the quality of the physical infrastructure attains greater relevance in sustaining, deepening and broadening gains from liberalization.

Enhanced connectivity has supported the development of the ASEAN tourism industry. From 51.2M international visitors in 2005, tourist arrivals more than doubled to reach 105M in 2014—with 46% being accounted for by

⁷ Cebu Pacific connects the following secondary airports - Clark, Cebu, Davao, Iloilo and Kalibo - to Singapore. PAL offers direct Cebu-Singapore. Philippine Air Asia offers direct flights from Cebu to Singapore and Kuala Lumpur.

⁸ Some of these routes are monopolized by either LCCs or traditional air carriers. There is a lack of regional competition policy. Not all ASEAN member economies have their own competition laws and bodies. The Philippines recently passed RA 10667 that created the Philippine Competition Commission.

Figure 2. Intra-ASEAN air connectivity, 2004 and 2015

Source: Official Airline Guide

intra-ASEAN visitors. The UNWTO projects that ASEAN international tourism will reach 187M by 2030.⁹ The ASEAN Open Skies, the Open Skies with partners such as China, and the move towards the ASEAN Single Aviation Market (ASAM) will further accentuate regional air travel connectivity (ASEAN Investment Report, 2015).

Critically important, governments have also been implementing policy reforms to support safe, seamless, and secure mobility of air transport users. These include: (1) removing visa requirements and/or implementing facilitation initiatives such as e-visa and online application or extending visa duration;¹⁰ (2) incentivizing charter flights to develop new destinations and decongest the major airports as in the case of Thailand, Malaysia, and the Philippines (for the BIMP-EAGA region only); and (3) implementing programs to ensure compliance with international standards of safety and security.¹¹

The Asia-Pacific region is projected to have the largest fleet of passenger and freighter aircraft of all global regions by the year 2035 (Table 1). Aircraft orders by select

ASEAN-based airlines will be used for replacement, while others are for opening new routes (Table 2). These airlines are preparing to harness opportunities from the ASEAN Open Skies and the projected growth in outbound travel (for tourism, cargo, business) by the major revenue generating tourism and cargo markets of China, India, Japan, and others. However, there are other entry barriers such as airport slots and poor infrastructure support that need to be addressed.

Airport and Air Space Constraints. As intermediaries, airlines can only move people and goods from their points of origin to their points of destination if there is infrastructure to accommodate their planes, facilities, and people. However, institutional infrastructure development is as important as creating physical infrastructure in order to achieve efficiency, quality service, and optimal capacity utilization (Mandri-Perrott, 2015).

As travel demand soared in recent years, more airports experienced congestion – crowded terminals, long

⁹ ASEAN Tourism Strategic Plan 2016-2025

¹⁰ Starting August 1, 2013, nationals from 151 countries may enter the Philippines without a visa and stay for a maximum of 30 days, provided they are holders of a passport valid at least 6 months beyond the period of stay in the Philippines and present a return or outward bound ticket to their country of residence. As an example of eVisa, Malaysia has implemented an eVisa facility for the following: PRC nationals (in China mainland (not including Macau), Australia, Bangladesh, Hong Kong, India, Indonesia, Myanmar, Nepal, and Taiwan), India nationals (in Australia, Bangladesh, Hong Kong, India, Myanmar, Nepal, and Taiwan), Bangladesh nationals in Bangladesh, Nepal nationals in Nepal and Myanmar nationals in Myanmar. See the following websites for other examples: <https://www.singapore-visa.sg/>, <https://www.windowmalaysia.my/evisa/>, <https://www.evisa.gov.kh/>, www.Vietnam-Evisa.Org, <http://evisa.moip.gov.mm/NewApplication.aspx>

¹¹ In 2014 and 2016, the Philippines and Indonesia, respectively, regained their Category 1 status with the US Federal Aviation Administration (FAA). A Category 1 rating means a nation's civil aviation authority complies with international standards. Category 2 means a country either lacks laws or regulations necessary to oversee its airlines in line with minimum international standards or its civil aviation authority is deficient in one or more areas. During the periods under Category 2 from 2007, the countries either lacked laws or regulations necessary to oversee air carriers in accordance with minimum international standards, or its civil aviation authority – a body equivalent to the FAA for aviation safety matters – was deficient in one or more areas, such as technical expertise, trained personnel, record-keeping, or inspection procedures. See https://www.faa.gov/news/press_releases/news_story.cfm?newsId=2063.

Table 1. Fleet in service by region, 2016 and 2035 (est.)

Region	Passenger Aircraft		Freighter Aircraft	
	Start Fleet 2016	End Fleet 2035	Start Fleet 2016	End Fleet 2035
Africa	605	1,370	51	79
Asia/Pacific	5,659	14,685	302	778
CIS	824	1,688	66	81
Europe	4,228	7,791	254	311
Latin America	1,317	2,948	56	88
Middle East	1,090	2,986	70	127
North America	4,296	6,239	764	647
World	18,019	37,708	1,564	2,111

Note: 100+ seaters (passenger aircraft) and 10t+ (freighter aircraft)

Source: Ascend Airbus

Table 2. Aircraft orders by select ASEAN-based airlines*

Airline	Orders	Deliveries	In Operation
Air Asia	575	171	174
Air Asia X	96	20	30
Cebu Air	73	39	49
Garuda Indonesia	58	36	25
Lao	2	2	4
Lion Air	237	25	3
Malaysian Airlines	39	39	25
Philippine Airlines	102	73	47
Silk Air	27	27	15
Singapore Airlines	144	77	51
Thai Airways International	85	81	24
Tiger Air	88	49	24
Vietjet Air	99	19	36
Vietnam Airlines	51	41	67

*Summary to 31st August 2016

Source: Ascend Airbus

queues in immigration areas, lower on-time departure performance (57% in Asia compared to Europe's 73-78%), long flight delays, long queues for take-off, and circling of aircraft in stacks prior to landing¹² thus leading to poor experience for passengers.¹³ Slot constraints in Southeast Asian airports have moved ASEAN-based airlines to order bigger planes like the Airbus A321neos in order to carry more passengers. While this leads to higher runway utilization, it also causes greater terminal congestion.

The bigger airports in the region are undergoing expansion and rehabilitation (Table 3) primarily using government funds, as the public-private partnership (PPP) mode is not yet used extensively. In the Philippines, the government already privatized the operations and maintenance of two government-controlled and owned airports – Caticlan¹⁴ and Mactan-Cebu International Airport.¹⁵ The next wave includes the privatization of the operations and maintenance of the NAIA and 5 regional airports (Bacolod-Silay, Bohol, Davao, Iloilo, and Laguindingan).

¹² <https://www.pwc.com/gx/en/capital-projects-infrastructure/publications/assets/pwc-connectivity-growth.pdf>

¹³ <http://www.straitstimes.com/singapore/transport/asian-airports-face-congestion-warns-global-body>

¹⁴ San Miguel Corporation owns the Caticlan Airport concession-holder TransAire Development Holdings Corporation. The Caticlan airport is being promoted as the New Boracay-Caticlan Airport, gateway to the famous island of Boracay. The airport is currently going through development projects that include runway extension up to 2.1 km to accommodate narrow body jets; a new 2-storey passenger terminal building with a design capacity of 5 million passengers, 10 contact gates, night operations, and international flight capability.

¹⁵ In December 2013 GMR Infrastructure in partnership with Megawide Construction Corporation of Philippines emerged as the highest bidder after offering a bid premium of 14.4B (approximately US\$ 320M). As per the concession agreement signed between GMR Megawide Consortium (GMCAC) and Department of Transportation and Communication (DOTC), GMCAC has taken full operational control from November 1, 2014 for renovation and modernization of MCIA. According to the agreement, GMR Megawide Consortium will operate the airport for a period of 25 years (commencing November 1, 2014). <http://www.gmrgroup.in/mactan-cebu.aspx>

Table 3. Select airport expansion programs in China and ASEAN¹⁶

Country	Program
China	<ul style="list-style-type: none"> • China's airlines carried 440M passengers in 2015; this number will grow to 1.19B by 2034 • China is building 60 more airports to reach a total of 260 by 2020. • China budgeted \$12B for airports in 2015. • The new \$12B Daxing Airport south of Beijing will have seven runways. • The first terminal will be able to handle 45M passengers a year. • The transportation hub under the terminal will include high-speed rail.
Indonesia	<ul style="list-style-type: none"> • Expansion of terminals from the design capacity of 26M passengers per annum to 62M (T1: from 9 to 18M; T2: from 9 to 19M; T3: from 5 to 25M; T4 under development), and • Planned construction of a 3rd runway.
Malaysia	Launched plan to develop the land around Kuala Lumpur International Airport (KLIA) in Sepang into an aviation hub called KLIA aerotropolis to house air cargo and logistics, aerospace and aviation services, meetings and convention facilities.
Singapore	Construction of Terminal 5 with 50M passenger capacity and with 3rd runway connected to 2 existing runways; total capacity expected to reach 137M with the completion of Terminal 4 and Terminal 5.
Thailand	Programmed expansion of Suvarnabhumi airport from 45M passengers per annum to 60M by 2019 and 90M by 2021. In 2015, the airport handled 50M passengers. The Airports Authority of Thailand will invest new facilities and buildings linked to the new mass transit line for Don Muang Airport. It plans to invest \$5.5B over 15 years to increase capacity of the airports that account for 90% of all traffic in Thailand from 71.5M to 150M by 2030.
Viet Nam	<ul style="list-style-type: none"> • Investments of at least \$5 billion to double the capacity of Hanoi Airport from 25M in 2014 to 50M by 2030, and • Ho Chi Minh Airport is being expanded to increase design capacity from 20M to 26M. In 2014, the airport handled 22M passengers. A new \$16B airport in Long Thanh to accommodate 38M passengers by 2025 is being planned to compete with Bangkok and Singapore.

Sources: New York Times International Edition, January 2, 2017, and other reports.

Air traffic management needs to be more efficient because airspace is not getting bigger to accommodate the projected increase in the number of planes (ATAG, 2013) that will enter the Flight Information Regions of Southeast Asian economies. Airport operators, regulators, and air navigation service providers (ANSPs) need to address the following infrastructure constraints in order to keep the skies and the ground safe:¹⁷

- Runways and airport congestion,
- Lack of wind-shear detection devices or advanced weather radar in most airports,
- Lack of “air traffic flow management” systems that can track planes automatically like those used in North America and Europe,
- Lack of accuracy of legacy air navigation technology,

- Short or badly designed runways with poor drainage,
- Lack of modern landing navigation systems or proper runway lights in secondary airports,
- Lack of long-term investments in ANSPs and human capital, and
- Lack of financial autonomy of civil aviation authorities and ANSPs; and lack of priority in national budgets.

In addition to upgrading infrastructure, in order to achieve greater efficiency in air traffic management, ASEAN economies are promoting information exchange and coordination between air navigation service providers. The ASAM provides the platform for implementing programs on aviation safety, aviation security, and air traffic management.¹⁸

¹⁶ See the following websites for references: <http://www.themalaymailonline.com/malaysia/article/guan-eng-tells-putrajaya-to-move-up-expansion-of-penang-airport>, <http://www.reuters.com/article/thailand-airports-expansion-idUSL4N1983E9>, <http://www.reuters.com/article/vietnam-airport-idUSL4N18R39D>, <http://www.thanhniennews.com/business/vietnam-to-expand-tan-son-nhat-airport-this-month-report-46223.html>, and <http://vietnamnews.vn/economy/280647/tan-son-nhat-airport-to-be-expanded.html#xzV7V0IEVWVqRKE.97><http://www.indonesia-investments.com/news/todays-headlines/third-runway-soekarno-hatta-international-airport-to-be-completed-in-2017/item6647>

¹⁷ http://www.saa.com.sg/saaWeb2011/export/sites/saa/en/Publication/downloads/AirTrafficManagementDevelopments_theAsiaPacific_FearsAndHopes.pdf

¹⁸ These programs include: ASEAN Aviation Regulatory Monitoring System, the ASEAN Foreign Operator Safety Assessment, Mutual Recognition Arrangement on Certificates, Approvals and Licenses of Civil Aviation, ASEAN Regional Contingency Plan; (2) the Capacity-Building Framework on Air Traffic Management; and (3) identification of key regional initiatives and required enabling technologies.

IV. PHILIPPINE AIR TRANSPORT INFRASTRUCTURE

This section aims to present the developments on the Philippine's air transport market and its institutions, as well as highlight concerns of stakeholders.

A. Demand and Supply Situation

On the demand side, in 2015, the Philippine air transport sector carried over 41.9M commercial and scheduled passenger traffic, 9% higher than in 2014. Of these, 22.1M (or 52.7% of the total) was accounted for by domestic traffic—which increased by 8.5% from the previous year's level after posting a flat growth in 2014 due to the NAIA congestion. The 19.9M international passenger traffic volume (or 47.3%) posted a higher growth of 10.9% due to the opening of new routes¹⁹ and utilization of secondary gateways like Mactan-Cebu, Clark, Kalibo, and Iloilo.

In parallel, the non-scheduled traffic (charter) segment has also been experiencing strong growth, supporting tourism. The airport of Kalibo, for example, developed due to charter flights that in 2008 started arriving from China and South Korea. Some of these eventually converted to scheduled flights.

The liberalized air transport policies (i.e. Executive Order (EO) 219 s.1995), liberalized charter policy (Civil Aeronautics Board (CAB) Resolution 23 s.2005), amendments of commercial annex provisions in air service agreements,²⁰ and opening of secondary international gateways (EO 500 s. 2007; EO 29 s. 2011) allowed rapid expansion of the air transport market. These liberalization policies were complemented by reforms to improve the business climate including the passage of Republic Act (RA) 10378²¹ and implementation of 24-7 Customs, Immigration, Quarantine, and Security (CIQS) operations. On the supply-side, a major consideration is the airport

and air traffic management infrastructure that supports movements of all types of traffic – commercial and scheduled, non-scheduled, and general aviation. There are (as of August 2016) 215 airports in the Philippines, of which 85 are government-owned and controlled, while the rest are privately owned and operated. Of the government-controlled airports, 11 are designated as international airports, 14 are Principal Class 1 airports, 19 are Principal Class 2 airports, and 41 are community airports.²² By virtue of RA No. 9497, the Civil Aviation Authority of the Philippines (CAAP) is mandated with the promotion, development and regulation of the technical, operational, safety, and aviation security functions. Out of the 11 international airports, both NAIA and MCIA are operated and managed by independent airport authorities - MIAA²³ and MCIAA,²⁴ respectively. The Clark International Airport Corporation (CIAC) manages and operates the Clark International Airport. The CAAP manages and operates the rest of the government-owned and controlled international and domestic airports.

The 85 airports handled at least 70M passenger movements²⁵ in 2015. NAIA was the busiest with a record of 36.7M passenger movements. The next busiest airports were Mactan-Cebu, Davao, Kalibo, Iloilo, Laguindingan, Bacolod, Puerto Princesa, Zamboanga, Clark, Tagbilaran, and General Santos (Figure 3). Their combined passenger movements reached 26.4M in 2015.

In terms of the air cargo volume, NAIA handled 584M kgs of air cargo, equivalent to 67% of the total movements across the 11 international airports of the Philippines. Air cargo volume jumped by an average of 34.7% from 2010 to 2015. The four airports of NAIA, MCIA, Davao, and Clark accounted for 87.6% of total air cargo movements across the 11 international airports.

¹⁹ New routes opened include Addis Ababa, Ethiopia; Auckland, New Zealand; Doha, Qatar; Fukuoka, Japan; Istanbul, Turkey; and Port Moresby, Papua New Guinea.

²⁰ These include shifts from single/dual to multiple designation policy, removal of restrictions on aircraft type, increase in the number of points of entry to the Philippines, increase in weekly frequencies, and unlimited frequencies to secondary airports.

²¹ RA 10378 allowed the removal of the Gross Philippine Billings on the basis of reciprocity.

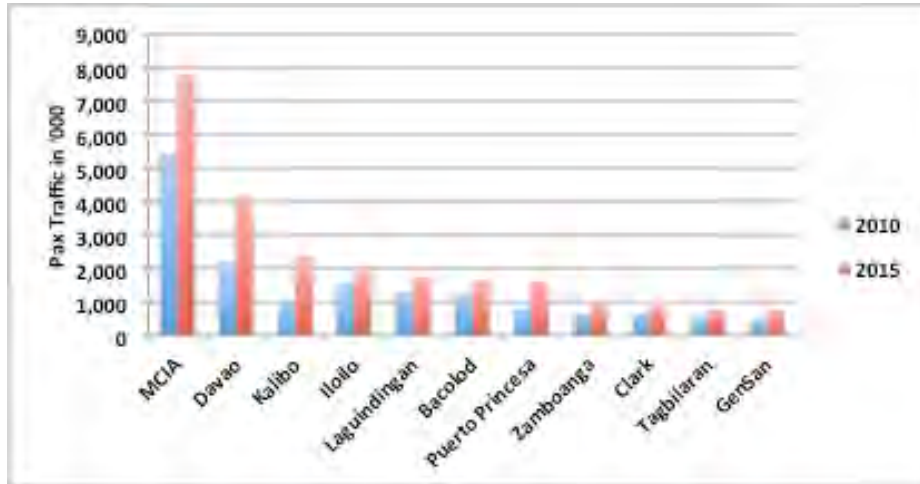
²² Domestic airports are categorized into principal class 1 and principal class 2 airports. These are registered in two different groups: Class1 airports are capable of serving jet aircraft with a capacity of at least 100 seats. Class 2 airports are airports capable of serving propeller aircraft with a capacity of at least 19 seats. Finally, community airports are airports primarily used for general aviation.

²³ The MIAA had been created by virtue of E.O. No. 778 (s.1982), as amended by E.O.No. 903 (s. 1983). The MIAA's mandate is to: (a) formulate and adopt for application in the airport internationally acceptable standards of airport accommodation service; (b) upgrade and provide safe, efficient and reliable airport facilities for international and domestic air travel; (c) help encourage and promote international and domestic air traffic in the country as a means of making the Philippines a center of international and domestic air travel; and (d) perform other functions as maybe provided by the law while maintaining financial viability as an autonomous government entity.

²⁴ R.A. No. 6958 dated 31 July 1990 created the MCIAA attached to the Department of Transportation and Communications, now the Department of Transportation. The MCIAA is mandated to undertake the economical, efficient and effective control, management and supervision of the MCIAA in the Province of Cebu and the Lahug Airport in Cebu City, and such other airports as may be established in the Province of Cebu.

²⁵ These refer to throughout passenger movements (incoming and outgoing).

Figure 3. Passenger movements in Philippine airports outside of Manila (2010 vs 2015)



Source: Civil Aviation Authority of the Philippines (CAAP)

B. Quality of Air Transport Infrastructure

In the latest World Economic Forum Global Competitiveness Report for 2016-2017, the Philippines has 1,302 M available airline seat kilometers²⁶ (domestic and international) per week, or 82% more than the capacity in 2009 (Table 4). Indonesia has the highest airline seat capacity followed by Thailand, Singapore, Malaysia, and the Philippines (Table 5). The Philippines ranks 5th out of the nine²⁷ ASEAN economies in terms of connectivity. Except for Singapore and Brunei, all ASEAN economies have domestic markets to serve.

The Philippines received lower rankings in terms of quality of overall infrastructure (i.e. road, seaport, airport, telecommunications) and quality of air transport infrastructure compared with the results in the 2015-2016 report (Table 4). The score of 3.2 for the quality of air transport infrastructure was a result of an Executive Opinion Survey (conducted from January to June 2016) where respondents were asked to respond to the question: *In your country, how is the quality (extensiveness and condition) of air transport [1 = extremely underdeveloped—among the worst in the*

Table 4. Quality of Philippine air transport infrastructure, 2009-2016

Pillars\Period of Survey Report	2009	2012	2013	2014	2015	2016
Available airline seat km/ week, millions*	28 (715.9)	26 (970.2)	26 (1,036.1)	25 (1,171.2)	27 (1,206.5)	27 (1,301.6)
Quality of air transport infrastructure	100 (3.7)	112 (3.6)	113 (3.5)	108 (3.6)	98 (3.7)	116 (3.2)
Quality of overall infrastructure	98 (3.1)	98 (3.6)	98 (3.7)	95 (3.3)	106 (3.3)	112 (3.0)
Number of Economies	133	144	148	144	140	138

The first figure for each economy represents its rank out of the number of economies covered in the survey. The second figure in parentheses refers to the values 1-to-7 (7= highest) scale unless otherwise annotated with an asterisk (*) which represents actual data.

Source: WEF Global Competitiveness Reports (various years)

²⁶ According to the Competitiveness Report, this information measures air connectivity, capturing the full range of interactions among all air transport network nodes, even when there is no direct flight connection between them.

²⁷ There is no country report for Myanmar.

Table 5. Comparison of ASEAN economies in quality of air transport infrastructure, 2015-2016

Pillars\Period of Survey Report	SIN	MAL	THAI	INDO	BRUNEI	VIET	CAM	LAO	PH
Available airline seat km/ week, millions	20 (2,479.8)	23 (1,921.6)	15 (3,140.9)	14 (3,228.4)	100 (50.0)	29 (1,194.7)	81 (106.7)	115 (28.6)	27 (1,301.6)
Quality of air transport infrastructure	1 (6.9)	20 (5.7)	42 (5.0)	62 (4.5)	84 (4.1)	86 (4.1)	99 (3.9)	100 (3.8)	116 (3.2)
Quality of overall infrastructure	2 (6.4)	19 (5.5)	72 (4.0)	80 (3.8)	67 (4.1)	85 (3.6)	95 (3.4)	81 (3.7)	112 (3.0)

The first figure for each economy represents its rank out of the 138 economies covered in the survey. The second figure in parentheses refers to the values 1-to-7 (7= highest scale unless otherwise annotated with an asterisk (*) which represents actual data.

Source: WEF Global Competitiveness Report 2016-2017

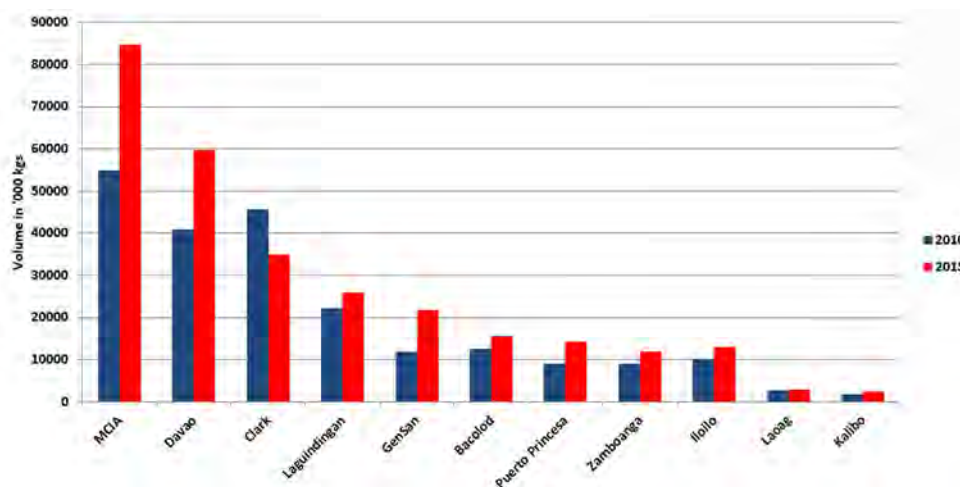
world; 7 = extensive and efficient—among the best in the world]. The Philippines's score of 3.2, the lowest over the period 2009 to 2016 (Table 4), is also the lowest in ASEAN (Table 5).

C. Binding Constraints²⁸ to Air Transport Growth

The air transport industry stimulates economic growth and benefits from it in the process. Bourguignon and Darpeix (2016) point out that the rates of growth of air passenger traffic are 2.2 and 2.0 times the rate of growth of the global and East Asia regional GDP, respectively.²⁹ In 2015, the Philippines's air passenger traffic growth of 9% was equivalent to 1.5 times the real GDP growth, lower than the global and regional benchmarks. This national record is reflected in the performance of the congested NAIA. This section explores the two binding constraints - congestion and institutional environment – to the growth of the Philippine air transport industry.

NAIA Congestion. The country's premier airport is congested because the demand for the airport's facilities – terminal and runway - is greater than the airport's current capacity.

• **Congested terminals.** In 2015, NAIA handled 36.7M passengers—significantly above its 30M combined terminal capacities. Domestic passenger volume reached 19.4M and grew by 7.7% from 2014. International passenger traffic, on the other hand, reached 17.1M but growth was relatively stagnant during the year. Recently, the government completed the Php1.3B rehabilitation project of Terminal 1 i.e. re-designing of the terminal interiors to provide wider passenger movement areas. However, the JICA (2012) pointed out that the future demands (Figure 5) for a capital gateway cannot be achieved because of capacity constraints. Safety concerns, passenger inconvenience and foregone business revenues became pressing issues for both government and private sector.

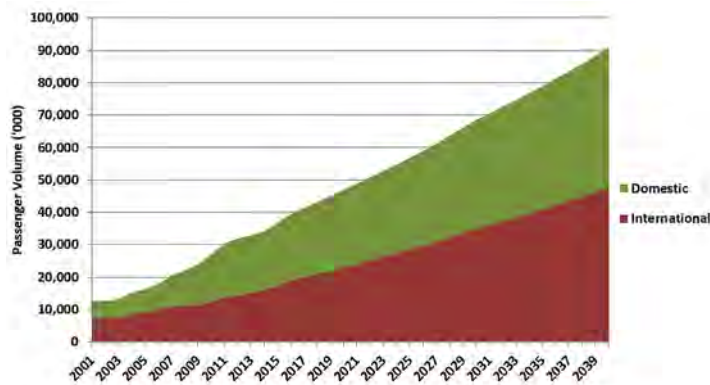
Figure 4. Air cargo movements in international airports outside of Manila (2010 vs 2015)

Sources: CAAP, CIAC, and MIAA

²⁸ The term binding constraints was used in the Growth Diagnostics Approach of Hausmann, Rodrik and Velasco (2005).

²⁹ The analysis utilized the database of the International Civil Aviation Organization for 118 countries over the period of 1994-2013. The sample for East Asia includes 12 countries.

Figure 5. NAIA passenger demand forecast



*Actual Data for 2001 to 2016; JICA Forecast for 2017 to 2040
 Sources: MIAA and JICA Study on airport strategy for Greater Capital Region in the Republic of the Philippines Progress Report

Runway congestion. There are two major issues relevant to the discussion of runway congestion at the NAIA: (1) the configuration of the runway and taxiway layout; and, given the runway configuration, (2) the utilization of the runway.

Runway configuration and taxiway layout. NAIA has two intersecting runways, Runway 06/24 (3,737 meters long and 60 meters wide), and Runway 13/31 (1,995 meters long and 45 meters wide) as shown in Figure 6. Due to these inbuilt constraints, there are limits to the type of aircraft that can use each runway. International arrivals are allowed only on Runway 06/24, so flights must be planned to maximize arrivals since, as a general rule in aviation, arrivals are given priority over departures. Moreover, due to safety issues related to runway configuration, arrival on Runway 31 is prohibited. There is also a lack of rapid exit taxiways (RET) particularly for runway 06/24 (although there have been mixed feedback on the impacts of the RETs on reducing runway occupancy times (ROT).

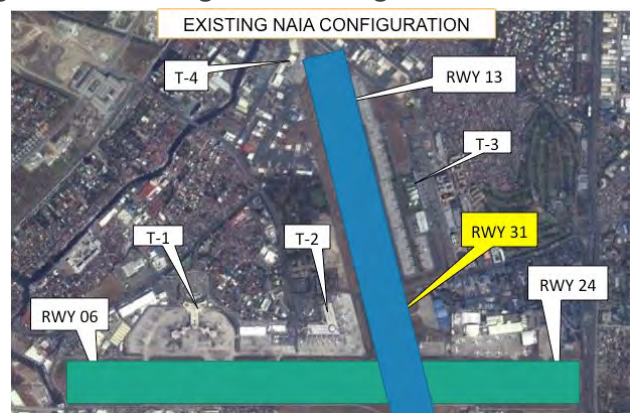
Recently, the following initiatives were pursued: reactivation of Runway 31 for departures, allowing flight movements to take place concurrently on both runways; extension of Taxiway N [November] that decongested the

taxiway—particularly at the intersection of the runways—and facilitation of a more flexible handling of international operations.

• **Runway utilization.** The runways are being used by commercial planes, cargo planes, general aviation, and military planes. General aviation aircraft not only competes with commercial planes for available runway capacity but also have longer ROTs as they have smaller engines. Japan International Cooperation Agency (JICA) (2012) noted that NAIA has a relatively low average number of passengers per aircraft movement, indicating that relative to other gateway airports runway utilization was less efficient.

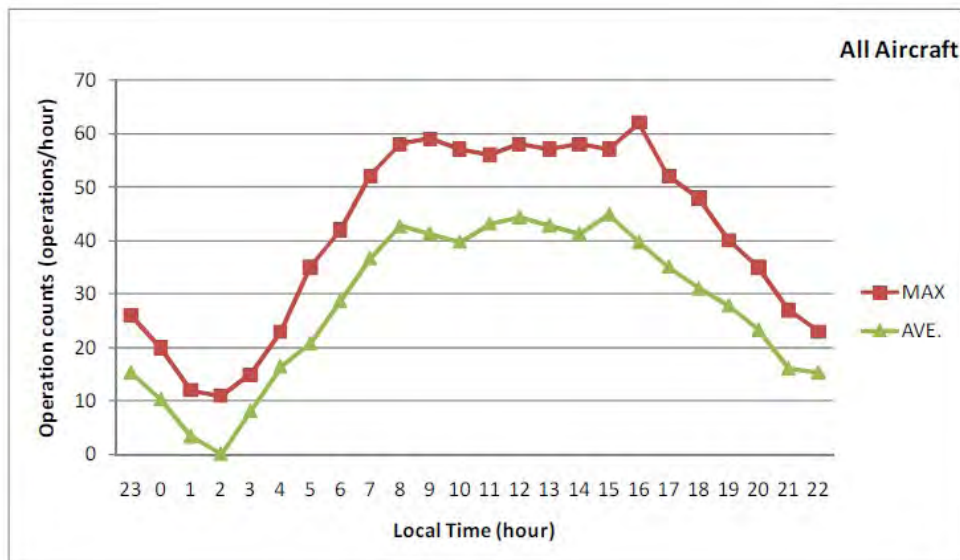
Moreover, in 2011, JICA documented that flights were highly concentrated during the core operational hours of 0700 to 1600 (Figure 7). The government eventually limited the number of movements to 40 per hour.³⁰ Local airlines mounted most of their domestic flights during the day. Most provincial airports were not night-rated and lacked instrument landing system (ILS) equipment to allow them to handle night flights. Without these facilities, airlines have found it difficult to spread their flights throughout the day to the provincial airports. In 2016, the government invested in facilities to make the airports of Caticlan, Dumaguete, Legaspi, and Roxas (limited due to some obstructions) capable to handle evening flights. In 2017, the airports of Cotabato, Dipolog, and Ozamis will be added to the list of night-rated airports.³¹

Figure 6. Existing NAIA configuration



³⁰ The House Transportation Committee was informed that CAAP told airline companies that NAIA could only handle a maximum of 40 arriving and departing flights per hour. However, a report from the Airport Coordination Australia (ACA), a foreign firm hired by MIAA and the airline community to schedule flights in such a way that flights do not arrive or depart at the same time, showed that the number could go up to 48 per hour. CAAP asserted that the flights need to be separated or put on hold either on the ground or in the air, a situation that results in cascading delays that affect flights set to take off or land in other time slots.

³¹ Based on the DOTr report during the February 1, 2017 hearing on the Senate Resolution inquiring on the progress of the rationalization of flights in NAIA.

Figure 7. Number of aircraft movements per hour, NAIA, 2011

Data used for analysis: Manila control tower monthly and daily traffic count, CAAP

Source: JICA

In addition, runway utilization is sub-optimized due to: lack of radar; air traffic management issues related to extended holding, vectors and delays; non-standard air traffic control (ATC) procedures; poor en-route communications (e.g. frequency congestion, reliance on radioed messages from the pilots, and separate locations of aerodrome control unit and the approach control unit); and safety concerns regarding ground operations (i.e. poor surface conditions) at the airport (IATA, 2016).³²

Passengers suffer from the inconvenience, stress, and additional costs due to flight delays, flight cancellations, and missed flights. Airlines suffer from poor on-time performance and higher business costs. For air carriers like PAL, losses reached around \$1,800 (around Php 84,000) for every 30-minute delay in its flights due to runway congestion at NAIA.³³

Institutional Environment: Providing linkages where there should be convergence; de-coupling where there should be independence.

The ability of any country to provide quality air transport infrastructure (i.e. in terms of adequacy vis-à-vis market demand; and in terms of safety) is underpinned by its institutional environment. In the case of the Philippines,

there is a need (1) to provide greater coherence and convergence among entities undertaking airport development and their implementation; and (2) to separate regulatory and developmental (i.e. operations and maintenance) functions which are currently in singular entities. The first imperative affects adequacy of infrastructure; the second is paramount for safety.

1. Weak link between airport planning, budgeting, and implementation

In a 2009 study of the Philippines' national transport infrastructure, the World Bank concluded that there is no integrated system for planning, budgeting, building, and operating transport infrastructure (World Bank, 2009). Coordination between line agencies and between national and local government is poor, and there is no system of inter-modal transport infrastructure. The Asian Development Bank (ADB) (2009) noted that, while roads, ports, and airports have been developed throughout the Philippines and many journeys require the use of more than one mode of transport, coordination among the agencies responsible for transport infrastructure was generally very limited.³⁴ In addition, while funding for capital investment in such projects may come from discretionary sources within the national budget, funding for subsequent operation and maintenance is generally

³² IATA raised these concerns during the period 2010-2013 and again on 2016.

³³ Based on the manifesto of the Advocacy for Dual Airport Priority, April 22, 2016.

³⁴ In 2012, anchored on Section 34 of the Tourism Act of 2009, the DOT and DPWH forged a convergence program that enabled the prioritization, budgeting and funding of tourism roads. This program enabled the improvement of existing roads and construction of new roads and enhanced access to the tourism destinations in the tourism development areas. It serves as proof of concept that government infrastructure agencies can converge and collaborate in order to improve the quality of infrastructure in the country.

not forthcoming. This places added burdens on the agencies responsible for the additional infrastructure.

Specifically for air transport, lack of coordination happens both at inter-department levels e.g. new airports which were built and completed but without adequate road connectivity to/from the airport gateways and city/town centers (e.g. Bacolod-Silay, Laguindingan)³⁵; and even within a single department, e.g. new airports were inaugurated without navigational aids to handle night operations (e.g. Laguindingan Airport).³⁶

Both the Department of Transportation (DOTr) and CAAP have overlapping functions in airport planning, budgeting, programming, and implementation. When projects are not completed or implemented, CAAP is the first agency to receive the complaints by stakeholders because CAAP is the airport operator even if it is the DOTr that allocated the budget. In certain cases, funds also end up not being obligated or are obligated only towards the last semester of the second year causing further delays in project implementation. Maintenance is also a major concern given the cases of radar breakdown, and the poor state of airport facilities and amenities. Even if independent airport authorities have the funds to procure and maintain equipment, they are generally unable as it is CAAP that has this mandate under RA 9497 Section 35 (l), which states that CAAP's function is to "plan, design, acquire, establish, construct, operate, improve, maintain, and repair necessary aerodromes and other air navigation facilities."

Some of the needs raised by stakeholders in the past years include:

(a) Consultations with the communities – tourism associations, business chambers (e.g. producers of high value and time sensitive commodities) and cargo and logistics companies - in the process of preparing airport designs, facilities, and flows of people and cargo;

- (b) Clear strategic directions on how the Philippines will position its airport system in the regional aviation map given the size of and growth in demand for high value and time sensitive products by the consumer and industrial markets in Asia; potential business opportunities (agriculture, manufacturing, MRO services) arising from the various bilateral and regional economic cooperation programs, trade agreements and industry roadmaps;
- (c) Prioritization and funding of ancillary infrastructure (e.g. power, water, telecommunications, roads) in the airports; and
- (d) Prioritization criteria for identifying new airport investment projects

2. Weak and ineffective regulatory/institutional infrastructure

The CAAP, per RA 9497, has conflicting responsibilities as regulator, operator, and investigator. These conflicts have made the agency weak as a regulator and ineffective as an operator of airports.

In 2008, the Philippines was badly impacted when the US Federal Aviation Agency (FAA) issued a downgrade following significant audit safety findings by the ICAO. The EU then followed and blacklisted Philippine carriers. As a result, access to key revenue generating markets for tourism and trade became very limited. International tourists had to pay high insurance premiums for travel to the Philippines. In response, RA 9497 was enacted in March 2008 creating CAAP—an "independent regulatory body" possessing corporate attributes with quasi-judicial and quasi-legislative powers and attached to the DOTr for the purpose of policy coordination. The new law abolished the Air Transportation Office (ATO) created by RA 776 of 1956, as amended. However, the commercial and investigatory functions of ATO remained as part of CAAP.

³⁵ In 2013, five years after the opening of the Bacolod-Silay International Airport, passengers began to enjoy shorter travel time of 15 minutes from the airport in Silay to Bacolod City because of the new 10.12 kilometer access road built by the DPWH. Previously, passengers had to use the North Section of the Bacolod Coastal Road that resulted in a travel time between 30 and 45 minutes to the airport. Construction for the new Laguindingan airport started in 2008 but the road network improvement was limited to the national highway. In 2015, the DPWH improved the 3.7 kilometer access road by widening (from two to four lanes with some vital sections widened into six lanes) the Opol to Laguindingan Section of Butuan City-Cagayan de Oro City-Iligan City Road. <http://www.philippineflightnetwork.com/2013/12/new-multi-million-bacolod-silay-airport.html>; <http://www.gmanetwork.com/news/story/486982/news/regions/dpwh-completes-p176-m-widening-of-airport-access-road-in-misamis-oriental#sthash.KYariBO3.dpuf>.

³⁶ The new Laguindingan Airport was mocked as "*di malandingan airport*" when it started commercial operations in June 2013 without the proper navigational aids that would allow night-time flights. Stakeholders raised concerns about cancellation of that would negatively affect the tourism industry, business and local communities. The air navigation equipment was finally installed in 2014. On March 12, 2015, Cebu Pacific became the first air carrier to operate night flight when its turbo-prop plane from Mactan-Cebu Airport landed in Laguindingan Airport. <http://www.gmanetwork.com/news/story/451589/news/regions/first-night-flight-arrives-at-laguindingan-airport-in-northern-mindanao#sthash.H275qmAp.dpuf> and <http://www.gmanetwork.com/news/story/540474/money/companies/caap-upgrading-laguindingan-airport-to-handle-int-l-flights#sthash.EGtE3ccj.dpuf>

Given the milestones achieved by the industry in 2014 (i.e. addressing the ICAO audit findings, the upgrade to Category 1 by the US FAA, and removal of Philippine carriers from the European Union (EU) blacklist), CAAP needs to be strengthened as a regulator and to be provided with funds to develop the technical capacity of its staff and officials and to invest in necessary infrastructure to promote safety on the ground and in the skies.

As a regulator, the **CAAP is responsible for non-economic regulatory oversight, especially safety**. It is tasked with certifying the safety of aerodromes – air traffic control, airports, installations, crash and fire equipment. It also issues licenses and regulates air operators, aircraft, pilots, and air traffic controllers. Through the conduct of safety oversight, the CAAP’s main role should be to ensure that service providers and operators comply with regulations i.e. operational procedures, safety performance, data accuracy and promulgation and reporting) and pursue high safety and security levels/standards. Based on ICAO’s documentation of best practices on the role of civil aviation authorities, *“the oversight actions include not only the initial aerodrome certification but also continuing surveillance and an ability to impose appropriate sanctions in respect of non-compliance with mandatory requirements by aerodrome operators”* (ICAO, Aerodrome Best Practice, 2011). The CAAP should therefore focus on setting a responsive and sustainable regulatory framework for its aviation industry stakeholders.

In contrast, however, the current set up is one where the **CAAP regulates what it also operates**, i.e direct operations of services (air traffic and air navigation services) and aerodromes, thereby creating conflicts of interest. By virtue of Section 78 of RA 9497, CAAP performs functions such as balancing service revenues and costs, forecasting or projecting market sizes and sourcing and providing funds for new airports or expansion of existing ones—over and above its safety oversight functions.

But this is something not unique for the Philippines as civil aviation authorities in other countries experience this type of conflict as well. Other countries have sought to establish the separation of the regulator and operator within the civil aviation authority thru **functional delinking**, where the commercial functions are retained under the equivalent of their CAAP but are separated thru internal re-organization (e.g. levels of authority, financial firewalls).³⁷ Evidence reveals that organizational delinking provides greater flexibility to the regulator to focus on its core function. For CAAP, this can be achieved thru the creation of a Philippines Airport Authority (or Corporation) and/or independent authorities for bigger airports or groups of airports. The provision of air traffic control services is another function that can be separated from the CAAP as regulator.

Based on Section 42 of RA 9497, **CAAP is tasked to conduct investigations of air accidents** (thru the Aircraft Accident Investigation and Inquiry Board) pending the establishment of an independent and separate government agency to conduct investigation of accidents on land, air, and water. To date, eight years since the passage of RA 9497, Congress has not yet created this independent agency. Several bills proposing the creation of the Philippine Transportation Safety Board were filed during the 16th Congress but were not prioritized and certified as urgent.

Finally, **air transport security** is another area where the country needs strong and fully accountable institutional infrastructure in protecting the entire transportation system. The Transportation Security Administration emphasized the value of risk-based approach to “decrease the size of the haystack,” layered-system to mitigate single points of failure, and the need to engage and communicate with stakeholders.³⁸ Currently, there are a number of security entities providing service at airports: the Office of Transportation Security (OTS), CAAP, the Philippine National Police, private security firms, and the airport operator (which can be CAAP or the independent airport authorities).

³⁷ During the 16th Congress, the Committee on Transport of the House of Representatives recommended and instructed the CAAP to convene a technical working group composed of CAAP, the Civil Service Commission, Department of Budget and Management and the Governance Commission for GOCCs to address the internal reorganization of the CAAP in order to address sustainability issues.

³⁸ Eustacio Bergamos, Transportation Security: U.S. Experience, Presentation during the National Aviation Summit, September 24, 2015, Makati City.

To illustrate, by virtue of EO 277 and EO 311, the OTS has been designated as the single authority responsible for the security of the transportation systems of the country and to ensure compliance to Annex 17 to the Convention on International Civil Aviation, as amended.³⁹ The OTS is mandated to prescribe security and safety standards, formulate, develop, promulgate and implement comprehensive security plans, policies, and measures. However, by virtue of RA 9497, CAAP is also mandated to formulate rules and regulations concerning

compliance of the carrier and the public for the safe transport of goods and materials by air pursuant to international standards or Annexes to the Chicago Convention and to exercise police authority. As a result of NAIA security issues particularly related to airport screening procedures of passengers and baggage in 2016 (especially the “bullets in baggage” or “tanim bala” scheme), stakeholders have clamored for the rationalization of security functions and procedures⁴⁰ and to amend mandates of agencies as necessary.

V. RECOMMENDATIONS

Airlines, both local and foreign, are more than ready to augment their capacities and take advantage of regional growth in aviation, tourism, and trade and to increase at least twice the economy’s growth. They have ordered new planes and are preparing their business cases for new routes. The Department of Tourism (DOT) is also at the forefront of pursuing route development especially after Manila successfully hosted “Routes Asia 2016.”

There are a number of recommended reform initiatives that key stakeholders believe could help improve Philippine aviation infrastructure. We focus on five in this policy brief. These are (1) decongestion and improvement of NAIA, (2) implementation of a multi-airport policy and system in the Greater Capital Region (GCR), (3) development of secondary international gateways and provincial airports, (4) modernization and strengthening of transport institutions, and (5) improvement of the business environment and travel facilitation programs.

1. Decongest and improve NAIA

Stakeholder inputs thru consultations and written proposals⁴¹ have identified priority tasks for decongesting air traffic in NAIA, increasing the on-time performance of airlines, improving passenger experience, and promoting safety.

On air traffic management:

- (a) continue to cap the number of movements per hour in NAIA to 40 for safety reasons and increase utilization only on the basis of the recommendations resulting from the DOTr commissioned study with UK National Air Transport System (NATS);
- (b) for the CAB and the air panel to close certain time slots already exceeding the safe number of aircraft movements per hour at Manila and instead offer Clark, Cebu, Davao, and other airports as alternates;⁴²
- (c) make NAIA a premium airport and address the hoarding of slots and non-use of slots for a certain period by imposing heavy penalties;
- (d) transfer general aviation to Sangley airport in Cavite, Clark, and Subic;
- (e) increase flexibility in Air Traffic Flow Management (ATFM) procedures;⁴³
- (f) ensure visibility and input into day-to-day ATFM and slot scheduling decisions for airlines;
- (g) improve infrastructure and sectorization to address communication issues and frequency congestion,

³⁹ This is commonly referred to as the Standards and Recommended Practices on Security and as enumerated in the Security Manual for Safeguarding International Civil Aviation Against Acts of Unlawful Interference, as well as the National Civil Aviation Security Programme.

⁴⁰ For example, in small and highly congested provincial airport terminals like Tagbilaran in Bohol, there are two screening areas that are very closely located to each other.

⁴¹ JICA and IATA presented the most comprehensive proposals.

⁴² Based on the manifesto of the Advocacy for Dual Airport Priority during the assembly in Clark Special Economic Zone last April 22, 2016.

⁴³ Items e to j are IATA recommendations.

- (h) urgently implement data link communications (CPDLC) and surveillance (ADS-C) in the oceanic sectors;⁴⁴
- (i) improve training, particularly regular cyclical training utilizing “lessons learnt” from incident investigations; and
- (j) ensure the capabilities enabled by the new Communications, Navigation and Surveillance Air Traffic Management (CNS/ATM) project are fully implemented with controller support tools and procedures.⁴⁵
- (c) update airfield charts and make them accurate with adequate notation for ground hazards;
- (d) establish airport short message service to enable proper hazard identification and risk management processes, including a system to collect, investigate, and provide feedback on airline safety reports;
- (e) provide up-to-date assessment of airport obstacles and terrain through completed aeronautical surveys;
- (f) ensure airport charts are current and changes are promulgated within the ICAO guidelines to allow updates of airline flight management systems; and
- (g) provide interconnections among the terminals.

On airport airside operations, IATA (2016) recommended the following:

- (a) install ground movement aids that are installed and maintained to ICAO Annex 14 standards at a minimum;
- (b) constructing the rapid exit taxiways;

During the first six months of the Duterte Administration, the DOTr spearheaded the implementation of action programs to decongest NAIA (Table 6).

Table 6. Actions implemented to decongest and improve NAIA

Action Programs	Remarks
1. Removed the overnight aircraft parking privileges of airlines	All terminal bays should be used for loading and unloading of passengers only. This ensures that passengers, especially the elderly, persons with disability, or passengers that need special assistance will not be burdened with riding a transfer bus from a remote parking.
2. Issued joint DOTr-CAAP-CAB-MIAA Memorandum Circular No. 2016-02 (dated July 28, 2016) that prevents the use of the runway by general aviation, except for helicopter operations, medical evacuations, and aircraft on emergency from 1200H to 1900H	On-time performance of commercial flights increased starting September 2016. The on-time performance of some Philippine air carriers reached 77% to 80%, the highest during the year. ⁴⁶
3. Initiated the bidding for the rapid exit taxiways, previously delayed for several years	On December 29, 2016, the MIAA issued the bid documents for Package 1: Civil Works for the Rapid Exit Taxiways 06/24 with an approved budget of Php 212.8M. Completion target date is first quarter of 2018 based on the bid announcement.
4. Conducted dialogues with the stakeholders for the transfer of general aviation to Sangley, Clark, Subic, and other airports	<ul style="list-style-type: none"> • On December 2016, DOTr issued notice of invitation to bid for the Php 553M repairs and restoration works (i.e. rehabilitation of the existing 2.4-kilometer runway, construction of ramp, drainage system, four hangars with a floor area of roughly 1,600-square meters (sqm) each, as well as an 800 sqm passenger terminal building with offices, vehicular parking area, and other facilities) of Sangley Airport to enable the transfer of general aviation services from NAIA to Sangley Airport. • In January 2017, the DOTr postponed the bidding per request of the Philippine Reclamation Authority (PRA) to clarify issues related to any development in Sangley Airport. EO 629 issued on June 21, 2007 directed the PRA to develop Sangley Point into an international logistics hub with container port and airport complex and an economic processing zone with cyber or technoparks through a private sector joint venture or Build-Operate-Transfer scheme. On the part of the DOTr, the Php 553 M repairs and restoration works are not part of any grand development plan for Sangley but are intended only to contribute to the urgent decongestion of NAIA.

⁴⁴ Some FIRs encompass the territorial airspace of several countries. Oceanic airspace is divided into Oceanic Information Regions and delegated to a controlling authority bordering that region. The division among authorities is done by international agreement through ICAO.

⁴⁵ The CNS-ATM became operational in the last quarter of 2016.

⁴⁶ Based on the presentation of CAAP during the February 1, 2017 hearing on the Senate resolution filed by Senator Grace Poe on the rationalization of NAIA flights.

Action Programs	Remarks
5. Conducted dialogues with the air carriers for movement of some flights to Clark	<p>Philippine Airlines Effective December 16, 2016: Daily Clark-Caticlan-Clark Effective January 1, 2017: Clark-Incheon-Clark (daily) Effective January 30, 2017: Clark-Cebu-Clark (4x per week to increase to daily on March 26, 2017) Effective February 1, 2017: Clark-Davao-Clark (3x per week to increase to 4x per week on March 26, 2017) Effective March 26, 2017:</p> <ul style="list-style-type: none"> • Clark-Puerto Princesa-Clark (3x per week) • Clark-Coron-Clark (daily) <p>Cebu Pacific Effective December 16, 2016</p> <ul style="list-style-type: none"> o Increase from 3 to 6 times weekly of Clark-Cebu-Clark flights o Increase from 7 to 10 times weekly of Clark-Hong Kong-Clark flights <p>Air Asia Effective March 27, 2017: Clark-Kalibo-Clark (3x per week)</p>
6. Conducted dialogues with various agencies to complete the one-stop shop for OFWs in Clark	Inauguration of the one-stop shop center for OFWs in Clark on September 2016.
7. Implemented crackdown on carriers taking over the daytime slots of other airlines	This move contributed to the improvement in the on-time performance of airlines.

In the medium-term, the **privatization of NAIA** is expected to improve the overall airport complex. This proposal was approved by the NEDA ICC-Cabinet Committee but deferred by the NEDA Board under the Aquino Administration. On September 16, 2016 the Duterte Administration approved the NAIA privatization. The privatization can leverage on the resources and expertise of the private sector to improve services and the ability of the airport to proactively meet the needs of the airlines and the public. However, there are some concerns raised regarding privatization of the existing NAIA in relation to the proposal to develop a new gateway to serve Metro Manila and the Southern Luzon environs. If NAIA is privatized under a concession period of 15 years, will the government still pursue the proposal to develop a new gateway to cater to the projected demands by 2030 and 2040? What are the safeguards to protect the interests of users of the airport – airlines, passengers, and other stakeholders? How will the government ensure competition over services being provided to the airlines, passengers and other airport users?

2. Implement a multi-airport system policy in the Greater Capital Region GCR and accelerate the development of Clark International Airport

In 1994, the Ramos administration recognized the urgency to develop Clark International Airport and to implement a

multi-airport (in this case, dual) strategy to address the inadequacy of NAIA to handle future traffic demands. The two-pronged solution proposed by the ad hoc committee led by then-Secretary of Finance Dr. Roberto de Ocampo involved the expansion of NAIA to meet the short-term needs and the simultaneous development of then Clark Air Base for the medium and long-term needs of airlines, passengers and other stakeholders.⁴⁷

Two decades later, both JICA (2012) and IATA (2016) recommended that Clark serve as the alternate airport to NAIA in the short to the medium-term.⁴⁸ The JICA report explored the concept of a dual airport system involving NAIA and Clark. It explained improvements that can be made to NAIA and at regional airports will not be sufficient; and that significant additional capacity outside of NAIA (i.e. Clark) is required to satisfy air travel demands in the GCR. A number of options were presented and announced to the public way back in 2012, including but not limited to:

- (1) Closing NAIA and transferring all operations to Clark International Airport;
- (2) NAIA serves domestic operations and Clark serves international traffic;
- (3) Government would develop Clark and at the same

⁴⁷ Speech of Dr. Roberto De Ocampo OBE, Chairman, Philippine Veterans Bank during the Clark Aviation Conference 2014 “Clark: Reshaping Philippine Aviation the Aerotropolis Concept,” May 16, 2014, Holiday Inn Grand Ballroom, Clark.

time maximize the operations of NAIA until 2025 and also look for an alternative site for a new airport that would be 25 km or 30 minutes away from the existing gateway; and

- (4) Government would jointly develop Clark and NAIA, and then decide whether or not to put up an alternative airport.

Stakeholders have recommended the issuance and implementation of a multi-airport policy to immediately help decongest NAIA and maximize the usefulness of the relative proximity of the NAIA and Clark airports to each other—allowing traffic flow to be better managed in terms of peak and low hours. A multi airport policy will likewise define the roles of NAIA and Clark (and other airports like Subic and Sangley to be used for general aviation in the immediate to short-term) in decongesting NAIA and in enhancing the economic competitiveness of the GCR. Clark’s catchment basin includes residents of Northern Metro Manila and Central and Northern Luzon plus OFWs and their families. A survey by the PSA revealed that 33% of OFWs reside in this catchment area of Clark. The catchment can be expanded to include other provincial destinations that can be connected to international flights currently operating at Clark. Given the domestic and international flights of PAL and Cebu Pacific and other airlines, Clark can also serve the Visayas and Mindanao markets. Thus, Clark International Airport can operate independently from NAIA.

In the recommendations for a multi airport system, the **most contentious issue has been traffic distribution**. One proposal raised during consultations was to split air traffic between NAIA (for domestic) and Clark (for international). However, this would make Manila lose any future bid to become an Asian hub under a multi airport system. The experience of Japan with the implementation of the multi airport system for Haneda and Narita provides some lessons on why government should not dictate the flight network or flight services that should be operated in either airport. Tokyo’s competitiveness as an Asian hub declined because the Japanese government forced one airport to serve only domestic traffic and the other to serve international traffic. In this situation, domestic-

international connections required the use of ground transport, which then proved to be ineffective as a business model. Recently, the Japanese government removed the restrictions on these two airports. Haneda has added a new runway, and both airports now offer international services (InterVistas, 2013).

During the first State of the Nation Address of President Duterte (July 2016), he announced that *“the Clark Airport can be utilized to shift some operations of our domestic and international airlines... fast train will be built...”* To ensure that this announcement is translated into action, there is a call for the executive to issue a policy instrument on the multi airport policy and strategy. Nonetheless, in the absence of the policy issuance during the months after the SONA, the DOTr has met regularly with airlines to implement the president’s announcement (Table 6).



Source: Roni Santiago, Manila Bulletin, December 3, 2016

An expansion program and implementation timeline for Clark can help airlines plan ahead. When the airlines finally believe the government has a plan and is implementing the plan, they will also make theirs so they will not be caught unaware. **Apart from a new terminal, Clark also needs to purchase and replace equipment and facilities in order to facilitate embarkation and disembarkation of passengers** especially during flight diversions and ensure high quality of services to passengers and airlines.⁴⁸ The completion of the NLEX-SLEX connector road between the Balintawak south terminus of NLEX and the Buendia Avenue north terminus of SLEX in Makati will facilitate the movement of passengers between Manila and Clark. There have been pronouncements (periodically since the early 1990s) about the development of a railway between Manila and Clark. This project may finally see its fruition in the medium to the long term. What is essential in the short-term, especially in light of Metro Manila congestion, is the rapid development of the Clark Airport terminal given existing land use and master plans at Clark and its increasing utilization by Philippine carriers. **The most immediate goals are: (1) to build the 8 M terminal (per the masterplan) to enable Clark to handle more than 500 passengers per hour, its estimated current capacity per hour; (2) to engage the private sector in making the airport reach performance levels at par with the competitive airports in the region.**

As regards the new NAIA, in 2014, the JICA-assisted study on the New NAIA project⁴⁹ concluded that the Sangley Point Offshore Site can offer more opportunity for harmonized development of New NAIA than West Laguna Lake Offshore Site and therefore Sangley Point Offshore Site is considered as the preferred option for development of New NAIA (Figure 8). Based on a timeline beginning 2013, the new NAIA, if the government decides

it will be at Sangley, would be inaugurated by 2025 and beyond. The current NAIA would then be closed once the new NAIA is opened. In the past months, some private sector proponents announced their intention to submit unsolicited proposals⁵⁰ to build a new NAIA within the next decade. To date, there is still uncertainty on the location of this new NAIA and the timeline for its implementation and completion.⁵¹ An announcement of the government's decision will definitely help industry stakeholders plan for the future. The DOT, for example, is positioning Manila as a turnaround and home port for cruise tourism. The implementation and success of this program also depends on the location of the airport.

3. Accelerate development of secondary international gateways and provincial airports

The country's tourism jewels and producers of high value commodities are located in destinations that can be served by existing and upcoming secondary international gateways. The airport development program can be guided by the DOT's new tourism development plan and the Department of Trade and Industry's Comprehensive National Industrial Strategy, industry roadmaps, trade and economic cooperation agreements, and the Department of Agriculture's program for high-value commodities.

By improving the airport, land, and port infrastructure in these areas, airlines can fly direct and passengers can save on travel costs and time and avoid NAIA congestion. The secondary international gateways have already reached their design capacities based on passenger throughput per year. Although these airports can serve as hubs to other domestic destinations, the provincial airports of interest to Philippine carriers need improvements in infrastructure i.e. night landing facilities,⁵² implementation of performance-

⁴⁸ The list includes upgrading of airfield ground lighting system, installation of new radar system, upgrading of voice communication switch, and fire trucks among others.

⁴⁹ JICA-NEDA Roadmap For Transport Infrastructure Development For Metro Manila And Its Surrounding Areas (Region Iii & Region Iv-A) Final Report Supplemental Report No. 1, New NAIA Project, p. 24.

⁵⁰ Two large Philippine conglomerates have announced plans to make unsolicited bids to the government to build a new airport to replace NAIA: (1) San Miguel Corporation has for several years proposed a four-runway airport along the Manila Bay foreshore near the PAGCOR Entertainment City, but more recently is reported to locate the airport with fewer runways at an undisclosed location further north in Bulacan province. Recently, last January, San Miguel expressed its indifference about the location of the new NAIA and expressed its intent to bid whether the airport will be located in Sangley or Bulacan; and (2) on October 29, 2016, an agreement was signed for the Philippine Global Gateway Project between the All-Asia Resources and Reclamation Corporation (AARRC) (of the Tieng family) and the Belle Corporation (of the the SM group of the Sy family) for a massive \$50 billion airport/seaport/logistics/reclamation project along the Manila Bay southern foreshore near Sangley Point, Cavite. The project will reportedly benefit from \$20B of financing as one of the major projects agreed to during President Duterte's October 2016 visit to Beijing with the massive China Communications Construction Company (CCCC). CCCC is a Chinese state-owned corporation publicly traded on the Hong Kong Stock Exchange. The new airport would reportedly have a passenger capacity of 50M per year and would be built after 2,500 hectares is reclaimed.

⁵¹ Industry experts point that a new airport within 15-20 minutes by land from Metro Manila will require closing NAIA, especially if such an airport is located south or southeast of the metropolis. ICAO regulations require a minimum of 45 miles distance separation between two active aerodromes. The Manila Terminal Maneuvering Area TMA has a radius of 60 miles. If the envisioned airport is south or southeast of the current NAIA then it could be no more than three air miles from NAIA. If the airport is south of NAIA, it will not have any operational effect on Clark which is 60 miles north of NAIA and just at the boundary of the Manila TMA. If the airport would be located north of Metro Manila at an approximate land distance of 15-20 minutes from Metro Manila, then both the current NAIA and Clark will be affected operationally. The constituents of Central and Southern Metro Manila and Southern Luzon and Central to Northern Luzon will then have to be engaged in the consultation process.

⁵² Basco, Busuanga, Calbayog, Catarman, Masbate, Naga, Pagadian, and Tagbilaran airports.

Figure 8. Proposed airport sharing for GCR under the JICA-assisted roadmap

Airport	Actions Required			
	Immediate-term (2013-2016)	Short-term (2017-2020)	Medium-term (2020-2025)	Long-term (2025 and beyond)
NAIA	Improve existing terminals and taxiways, etc.	Continue improvement of existing terminals and taxiways, etc.	Partially transfer some domestic operations to Sangley.	Close NAIA upon opening of New NAIA.
Clark	Develop LCC terminal, etc. as required to share NAIA demand	Develop required facilities/services to meet demand (NAIA and C&N Luzon)	Develop required facilities/services to meet demand (NAIA and C&N Luzon)	Develop required facilities/services to meet demand (NAIA and C&N Luzon)
Sangley (SRA)	Transfer to CAAP Design/implement necessary measures to share function of NAIA	Operate as third runway of NAIA under one single ATC with possible access by high speed boat and improved roads		Integrate development with New NAIA (in case of Sangley as new NAIA)
Plaridel	Expand and improve to accommodate all GA operations.			
New NAIA	Project plan/design: FS, EIA/ECC, ICC approval, etc.	Design/construct seawalls/reclamation and access bridge(road and rail).	Site development, construction of airport and related facilities and services.	Inaugurate New NAIA.

Source: JICA presentation during the September 2014 Roundtable Discussion on Air Transport

based navigation instrument flight procedure,⁵³ and expansion of runway capacities to accommodate bigger aircraft. Originally bundled as two PPP projects, there will now be five individual procurements for the airports of Bacolod-Silay, Davao, Iloilo, Laguindingan, and New Bohol airport.

Stakeholders need to know how they can partner with the government in positioning the Philippines as an investment destination for high value-adding manufacturing and logistics services. Thus, a clear strategy and implementation plan on the air cargo logistics industry and its interdependence with the other transport modes can guide the airport prioritization and development program.

4. Modernize and strengthen institutions and regulations⁵⁴

Growing commercialization of the air transport industry and growing demands for safety and security are driving reforms in governance. **Strengthening the CAAP as the agency in charge of safety and regulatory oversight requires enactment of legislative measures.** The first is to amend the CAAP Law or RA 9497 in order to

address human resource development, strengthen the board and increase the compliance of the Philippines with international standards of safety and security. The second is to separate conflicting functions of CAAP as regulator, operator, and investigator. The third is to set a clear framework for the regulation of privatized airports.

- **Amendments of RA 9497.** There is a need to address the remaining critical elements in order to improve the country's aviation status. These critical elements include fine-tuning the Philippine civil air regulations, changing the CAAP's safety and oversight structure, updating its database storing system, standardizing their certification of safety inspectors and revalidation of airline carriers, among others. The intention of the amendments is to strengthen the CAAP as regulator of the air transport industry. House Bill (HB) 0141 authored by Representative Cesar Sarmiento, chair of the Transportation Committee seeks to address these concerns. There is no Senate version filed to date.⁵⁵

To further strengthen the CAAP as regulator, there is a need to separate its conflicting functions, namely: regulator, operator, and investigator. This can be done in two ways. The first is through the assistance

⁵³ Recommended for the Butuan, Dumaguete, Legazpi, and Zamboanga airports.

⁵⁴ See Rodolfo (2016) for a review of literature and country experiences in air transport governance framework and models and Report of CAAP to maintain Category 1 status during the Committee on Transportation Meeting, Speaker Yniguez Hall, Southwing Annex, House of Representatives, Quezon City, May 2014.

⁵⁵ During the 16th Congress, Senator Grace Poe filed the bill seeking to amend the CAAP Charter.

of the Governance Commission for GOCCs in implementing the so-called functional delinking thru reorganization. The organizational delinking can evolve from the results of functional delinking. It can be done through the creation of three separate entities to develop and manage Philippine airports (Philippine Airports Authority), to conduct investigation (National Transportation Safety Board), and to provide direct air traffic control services (corporatization or privatization of air traffic control).

- **Creation of Philippine Airports Authority.** The airport operations can be transferred to an independent entity that will consolidate the functions of planning, developing, maintaining of all airports, and regulating the privatized airports of CAAP. By transferring the elements of Section 78 of RA 9497 to the new entity, coordination failures experienced in the past years from having both DOTr and CAAP provide separate budgets for airport development, maintenance, and operations will be addressed. The functional delinking process mentioned above is a major step in addressing the conflicts pending the passage of law to implement the organizational delinking by Congress.
- **Creation of the National Transportation Safety Board.** The proposed National Transportation Safety Board (NTSB) shall be an independent and non-regulatory agency mandated to determine the probable cause of transportation-related accidents on land, sea, and air, including railway and pipeline systems. Functions of the proposed NTSB include conducting safety inspections on land, sea, and air transportation and appraising or assessing existing practices and policies regarding the transportation sector. There are five pending bills in the 17th Congress: HB 190, 1725, 2731, 3116, and Senate Bill (SB) 162.
- **Corporatization or privatization of air traffic control services.** There are various governance models and that can be used as reference in terms of the experience and impacts of the public management reform (Table 7). In Switzerland, the Skyguide is a not-for-profit joint stock corporation. In the United Kingdom, the NATS is the provider of services under a PPP arrangement where ownership is 48.87% government, 41.9% consortium of UK airlines, and 5% NATS staff. In New Zealand, the Airways Corporation of New Zealand is a state-owned enterprise that is expected to make a return on operating capital. Australia has created an independent government agency with its own board,

although the cabinet names its members. Other countries restrict the profit maximizing behaviour of their ATCs. This is the case in Canada where a club of airlines owns and manages the ATC, as is the case in the Netherlands, South Africa, and Switzerland. These countries aim at combining private management styles, but want to limit profit-maximizing motives by applying the non-for-profit principle (Niemerier, 2010). The Canada model has a unique structure and form of governance. It has no share capital, and its board is made up of stakeholders represented either directly or indirectly through associations with respect to the airline industry and general aviation. Nav Canada is a not-for-profit firm and obtains its capital from the open market without a government guarantee of debt. This model recognizes the role of stakeholders while keeping them at arms' length and has been suggested as a potential model of reforms in a number of countries including the United States.

An implementation timeline will be critical in the reform process. It is recognized that this reform process requires strong political will and preparation of mitigating mechanisms to address the concerns of the agencies to be affected by the proposed reorganizations.

- **Setting a clear framework on regulation of privatized airports.**

One of the largest problems facing government in the Philippines is the low quality and reliability of infrastructure assets and services. Under public ownership, airports have become crowded. Assets have deteriorated and have not been replaced. New investments are needed to renovate and expand the airports to meet passenger growth. Policymakers may choose private participation, whether PPP or privatization, over traditional public procurement primarily because they expect to use private capacity and/or capital to improve and develop public airports.

In 2014, the **government tapped the resources and expertise of the private sector with the privatization of the operations and maintenance of the MCIAs' landside facilities. There are now six more airports for development through PPP:** NAIA and five regional airports - Bacolod-Silay, Bohol, Davao, Iloilo, and Laguindingan pursuant to a dual-stage public bidding process in accordance with the Philippine Build-Operate-Transfer law (RA 6957, as amended by RA 7718), and its

2012 Revised Implementing Rules and Regulations. The contracts for these six airports will cover development, operations, and maintenance of both landside (including, among others, the passenger terminals) and associated airside facilities (including, among others, the apron, runway, and taxiway), during the entire concession period. Operators will be responsible for the installation of all required equipment and associated facilities and necessary upgrade and maintenance of ATC and ANS facilities. Winning concessionaires will handle airport O&M for 30 years and will expand the facilities.⁵⁶ The bundling of airport systems or a set of adjacent airports allows for cross-subsidization, either for predatory or social reasons. Bidding the airports independently can promote competition and mitigate predatory behavior.

Effective regulation demands that, at the very least, the regulating authority should be separated from the owner and at best from the government in order to avoid regulatory capture.⁵⁷ This will help ensure that safety, security, and efficiency across the value chain is achieved with the PPP. Such an independent regulator should be part of a well-designed and functioning legal system and should prevent regulatory capture by either the regulated firm (Stigler, 1971) and/or consumer groups (Posner, 1971). With respect to airports Wolf (2004) argues that an independent regulator is a necessary condition for full privatization. An independent regulator applying incentive regulation is necessary because airports might otherwise take hostages such as partial government shares in order to protect their investment in a specific asset. Airlines demanding reform would like to set up a regulatory body that is more independent from the government.

Under the BOT law, the PPP governance process places the regulatory function in the hands of the respective government agency or local government unit. In 2015, the DOTr expressed the opinion that it was not the best regulator that the government and the people would be better off when there is less need to watch over the concessionaire because anti-competitive provisions will entail higher administrative and regulation costs.⁵⁸ While there are gains to privatizing airports for local

municipalities (removal of a fiscal burden and one-time government revenue boost via the purchase price for the assets), the concern has been that privatized airports will more fully utilize their market power and increase aeronautical charges. As cited in Bilotkach (2012), Bel and Fageda (2010) found higher aeronautical charges at private, unregulated airports in their cross-sectional study. Accordingly, as the ownership of airports changes from public to private hands, economic regulation may become increasingly necessary due to the local monopoly nature of airports. Despite the increasing potential for airports to be innovative businesses that provide services beyond take-offs and landings (e.g., parking, concessions, retail, and other related services), it must be recognized that airports generally exhibit many of the classic properties of local monopolies. The natural monopoly tendency implies that leaving these businesses unregulated might not be best from a social welfare perspective. Nevertheless, some countries—such as Australia and the UK—have allowed many airports to freely set charges in an unfettered manner; but even in these instances airport service pricing is subject to monitoring by industry regulators (Forsyth, 2008).

The regulatory functions should be performed by an independent entity and should cover various financial and service aspects including service levels, pricing, slots, counter allocation, among others (IATA, 2016). If the CAAP is the regulator of the airports by virtue of RA No. 9497 then it needs to be strengthened as a regulator of ‘privatized airports’ today.

Another concern is related to the limits in the participation of airline-related entities and of foreign investors in airport privatization. In the PPP for Mactan-Cebu Airport and the five regional airports, the aggregate proposed shareholdings of airline-related entities in the consortium does not exceed 33% of the total equity of the consortium, as required under section II-09 of the Instructions to Prospective Bidders. There were concerns on possible abuse of market power when the airline/airport operator makes availability of slots, gates, counters, lounges, and baggage handling more difficult to their competitors and assign the worst areas to rivals. The IATA on the other

⁵⁶ Five groups were qualified to join the bidding: the Filinvest-Jatco-Sojitz Consortium; the GMR Infrastructure and Megawide Consortium; the Maya Consortium; the Philippine Airports Consortium; and the SMHC-IIAC Airports Consortium.

⁵⁷ Effective regulatory institutions for air transport: A European Perspective Hans-Martin NIEMEIER University of Applied Sciences, Bremen, Germany joint Transport Research Centre ROUND TABLE 2-3 December 2010, Paris.

⁵⁸ http://ppp.gov.ph/?in_the_news=why-pal-cebu-pacific-cannot-bid-for-mactan-cebu-airport

hand cites the cases of Singapore and Dubai, where the airline (Singapore and Emirates, respectively) and the airport share the same owner. These airports are considered world class with no evidence of other airlines being subjected to discriminatory practices.

The **amendment of the Public Services Act (PSA)** (Commonwealth Act No.146 of 1936) **seeks to maximize competitiveness and quality of transportation** to provide an effective solution to the current inefficiency in transportation in the Philippines. This 80-year old law is no longer responsive to dynamic changes in the markets for transportation, a critical pillar in country competitiveness in the 21st century. For many years, the poor state of the transportation services and infrastructure has served as the most binding constraint to the competitiveness of manufactured goods and service industries such as tourism. Under the 1936 law, the limitations that should only apply to the operation of a public utility are usually also applied to all public services due to an ambiguity in the definition of public utility. Thus competition was limited to few local players to the great detriment of societal welfare. The legislative initiatives seek to clarify the definition of public utility and include

transportation in the list of industries that will no longer be treated as public utilities. This will benefit consumers who often experience high transportation prices relative to the quality of services provided. This is true in other sectors such as telecommunications controlled by solely local players. Publicly owned and managed airports and ports and services have not been able to respond to the needs of export-oriented industries and services. Through legislative amendments to the PSA, airports, for example, can operate as multi-product customer-oriented firms providing services to airlines, exporters, importers, and passengers. Amendment of the PSA will create opportunities to improve delivery of goods and services and reduce transport costs to the benefit of consumers and country competitiveness. There are four bills to amend the PSA introduced in the 17th Congress: HB 4468 and 4501, SB 695, and 1261.

Another concern raised by consumers and legislators is on the issue of sovereign guarantees to winning bidders. Per the DOTr during the 2016 public hearings on emergency powers bills, the government will not provide these guarantees for the airports to the privatized.

Box 2. PPP for Airports

Private sector participation in publicly owned airports has become a global trend. The Centre for Aviation (2015) reports that 40 of the 100 largest airports around the world in terms of revenue are either fully or partially owned or controlled by private investors. The private sector participates in managing and operating public airports through various schemes ranging from PPP to full privatization. London Heathrow Airport, for example, has been fully privatized and is now owned by an investor consortium led by Ferrovial S.A. The Danish government has divested its shares in Copenhagen Airport since 1994 and holds only a partial share. The government of India has developed and modernized the country's four major airports in Bengaluru, Delhi, Hyderabad, and Mumbai on a PPP basis.

Young In, Casemiro and Kim (2016) provide various benefits that PPP brings in the air transport industry as cited in the literature:

- (1) Tang (2016) notes that airports are freed from political interference and arbitrary funding cuts or raids on financial assets. Moreover, private participation can increase government access to private capital and unburden the public budget for airport development;
- (2) Airports can be operated as a business using private sector skills while still protecting public interest. The growing presence of the private sector has shifted the airport business to become more revenue-driven. Gillen (2011) observes that the modern airport business model puts an increased importance on non-aeronautical activities. As a result, the use of airports has become a lot more diverse; many public airports have transitioned from public utilities to multi-product firms that deliver airside, retail, and other ancillary services;
- (3) Faster decision making, increased operating efficiency, modernization of processes, and introduction of commercial skills. The transition may also bring advantages to the public sector because private capital and capacities to improve and develop public airports. Private airports tend to have the advantage of charging efficient prices and responding to market incentives for capacity expansions (Craig, 1996). Oum, Yan and Yu (2008) show a statistical analysis of 109 airports worldwide with a variety of ownership forms and finds that airports with private ownership are more efficient than those with traditional public ownership;

- (4) Regulatory control of aeronautical operations is maintained; and
- (5) The income earned is applied to the needs of the aviation customers.⁵⁹

There is, in general, a belief that the private sector is always more efficient than the public sector, and, very often, the expected performance of privatized assets is higher than that of public assets. The private sector can also bring value drivers to infrastructure by helping to improve, for example, service delivery and maintenance, as well as assist with the introduction of innovations (Oum, Yan and Yu, 2008). One of the reasons for this higher performance is the fact that the performance of PPPs is specified in terms of outputs rather than inputs, which fosters innovation. Engaging in a PPP also helps the government to diversify portions of risk away from themselves (e.g. construction risk, technology risk, and operation risk) and towards the private sector.

However, not all benefits may be realized if the regulatory regime is lax. This can lead to abuse of market power, higher landing charges, and under-investment, as experienced in other privatized transport services. As public goods, public airports are often involved with complex principal-agent problems in relation to incentives, barriers, and means to promote private sector participation.

While IATA supports the concept of public-private partnerships, it recommends the adoption of the following key principles:

- Stakeholder consultations and transparency throughout the restructuring process.
- Setup of independent economic regulation and oversight.
- Avoidance of onerous rent transfers or concession levies from private enterprise to government.
- Avoidance of pre-funding (e.g. through introduction of a passenger fee) especially since one key reason for PPP is to tap funds from the private sector.
- Setting up of Service Level Agreements (SLA) and incentives for cost-efficiency.
- Impact on aviation industry and its wider economic benefits to the Philippines economy.
- Productivity gains and other benefits of restructuring to be shared with the users of the services.

Box 3. Mactan-Cebu International Airport

Privatization became an option to develop Philippine airports when government bidded out the MCIA expansion for private sector participation in 2014. The privatization of Mactan-Cebu airport presents a good case for how secondary airports can be transformed into internationally competitive assets for the country.

The GMR Infrastructure and Megawide Consortium is a partnership of listed builder Megawide Construction Corp. and Bangalore-based airport operator GMR Infrastructure Ltd. that beat Filinvest Land and others for the P17.52B MCIA Passenger Terminal Building project on April 4, 2015. GMR-Megawide Consortium is very active in route development and has worked with the MCIA Authority in granting incentives to airline operators. GMR-Megawide is heavily investing in developing the international and domestic route connectivity to the point of proactively working with the tourism sector in improving land transport connectivity and product development. In just two years, Mactan-Cebu airport has substantially improved its terminal, facilities, and process flows among others.

In 2015, the domestic and international route networks have expanded significantly due to the aggressive marketing campaign of the private operator in partnership with MCI AA and DOT. From 2014 to 2015, international and domestic aircraft movements increased by 14.9% and 9.4%, respectively. The international passenger movements likewise expanded by 19.8% compared to 11.8% for domestic passenger movements. The total domestic and international air cargo volume increased by 54.5%. MCIA is the gateway to the tourism jewels of the Central Philippines tourism corridor and to the producers of high value fashion and consumer items in processing zones and the cities. By 2018, the passenger throughput capacity of Mactan-Cebu will reach 12.5M from only 4.5M prior to privatization. Given the congestion in NAIA and the presence of prime tourism attractions in the Central Philippines, the route development programs being pursued by the DOT and Mactan-Cebu are expected to yield more direct flights to Cebu. This will benefit travellers and airlines as well.

⁵⁹ Presentation of Ms. Cosette Canilao during the National Aviation Summit, September 2015. Makati City.

Table 7. Comparative Aviation Regulatory and Governance Framework

Countries	Economic Regulator	Civil Aviation Technical / Safety Regulator	Accident Investigation	Security	Airport Operator	Air Traffic Control Services				
						Provider	Organization Type	Empowering Legislation	Governance	Funding
Australia	Australian Competition and Consumer Commission	Civil Aviation Safety Authority (CASA)	Australian Transport Safety Bureau	Australian Federal Police	SACL (Sydney); APAC (Melbourne); BAC (Brisbane)	Airservices Australia	Government-owned authority	Air Services Act of 1995	8-member board of directors appointed by minister for transport and regional services	Charges based on equity approved by minister. May raise money on private capital market
Canada	Canadian Transportation Agency	Department of Transport	Transport Safety Board	Canadian Air Transport Security Authority	Various Private Operators	NAV Canada	Private non-share not for profit corporation	Civil Air Navigation Services Commercialization Act	Board of directors: 10 named by government and aviation industry; four independent members plus president/CEO	Self-financing; original credit facility from banks
New Zealand	New Zealand Commerce Commission	Civil Aviation Authority	Transport Accident Investigation Commission	ANSEC	Various	Airways Corporation of New Zealand	State-owned enterprise	Incorporated in 1987 as a company under the Companies Act and the State-Owned Enterprises Act	7-member board of directors appointed by minister for state-owned enterprises and minister of finance, each of whom has 50% of shares	ANCZ expected to make a return on operating capital; debt/equity structure to be maintained at 50/50
Philippines	CAB	CAAP	CAAP	OTS, CAAP, PNP, Airport Authorities	CAAP except for Manila (MIAA), Cebu (MCA) and Clark (CIAC)	CAAP	Regulatory body with quasi-judicial and quasi-legislative powers with corporate attributes [7]	RA 9497	Board of Directors	General Appropriations Act; Corporate Funds
Switzerland	DETEC (federal department for environment, transport, energy, and comms). Enroute charges to be approved by EUROCONTROL. approach charges must be approved by DETEC	Federal Office for Civil Aviation	Swiss Accident Investigation Board	Swiss Aviation Security		Skyguide	Not for profit joint stock corporation	Federal Aviation Act and Federal Ordinance on Air Navigation Services, as amended in 2001	7-Member board of directors appointed by shareholders. Federal Government owns 99.85% of shares; aviation industry interests own 0.15%	Full cost recovery; debt financed by private banks; debt not guaranteed by government
Thailand	Civil Aviation Board	Department of Civil Aviation	Aircraft Accident Investigation Committee	DCA	Airports Authority of Thailand; privately operated airports (Bangkok Airways owns Samui Airport, Suvarnabhumi Airport and Trat Airport)	Aeronautical Radio of Thailand Limited (AEROTHAI)	State-owned enterprise	Acquired by the government in 1963	Governed by Board of Directors and Executive Committees	Registered shares owned by government and member airlines
United Kingdom	Civil Aviation Authority; Enroute charges must be approved by EUROCONTROL	Civil Aviation Authority	Air Accidents Investigation Branch	Department for Transport	Various	National Air Traffic Services Ltd.	Public private partnership the UK government holds 49% and a golden share, with 42% held by the Airline Group, 5% by NATS staff, and 4% by UK airport operator LHR Airports Limited	Transport Act of 2000	Board of directors with advisory stakeholder council. One executive director, one independent (nonexecutive) director, 3 government directors, 4 airline industry directors	Regulated as a monopoly utility
United States	FAA	FAA	NTSB	TSA	American Airports Corporation in various US domestic airports	FAA	Government agency	Federal Aviation Act of 1958	Administrator reports to Secretary of Transportation	Congressional appropriations, and fees set by regulation

Sources: Brown, D., T. Berry, S. Welman and E.J. Spear (2014); ICAO (2008); Lewis (2004)

5. Improve business environment and facilitate travel

Apart from the airport and air traffic management infrastructure, the air transport industry can benefit from improvements in the business climate to further enhance connectivity especially to secondary gateways. The liberalized charter program was instrumental in the development of international air traffic in secondary gateways particularly Kalibo, Laoag, and Legaspi. **Incentives** in the form of lower application fees, streamlined processes plus output-based incentives similar to those offered in Thailand, Malaysia, and South Korea have been mentioned as enabling factors for expanding charter operations especially in secondary airports. As a start, the application fees can be reviewed to differentiate grantees of permits that intend to operate for six continuous months from those applying for single flights or bundle of flights within a one-month period only. This can reduce operational costs of charter operators and help the DOT to boost its tourism numbers to the countryside for inclusive growth.

VI. CONCLUSION

Air service connectivity in the Philippines has significantly improved in recent years due to the liberalization process that reduced entry barriers in the industry. However, the poor state of infrastructure – airports, air traffic management, and institutions – has hindered the ability of the country’s hard and soft players to capitalize on growth opportunities and most importantly of consumers to enjoy safe, seamless, and secure travel. There is greater optimism that long-delayed reforms to achieve competitive, sustainable, and inclusive air transport services in the country will finally happen based on executive actions to decongest NAIA, operate the CNS-ATM, and roll out the airport projects whether PPP or government-funded.

It is the institutional infrastructure, the glue that binds the three A’s of air transport infrastructure (airlines, airports, and air traffic management) and the most critical to sustain executive actions, that has been the least prioritized for years. Institutions set the rules of the game and the system of incentives and disincentives for the industry to grow.

There is a need to ensure the **provision of CIQS** at international airports without charging the private sector for the costs of border control. Part of the aviation modernization program is implementation of an **advanced passenger information system** (APIS). The APIS enables the Bureau of Immigration (BI) to screen the passengers upon check-in from their port of origin and provides seamless movements among passengers especially bonafide tourists. In 2014, the BI submitted a draft executive order for the APIS implementation and funding, endorsed by the DOT and the international air carriers (Philippine and foreign) to the Office of the President. The industry has appealed for the signing and issuance of this E.O. Another concern raised is related to the effects on travel and tourism of the proposed increases in the **jet fuel excise tax** under the comprehensive tax reform package of the administration.

These institutional reforms need the urgent support of the legislature. Congress plays a very crucial role in modernizing the Philippine air transport industry and in achieving sustainability. These reforms have been included as proposed projects to be covered by the emergency powers to address the traffic crisis in the air. Crisis periods provide opportunities to reform institutions, to strengthen them in performing core functions, and to invest in the human resources that make these institutions work to the greater benefit of the users of air transport.

As the public and private sectors in the Philippines consider recommendations in this policy brief, it would be prudent to keep in mind the status of investments in aviation infrastructure in competing neighbor economies and their continuing success in capturing large shares of regional tourism flows. Similar successful implementation of reforms in the Philippines are essential to increase inbound international visitor volume and resulting benefits to job creation and inclusive growth.

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