

PUBLIC-PRIVATE PARTNERSHIPS
IN AIRPORTS IN LATIN AMERICA
AND THE CARIBBEAN:

MAIN FIGURES AND TRENDS IN THE SECTOR



Inter-American Development Bank

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CONTENTS

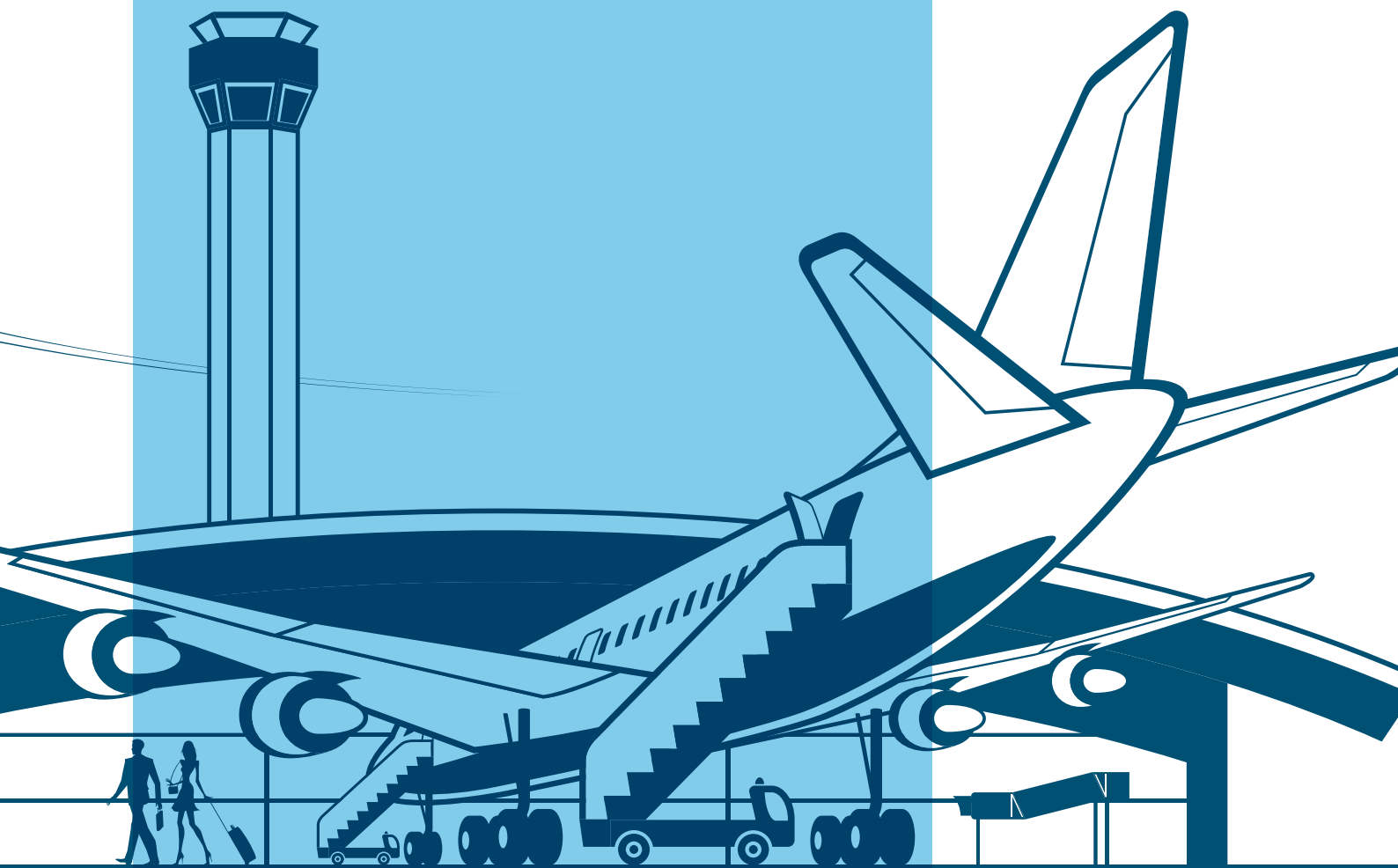
1	Introduction	01
2	Short description of public-private partnerships in airports in Latin America and the Caribbean	04
3	Main airport operators in the region under PPP schemes	14
4	Infrastructure considered, type of contracts and tender processes in airport PPPs in LAC	18
5	Characteristics of contracts and risk allocation in airport PPPs in LAC	25
5A	Revenue and payments to the government	26
5B	Tariffs	29
5C	Mandatory investments and maintenance	31
5D	Risk allocation	34
6	Performance of airport PPPs in Latin America and the Caribbean	37
6A	Renegotiations	39
6B	Cost overruns, delays and demand	42
7	Summary of main features in selected airport PPPs	46
	References	48
Annexes		
A	Data and definitions used in the document – airport PPPs	50
B	Physical indicators of the major airports per country	54
C	Timeline of the first and last airport PPP and PPP legislation per country	56
D	Availability of information on the airport industry and airport PPPs	58
E	Economic aspects of contracts by PPP airport	60
F	Information on contracts - sources of information and links.....	65

STYLIZED FACTS - KEY MESSAGES

- 1 -** Latin America and the Caribbean have been the world region with the largest airport PPP concentration since 1990, with over USD 38,000 M in 168 airports, which handle around three quarters of total traffic in the region. Growth of the sector and demands of the region created investment needs for development and maintenance close to USD 146,000 M for the next twenty years.
- 2 -** Regional operators handle 45% of the traffic of the region, with a relevant role of Corporación América (Argentina), Invepar and CCR (Brazil), Odinsa (Colombia), and Asur and CMA (Mexico), who have expanded beyond their country of origin. International operators handle 32% of traffic, with a strong presence of Fraport (Germany), Vinci (France) and Aena (Spain). Only 5 companies move close to 60% of the regional traffic.
- 3 -** Most of the PPP processes in airports in the region have been brownfield projects (90%), for a 20-year term, with a one-stage public tender process and an average of 3 offers, and where the most recurrent tender factor has been a higher payment to the Government.
- 4 -** With regards to the features of the contracts, most are self-sustainable creating aviation and commercial revenue, where payments to the Government have been structured using a fixed annual canon plus a variable percentage of revenue (with high variability, reaching even 77% of the operator's total revenue), and with required investment and maintenance criteria. Overall, the private sector assumes business, operation and construction risks, while the public side keeps land management, political, regulatory and force majeure risks.
- 5 -** Renegotiations are common in the analyzed cases, affecting the required investment (50% of cases), payments to the Government (25%), or agreed-on rates (30%). The average delay in project development exceeds 25 months, most cases recorded cost overruns, and demand performance shows both under and overestimations. All this reinforces the need to promote control, oversight and monitoring schemes of the development of infrastructure and its services, determined by robust and transparent regulatory schemes.

1

INTRODUCTION



1

INTRODUCTION

Public-Private Partnerships (PPPs)¹ have been an essential tool in airport development in Latin America and the Caribbean, with regards to investment volume, number of airports developed by or operating under this scheme, and passengers transported in PPP airports of the region. Countries in Latin America and the Caribbean (LAC) make up the region where the largest number of PPP projects in the world has been developed from 1990 until today². These models have been instrumental in handling the investment volume in this subsector and the growing demand in transported passengers in the region. In all, investments through PPPs in the sector represent over USD 38,000 M. 168 airports have been developed under this scheme in the same period, compared to 202 that used another scheme (whether they be publicly-owned-and-run airports, or privately-owned-and-run ones)³. Moreover, according to the International Air Transport Association-IATA (2019) world passenger demand experienced a 3.5% annual average increase during the last decade. The region has a volume of transported passengers close to 500 million per year. Around three quarters, over 350 million passengers per year, are transported from/to PPP airports.

Growth projections of the air transport market together with capacity and service restrictions impact the needs of development of the sector in the region. Air transport has a 4.7% average annual growth projection for the next 10 years in the region. This implies that the airports in the region will need to invest around USD 146,000 M in the air sector to develop new infrastructure and maintain the existing airport infrastructure until 2040; twice the amount needed, for example, in Europe for the same period⁴.

¹ According to the World Bank's Public-Private Partnerships Reference Guide 3.0, a PPP is a long-term contract between a private party and a government entity, for providing a public asset or service, in which the private party bears significant risk and management responsibility, and remuneration is linked to performance.

² Database of private participation in infrastructure, World Bank (2019).

³ As stated by Serebrisky (2012), during a great part of the twentieth century, airports were mostly not only State owned and run, but also considered strategic defense assets. It is as from the eighties that there was a switch towards the creation of airports with more commercial activities and purposes in mind, with Latin America and the Caribbean being a pioneer region in the participation of the private sector in airport infrastructure. For more details on the airport economy in the region, as well as its history and dynamics, see Serebrisky (2012).

⁴ Global Infrastructure Outlook, a G20 initiative. <https://outlook.gihub.org/>

The impressive growth of the international and regional air transport market in Latin America and the Caribbean has not only been the result of the region's economic development, but also of the existence of higher levels of investment, and regulatory regimes directed at allowing a larger access to the markets with the addition of new service operators and providers (Ricovert, Serebrisky, and Suárez-Alemán, 2018). All this has brought about an additional pressure on airport infrastructure in the region. The governments have responded by increasing the efforts to extend and update the main airports, essentially by collaborating with the private sector.

Thanks to PPP mechanisms, quality, efficiency and competitiveness of airports can be increased. The model has been extensively used in the region, due to its advantages over others available for air development and operation. The airport business, traditionally operated by State companies with low efficiency levels, is intensive in the use of capital and may require many years to recover significant investments in terminals and runways (ACI, 2016). On the one hand, using PPPs supplements the financing from the public sector and allows the development of projects that would otherwise be dismissed due to fiscal restrictions (World Bank, 2017). It also has the potential of obtaining better operational results when creating incentives that aligned with public and private interests, where the private sector operates the infrastructure and generates revenue derived from said operation for the State. Initially, countries developed ad hoc legislative initiatives to attract private investment and transfer the operation of services to the private sector in exchange of a canon.

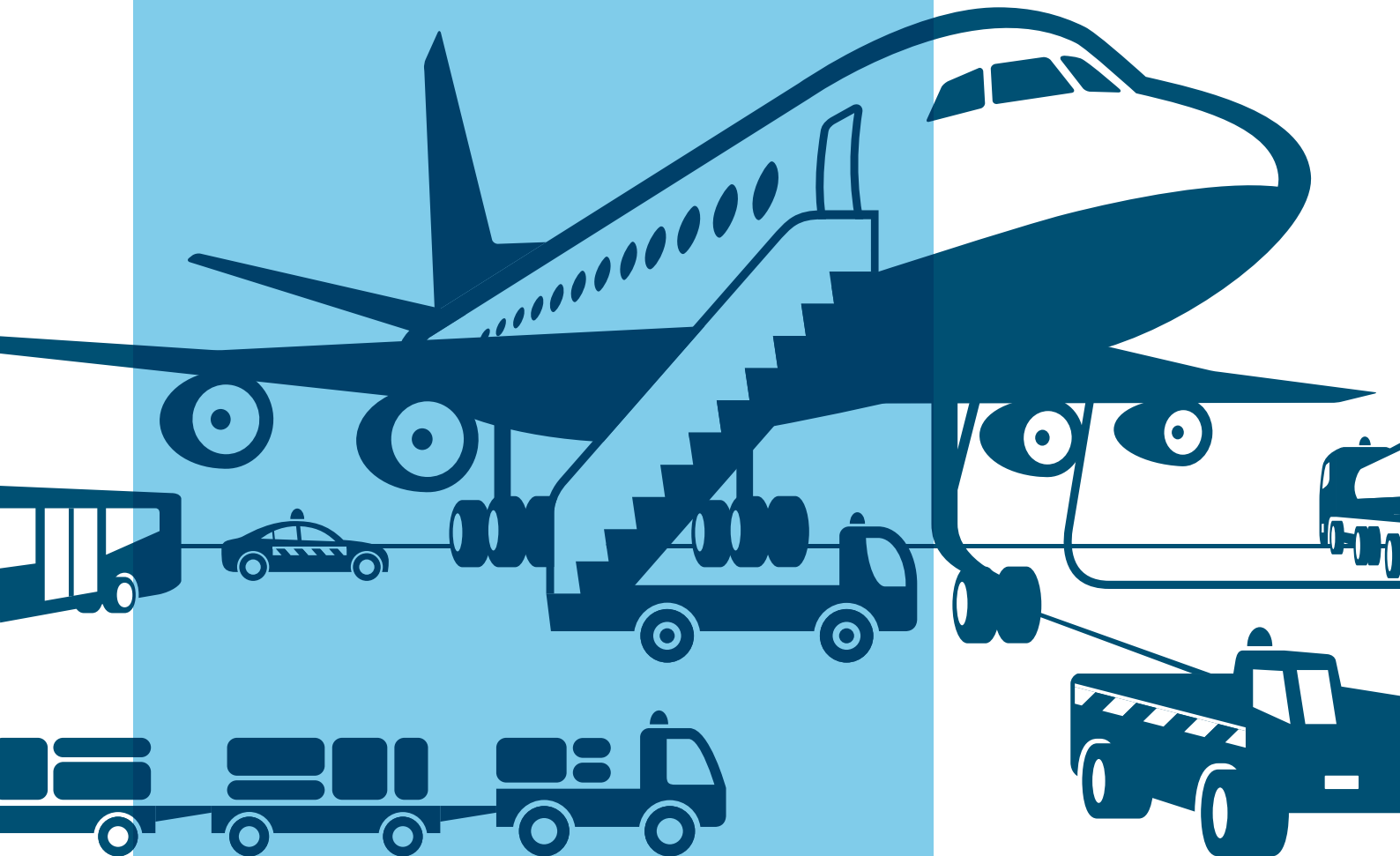
In the mid nineties, generalized concessions in the airport sector in the region were granted without robust regulatory and institutional frameworks. As a result, 45% of these public-private partnerships went through renegotiation processes (of political and economic sources, among others) during their first four years, as consequence of regulatory gaps and weaknesses (Fioravanti, Café, and Diez-Roux, 2018). Out of the 12 countries in the region that implemented airport PPPs, 10 did not have a specific PPP regulatory framework in their first stages. Currently, most of the countries have PPP regulatory frameworks that have allowed a more effective deployment of said scheme. Therefore, PPP airports handle most passengers in LAC. Thus, the development of adequate regulatory and institutional reforms is key for PPP success. It is already a pending issue in part of the region.

This document creates a profile of airport PPPs in the region, with a focus to identify the main trends regarding public-private partnerships in the sector. In order to develop the profile of airport PPPs in the region, data were collected and consolidated from government bodies in charge of PPP transactions, regulation or management of airport infrastructure, as well as those of private operators. Besides, this profile included data from the World Bank's PPI Database and the Infrastructure Journal Global. All in all, the document analyzes in depth 75 airport PPP projects, for the period 1993-2019 (active and completed projects). It also considers information available for projects in the making and with a bidding date for the period 2019-2022⁵. Annex A contains data and definitions used in this document. Annex B shows the availability of information on the airport industry and airport PPPs in those countries with PPP airports or other type of private participation.

⁵ The year considered for each project is, according to the available information, the start year for the contract or year of financial closure in those cases where the contract has not started.

2

SHORT DESCRIPTION OF PUBLIC-PRIVATE PARTNERSHIPS IN AIRPORTS IN LATIN AMERICA AND THE CARIBBEAN

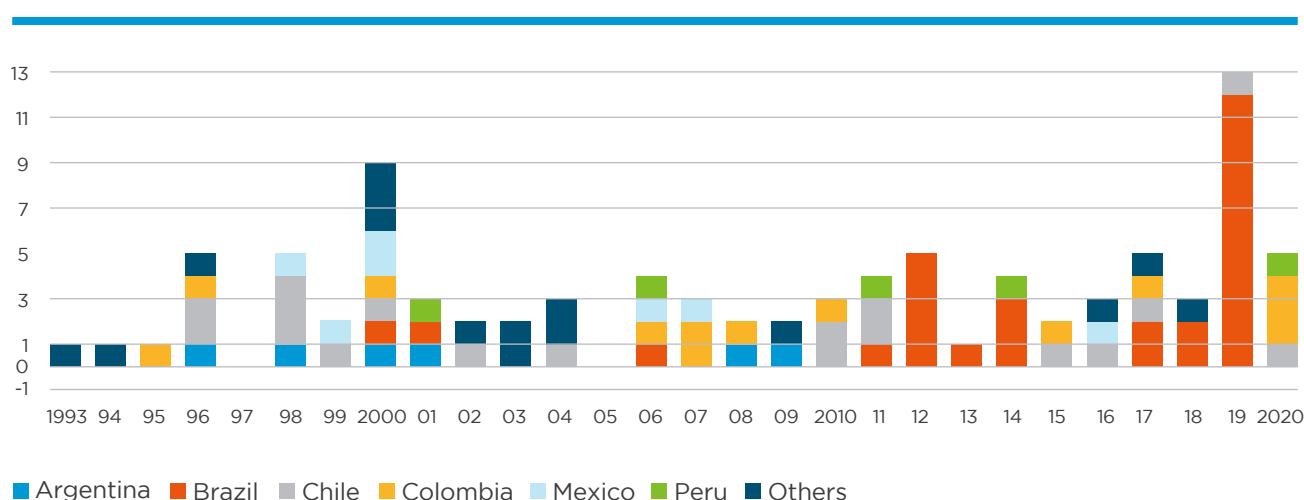


2

SHORT DESCRIPTION OF PUBLIC-PRIVATE PARTNERSHIPS IN AIRPORTS IN LATIN AMERICA AND THE CARIBBEAN

Most countries in Latin America and the Caribbean with a significant volume of passengers have PPP airports: Argentina, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Honduras, Jamaica, Mexico, Peru and Uruguay. They account for 86%⁶ of the Gross Domestic Product (GDP) and 82%⁷ of total population. As can be seen in the graph below, from 1993 to 2019 (with the exception of 1997 and 2005), every year at least one airport PPP started in Latin America and the Caribbean. For the period 2010-2018, the average number of concessions per year in LAC was around 4⁸.

Graph 1
NUMBER OF PPP IN AIRPORTS PER CONTRACT START YEAR



Source: Produced by the authors. **Note:** For 2018 and 2019, expected data are provided.

⁶ IMF (International Monetary Fund), World Economic Outlook Database, 2019. <https://www.imf.org/en/Publications/WEO>

⁷ World Bank's Database, 2019. <https://datos.bancomundial.org/>

⁸ The table includes a bidding round of 12 airports in Brazil in March 2019. Some of them are in the process of clearance of the winning operators. Contracts will be subsequently award. The table includes as well bidding plans for airports in 2019 and 2020 in Chile, Colombia y Peru. https://elpais.com/economia/2019/03/15/actualidad/1552664297_148423.html

A brief overview of the historical process for PPPs in airports in LAC as from the nineties: Within the framework of economic reforms during the nineties⁹, in 1993, Uruguay granted in concession the airport of Punta del Este, the second largest in the country¹⁰. Between 1996 and 1999, Colombia, Chile and Argentina had PPP tenders for their main airports, and Mexico did the same with its second main airport (Cancun). In the first decade of the 2000's, Costa Rica, Ecuador, Honduras, Jamaica, Peru and Uruguay had a tender for their main airports through PPPs (San José, Quito, San Pedro Sula, Montego Bay, Lima, and Montevideo). It should be noted that the Dominican Republic had a tender in 2000 for its main state airport (Las Américas). However, the country's main airport, Punta Cana, has operated under 100% private ownership since 1982. Brazil started using PPPs in small airports in 2001. Nevertheless, within the analyzed period, it was not until 2012 that it tendered a main airport (Brasília). Besides, in most cases, transactions were conducted without a PPP specific law, except in the cases of Chile and Brazil. The Concessions Act in Chile was issued in 1997. The first tender took place in 1998. In Brazil, the legislation was issued in 2004, several years before the first transaction in 2012. Figure 1 and Table 1 of Annex C show the timeline of the PPP process in the region, together with the applicable legislation¹¹.

In all, there are 168 airports in the region operating under a PPP scheme. In terms of passengers, these airports account for over 70% of total traffic in the region, a figure that goes up to around 80% when we only consider countries with airport PPPs: Argentina, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Honduras, Jamaica, Mexico, Peru or Uruguay. The remaining percentage is mainly mobilized in airports operated by State entities and, in some cases, in privately-owned airports. Per country percentages of traffic mobilized in PPP airports is over 85%, with three exceptions: Mexico, Brazil and Dominican Republic, where percentages reach 65%, 66%¹², and 44%, respectively. In Mexico, the federal government, through the corporation GACM (Grupo Aeroportuario de Ciudad de México) operates the country's largest airport (Mexico City Airport) and accounted for around 35% of total passenger traffic in 2018. ASA also manages 19 airports with a low volume of passengers (all below 64,000 passengers in 2018). In Brazil, the government, through Infraero, owns and operates 37% of the country's passenger traffic. It handles 44 airports, including the second largest one in the country (Congonhas in Sao Paulo) with over 20 million passengers, and small airports (which mobilized 4,000 passengers per year).

⁹ Due to the low availability of systematized and comparable information, this study does not cover private participation processes in airports of the region before the nineties.

¹⁰ Recently, the Uruguayan government renewed the concession for the Punta del Este Airport to Corporación América until 2033, in return for investments in infrastructure and technology for USD 35 M, and a minimum annual canon of USD 7 M.

¹¹ With the exception of Chile and Brazil, the latter being the last country to use PPPs for a major airport, the countries in the region developed airport PPPs without having specific legislation on PPPs. Moreover, the first tenders covered the largest airports in Colombia, Peru, Costa Rica, Ecuador, Honduras and Jamaica. In Uruguay and Mexico, the first tenders covered the second largest airports. In Chile and Brazil, the third largest ones. In Argentina, the first tender was conducted for a small airport. The Chilean case is unique in that the first two tenders were private initiatives; that is, projects created and proposed by private entities. The effects of PPP legislation in the airport sector would be limited in most cases. Only in Chile, Peru (in one tender) and Brazil were there relevant tenders that resorted to the PPP legislation in force.

¹² In 2019, the Brazilian government tendered 12 airports, increasing that percentage.

Table 1
SHARE OF AIRPORT PPP BY PASSENGER TRAFFIC
AND NUMBER OF AIRPORTS PER COUNTRY

Country	Passengers Millions (2017) (*)			Number of airports (**)		
	PPP	Total	Percentage of total	PPP	Total	Percentage of total
Argentina	38.5	38.8	99%	39	56	70%
Colombia	60.8	65.9	96%	19	63	30%
Honduras	2.1	NA	>95%	4	6	67%
Jamaica	5.9	NA	>95%	2	3	67%
Ecuador	10.1	NA	>95%	2	12	17%
Uruguay	2.2	NA	>95%	2	14	14%
Chile	30.3	33.9	89%	9	19	47%
PerU	29.1	33.2	88%	18	33	55%
Costa Rica	5.9	7.0	85%	2	4	50%
Brazil	134.5	202.6	66%	29	76	38%
Mexico	30.7	46.7	65%	36	66	55%
Dominican Republic	4.9	11.2	44%	6	9	67%
Total	355	450	> 79%	168	369	46%

(*) Figures for 2017, except Honduras (2016), and Cuenca Airport, Ecuador (2018).

(**) Does not include airfields. For Brazil, only airports managed by Infraero and airports under concession are included.

Sources: ORSNA; Brazil: ANAC and Infraero; Chile: Aeronautical Board and DGAC (the main network of airports was included); Colombia: Civil Aviation; Costa Rica: Civil Aviation Unit; Ecuador: Passengers information: Websites of the Cuenca and Guayaquil Airports, Estimated data of Quito Airport. Included airports: Quito, Guayaquil, Manta, Cuenca, Loja, Santa Rosa, Esmeraldas, Galápagos, Lago Agrio, Coca, San Cristóbal, and Salinas; Honduras: Includes airports operated by Interairports, and Guanaja and Aguacate; Jamaica: Websites for Montego Bay Airport, Kingston Airport, and Ian Fleming; Mexico: STC; Peru: OSITRAN; Dominican Republic: Open Data - Government of Dominican Republic and Airport Department; Uruguay: DINANCIA.

Table 1
STATE AIRPORT OPERATORS
IN BRAZIL AND MEXICO

According to the Ministry of Infrastructure¹³, Brazil has 2,499 airfields, out of which 1,911 are private and 588, public. Besides, over 98% of passenger traffic is concentrated in 66 airports. Most airports with a significant level of traffic were traditionally controlled by Infraero, a public federal airport infrastructure company created in the seventies, and the rest, by local government authorities. Out of the 29 airports registered until 2019¹⁴, 19 are owned by the federal government, traditionally operated by Infraero, while 10 are owned by subnational governments.

In 2006, Infraero directly managed 102 million passengers in 67 airports (including the 28 airports with the largest passenger traffic). Even though as from 2000, tenders started for certain airports managed by subnational governments, it is only as from 2011 that tenders started for airports managed by Infraero. After 5 bidding rounds between 2011-2013 and 2017-2019, Infraero managed directly 44 airports¹⁵ (34% less than in 2006), with 70 million passengers (32% less than in 2006) in 2019. They accounted for 37% of all passengers in 2018 and included the country's second largest airport (Congonhas in Sao Paulo).

Additionally, some tenders imposed as a condition for private operators to partner with Infraero. As a result, Infraero has a minority share (49%) in the operators (special purpose companies) of 5 PPP airports: Belo Horizonte, Brasília, Campinas, Rio de Janeiro - Galeao, and Sao Paulo - Guarulhos. If we take these airports into account, Infraero participated as an operator or shareholder in airports that accounted for 76% of total traffic in 2018.

In 2019, ANAC indicated the government's intention to conduct a sixth bidding round with 22 airports operated by Infraero (around 23 million passengers, 12% of the country's total) and started a consultation process on regulatory aspects¹⁶.

¹³ Ministry of Infrastructure, <https://www.infraestrutura.gov.br/rede-aeroportos.html>.

¹⁴ This includes 12 airports tendered in March 2019, not yet started.

¹⁵ This includes 12 airports tendered in March 2019, not yet started.

¹⁶ https://www.anac.gov.br/assuntos/paginas-tematicas/concessoes/Consultasobreregulaoeconmicadeconcessesaeroporturias_sextarodada.pdf

According to the Secretary of Communications and Transport (SCT)¹⁷, the Mexican airport system is made up of 1,215 airfields, 85 of which are commercial airports. To date, 36 airports are operated under PPPs, 34 are privately operated and 2 are operated by partnerships among subnational authorities, ASA (Airports and Ancillary Services) and private actors.

ASA was created in the sixties to manage and operate airport infrastructure. Until the end of the nineties, it managed 58 airports, including the largest ones. As from 1998, 3 groups of airports were tendered for PPP to private entities (ASUR, GAP and OMA) and an entity with a majority state share was created: GACM (Mexico City Airport Group) to operate that city's airport. Mexico City's Airport is the largest in the country. In 2018, it accounted for 35% of total traffic.

ASA currently manages over 19 airports with a low passenger volume (all of them with less than 64,000 passengers in 2018) and is a partner in the operation of 5 airports¹⁸.

Source: Produced by the authors.

Three out of four airports mobilizing over a million passengers in the twelve countries analyzed operate under PPP models. Those that do not operate under a PPP are managed by State entities (most of them are located in Brazil, besides the Cuzco Airport in Peru and that of Mexico City), with only two privately-owned airports, Punta Cana and Cibao (Dominican Republic) and Puerto Montt (Chile), under concession and operated under a short-term contract (6 years)¹⁹. Data show how the size of the airport influences its profitability. Airports with less than a million passengers tend to have negative margins (ICAO, 2014). Thus, only airports with a significant traffic could achieve economies of scale and considerably reduce their marginal costs.²⁰ The graph below shows the 71 airports mobilizing over a million passengers per year in the 12 countries that have airport PPPs in LAC. For the same group of countries, in the case of the 298 airports with less than a million passengers, 61% are operated²¹ by State entities and 39% under PPPs. Most of the latter are included in packages of airports jointly tendered (for example, Valledupar and Riohacha, with less than 400,000 passengers per year each, as part as the Northeast Group in Colombia, or Manzanillo and Hermosillo, with less than 100,000 passengers per year each, as part of the Pacific Group in Mexico). In exceptional cases, they are individually tendered (for example, La Araucanía or Arica in Chile).

¹⁷ Secretary of Communications and Transport of Mexico.

¹⁸ Querétaro, Toluca, Cuernavaca, Palenque, and Tuxtla.

¹⁹ In this report, PPPs are those contracts that last at least 10 years. For more details, refer to the definitions in Annex A at the end of the document.

²⁰ According to Echevarne (2014), 67% of airports in the world registered losses. 93% of them were airports with less than a million passengers, and 6% were airports with over a million and less than 5 million passengers.

²¹ This includes an airport (La Serena, Chile) operated by a private entity under a short-term contract (8 years).

Table 2**AIRPORTS WITH OVER A MILLION PASSENGERS
OPERATED UNDER PPPs, OTHER TYPES OF PRIVATE
PARTICIPATION OR STATE ENTITIES (TRAFFIC 2017)**

Country	Airport	Million passengers	Type	Country	Airport	Million passengers	Type
1 Brazil	SP - Guarulhos	37.0	PPP	37 Brazil	Cuiaba	2.8	PPP
2 Colombia	Bogotá	31.0	PPP	38 Argentina	Córdoba	2.8	PPP
3 Chile	Santiago	21.4	PPP	39 Colombia	Barranquilla	2.6	PPP
4 Brazil	SP - Congonhas	21.2	State	40 Brazil	Manaus	2.6	State
5 Peru	Lima	20.6	PPP	41 Brazil	Natal	2.4	PPP
6 Brazil	Brasilia	16.5	PPP	42 Colombia	San Andrés	2.3	PPP
7 Brazil	Rio - Galeao	15.9	PPP	43 Brazil	Foz de Iguaçu	2.1	State
8 Mexico	Cancun	15.8	PPP	44 Uruguay	Montevideo	2.1	PPP
9 Mexico	Mexico City	15.8	State	45 Brazil	Maceio	2.0	PPP
10 Argentina	BA - Aeroparque	13.3	PPP	46 Chile	Antofagasta	1.8	
11 Brazil	Belo Horizonte	9.8	State	47 Argentina	Mendoza	1.7	PPP
12 Argentina	BA - Ezeiza	9.7	PPP	48 Brazil	Porto Seguro	1.7	PPP
13 Brazil	Rio - Santos	9.0	State	49 Peru	Arequipa	1.7	PPP
14 Brazil	Camp.-Viracopos	8.8	PPP	50 Colombia	Santa Marta	1.7	PPP
15 Brazil	Porto Alegre	7.8	PPP	51 Brazil	Sao Luis	1.6	State
16 Colombia	Antioquia	7.6	PPP	52 Chile	Puerto Montt	1.6	
17 Brazil	Recife	7.6	State	53 Jamaica	Kingston	1.6	PPP
18 Brazil	Salvador	7.6	PPP	54 Colombia	Bucaramanga	1.57	PPP
19 D. Republic	Punta Cana	7.3	Private	55 Chile	Calama	1.56	PPP
20 Brazil	Curitiba	6.5	State	56 Colombia	Pereira	1.54	PPP
21 Ecuador	Quito	6.5	PPP	57 Brazil	Navegantes	1.53	State
22 Brazil	Fortaleza	5.8	PPP	58 Brazil	Campo Grande	1.51	State
23 Colombia	Cali	5.0	PPP	59 D. Republic	Cibao	1.40	Private
24 Costa Rica	San José	4.9	PPP	60 Brazil	Joao Pessoa	1.36	PPP
25 Colombia	Cartagena	4.7	PPP	61 Argentina	Bariloche	1.28	PPP
26 Jamaica	Montego Bay	4.3	PPP	62 Chile	Iquique	1.26	PPP
27 Mexico	Guadalajara	3.8	PPP	63 Mexico	Monterrey	1.26	PPP
28 Brazil	Florianopolis	3.7	PPP	64 Brazil	Aracaju	1.20	PPP
29 D. Republic	Las Américas	3.7	PPP	65 Chile	Concepción	1.12	PPP
30 Ecuador	Guayaquil	3.6	PPP	66 Argentina	Salta	1.10	PPP
31 Peru	Cuzco	3.3	State	67 Colombia	Medellín	1.07	PPP
32 Mexico	San José del Cabo	3.2	PPP	68 Brazil	Teresina	1.07	State
33 Brazil	Belem	3.2	State	69 Costa Rica	Liberia	1.05	PPP
34 Mexico	Puerto Vallarta	3.0	PPP	70 Brazil	Uberlandia	1.04	State
35 Brazil	Goiana	3.0	State	71 Peru	Iquitos	1.00	PPP
36 Brazil	Vitoria	2.9	PPP				

Source: Produced by the authors. In yellow, airports under PPP schemes.

Table 2 shows details of PPP airports in operation, completed, cancelled and in preparation.

Table 2
DETAILS OF PPP AIRPORTS IN OPERATION, COMPLETED,
CANCELLED AND IN PREPARATION

Country	PPP airports in operation or completed		Projects cancelled, finished in advance with termination request or arbitration	Projects in preparation
	Individual PPP	Group PPP		
Argentina	Malvinas (1996), Calafate (2000), Neuquén (2001), Bahía Blanca (2008), Trelew (2009)	Group - 33 airports (1998) Buenos Aires - Aeroparque, Buenos Aires - Ezeiza, San Fernando, El Palomar, Mar del Plata, Catamarca, Resistencia, Esquel, Puerto Madryn, Córdoba, Cuarto, Paraná, Formosa, Jujuy, General Pico, Santa Rosa, La Rioja, Malargüe, Rivadavia, Mendoza, San Rafael, Iguazú, Posadas, Bariloche, Viedma, Salta, San Juan, San Luis, Villa Reynolds, Río Gallegos, Reconquista, Santiago del Estero, Río Grande, Tucumán	-	-
Bolivia	-	-	Group - 6 airports (1996)	-
Brazil	Porto Seguro (2000), Cabo Frio (2001), Bonito (2006), São João (2011), Brasília (2012), Campinas (2012), Noronha (2012), São Paulo-Guarulhos (2012), Natal (2012), Feira de Santana (2013), Itamar (2014), Belo Horizonte (2014), Rio - Galeão (2014), Fortaleza (2018), Porto Alegre (2018), Florianópolis (2018), Salvador (2018)	-	-	12 airports tendered in March 2019 and in clearance and approval stage: Recife, Maceio, Pessosa, Aracaju, Campina Grande, Juazeiro, Vitória, Macae, Cuiaba, Sinop, Rondonópolis, and Alta Floresta.
Chile	Puerto Montt (1996), Iquique (1996, 2017), Calama (1998, 2019), Antofagasta (2000, 2011), Punta Arenas (2000, 2010), Atacama (2002), Araucanía (2010), Arica (2004, 2018), Concepción (1999, 2016), Santiago (1998, 2015)	-	-	For bidding: La Serena (2019), Red Aeroportuaria Austral (2019), Calama (2022), Araucanía (2022)

Country	PPP airports in operation or completed		Projects cancelled, finished in advance with termination request or arbitration	Projects in preparation
	Individual PPP	Group PPP		
Colombia	Bogotá (1995, 2006), Cartagena (1996), Barranquilla (2015), Cali (2000), San Andrés and Providencia (2007)	Group - 6 airports: Center North (2008), Group - 6 airports: Northeast (2010)	San Andrés (2007), Providencia ²² (2007)	-
Costa Rica	San José (2000), Liberia (2009)	-	-	-
Dominican Republic	-	Grupo 6 airports (2000) ²³ : Las Américas and Joaquín Balaguer in Santo Domingo, Gregorio Luperón in Puerto Plata, Juan Bosch and Arroyo Barril in Samaná, and María Montez in Barahona	-	-
Ecuador	Quito (2002), Guayaquil (2004)	-	-	-
Honduras	-	Group - 4 airports (2000)	-	Group - 4 airports (2020) ²⁴
Jamaica	Montego Bay (2003), Kingston (2018)	-	-	-
Mexico ²⁵	Puebla (2000), Toluca (2006)	Southeast Group - 9 airports (1998), Pacific Group - 12 Airports (1999), Center North Group - 13 Airports (2000)	-	-
Nicaragua	-	-	Airport of the Panama Canal (2018) ²⁶	-
Paraguay	-	-	Asunción (2018) ²⁷	-
Peru	Lima (2001)	Group 1 - 12 airports (2006), Group 2 - 5 airports (2011)	Chinchero (2017) ²⁸	Group 3 - 7 airports (2019)
Uruguay	Punta del Este (1993), Montevideo (2003)	-	-	-
Venezuela	-	-	Margarita (1994, 2004)	-

Source: Produced by the authors.

22 Both concessions were cancelled due to early breach of contractual obligations on the part of the concessionaire.

23 See: http://da.gob.do/transparencia/?page_id=996.

24 Second tender of the group, after the period of the first one.

25 In 2018, the construction of the new airport for Mexico City was cancelled. GACM (majority state-owned entity) was in charge of the process and operation of the airport. The cancellation was due to flaws in design and re-evaluation of the project (<https://www.gob.mx/sct/articulos/razones-para-la-cancelacion-del-proyecto-del-nuevo-aeropuerto-en-texcoco>)

26 Cancelled due to financing problems. See: <https://www.elfinanciero.com/economia-y-politica/incertidumbres-financieras-desvanecen-sueno-de-7HFF44CY3RBVVE7BR3YRKJ3XZY/story/>

27 The cancellation took place after the comptroller agency issued a report indicating that the tender did not comply with the PPP legislation.

28 The contract was unilaterally terminated by the Government due to financial and design problems of the project.

In ten percent of the analyzed cases (distributed in six different countries), PPP contracts had early cancellations or terminations, or a contract termination request, or changed operators due to financial problems. In Colombia, the cancellation resulted from early breach of contractual obligations on the part of the concessionaire²⁹. In Peru, the contract was unilaterally terminated by the Government due to financial and design problems of the project³⁰. In the case of Paraguay, the cancellation took place after the comptroller agency issued a report indicating that the tender did not comply with the PPP legislation³¹. In Bolivia y Venezuela, the Government expropriated the goods of the operators and later had to pay compensation³².

Most of the each country's major airports operate individually and generate revenue not only to cover costs, but also to pay the Government. In most cases, operators are in charge of both the operation of the passenger terminal and all the air activities (runway). Besides, they have revenue for said airport activities (tariffs for the use of passenger terminals, tariffs for aircraft take-off and landing, etc.) and for commercial activities (for example, retail business). These financially self-sustainable airports do not receive subsidies from the Government. They are completely financed with revenue from their activity, generating as well revenue for the Government. As shown in Table 10 below, airport PPPs can pay the Government from 5% (some cases in Brazil) to 77.5%³³ (second concession in Santiago, Chile) of gross airport revenue. Two variations to the model can be found in the cases of Santiago (Second Concession) and Bogotá (Second Concession), where the operator is completely in charge of the passenger terminal and partially in charge of runways, the remaining activities being handled by aviation authorities³⁴. The group contracts combine airports with over a million passengers and others with a smaller number of passengers, in order to cross-subsidize their operation. For example, the concession of 46 airports in Argentina included 6 airports with over a million passengers (with a higher potential for profitability) and 28 airports with less than a million passengers. In Colombia (Center North Group) and Dominican Republic, one airport with over a million passenger was combined with 5 airports with less than a million passengers. Within these groups, the profitable airports are expected to subsidize those that are not sustainable.

In some cases, mainly justified with the purpose of providing essential air services, the State subsidizes the airport operator. Not financially sustainable PPPs were identified and they receive resources from the State. For example, Puerto Montt (first concession), Antofagasta and Calama (second concession) in Chile³⁵, Cali in Colombia³⁶, Palmerola in Honduras, and Group 2 in Peru, where the government directly subsidizes the operator. Additionally, in some cases, profitable PPPs can be subsidized in order to avoid raising regulated tariffs or with other political goals. For example, in Santiago (second concession), the operator can be compensated with direct payments or a reduction in its obligations with the government in the event more investments are needed.

²⁹ ANI (National Infrastructure Agency) ended the concession due to a breach in delivering the Compliance and Extra contractual Civil Responsibility Policies. <https://www.ani.gov.co/article/terminacion-contrato-concesion-casyp-sa-aeropuertos-gustavo-rojas-pinilla-de-san-andres-y-el>

³⁰ <https://elcomercio.pe/economia/peru/aeropuerto-chinchero-gobierno-resuelve-contrato-concesion-kuntur-wasi-442053>

³¹ <https://www.rdn.com.py/2017/10/31/contraloria-ratifica-cancelacion-de-app-para-el-aeropuerto/>; and <https://www.ultimahora.com/mopc-cancela-la-app-del-aeropuerto-y-dinac-anuncia-una-nueva-licitacion-n2704327.html>

³² See: https://www.abc.es/economia/abci-bolivia-indemnizara-abertis-23-millones-nacionalizacion-2013-20170511642_noticia.html; <https://www.emol.com/noticias/economia/2014/11/22/691126/aeroportuaria-chilena-gana-juicio-a-venezuela-en-el-ciadi.html>

³³ [http://www.concesiones.cl/proyectos/Documents/Aeropuerto%20Arturo%20Merino%20Benitez%20\(r\)/img-421132010-0001.pdf](http://www.concesiones.cl/proyectos/Documents/Aeropuerto%20Arturo%20Merino%20Benitez%20(r)/img-421132010-0001.pdf)

³⁴ In both cases, aviation authorities play an active role on runways. In the Colombian case, there was a previous operator exclusively dedicated to building the second runway and maintaining the existing runways through a PPP in force between 2005 and 2017.

³⁵ The first contractual amendment established that the Government would pay around 75,000 UF to the concessionaire, that is 36% of the total (205,000 UF) of the budget of works.

³⁶ The first contract amendment stated that the total investment amount (including new works) in the airport would be approximately USD 91 million. UAEAC (the Government of Colombia's aviation department) would be contribute 68%, and the concessionaire, the rest. Furthermore, UAEAC would pay USD 22 million for additional expenses.

3

MAIN AIRPORT OPERATORS IN THE REGION UNDER PPP SCHEMES



3

MAIN AIRPORT OPERATORS IN THE REGION UNDER PPP SCHEMES

Regional operators of airport PPPs, i.e. LAC private operators with operations in their country of origin and another country in the region, such as Corporación América (Argentina), CCR (Brazil), ASUR and CMA (Mexico), and ODINSA (Colombia), handle 45% of the traffic of airport PPPs of the region, while international operators manage 38% of total passenger traffic in the region, and local actors (private firms that basically operate in their country of origin) account for 17%. It is relevant to highlight that, of the percentage assigned to local operators, a large local operator, Invepar (Brazilian private company doing business in airport and train transport), accounts for around 40%, while smaller local operators represent the remaining share. If we only take into account the largest airports in each country, defined as those that handle at least 50% of passenger traffic in each country, regional operators manage 52% of passenger traffic in major airports. International operators mobilize 37% of traffic, while local operators mobilize 17%. It is common for several operators to partner in order to operate one or more airports. For example, ODINSA and CCR share their participation in Quito (Ecuador), Vinci and Aéroports de Paris are partners in Santiago (Chile), and CMA and AENA, in Pacific Group (Mexico) and Montego Bay and Kingston (Jamaica). The table below lists the main operators of PPP airports in the region.

Table 3
MAIN CONCESSIONAIRES BY COUNTRY OF ORIGIN, AIRPORT
AND AGGREGATED NUMBER OF PASSENGERS

Operator (individual or consortium)	Airports	Million passengers (2017)	Percentage of total in PPP airports
Corporación América (Argentina)	Group of 36 airports 1998, Neuquén 2001, and Bahía Blanca 2008 (Argentina) ³⁷ , Brasília 2012 and Natal 2012 (Brazil), Guayaquil 2004 (Ecuador), Group 2 2011 (Peru), Montevideo 2003 and Punta del Este 1993 (Uruguay)	62.9	18%
Invepar (Brazil)	Sao Paulo - Guarulhos 2012 (Brazil)	37.8	11%
ODINSA (Colombia)	Bogotá 2006 (Colombia), Quito 2002 (Ecuador)	37.5	11%
Fraport (Germany)	Lima 2001 (Peru), Porto Alegre 2018 and Fortaleza 2018 (Brazil), and Puebla 2000 (Mexico)	34.6	10%
Vinci (France)	Santiago 2015 (Chile), Salvador 2017 (Brazil)	28.6	8%
ASUR (Mexico)	Center North Group - 6 airports 2008 (Colombia), Southeast - 9 airports 1998 (Mexico)	27.0	8%
AENA (Spain)	Pacific Group - 12 airports 1999 (Mexico), Cali and Cartagena 2018 (Colombia), Montego Bay 2003 and Kingston 2018 (Jamaica) + 6 in process in Brazil (not taken into account): Recife (Pernambuco), Maceió (Alagoas), Aracaju (Sergipe), Juazeiro do Norte (Ceará), João Pessoa and Campina Grande (Paraíba) - (2019)	27.0	8%
Companhia de Concessões Rodovias CCR (Brazil)	Belo Horizonte 2014 (Brazil), Quito 2002 (Ecuador), San José 2000 (Costa Rica)	21.5	6%
CMA (Mexico)	Montego Bay 2003 and Kingston 2018 (Jamaica), Pacific Group - 12 airports 1999 (Mexico)	17.2	5%
Changi Airports International (Singapore) / Odebrecht (Brazil)	Rio - Galeao 2014 (Brazil)	16.3	5%
Aéroports de Paris (France)	Santiago 2015 (Chile)	16.0	5%
Flughafen Zurich (Switzerland) - Zurich Airport Latin America	Belo Horizonte 2014 and Florianópolis 2017 (Brazil), Antofagasta 2011 and Iquique 2017 (Chile) + 3 in process in Brazil (not taken into account): Vitória (Espírito Santo) and Macaé (Rio de Janeiro)	15.6	4%
Houston Airport System (United States)	San José 2000 and Odebrecht 2009 (Costa Rica)	5.9	2%
Ferrovial (Spain)	Grupo 1 2006 (Peru)	5.4	2%
ADC (Canada)	San José 2000 (Costa Rica)	4.9	1%
Other international operators	Toluca (Mexico), Puerto Montt (Chile), Group of 4 airports and Palmerola (Honduras) ³⁸ , and others	9.3	3%
Other local operators	Islas Malvinas, Calafate and Trelew (Argentina) Bonito, Fernando de Noronha, Aeroeste and Cabo Frio (Brazil) Calama, La Serena, Arica, Punta Arenas, Araucanía, and Concepción (Chile), and others	45.7	13%
Total, PPP airports	-	355.1	-

Source: Produced by the authors.

³⁷ Corporación América obtained in 1998 the contract for the development and operation of 36 airports (<http://mepriv.mecon.gov.ar/Normas/163-98.htm>), concentrating 99% of the country's traffic. Subsequently, some were excluded from (for example, Corrientes and Bahía Blanca) while others were included in (for example, El Palomar) the scope of the original contract. Additionally, the concessionaire was awarded two tenders for the airports in Bahía Blanca (2001) and Neuquén (2008). According to the current available information, the company operates 35 airports in Argentina. The original concession suffered significant changes and there were significant breaches on the concessionaire's side, such as USD 850 of debt for the canon. According to AGN (2011), "from its early stages, the implementation of the concession contract showed a high degree of potential litigation, breaches of essential elements of the contract, such as non-payment of the canon and committed investments, and claims to the concessionaire". In 2006, the economic terms of the contract were renegotiated. The main amendments were the switch from the fixed canon payment to a percentage (15%) of gross revenue, the allocation of 7% of international airport revenue, the replacement of the investment plan, originally set for 2006-2028, with five-year plans, and the change of debt for concession shares.

³⁸ The new Parmerola Airport was tendered in 2016. Part of its operations is expected to come from the Tegucigalpa Airport, included in the Group of 4 airports whose contract ends in 2020.

Generally speaking, traffic concentration in one or two operators is high in most countries, with the remarkable exception of Brazil³⁹. Airport operation in countries like Argentina is completely concentrated in Corporación América, an Argentine company (agribusiness, technology, energy and infrastructure) that has expanded its operations to other airports of the region, such as Brasilia and Natal, in Brazil, Guayaquil, in Ecuador, or Montevideo and Punta del Este, in Uruguay, among others. This company, which concentrates 18% of regional PPP traffic, owns 95% of airport operation in Argentina, compared to the remaining 5 in the hands of the local company London Supply, which operates 3 small airports (Trelew, Rosario and Calafate). ASUR (Mexican company with over 90% of shares on the stock exchange) operates the Southeast Group in Mexico and the Center North one in Colombia. CMA (another Mexican company) operates the Pacific Group of Mexico, as well as the Kingston and Montego Bay Airports in Jamaica. CCR (Brazilian company with business in highway, train and airport transport) operates the airports in Belo Horizonte (Brazil), San José (Costa Rica), and participates in the PPP for the new airport in Quito. Finally, ODINSA (Colombian company focused on road and airport projects) operates the PPP for the El Dorado Airport and participates in the PPP for the new airport in Quito (Ecuador).

Table 4
CONCENTRATION OF CONCESSIONAIRES IN MOBILIZATION
OF PASSENGERS BY COUNTRY

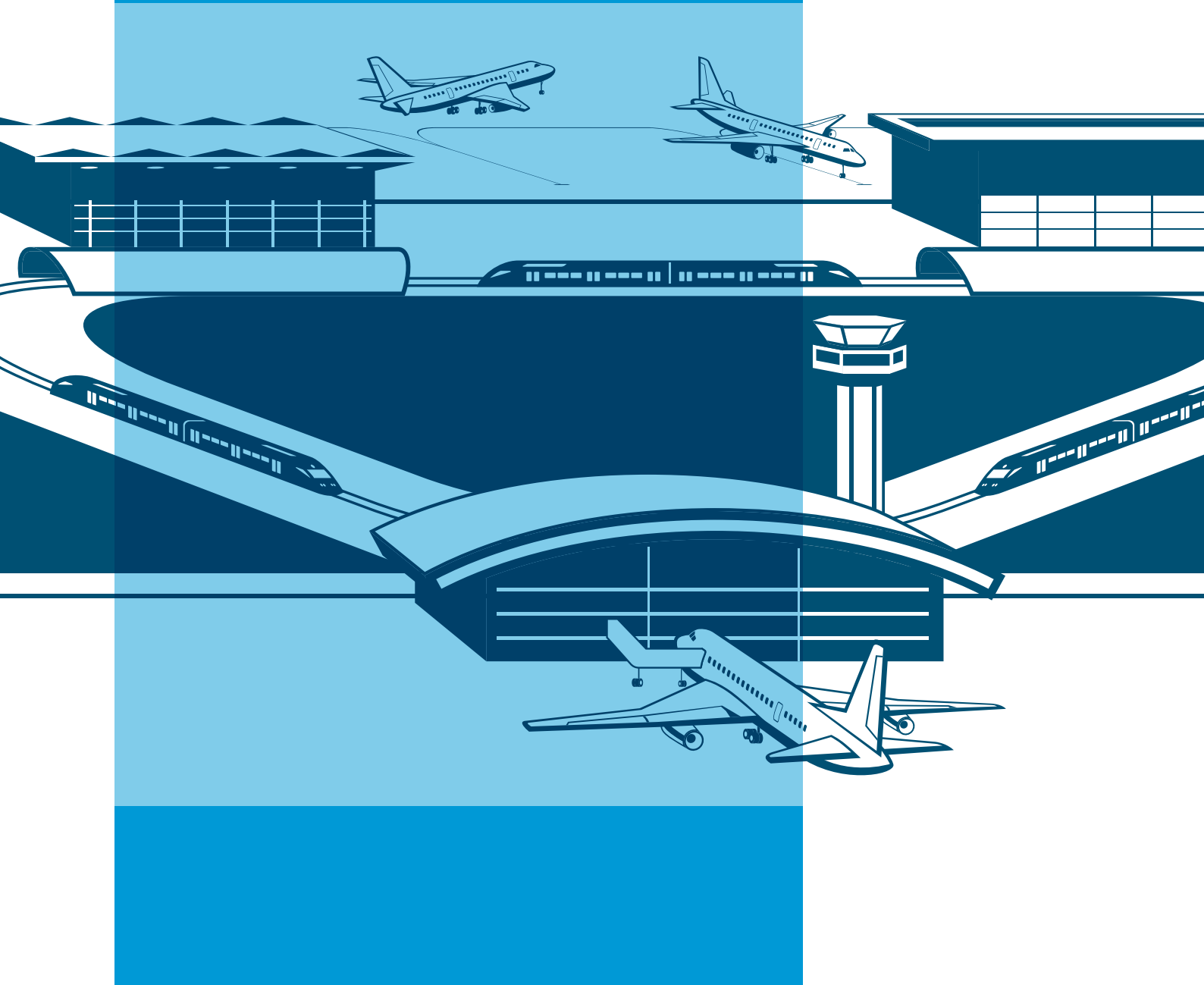
	Million passengers in airports where they operate (2017)							
	Argentina	Costa Rica	Chile	Ecuador	Peru	Colombia	Mexico	Brazil
Corporación América (Argentina)	36.8	-	-	3.6	3.1	-	-	17.1
Invepar (Brazil)	-	-	-	-	-	-	-	37.8
Fraport (Germany)	-	-	-	-	20.6	-	-	13.9
ODINSA (Colombia)	-	-	-	6.5	-	31.0	-	-
ASUR (Mexico)	-	-	-	-	-	10.3	16.7	-
Vinci (France)	-	-	16.0	-	-	-	-	7.7
CCR (Brazil)	-	4.9	-	6.5	-	-	-	10.2
AENA (Spain)	-	-	-	-	-	9.7	11.4	-
CMA (Mexico)	-	-	-	-	-	-	11.4	-
Changi Airports (Singapore)	-	-	-	-	-	16.2	-	-
Aéroports de Paris (France)	-	-	16.0	-	-	-	-	-
Flughafen Zurich (Switzerland)	-	-	1.6	-	-	-	-	14.0
ADC (Canada)	-	4.9	-	-	-	-	-	-
Houston Airport System (United States)	-	5.9	-	-	-	-	-	-
Ferrovial (Spain)	-	-	-	-	5.4	-	-	-
Total, Country	38.8	7.0	22.5	10.4	33.2	65.9	46.7	225.1
Market share, major operator	95%	85%	71%	62%	62%	47%	36%	17%
Market share, 2 major operators	99%	NA	78%	97%	78%	72%	60%	24%

Source: Produced by the authors. These figures do not take into account airports recently tendered in Brazil, with impact on AENA and Flughafen Zurich, which would mobilize 12.8 and 3.1 million more in Brazil. Flughafen Zurich would have a total of 17.1 in Brazil.

39 In Brazil, passenger traffic per airport is less concentrated than in the rest of the countries in the region, where over 50% of traffic is concentrated in one or two airports. Brazil has 40% of airports with over a million passengers in LAC. Out of these 29 airports, 15 are operated under PPPs, and the rest, by Infraero (Government Corporation). The seven largest PPP airports in Brazil, which account for 77% of total passenger traffic mobilized in the country's PPP airports, were granted to different operators: Sao Paulo- Guarulhos, Brasilia (Corporación América), Rio - Galeao (Changhi), Belo Horizonte (Zurich Airports), Campina (local operator), Porto Alegre (Fraport), and Recife (Vinci).

4

INFRASTRUCTURE CONSIDERED, TYPE OF CONTRACTS AND TENDER PROCESSES IN AIRPORT PPPS IN LAC



4

INFRASTRUCTURE CONSIDERED, TYPE OF CONTRACTS AND TENDER PROCESSES IN AIRPORT PPPS IN LAC

In Latin America and the Caribbean, 90% of airport PPPs have been conducted on completely-or-partially-existing infrastructure (brownfield projects), compared to 10% development of new airport infrastructure (greenfield projects). Most concessions include all the operations in the terminal, runway and other regulated and non-regulated (commercial) services, and exclude air traffic control. By comparison, in Santiago (first and second concessions), the corrective maintenance and the runway operation were excluded; in Bogotá, the concession excluded the building and maintenance of the second runway. Most airport PPPs in the region (91%) included the partial building of infrastructure, rehabilitation of the existing one, operation and transfer (known as BROT schemes). Table 5 shows airport distribution by type of contract and main infrastructure considered (terminals and runways). Most contracts include both elements (90%). 67% of contracts include all the activities in runways (building, operation, maintenance). Chile is the exception. The concessions analyzed did not include the operation of the runway and, in some cases, as Santiago (both concessions, 1998, 2015), major maintenance of runways was not included, either. Only as from 2007 have airport PPPs in Chile started to include runway maintenance (Carvallo, 2008). However, major maintenance is conducted with State financing mechanisms. And the runway operation is still in the hands of the DGAC (Aviation Unit).

Table 5
NUMBER OF CONTRACTS BY TYPE AND SEGMENT

	Runway	Terminal	Runway and terminal	Total
Build, operate, and transfer	2%	-	7%	9%
DBFOT	-	-	2%	2%
Build, rehabilitate, operate, and transfer/ Rehabilitate, operate, and transfer	-	8%	80%	88%
Rehabilitate, lease or rent, and transfer	-	-	2%	2%
Total	2%	8%	90%	100%

Note: This is a reduced sample due to the lack of public information available for all cases of the broad sample: N =61

Source: Produced by the authors.

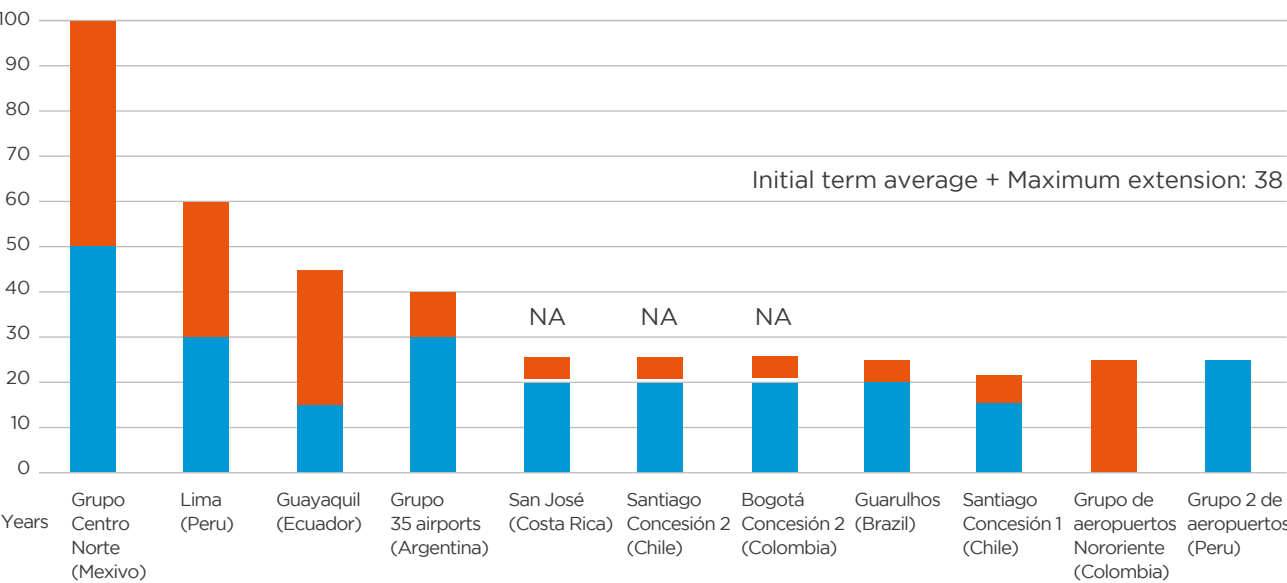
Most contracts last between 16 and 30 years. Most concessions (75%) are in the 16-20 year range (75%), such as, Sao Paulo - Guarulhos in Brazil, Center North Group in Colombia, and 21-30 year range, such as the Group of 35 airports in Argentina, and Lima in Peru. Due to their short duration, the following are exceptions: Chile, with contracts of less than 10 (Puerto Montt, second and fourth concessions) or 15 years (Santiago, first concession), operation and maintenance contracts in Brazil (Itamar, Jaguaruna and Porto Seguro), and Barranquilla (Colombia). Because their terms are longer (over 30 years), the following are exceptions: Southeast, Pacific and Center North airport groups in Mexico. The table below shows the average duration of contracts per country. The term is fixed in most cases, except for Bogotá (in operation) and the first concession in Santiago (which lasted 17 years). In those cases, the contract ends when the operator reaches certain total revenue. The terms or duration of the contracts range from 15 years in Guayaquil and Santiago's first concession to 50 years for the Center North (and Pacific and Southeast) Groups in Mexico. For the rest, the term varies between 20 and 30 years. In most countries, the minimum duration is 20 years, except for Brazil (13 years), Colombia (15 years) and Chile (10 years). The maximum duration of contracts ranges from 25 to 30 years in most cases, except for Costa Rica and Dominican Republic (20 years), Ecuador (39 years) and Mexico (50 years). With regards to the maximum extensions allowed, the Center North Group (as well as the Southeast and Pacific ones) of Mexico are well above the average with the possibility of a total of 100 years for their term and extension. Besides, Lima with 60 years, as well as Guayaquil and Argentina, are above average.

Table 6
NUMBER OF CONCESSIONS BY COUNTRY BY CONTRACT DURATION

Country	Range
Argentina	20-30
Brazil	13-30
Colombia	15-25
Costa Rica	20
Chile	10-25
Dominican Republic	20
Ecuador	20-39
Mexico	20-50
Honduras	20-30
Jamaica	25-30
Peru	25-30
Uruguay	30

Source: Produced by the authors.

Graph 2
CONTRACT DURATION (YEARS) FOR SELECTED AIRPORTS



■ Initial ■ Top extension

Source: Produced by the authors.

NA: Not available.

Regarding the characteristics of the tender⁴⁰, in most cases observed (81%), the method used to select the operator was a one-stage public tender (i.e. the operator is chosen and granted the rights over the contract in a single process), and the standard business structure is a privately-owned company with a specific purpose.

This type includes the Group of 36 airports (Argentina), Brasilia, Porto Alegre, Salvador, Florianopolis, and Fortaleza (Brazil), Bogotá and 2 airport groups (Colombia) San José (Costa Rica), Guayaquil and Quito (Ecuador), Montego Bay (Jamaica), Lima and 2 airport groups in Peru, and the 2 concessions in Santiago (Chile). In contrast, in the tenders of Southeast, Pacific and Center North Groups (Mexico) and Montevideo (Uruguay), the selection of the operator took place in two stages (the operator was chosen and granted partial rights over the contract and, subsequently, another process was conducted to grant the rest of the contractual rights). For example, the Center North Group (Mexico) was tendered in 2000. The winning firm was awarded 49% of the ownership of the concessionaire company, and the Mexican Government kept the remaining 51%. Later on, in 2005-2006, the Government sold its share through a public tender. As a result, as from 2006, the concessionaire company is 100% privately owned⁴¹. In Montevideo, the Government granted the operation to a State company in 2003. Six months later, there was a tender on all the shares of the company. The tenders in Brasilia, Viracopos, and Sao Paulo - Guarulhos (Brazil) in 2012 included a maximum of 51% of private participation in each of the companies with specific purpose. The remaining 49% is owned by the State company (Infraero)⁴².

In an airport PPP tender process in Latin America and the Caribbean, receiving offers from three bidders is the most frequent situation (26% of cases). In general, in most of the cases, the number is below five (89% of all observed cases). This matches the high degree of concentration of the industry see in Table 4. Brazil and Chile stand out in this respect, because they have both the largest quantity of information on the tenders, and between 2 and 11 bidders (in 13 of the 17 processes observed in Brazil), and 2 to 5 bidders in all the processes analyzed in Chile. In Colombia, the two projects with the largest traffic had on average more than twice the number of bidders than the rest of the projects. In Chile, the number of bidders per tender fell on average by 20% in 2015-2014 compared to 2010-2011, and by 50% in 2016-2018 compared to 2014-2015.

⁴⁰ The tender aims at selecting the most competitive bidder, maximizing the benefits of competition among bidders, minimizing costs and time, and ultimately, allowing the scrutiny of the process on the part of the public and private sectors (Farquharson et al., 2011). On the one hand, private operators want adequate returns and a stable environment. On the other hand, the public sector wants to limit monopoly behaviour from the private operator. It wants to maximize productive efficiency (i.e. production at the lowest cost) to allocative efficiency (i.e. through an optimal price structure). Furthermore, the State wants to ensure adequate levels of services. Klein et al. (1998) indicate the following as good practices to structure the tender: simplicity and transparency, promoting economic efficiency, in terms of efficient consumption on the part of consumers, and efficient transactions and investments.

⁴¹ All the airport groups in Mexico have a percentage of shares on the stock exchange. For example, OMA (Center North Group) issued 400 million shares, 12.4% of which are Series BB and 87.6%, Series B stocks. Series B stocks have traded on the Mexican Stock Exchange (BMV) since November 29, 2006. The same stocks, but as ADSs (American Depositary Shares) are listed on the NASDAQ Global Market in New York. Each ADS represents 8 Series B shares. ASUR (Southeast Group) and GAP (Pacific Group) also trade on Mexican and US stock exchanges.

⁴² BNDES (2012) indicates that the goal of such a condition is to support the sustainability of airports managed by Infraero through a flow of dividends coming from these PPPs.

Table 7
PPPS BY NUMBER OF BIDDERS

Number of bidders	Number of projects						
	Argentina	Brazil	Chile	Colombia	Peru	Jamaica	Total
1	3%	3%	0%	0%	3%	0%	16%
2	0%	3%	3%	5%	0%	0%	16%
3	0%	13%	0%	3%	5%	3%	26%
4	3%	5%	3%	0%	3%	0%	16%
5	0%	3%	11%	3%	0%	0%	16%
6	0%	0%	0%	3%	0%	0%	3%
11	0%	8%	0%	0%	0%	0%	8%
Total	5%	34%	16%	13%	11%	3%	100%

Note : This is a reduced sample due to the lack of public information available for all cases of the broad sample: N =38.

Source: Produced by the authors.

With regards to the tender factors, experience in the region shows that a higher payment to the Government was applied in half the cases, being the most common practice in Brazil, Colombia, and Mexico, among others. Overall, there are six tender factors frequently used in the region:

- 1** - Higher payment to the Government, aimed at maximizing the State's revenue either as a fixed amount or a percentage of the revenue to share. It applies to surplus projects, i.e. those that are financially self-sustainable and can generate surpluses;
- 2** - Lower subsidies, aimed at minimizing the State's subsidy. It applies to deficit projects, i.e. those that are not financially self-sustainable and require a subsidy from the Government, and frequently respond to the need of providing an essential air public service to isolated communities;
- 3** - Lower tariffs, aimed at minimizing tariffs to be paid by users;
- 4** - Lower revenue for the operator, aimed at minimizing their revenue;
- 5** - Shorter contract duration, aimed at minimizing the contract duration; and
- 6** - Larger investments, aimed at maximizing volume of investments to improve or adapt the infrastructure.

These factors may be applied individually or combined among themselves. For example, the first concession of Santiago Airport used an average weighed factor made up of a lower tariff and a shorter concession term. The most widely used factor is higher payment to the Government. It was applied in 48% of the cases, and it was the most widely used factor (individually) in Brazil, Colombia and Mexico. The other factors used are lower tariff, and shorter contract duration. These were applied basically in Chile and account for 22% and 15% of total cases, respectively. Lower subsidies were preferred in Brazil, Chile and Peru. They account for 13% of all cases. The criteria for lower revenue for the operator were used in 11% of cases (second concessions in Iquique and Antofagasta in 2011 and 2012, respectively, in Chile). In the case of Iquique Airport, the concession term was set, and the value of proposed revenue by winning bidder was used to calculate the tariff per passenger that said operator could charge. Finally, the larger investments factor was applied in 7% of the analyzed cases (Florianopolis and Salvador, 2017, and Fortaleza and Porto Alegre, 2018).

Table 8
NUMBER OF CONCESSIONS BY TENDER FACTOR BY COUNTRY

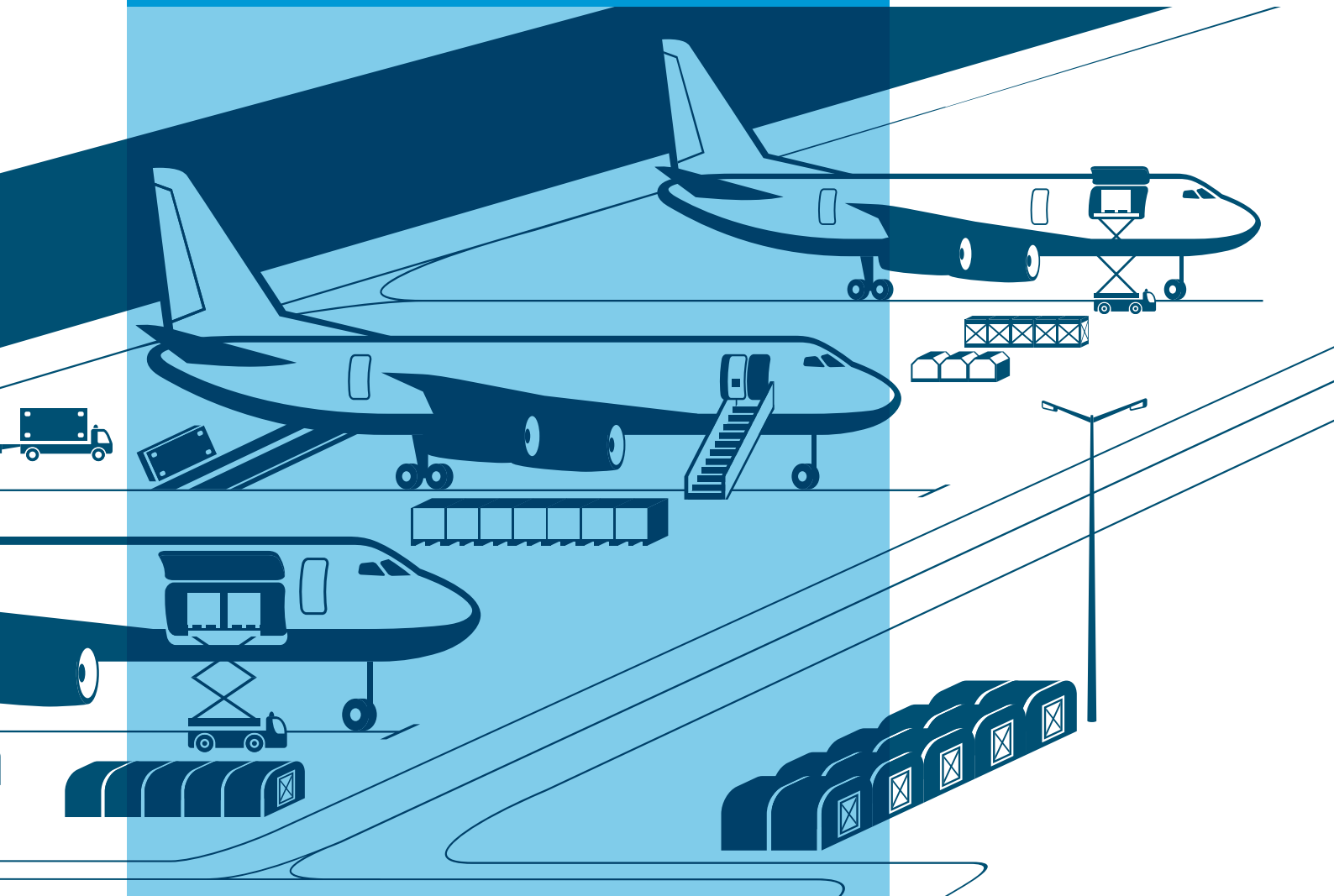
Tender factor (Used individually or jointly with another factor)	Number of projects						
	Brazil	Chile	Colombia	Argentina, Costa Rica, Ecuador, Honduras	Peru	Mexico	Total
Higher payment to the Government	15%	11%	5.6%	9%	1.9%	6%	48%
Lower tariff	-	20%	1.9%	-	-	-	22%
Shorter contract duration	-	15%	-	-	-	-	15%
Lower subsidies	4%	4%	-	-	5.6%	-	13%
Lower revenue	-	11%	-	-	-	-	11%
Larger investments	7%	-	-	-	-	-	7%
Total	26%	61%	7%	9%	7%	6%	100%

Reduced sample: N = 54. There were 54 projects with publicly available information on the tender factor. Around 70% of cases are in Brazil (15 cases) and Chile (22 cases). 5 cases in Colombia, 4 cases in Peru, 3 in Mexico and 1 case in Argentina, Costa Rica, Ecuador and Honduras.

Source: Produced by the authors.

5

CHARACTERISTICS OF CONTRACTS AND RISK ALLOCATION IN AIRPORT PPPS IN LAC



5

CHARACTERISTICS OF CONTRACTS AND RISK ALLOCATION IN AIRPORT PPPS IN LAC

This section analyzes the main features of the contracts and those related to risk allocation in airport PPPs in the region. Annex E provides more detail on these features. The airport sample considered includes financially self-sustainable concessions, i.e. the revenue collected from airport services covers the operational and investment costs and generates profitability for the operator⁴³. In these cases, the operator's revenue comes from charging tariffs to users of the several regulated and non-regulated airport services. The operator does not receive financial support from the Government.

The following are analyzed:

- A** - revenue and payments to the Government;
- B** - tariffs; and
- C** - mandatory investments.

A REVENUE AND PAYMENTS TO THE GOVERNMENT



Most PPPs are self-sustainable and generate revenue from aviation activities (such as the use of the passenger terminal, landing of aircrafts, etc.), and commercial ones (including non aviation activities, such as parking, retail business, etc.). According to ICAO (2014), revenue from commercial activities accounted for 38% of total airport revenue in the world and 36% in LAC. Table 12 shows that in those cases where public information is available; this percentage ranges from 21% (Monterrey, Mexico) or 22% (Northeast Group, Colombia) to 43% (Sao Paulo – Guarulhos, Brazil) and 46% (Cancun, Mexico). Some cases have revenue from other sources, such as a direct payment of some construction components (for example, Center North and Southeast Groups in Mexico).

⁴³ In contrast, non-financially self-sustainable airports are subsidized under the assumption that they are socially profitable. Subsidies are directly granted by the Government, for example, in the second concessions in Calama and Antofagasta (Chile), in Group 2 (Peru, where the operator receives an annual subsidy for operation, maintenance and investments), and the construction of Palmerola (Honduras, during the first three years of execution) or implicitly through a package under a PPP contract with other profitable airports (for example, the mentioned airport groups in Mexico and Colombia).

Table 9
REVENUE DISAGGREGATED BY ACTIVITY IN AIRPORT PPPS (2018)

PPP	Annual revenue (USD million)				Commercial revenue/ Aviation and commercial revenue
	Aviation	Commercial	Others	Total	
Center North Group (Mexico)	261	83	58	402	24%
Monterrey	127	34	12	173	21%
Southeast Group (Mexico)	455.4	282	48	785	38%
Cancun	230	199	11	440	46%
Santiago (Chile)	226	85	4	315	27%
Lima (Peru)	253	94	-	347	27%
Sao Paulo - Guarulhos (Brazil)	344	257	-	602	43%
Viracopos (Brazil)	180	28	3	212	13%
Northwest Group (Colombia)	127	36	-	163	22%

(*) 2017 for Lima and Viracopos. Viracopos: annualized figure for the period January-August.

Source: Produced by the authors.

Payments to the Government are usually presented as an annual variable canon according to the revenue. The table below illustrates the form of payment to the Government, and the amounts in 2018 for some cases. In all the analyzed cases, except Northeast Group (Colombia) and Group 2 (Peru), the operator must make periodic payments to the Government (for example, in addition to an initial canon, another annual fixed one, plus a variable amount based on a percentage of their revenue). In most cases, the payment to the Government was decided in the bidding process. As indicated above, the payment to the Government was considered a tender factor in most cases: Santiago, Lima, Sao Paulo - Guarulhos, Group of 36 airports (Argentina), Montevideo, and airport groups in Mexico. In contrast, in Bogotá, the lower expected revenue for the concessionaire was used. In Lima (Peru, >48%), Santiago (Chile, 77.5%), San José (Costa Rica), Guayaquil (Ecuador, 50%), Barranquilla and Cali (15% and 19%, respectively, Colombia) the percentage of revenue is the only way to pay the Government. In Viracopos, Sao Paulo - Guarulhos, Brasília, Rio - Galeao, and Porto Alegre (Brazil), a fixed payment was also included. However, payment as a percentage of revenue is the main revenue collected by the Government. In the Brazilian airports (5-10%), percentages of revenue collected were significantly lower than the percentages applied in Chile, Ecuador or Peru. In Quito, the Government received a fixed amount and a percentage of EBITDA. In Mexico, the Government received, as well the payment for the sale of shares it had on the concession. In Brazil, the Government owns 49% of the operator's shares in Sao Paulo -Guarulhos. Argentina (1998) and Uruguay (2003) were the only cases in which the conditions established only the payment of a fixed amount on the part of the operator (Corporación América in both cases). In the Argentine case, said condition was later modified in 2006 within the framework of a negotiation. Under the new conditions, the Government keeps 15% of gross revenue and holds a percentage of shares in the concession.

Table 10
PAYMENTS TO THE GOVERNMENT BY AIRPORT PPP (2018)

PPP	Payment structure	Payment to the Government (USD million) 2018 (*)	Payment to the Government/ Total revenue
Group of 36 airports (Argentina)	Originally in 1998: Annual payment of USD 171 million (US IPP indexed). Subsequently modified. Modified in 2006: 15% of revenue	NA	NA
Sao Paulo - Guarulhos (Brazil)	Fixed payment of USD 208 million on average per year Variable payment of 10% of revenue	217	36%
Viracopos (Brazil)	Fixed payment of USD 63,000 per year 5% of revenue	46	22%
Belo Horizonte (Brazil)	Fixed payment of USD 16 million on average per year 5% of revenue	NA	NA
Brasilia (Brazil)	Fixed payment of USD 47 million on average per year 5% of revenue	NA	NA
Rio - Galeao (Brazil)	Fixed payment of USD 165 million on average per year 5% of revenue	NA	NA
Porto Alegre (Brazil)	Annual fixed payment 5% of revenue	NA	NA
Santiago (Chile)	77.5% of total revenue	241	77.5%
Center North Group (Colombia)	19% of revenue	NA	NA
Barranquilla (Colombia)	14.6% of revenue	NA	NA
Bogotá (Colombia)	Higher of 46.2% of revenue and USD 4.6 million	NA	NA
Cali (Colombia)	Annual fixed payment of USD 3 million 41% of revenue	NA	NA
San José (Costa Rica)	35.2% of total revenue, excluding departure tax for passengers and 25% of revenue from landing fees.	NA	NA
Quito (Ecuador)	Annual fixed payment of between USD 1.5 and 2.0 million Variable payment of between 2.5 and 4.5% of EBITDA	NA	NA
Guayaquil (Ecuador)	50% of revenue goes to a trust for the development of the new airport in Guayaquil. Annual payment of USD 1.5 million.	NA	NA
Montego Bay (Jamaica)	Annual payment	NA	NA
Palmerola (Honduras)	10% of gross revenue from international passenger tariffs	NA	NA
Group of 4 airports (Honduras)	34.4% of revenue	-	-
Center North Group (Mexico)	Payment by auction of 85% of shares in the concession 5% of revenue	16	4%
Southeast Group (Mexico)	Payment by auction of 85% of shares in the concession 5% of revenue	47	6%
Lima (Peru)	47.5% of revenue, 50% of revenue from takeoff and landing, 20% of terminal tariff, +1%	185	53%
Montevideo (Uruguay)	Annual payment of USD 2.5 million	NA	NA

(*) 2017 for Lima and Viracopos. Viracopos: annualized figure for the period January-August.

Source: Produced by the authors. The cases of Montevideo, Tegucigalpa, Palmerola, Quito, Cali and Barranquilla are taken from CAF (2016).

B TARIFFS



There are two main ways of regulating airport operators' tariffs: return rate and price cap. The return rate scheme was applied in Santiago (both concessions), Bogotá, North-west Group (Colombia) and Guayaquil. In contrast, in the Group of 36 airports in Argentina, Sao Paulo - Guarulhos, Lima, Center North Group (Mexico) and San José, the price cap model was used. Under the return rate model, revenue is linked to production costs, as well as a reasonable return according to risk and capital at stake. The goal is to limit operator's revenue so that they recover their cost and get a certain return. When applying the price cap method, tariffs are adjusted according to a formula that considers inflation and expected earnings in efficiency. Prices are fixed for longer terms (when compared to the return rate model). In practice, it is highly difficult to make accurate forecasts. The table below shows the main tariffs charged to airlines and passengers in domestic and international flights. In the first case, landing, lighting, parking and boarding bridges fees are included. In the second case, boarding and security fees, as well as other fixed charges and taxes on the ticket are included. With regards to tariffs charged to passengers in domestic flights, Quito, Lima and Cartagena are between 42% and 55% above average. Brasilia, Belo Horizonte, Congonhas - Rio, Sao Paulo - Guarulhos, and Santiago are between 55% and 65% below average.

Table 11
TARIFFS CHARGED TO AIRLINES AND PASSENGERS FOR SELECTED PPP AIRPORTS

Domestic					
Tariffs charged to airlines (landing + lighting + parking + boarding bridges) USD ¹		Difference with average	Tariffs charged to passengers (boarding, security, ticket tax and other charges) USD ²		Difference with average
Lima	645	185%	Quito	39.1	48%
Quito	587	159%	Lima	37.9	44%
Sao Paulo - Guarulhos	233	3%	Cartagena	35.7	35%
Brasilia	233	3%	Bogotá	33.7	28%
Belo Horizonte	233	3%	Medellín	33.5	27%
Cartagena	231	2%	Guayaquil	31.5	19%
Average	226	0%	Buenos Aires - Ezeiza	30.2	14%
Santiago	195	-14%	Buenos Aires - Aeroparque	30.2	14%
Bogotá	152	-33%	Córdoba	30.2	14%
Medellín	152	-33%	Rosario	29.2	11%
Guayaquil	143	-37%	Average	26	0%
Buenos Aires - Ezeiza	92	-59%	Santiago	11.4	-57%
Buenos Aires - Aeroparque	92	-59%	Sao Paulo - Guarulhos	9.2	-65%
Rosario	91	-60%	Belo Horizonte	8.9	-66%
Córdoba	89	-61%	Brasilia	8.9	-66%

¹ For a period of two hours of parking on the operational platform and turnaround for an A320 aircraft.

² For a plane ticket of USD 150 for the purposes of calculating tax on the ticket.

International					
Tariffs charged to airlines (landing + lighting + parking + boarding bridges) USD ¹		Difference with average	Tariffs charged to passengers (boarding, security, ticket tax and other charges) USD ³		Difference with average
Cartagena	1835	105%	Quito	182.5	73%
Quito	1667	86%	Cartagena	165.1	56%
Lima	1090	22%	Bogotá	162.1	54%
Montevideo	1075	20%	Medellín	162.1	54%
Buenos Aires - Ezeiza	989	11%	Guayaquil	157	49%
Buenos Aires - Aeroparque	989	11%	Lima	120.7	14%
Córdoba	851	-5%	Buenos Aires - Ezeiza	104	-1%
Rosario	851	-5%	Buenos Aires - Aeroparque	104	-1%
Average	894	0%	Córdoba	104	-1%
Sao Paulo - Guarulhos	621	-31%	Rosario	104	-1%
Brasilia	621	-31%	Average	106	0%
Belo Horizonte	621	-31%	Montevideo	81.5	-23%
Bogotá	581	-35%	Sao Paulo - Guarulhos	35.5	-66%
Medellín	581	-35%	Brasilia	35	-67%
Santiago	531	-41%	Belo Horizonte	35	-67%
Guayaquil	513	-43%	Santiago	30	-72%
Cartagena	1835	-105%	Quito	182.5	73%

¹ For a period of two hours of parking on the operational platform and turnaround for an A320 aircraft.

³ For a plane ticket of USD 500 for the purposes of calculating tax on the ticket.

Source: Ricover, Serebrisky, and Suárez-Alemán (2018)

With respect to tariffs charged to passengers in international flights, Quito, Cartagena, Bogotá, Medellín and Guayaquil are between 57% and 83% above average. Santiago, Belo Horizonte, Brasilia, Congonhas - Rio, Sao Paulo- Guarulhos and Asunción are between 58% and 70% below average. In addition, with regards to tariffs charged to airlines in domestic flights, Lima and Quito are well above average, 205% and 178%, respectively. The Argentine airports (Córdoba, Rosario, and Aeroparque and Ezeiza in Buenos Aires) stand out, with more than 55% below average. Finally, with regards to tariffs charged to airlines in international flights, Cartagena and Quito are between 105% and 125% above average. Paramaribo, Guayaquil, Santiago, Asunción, Congonhas - Sao Paulo, Medellín, Bogotá are between 29% and 48% below (Ricover, Serebrisky, and Suárez-Alemán, 2018).

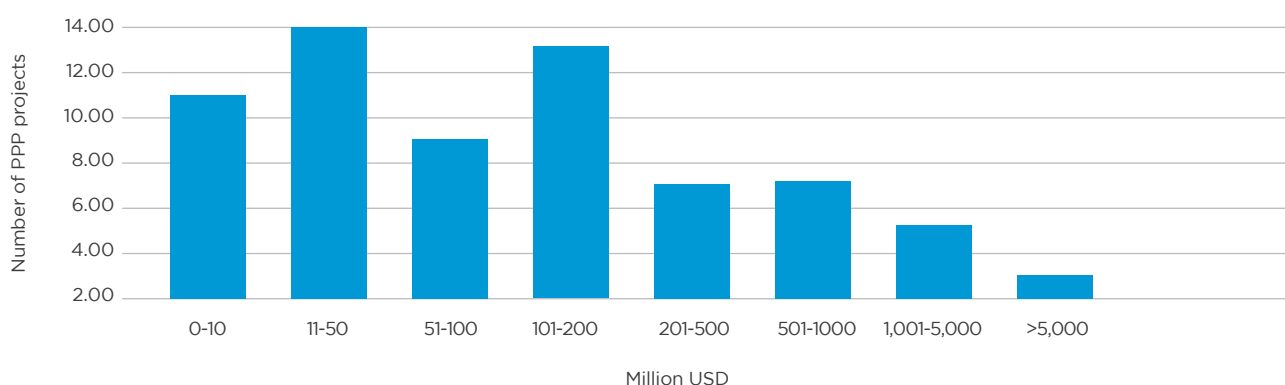


Airport PPPs predetermine investment requirements, with a wide range between USD 10 and USD 200 million. The predetermined investment amounts requirement is a prevailing feature in airport PPPs in the region. The most frequently made investment is for a value between USD 10 and USD 200 million⁴⁴, with an average above USD 1,000 million strongly conditioned by wide investments required by greenfield airports in the sample. In most cases, specific requirements for works are set with estimated values⁴⁵. Investments are made either for the construction of new facilities, terminals, runways, etc., or to rehabilitate or maintain existing ones. There is a wide range of investment amounts per project. In half of the projects with available information, the investment amount was less than or equal to USD 100 million, while there are only a few megaprojects associated to the development of new infrastructure, above USD 1,000 million, such as Guarulhos – Sao Paulo, Rio – Galeao, and Brasilia in Brazil. In 20% of airports, the amount was less than or equal to 10 million. Most of them are airports with less than a million passengers in 2017. In 18 contracts, the investment amount is in the USD 11 to 50 million range. These are airports with less than a million passengers. In 7 projects, the investment amount varies between USD 51 and 100 million. That is the case of the airports in Guayaquil (Ecuador) and Kingston (Jamaica). In the USD 101 to 200 million range, we find the airports of Barranquilla (over 2.5 million passengers), Kingston (Jamaica, over 1.5 million passengers), Porto Alegre, Brazil (over 8 million passengers), and airports with less than half a million passengers, such as La Araucanía (Chile), and Toluca (Mexico). In the USD 201 to 500 million range, we find the airports of Santiago, Chile (first concession, 16 million passengers), Lima (20.6 million passengers), Groups 1 and 2, Peru (5.4 and 3.1 million passengers, respectively). Furthermore, this range also includes small airports, such as Natal (Brazil, less than 200,000 passengers). The USD 500 million to 1 billion range includes Santiago, Chile (second concession, 16 million passengers), Southeast Group (Mexico, 16.7 million passengers), Quito (Ecuador, 6.5 million passengers) and Group 3, Peru (less than a million passengers). The USD 1 to 5 billion range applies to Brasilia, Brazil (16.9 million passengers), Campinas, Brazil (9.3 million passengers), Center North Group, Mexico (2.4 million passengers). Finally, with amounts over USD 5 billion, we find Sao Paulo – Guarulhos and Rio – Galeao, Brazil (37.8 and 16.2 million passengers, respectively). Thus, the average investment per passenger is around USD 125. In Guarulhos – Sao Paulo, Cancun, Brasilia and Buenos Aires – Ezeiza, the average investment varies from USD 84 to USD 124 per passenger. The average investment in Lima and Santiago is around USD 50 per passenger. Finally, the average investment per passenger for Bogotá and Guayaquil is between USD 21 and USD 26. A more thorough comparison should consider the features and size of the infrastructure developed with said investment.

⁴⁴ The committed or benchmark investment values are fixed in dollars in Costa Rica, Ecuador (where the local currency is the dollar), Honduras and Peru, and in the local currency in Brazil, Chile and Colombia.

⁴⁵ Literature establishes that fixing future levels of investment (versus fixing levels of quality in provision of services) prevents the operator from adjusting them according to the changes in market conditions, is difficult to enforce and fosters investments that are excessive and unjustifiable from an economic point of view (Klein, 1998). In Sao Paulo – Guarulhos and Group 2 (Peru) only, the Government establishes operational and investment requirements, triggered by demand milestones, without defining the amount.

Graph 3
NUMBER OF AIRPORT PPPS BY RANGE OF INVESTMENT



Source: Produced by the authors with data from the World Bank's PPI.

Tabla 12
AVERAGE PER PASSENGER INVESTMENT IN AN AIRPORT PPP SAMPLE IN LAC

Airport	Committed investment (*)	Passengers per year	Investment per passenger
	(USD million)	(million)	(USD per passenger)
Viracopos (Brazil)	5,100	8.8	577.6
Sao Paulo – Guarulhos (Brazil)	3,100	37.0	83.8
Brasilia (Brazil)	1,800	16.5	108.7
Cancun (Mexico)	1,365	15.8	86.4
Buenos Aires - Ezeiza (Argentina)	1,200	9.7	123.7
Santiago, First Concession (Chile)	212	21.4	-
Santiago, Second Concession (Chile)	850	21.4	-
Santiago, Aggregated (Chile)	1,062	-	49.6
Lima - Phases 1 and 2 (Peru)	454	20.6	-
Lima - Phase 3 (Peru)	607	20.6	-
Lima, Aggregated (Peru)	1,061	-	51.5
Bogotá, First Concession (Colombia)	100	31.0	-
Bogotá, Second Concession (Colombia)	565	31.0	-
Bogotá, Aggregated (Colombia)	665	-	21.5
Guayaquil (Ecuador)	92	3.6	25.6

(*) Planned investment in Cancun.

Source: Produced by the authors.

It is also frequent for contracts to include the obligation of making investments during the life of the partnership to ensure certain levels of maintenance of the infrastructure and provision of adequate services. In most cases, there is a medium-term timeline for mandatory investments (for example, 4 years in Sao Paulo - Guarulhos, 5 years in Santiago and Bogotá, 8 years in Lima). There are also mandatory investments in case certain levels of movement of passengers or aircrafts are reached (for example, Santiago, Lima, and Sao Paulo - Guarulhos). In other cases, five-year investment plans are developed and obligations are set for said period (for example, Southeast, Pacific and Center North Groups in Mexico, and, after renegotiation and change in original investment obligations, Group of 36 airports in Argentina). In the cases of Bogotá (Colombia) and Santiago, Second Concession (Chile), the contract defines mandatory works that the operator must undertake, defines an estimated cost value and technical specifications, and details the processes for presentation and approval of the design and the characteristics of the works, between the private party, an independent consultant or inspector, and Aerocivil (Colombia) or the Ministry of Public Works (Chile). If required, the use of additional works is included, the public actor having the possibility to request it directly. Chile also regulates the way in which the operator hires construction companies in case of extension works. In Sao Paulo - Guarulhos (Brazil) and Lima (Peru), contracts define mandatory works, in less detail than the previous cases, and they emphasize technical specifications and service quality standards. In Brazil, even the compliance of service standards is related to the tariff adjustment method.

Table 13
TERM AND INVESTMENTS

PPP airport	Term	Total investment (USD million)
Group of 36 airports (Argentina)	30 years, renewable for 10 years more	Total: 2,279 Investments can be modified as long as there are no changes to the annual amount set in the Investment Plan. According to this plan: USD 2.2 trillion altogether for all airports, out of which USD 1.2 trillion for Buenos Aires - Ezeiza. Modified by addendum in 2006: indicates investments for the 2006-2010 as 1,200 million pesos (USD 400 million approx.). As from 2011, five-year plans will be estimated. Investments include Terminals 3 and 4, 35km ² in 2014 in Buenos Aires - Aeroparque and Terminals B (28.7k m ²) and C in 2013 (partially) and 2011
Sao Paulo - Guarulhos (Brazil)	20 years, renewable for 5 years more	Total: 3,000 (benchmark) The concessionaire must make the necessary investments to comply with the service and quality standards indicated in the contract.
Santiago, First Concession (Chile)	15 years originally. Addendum 2, term becomes variable, with a maximum of 6.5 years more. Final duration: 17 years.	Total: 265 Required investments can be modified by the Ministry of Public Works, and the concessionaire must be compensated accordingly. Maximum amount for new investments: 30% of concessionaire's initial investment, and in the construction phase, 10% of initial budget.
Santiago, Second Concession (Chile)	20 years	10 (Original) 850 (Updated) If certain passenger levels are exceeded, the granting agency requests application of works. In that case, the concessionaire must conduct a public tender to execute the works.

PPP airport	Term	Total investment (USD million)
Bogotá, Second Concession (Colombia)	20 years	Total: 650 The Government can request additional works. The compensation amount will be defined by the parties. USD 211 million for change in the works.
Northeast Airport Group (Colombia)	Until reaching the expected revenue, maximum of 25 years	Total: 150 (Santa Marta Airport 56) The Government establishes the need or not to undertake additional works.
Center North Group (Mexico)	50 years, renewable for 50 years more	Total: 810 The concessionaire must submit an investment plan every 5 years, as from the year 2000. Committed investments for the period 2016-2020, USD 300 million.
Southeast Group (Mexico)	50 years, renewable for 50 years more	1999-2018 1,200 million 2019-2023 600 million 2006-2007 Terminal 3 / Second runway Cancun 1,100 million 2000-2023
Lima (Peru)	30, 30 years more	1,062 (benchmark)
Group 2 (Peru)	25 years, not renewable	Total: 257
San José (Costa Rica)	20 years, renewable	Total: 161
Guayaquil (Ecuador)	15 years, renewable for 30 years more	Total: 92

Source: Produced by the authors.

D RISK ALLOCATION



In general, in the development of airports through a PPP, the private sector assumes business, operation and construction risks. The public sector bears land management, force majeure, political and regulatory risks. Table 14 shows the risk allocation for a sample of projects in the region.

Table 14
RISK ALLOCATION IN PPP AIRPORTS IN LATIN AMERICA AND THE CARIBBEAN

PPP airport	Land	Design	Construction	Operation	Commercial (demand)	Inflation, exchange rate	Social and environmental	Political and regulatory	Force majeure
Group of 36 airports (Argentina)	-	Private	-	Private/ Operations (Commercial plan)	-	Inflation: Users Exchange rate: Users-private	Public	Public except changes in profit rate	Public
Sao Paulo - Guarulhos (Brazil)	Public	Private	Private	Private	Private	Inflation: Users Exchange rate: Private	Public (Licenses not attributable to the operator), includes archaeological risks	Public	Public
Brasilia (Brazil)	Public	Private	Private	Private	Private	Inflation: Users Exchange rate: Private	Public	Public, except for income tax	Public
Santiago, First Concession	Public	Shared	Private	Private	Shared	Users	-	-	-
Santiago, Second Concession	Public	Shared	Private	Private	Private	Inflation: Users Exchange rate: Private	Public	Public	Public
Bogotá, Second Concession	Shared	Shared	Private	Private	Private (Demand in revenue), Collection	Inflation: Users Exchange rate: Private	Public (Environmental license)	Mainly public. The private actor bears the risk of the tax legislation and airport security (up to 1% of gross revenue, in case of excess, it is public risk)	Public (Non-insurable events)
Northwest Group (Colombia)	Shared	Shared	Private	Private	Private	Inflation: Users	-	Public: Archaeological risk	Public
Lima (Peru)	Public	Private	Private	Private	Private	Inflation: Users Exchange rate: Private	-	Public	Public
Group 2 (Peru)	Public	-	Private	Private	Shared	Inflation: Users Exchange rate: Private	-	Public	Public
San José (Costa Rica)	Public	Private	Private	Private	Shared	Users	-	Public	Public
Guayaquil (Ecuador)	Shared	Private	Private	Private	Private	Inflation: Users	-	Public	Public

Source: Produced by the authors.

- In most cases studied, the **land risk** is assumed by the public sector. In Colombia (both PPP airports), the Government establishes that the operator shall undertake all steps and activities related to obtaining land. The Government shall help only in case of any impediment.
- In most cases, the private sector bears the **design risk**. However, in two cases (Chile and Colombia), this risk is shared. In both cases, government authorities establish detailed obligations and regulate aspects related to the design, as well as requirements to provide the services. They can also request new works on their own initiative. In contrast, in Brazil and Peru, the Government establishes operational and quality requirements, and, to a lesser extent, aspects of the infrastructure design.
- **Construction risks** (cost and terms), as well as **operation risks**, are assigned to the private operator. To a larger extent, the demand risk is transferred to the private partner. In two cases, it was shared by an income guarantee (Santiago, first concession) and by a financial balance clause in case of a lower than expected demand (San José). According to S&P's analysis of airport performance in the region (2017), construction risk is relatively low due to little complexity of the infrastructure. By comparison, traffic and tariff levels are important risk factors. As in previous sections, different tariff regulation regimes imply different risk levels from the private actor's point of view. In all cases, the **inflation risk** is transferred to the users through the indexation of tariffs. The **exchange rate risk** is born by the private partner, except in Santiago (first concession) and San José, where tariffs were also indexed by exchange rate. In all cases, the **force majeure risk** is assumed by the Government, with the exception of insurable risks in some cases.
- The operator bears the **commercial risk** (demand). As mentioned before, in two cases, the operator received support to mitigate the demand risk by an income guarantee (Santiago, first concession) and the restoration of the economic and financial balance (San José). In Group 2 (Peru), the operator receives an annual subsidy (for operation and maintenance, and investments) for its sustainability and the Government bears the demand risk.

6

PERFORMANCE OF AIRPORT PPPS IN LATIN AMERICA AND THE CARIBBEAN



6

PERFORMANCE OF AIRPORT PPPS IN LATIN AMERICA AND THE CARIBBEAN

The region has little public information on the performance of airport PPPs. The little availability of information for the performance of PPPs in the operation phase does not allow for comparisons of compliance with obligations and performance in services and quality. According to the selected sample, there is, in general, a low level of transparency and publication of bidding conditions, contracts and performance indicators of the operators. Only in Peru, where there is a regulatory agency for transport PPPs, are all the items published. Brazil follows, as it discloses contracts and amendments, as well as tariffs and financial indicators. Chile publishes tariffs, investments (commitments and their compliance) and financial indicators. Colombia shares contracts and amendments. The table below presents the minimum elements that should be published by the Government agencies that play a role in regulation or oversight of the sector.

Table 15
ANNUAL AVAILABLE INFORMATION IN THE OPERATION PHASE IN AIRPORT PPPS

Country (Airports)	Contract	Amendments to the contract	Level of services (requirements and compliance)	Investments (requirements and compliance)	Government's commitments (*)	Payments to the Government	Tariffs	Concessionaire's financial indicators	Consulted sources
Peru (Lima)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	OSITRAN
Brazil (Sao Paulo - Guarulhos)	Yes	Yes (**)	No	No	No	No	Yes	Yes	ANAC, Ministry of Infrastructure
Chile (Santiago, Second Concession)	No	No	No	Yes	No	No	Yes	Yes	Concessions (Ministry of Public Works, MOP)

Country (Airports)	Contract	Amendments to the contract	Level of services (requirements and compliance)	Investments (requirements and compliance)	Government's commitments (*)	Payments to the Government	Tariffs	Concessionaire's financial indicators	Consulted sources
Colombia (Bogotá)	Yes	Yes	No	No	No	No	No	No	ANI, Colombia Compra Eficiente, Aerocivil
Argentina (Group of 36 airports)	Yes	No	No	No	No	No	No	No	ORSNA, Ministry of the Economy and Finances
Mexico	Yes	No	No	No	No	No	No	No	Secretary of Communications and Transport
Costa Rica (San José)	Yes	No	No	No	No	No	No	No	Civil Aviation Unit
Dominican Republic (Las Américas)	No	No	No	No	No	No	No	No	Open Data - Government of Dominican Republic
Ecuador (Guayaquil)	Yes	No	No	No	No	No	No	No	AAG, TAGSA
Uruguay (Montevideo)	No	No	No	No	No	No	No	No	DINANCIA

(*) Includes Government's payments to the concessionaire and direct investments in the airport.

(**) Difficult access. There is no list of changes.

Source: Produced by the authors.

A RENEGOTIATIONS



Due to the incomplete nature of contracts, the long-term horizon and the high probability that unexpected events impact the project, in certain circumstances, it may be reasonable to renegotiate the contracts. Data show how all the airports analyzed suffered some type of renegotiation, mainly focused on changes in required investment (50% of cases), payments to the Government (25% of cases) or agreed-on rates. (30% of cases). Tables 19 and 20 show the extensive use of amendments (through addenda or other instruments) to modify the original contractual conditions. This justifies the need to strengthen contract oversight and monitoring processes and the correct performance of infrastructure and its associated services; as a result of solid and transparent regulatory frameworks.

Table 16
RENEGOTIATIONS IN A SAMPLE OF PPP AIRPORTS

PPP airport	List and publication of addenda	Renegotiations
Group of 36 airports (Argentina)	No	2006: Extension of the concession, service quality, tariff levels, investment plans and approval processes, payment to the State (15% of gross revenue), both parties agree to abandon the mutual claims, with a positive balance for the granting agency, the operator grants 7% of international airport revenue, financial obligations convertible in shares and operator's shares
Sao Paulo - Guarulhos (Brazil)	No	2 unilateral amendments 2016: Establishes tariff levels and modifies other related aspects 2017: Sets values of operator's payments to the State and changes other related aspects 3 amendments by agreement among the parties 2017: Modifies aspects of the concession term, and the mechanism for the economic and financial balance 2017: Sets values of operator's payments to the State and changes other related aspects 2018
Santiago, First Concession (Chile)	Yes	4 addendas: Addendum 1: 2001 - New investments for UF\$ 0.2 million Addendum 2: 2004 - UF\$ 0.80 M Addendum 3: 2008 - UF\$ 0.45 M Addendum 4: 2013 - 12 resolutions that unilaterally modify several aspects, including investments Final budget : UF\$ 8.5 million Investment amount, MOF Report 2015 USD 212 million
Santiago, Second Concession (Chile)	No	2017: Supreme Decree authorizes replacement of works 2018: Supreme Decree authorizes change in the area under concession 2018: Resolution authorizing the addition of partial provisional commissioning
Bogotá, Second Concession (Colombia)	Yes	30 amendments during 2006-2019. Highlights: change in expansion timeline (2009), release of areas required by the Government (2015), system to accelerate procedures for the approval of works design (2015), release of areas (2015, 2016), agreement on the APEX and OPEX values of additional works (2016), change in the expansion timeline (2018), exclusion of areas under concession (2018), inclusion of new areas (2019)
Northwest Group (Colombia)	Yes	11 amendments in the 6 contracts. 1 amendment of Santa Marta on the inclusion of areas for the concession
Center North Group (Mexico)	No	2001: Includes minimum investment requirements, tariff regime, payment to the State, areas under concession and others
Lima (Peru)	Yes	Addendum 1: 2001 Addendum 2: 2001 - clauses regulating conditions of allowed creditors / authorizes trust and mortgage guarantees on concession rights Addendum 3: 2002 -Extends the term for delivering land (1 year) Addendum 4: 2003 - Modifies the timeline for mandatory investments. Instead of USD 100 million by year 4, it becomes USD 25 million to year 3, USD 80 million to year 3.5, USD 110 million to year 4 - Runway is postponed from year 11 to year 14, or 5 years after the delivery of the land - Extension of granting agency's deadline to deliver the land for extending the airport Addendum 5: 2011 - Related to the land to extend the airport Addendum 6: 2013 - Related to the land to extend the airport Addendum 7: 2017 - Ten-year extension of the concession term , removal of interferences in the land on the part of the Government, modification of deadline for building the second runway, methodological guidelines to calculate the RPI-X, changes in operation parameters
Group 2 (Peru)	Yes	The regulatory agency issues an opinion to verify that the amendment keeps the nature of the concession, economic and technical conditions, and risk allocation. Addendum 1: 2013 - Delivery of land Addendum 2: 2013 - Clarifications Addendum 3: 2015 - Key personnel requirements

PPP airport	List and publication of addenda	Renegotiations
San José (Costa Rica)	No	2 adendas: Addendum 1: 2008 - Term extension from 20 to 25 years, rescheduling of works Addendum 2: 2011 - Measures of bankability of the project, to provide creditors with more guarantees, use of the economic balance mechanism, change in tariff adjustment timeline, topic of delivery of land by the granting agency. Additionally, in 2009, there was a change in the consortium. The concession was transferred from Alterra to the new consortium.
Guayaquil (Ecuador)	No	7 adendas: 2007: extension of term for 5 years 2018: extension of term for 5 years, increase of payment to the State from 50.3% to 55.3% of total revenue, investments for USD 32 million

Source: Produced by the authors.

In the following cases, changes were made in required investments, tariffs or payments to the Government:

- Group of 36 airports in Argentina. They modified the concession term, extension of the concession, service quality, tariff levels, investment plans and approval processes, and payment to the State.
- Sao Paulo - Guarulhos. There were unilateral amendments on tariffs and operator's payment to the Government.
- Santiago (First Concession). New resolutions modifying aspects such as required investments, as well as addenda adding investments.
- Santiago (First Concession). Addenda modifying required investments.
- Bogotá. Addenda modifying the extension timeline and investment value.
- Center North Group (Mexico). Modification of investment requirements, tariff regime and payments to the State.
- Guayaquil. Change in the concession term, payments to the State and required investments.

Amendments related to land management prevail throughout the sample. These can be seen in Santiago (Second Concession), Bogotá (release), Northwest Group (Colombia), Center North Group (Mexico), Lima, and Group 2 (Peru). In this respect, the practice in Peru stands out. The regulatory agency (OSITRAN) not only lists and publishes all contractual amendments, but it also analyzes the economic effects and risk allocation to issue its opinion.

B COST OVERRUNS, DELAYS AND DEMAND



There is a high prevalence of cost overruns. Even though the sample is small (lack of available information), most analyzed PPP airports in Latin America and the Caribbean present cost overruns. Likewise, there was an average delay of 25 months in the development of the works, and demand figures were lower than expected in two thirds of the sample (on average, 23% less) and higher in a third of the sample (on average, 56% more). Table 17 shows the cases with changes in terms and expected costs.

Table 17
DELAYS AND COST OVERRUNS

Investment				Completion date	
Airport (country)	Bidding year	Original contract/ Conditions	Actual 2019, unless otherwise indicated	Original contract	Actual 2019, unless otherwise indicated
		USD million (or another currency if so indicated)			
Iquique (Chile) First Concession	1996	129,000 UF (Conditions)	177,000 UF (Official) (+37%)	-	-
Puerto Montt (Chile) First Concession	1996	164,000 UF (Conditions)	206,000 UF (Official) (+25%)	Construction of a 24,600 m² platform	Only 11,600 m² of the platform were built (delays due to changes in the design of the granting agency prevented the completion of works during the concession term)
Santiago – First Concession (Chile)	1998	Offer: 176 Initial: 140	212 (2015) (+51%)	-	-
Cali (Colombia)	2000	USD 29 (Investment)	USD 91 (Investment) + USD 22 (additional expenses) (+214%)	-	-
Lima (Peru)	2001	-	-	Second runway year 11	Second runway year 14 +36 months
Bogotá (Colombia)	2006	USD 452 contract value CAPEX 362	USD 113 additional CAPEX, USD 98 additional OPEX, (+25%)	End of modernization and expansion phase (includes modifications to the existing terminal and con- struction of a new one) September 2012 (5 years from the beginning of the phase)	July 2014 + 22 months (through contract amendment in 2010)
Araucanía (Chile)	2010	120	120 (Final)	-	-

Investment				Completion date	
Airport (country)	Bidding year	Original contract/ Conditions	Actual 2019, unless otherwise indicated	Original contract	Actual 2019, unless otherwise indicated
		USD million (or another currency if so indicated)			
Antofagasta (Chile) Second Concession	2011	665,000 UF (Conditions)	816,000 UF (Actual) (+23%)	-	-
Calama (Chile)	2011	40	70 (Final) (+75%)	-	-
Brasilia (Brazil)	2012	500	600 (Final) (+20%)	-	-
Viracopos (Brazil)	2012	-	-	May 2014	Works in terminal and aircraft yard (Phase I-B) delayed +24 months at least ANAC imposed a US\$ 15 million fine
Belo Horizonte (Brazil)	2014	-	-	April 2014	June 2016 +26 meses
Santiago – Second Concession (Chile)	2015	610	+ 183 additional ones requested by the concessionaire (in dispute)	4 years all the works, including the new terminal	+ 15 months Delay in the approval of studies
New Airport in Mexico City (no PPP)	2016 (Cancelled 2019)	8,700 (Budget 2014)	14,800 (Budget 2018) (+70%)	-	-

Source: Produced by the authors.

The shortest reported delay was in Santiago's second PPP, with a 7-month delay so far in building the new terminal. Besides, the following delays were reported: 22 months (Bogotá), 24 months (Viracopos), 26 months (Belo Horizonte), and 36 months (Lima). In this last case, unlike the others, the delay was because of the operators, and it was public responsibility for delaying the delivery of the necessary land for the construction of a second runway. Moreover, there were two cases with an increase in the cost of investments. The first one, the first PPP in Santiago, where the amount was increased by 20% as a result of new works proposed by the granting agency. The second case, in the PPP of Bogotá's airport, where the increase in CAPEX and OPEX represented a 50% rise from the initial value of the contract. There were also two cases in which the investment amounts grew significantly in relation to the initial values (set in the conditions). In Santiago (first concession), investment cost increased by 51%. In Bogotá (second concession), the costs went up by 47%. In both cases, the granting agency required the increases. As mentioned in the previous section, in both these cases, design risk and construction costs are shared between the private partner and the Government. There were also two cases where non compliance by the operator or defects in the projects were identified by comptroller agencies. In the case of the Group PPP for 33 airports in Argentina, the comptroller entity identified a breach in 50% of committed investments, and debt for canon of around USD 850 million to 2006. That year, by a renegotiation agreement, it was agreed to replace the fixed canon amount (originally established) with 15% of the revenue. Furthermore, the concessionaire would pay 60% of their debt through the delivery of stocks, and 20% through 7% of international airport revenue.

In 2015, another report was issued indicating that the regulatory agency did not fulfill its oversight tasks and could not enforce the contract due to the inapplicability of fines in case of failure to perform. With regards to the second concession in Bogotá, the comptroller entity found in 2013 the inapplicability of fines for breach in developing the contract, breach of technical specifications in the delivery of works and milestones in the established conditions, weakness in oversight and follow-up of the development of the contract, contractual breach in airport security matters.

Table 18 shows cases with information on the demand forecasted by government bodies and used to conduct the bids, as well as the actual figures.

Table 18
ESTIMATED AND ACTUAL DEMAND

		Demand or revenue		Source:	
Airport (country)	Bidding year	Forecast	Actual figure	Difference	Forecast Actual figure
Million passengers					
2015					
Buenos Aires - Ezeiza and Aeroparque (Argentina)	1998	27.3	19.9	-27%	Annexes to the PPP Contract / ORNSA
2018					
Sao Paulo - Guarulhos (Brazil)	2012	33.0	41.2	+25%	Federal Government (2011) / ANAC
Viracopos (Brazil)	2012	11.9	8.7	-27%	
Brasilia (Brazil)	2012	22.5	17.5	22%	
2010					
Bogotá (Colombia)	2006	10.0 approx.	18.9	+87%	Civil Aviation Master Plan Report (2012) / Aerocivil
USD million					
2017					
Lima (Peru)	2001	2017: 413.8	2017: 346.7 (-16%)	-16%	Operator's economic offer (2001) / OSITRAN
Santiago – First Concession (Chile)	1998	In year 7, approx. revenue per passenger reaches the guaranteed minimum (for the first 13 years of a total of 15) For year 12, the operator is no longer receiving revenue per passenger, but only commercial revenue		NA	Award resolution (1998) / Operator's document

Source: Produced by the authors.

Evidence shows mixed results with regards to the difference between the demand forecasts (during the preparatory stage for the tender) and actual figures. We thus see that in the PPPs of the Group of 36 airports in Argentina, as well as in Viracopos and Brasilia in Brazil, actual demand was between 22% and 27% below the forecasts. In Lima, revenue in 2017 was 16% less than expected. The opposite situation can be seen in Sao Paulo - Guarulhos (Brazil), where actual demand was 25% above the forecasts, and Bogotá (Colombia), where passenger traffic was 87% more than expected. In the same vein, in the First Concession in Santiago, the Government included a minimum income guarantee for the first 13 years of the concession. However, in practice, the minimum income was reached in year 7.

7

SUMMARY OF MAIN FEATURES IN SELECTED AIRPORT PPPS



7

SUMMARY OF MAIN FEATURES IN SELECTED AIRPORT PPPS

The table below summarizes the main features of airport PPPs selected for the main countries of the region in volume of passengers.

Table 19
MAIN FEATURES OF AIRPORT PPPS FOR A SELECTED SAMPLE

	Buenos Aires - Ezeiza and Aeroparque (Argentina)	Sao Paulo - Guarulhos (Brazil)	Santiago (Chile)	Bogotá (Colombia)	Cancun (Mexico)	Lima (Peru)
Group or individual concession	Group	Individual	Individual	Individual	Group	Individual
Competition factor in the tender	Higher payment to the Government	Higher payment to the Government	Higher payment to the Government	Lower expected revenue	Higher payment to the Government	Higher payment to the Government
Duration / maximum extension (years)	30 /10	20 / 5	20 / NA	20 / NAD	50 /50	30 /30
Tariff regulation	Price cap	Price cap	Return rate	Return rate	Price cap	Price cap
Design risk / higher costs	NA	Private	Shared	Shared	Shared	Private
Investment requirement	Through an investment plan revised every 5 years	Set in the contract – Focus on quality indicators and technical requirements	Set in the contract	Set in the contract	Through an investment plan revised every 5 years	Set in the contract – Focus on service indicators and technical requirements

	Buenos Aires - Ezeiza and Aeroparque (Argentina)	Sao Paulo - Guarulhos (Brazil)	Santiago (Chile)	Bogotá (Colombia)	Cancun (Mexico)	Lima (Peru)
Renegotiations (economic aspects)	NA	2 unilateral amendments, 3 amendments by agreement of both parties	3 amendments	30 amendments	NA	7 amendments
	Changes in investment and economic conditions	NA	Increase in required investment	Increase in required investment	NA	-
Delay in execution of works / commissioning	By year 8 of the contract, there was a delay of 50% of committed investments	NA	7-month delay	22-month delay	NA	36-month delay
Transparency after the start of the contract (*)	Low	Medium	Medium	Low	Low	High

(*): Availability of six items in Government websites is taken into account, namely: (1) amendments to the contract, (2) level of services or quality (requirements and compliance), (3) investments (requirements and compliance), (4) payments to the Government, (5) tariffs, and (6) concessionaire's financial indicators. Low Transparency means that it has 2 or less items; Medium, 3 or 4 items; and High, 5 or 6 items.

Source: Produced by the authors.

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ANNEX A

DATA AND DEFINITIONS USED IN THE DOCUMENT - AIRPORT PPPS



Annex A - Table 1

NUMBER OF AIRPORTS UNDER PPPS AND OTHER TYPES OF PRIVATE PARTICIPATION IN LAC BY STATUS AND SOURCE

Project status	Source			PPP	Total	Percentage of total
	PPI	Government or private entities	IJ			
Active / Completed	50	6	32	64	88	90%
Cancelled / Distressed projects	8	4	0	10	12	12%
In preparation	0	4	20	24	24	24%
PPP	47	41	10	98	-	79%
Total	58	52	14	-	124	-

Source: Produced by the authors.

Airport PPPs in LAC studied in the analysis, by type of contract Likewise, the projects analyzed can be divided into categories based on different types of PPP contracts, namely⁴⁶ :

- *Greenfield* (6 projects, 10% of total). A private sponsor or a joint-venture builds and operates a new infrastructure for the period indicated in the contract. The private partner bears an important part of the financial and operational risk, and recovers their investment throughout the life of the project. There are different types:
 - *Build Operate Transfer* (BOT) (5 projects, 8% of total). A private sponsor owns and operates the infrastructure at their own risk, then transfers the infrastructure to the Government at the end of the contractual term.
 - *Build Operate Own* (BOO). A private sponsor builds a new infrastructure at their own risk, then owns and operates the infrastructure at their own risk.
- *Brownfield* (59 projects, 91% of total). Similar to Greenfield, except that, instead of building a new asset, the private partner takes an existing asset and usually upgrades, rehabilitates or expands it. In general, they control the operations of the existing asset first and then carry out a capital investment. The private sponsor is usually responsible for the operations for a period of time, during which they recover their investment of the project operations. Afterwards, they revert the asset to the Government. There are different types:
 - *Rehabilitate Operate Transfer* (ROT) (21 projects, 9% of total). A private sponsor rehabilitates an existing infrastructure, then operates and maintains the infrastructure at their own risk.
 - *Rehabilitate Lease / Rent Transfer* (1 project, 2% of total). A private sponsor rehabilitates an existing infrastructure, then rents it to the Government, and operates and maintains the infrastructure at their own risk.
 - *Build Rehabilitate Operate Transfer* (BROT) (52 projects, 80% of total). A private sponsor builds an extension of an existing facility or completes a partially-built infrastructure and rehabilitates the existing assets. Then, the sponsor operates and maintains the infrastructure at their own risk during the contract period.

Airport PPPs in LAC studied in the analysis, by project status: Based on the project status or phase, the following categories are considered:

- *Active* (65 projects, 66% of total): projects that are in the operation or building phase (or about to start building). *Completed*: projects for which the contract term has expired and was not renewed or extended.

⁴⁶ In this document, the following are not considered PPPs: 1) Management contracts. These usually include performances indicators and requirements similar to those of PPPs. However, “they usually last less than PPPs and do not involve important investments of private capital, as performance incentives are mainly created through payments and fines schemes”; 2) Privately-owned airports. In this case, the private actor owns and operates the assets. Even in the case of airports of public use, the Government does not impose specifications as to the assets or services. This category includes merchant agreements, where a private sponsor builds a new infrastructure in a liberalized market in which the government does not contribute with income or payment of guarantees. The private actor bears the construction, operation and market risks. Also excluded from the definition are contracts whose duration is less than 10 years (including management contracts, leasing and short BROT contracts).

- Cancelled (8 projects, 8% of total): projects in which the private operation has left, whether **(1)** by selling or transferring their interest back to the Government before completing the contract term, or **(2)** by withdrawing management and personnel, or **(3)** by stopping operations or construction for 15% or more of the license or concession term, followed by the revocation of the license or the cancellation of the contract.
- Distressed (2 projects, 2% of total): projects in which the Government or the operator has either requested contract termination or are in arbitration. Definitions taken from the glossary of terms in the PPI Database.
- In preparation (24 projects, 24% of total): projects that are in the preparation phase for the tender of have a scheduled date for the tender.

Airport PPPs in LAC studied in the analysis, by country: With regards to regional distribution, in absolute quantitative terms, airport PPPs have a special presence in Brazil (30), Chile (21)⁴⁷, Colombia (12), Argentina (6), Mexico (7), and Peru (5). Table 2 shows the number of airport PPPs in LAC by status and country.

Annex A - Table 2

NUMBER OF AIRPORT PPPS IN LAC BY STATUS AND COUNTRY

Country	Project status				
	Active / Completed	Cancelled / Distressed	In preparation	Total	Percentage of total
Brazil	17	0	13 (*)	30	31%
Chile	16	0	5	21	21%
Colombia	7	2	3	12	12%
Mexico	5	2	0	7	7%
Argentina	6	0	0	6	6%
Peru	3	1	1	5	5%
Honduras	2	0	0	2	2%
Costa Rica	2	0	0	2	2%
Ecuador	2	0	0	2	2%
Jamaica	2	0	0	2	2%
Trinidad and Tobago	0	0	2	2	2%
Uruguay	2	0	0	2	2%
Venezuela	0	2	0	2	2%
Dominican Republic	0	1	0	1	1%
Bolivia	0	1	0	1	1%
Paraguay	0	1	0	1	1%
Total	64	10	24	98	-

(*): Already tendered.

Source: Produced by the authors.

47: Unlike the rest of the countries, where in most cases there was one PPP project per airport, in Chile there were between 1 and 4 projects per airport (out of a total of 12 airports tendered). For example, the airports in Iquique and Puerto Montt have been tendered 4 times after the completion of their contract terms on three occasions.

Airport PPPs in LAC studied in the analysis, by size: The size of the PPP airports in LAC varies; from less than 100,000 passengers per year to over 35 million. As illustrated in the table below, 26% of airports with information on passengers mobilized less than 500,000 passengers in 2007; 27%, between 500,000 and 1 million; 24%, between 1 and 5 million passengers; and 23% mobilized over 10 million passengers.

Annex A - Table 3

NUMBER OF AIRPORTS UNDER PPPS AND OTHER TYPES OF PRIVATE PARTICIPATION IN LAC BY NUMBER OF PASSENGERS

Range (Million passengers)	Number of PPPs	Percentage of total
< 0.500	22	26%
0.5 - 1.0	23	27%
1.0 - 5.0	21	24%
5.0 - 10.0	7	8%
10.0 - 20.0	8	9%
> 20.0	5	6%
Total	86	100%

Source: Produced by the authors.

ANNEX B

PHYSICAL INDICATORS OF THE MAJOR AIRPORTS PER COUNTRY



Annex B - Table 1

PHYSICAL INDICATORS OF THE MAJOR AIRPORTS PER COUNTRY

Airport	Terminal	Runway
Buenos Aires - Aeroparque and Ezeiza (Argentina)	Aeroparque 4 terminals 1 and 2 30k m ² 3 and 4 35km ² Ezeiza Terminal A 56k m ² Terminal B 27k m ² Terminal C 21k m ²	Aeroparque Runway 84k m ² Ezeiza Runway 1 1198k m ² Runway 2 140k m ² Taxiway 298k m ²
Sao Paulo - Guarulhos and Sao Paulo - Congonhas (Brasil)	Sao Paulo - Guarulhos Concessionaire's obligations: Phase 0 2012-2014 Terminal 100k m ² Phase 1 2014-2016 Terminal 82k m ² Phase 2 2016-2021 Terminal area 66k m ² Phase 3 2021-2031 Terminal area 29k m ² Terminal 3 192k m ² Sao Paulo - Congonhas Terminal 65k m ²	Sao Paulo - Guarulhos Yard 975k m ² Runway 301k m ² Phase 0 2012-2014 Terminal 100k m ² Phase 1 2014-2016 Yard 430k m ² Phase 2 2016-2021 Yard 195k m ² Phase 3 2021-2031 Yard 86k m ² Sao Paulo - Congonhas Runway 87k m ² Aircraft yard 77k m ²
Santiago (Chile)	Terminal 109,000 m ² Terminal extension 65k m ² New terminal: 175k m ² Terminal 1: 110k m ² , extension 9k m ²	Construction: 75k m ² platform and 29k m ² taxiway Runway 1: 3,750 x 55 m Runway 2: 3,800 x 45 m
Bogotá (Colombia)	Terminal 1 173k m ² Terminal 2 37k m ² / Platform 37k m ²	2 runways 3,800 x 45 each
Montego Bay (Jamaica)	-	Runway 120k m ²
Cancun and México City	México City Terminal 1 540k m ² Terminal 2 288k m ² Cancun: Terminal 1 119k m ² Terminal 2 51k m ² Terminal 3 45k m ²	México City Runway 1 Length 3,900 m Runway 2 Length 3,900 m Cancun: Runway 1 3,500 m Runway 2 2,800 m

Airport	Terminal	Runway
Lima (Peru)	Terminal 1: From 39k m ² to 66k m ² + 18k m ² 2001 / 2018 Terminal 39k m ² / 89k m ²	+ 12k m ² of platform 2001 / 2018 Platform 165k m ² / 374k m ²
Guayaquil (Ecuador)	Initial terminal: 50k m ² , Extension: 10k m ²	Runway 2,790 / (52k m ²)
Montevideo (Uruguay)	New terminal 45k m ²	Runway 1: 2,250 m ² , Runway 2: 3,322 m ²

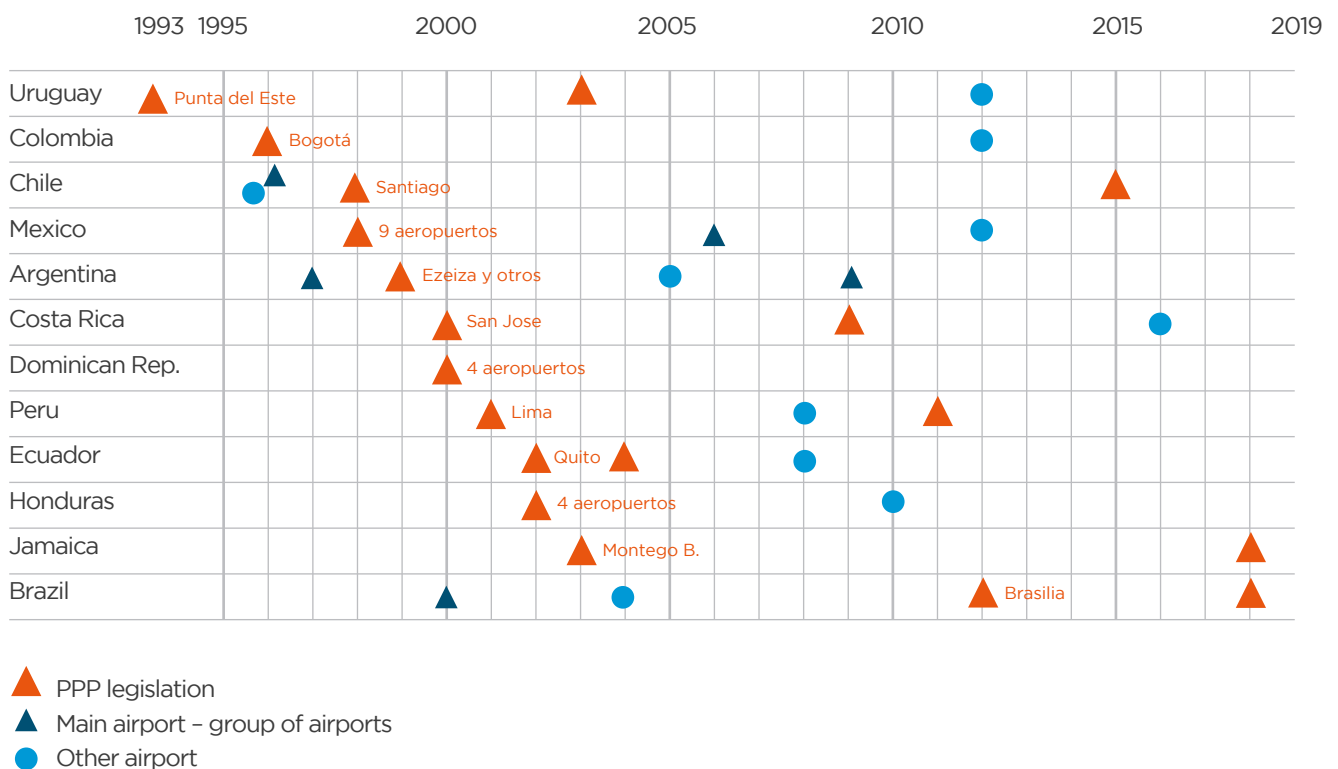
Source: Produced by the authors.

ANNEX C

TIMELINE OF THE FIRST AND LAST AIRPORT PPP AND PPP LEGISLATION PER COUNTRY



Annex C - Graph 1
**TIMELINE OF THE FIRST AND LAST AIRPORT PPP
AND PPP LEGISLATION PER COUNTRY**



Source: Produced by the authors.

Annex C - Table 1

LEGISLATION APPLICABLE TO AIRPORT PPPS PER COUNTRY

Country	Legislation relevant for PPPs in airports	PPP Contract / Use of PPP Act
Argentina	PPP National Regime (2005), Act on Public-Private Partnership Contracts and Regulation (2017)	Public Works Act, Privatizations and Private Capital Participation Act
Brazil	Brazilian Aviation Code (1986) "airport exploration and operation can be delegated to private initiatives, by concession or authorization" Regime for Concessions and Permits for Public Services (1995) Law - National Destatization Program (1997) Creation of the National Civil Aviation Association - ANAC (2005) Law - "for tenders and contracts of public-private partnerships (...)" (2004) Differentiated Regime for Public Procurement" (2011)	Guarulhos (2012): Regime for Concessions and Permits for Public Services (1995), Law (...) National Destatization Program (1997), Differentiated Regime for Public Procurement (2011)
Chile	Concessions Act (1996), Regulation of the Concessions Act (1997)	Santiago (1998) and (2015) Concessions Act was used
Colombia	Law - Legal Regime for PPPs and Regulation (2012)	NA
Costa Rica	Regulation for PPP contracts (2016)	San José (2000): Concessions for Public Works with Public Services Act (1998)
Ecuador	Incentives for PPPs Act and Regulation (2015)	Guayaquil (2004): Modernization, Privatizations and Public Service Provision Act and Investment Promotion and Citizen Participation Act
Honduras	PPP Act and Regulation (2010)	Group - 4 Airports (2000) Promotion and Development of Public Works and National Infrastructure Act (1998) Palmerola (2016): PPP Act
Jamaica	Framework for the Implementation of the PPP Program (2014), Manual for procurement in the public sector (2014)	NA
Mexico	Airport Act (1995) and amendments PPP Act and Regulation (2012)	3 airport groups (1998-2000): Airport Act (1995), Public Administration Act, and National Goods Act
Peru	Private Investment Promotion Act (1991) PPP Act (2008) Regulation of PPP Act (2014) Decree - Private Promotion Framework (2015), Amendments (2016, 2017)	Lima (2001): Private Investment Promotion Act
Dominican Republic	Act of procurement of goods, works, services and concessions (2006) and Regulation (2012)	NA
Uruguay	Public-private Participation Act (2011), Regulation (2012) and amendments	NA

Source: Produced by the authors.

ANNEX D

AVAILABILITY OF INFORMATION ON THE AIRPORT INDUSTRY AND AIRPORT PPPS



The table below shows the availability of information on the airport industry and airport PPPs in those countries that have PPP airports or other type of private participation, based on our own verification. Most countries with airport PPPs, except Ecuador, Honduras, Bahamas and Jamaica, publish the list of airports in their airport networks and the number of passengers. It is thus possible to identify PPP airports and State-run airports, as well. In Brazil, there is only information on the airports run by the State agency Infraero and PPPs tendered by ANAC (Agência Nacional de Aviação Civil).

Most countries do not publish specific PPP information, i.e. bidding conditions, contract, and list of bidders and winner. The three elements were present only in Peru. Chile publishes everything but the contract. Colombia discloses everything, except for the list of bidders and the winner in some cases. Brazil publishes the conditions and the contract only for PPPs tendered by ANAC. In Mexico, some PPP contracts were found. Besides, in Mexico, unlike the rest of the cases, contracts do not include critical information, such as investment or tariffs. Colombia publishes contracts only for those PPPs tendered by ANI. Argentina, Costa Rica, Dominican Republic and Uruguay do not publish any of the mentioned items.

The other countries that do not have airport PPPs do not publish information about the airport network. These include Bolivia, Barbados, El Salvador, Guatemala, Haiti, Nicaragua, Panama, Paraguay, Trinidad and Tobago, and Venezuela. Trinidad and Tobago is in the preparation phase for airport PPPs.

Annex D - Table 1

AVAILABLE INFORMATION ON PPP AIRPORTS AND TRANSACTIONS

	Airport network / Passenger statistics		Bidding conditions	Contract	List of bidders and winner
	Airports operated by a State agency	PPP airports			
	Countries with airport PPPs				
	Information available in websites of public or private entities? (Yes, No, Partially)				
Peru	Yes	Yes	Yes	Yes	Yes
Colombia	Yes	Yes	Yes	Yes	Partially (*)
Chile	Yes	Yes	Yes	No	Partially (*)
Brazil	Yes (**)	Partially (*)	Partially (*)	Partially (*)	No
Argentina	Yes	Yes	No	Partially (*)	Partially (*)
Mexico	Yes	Yes	No	Partially (*)	No
Costa Rica	Yes	Yes	No	Partially (*)	No
Dominican Republic	Yes	Yes	No	No	No
Uruguay	Yes	Yes	No	No	No
Ecuador	No	No	Partially (*)	Partially (*)	No
Honduras	No	No	No	Partially (*)	No
Bahamas	No	No	No	No	No
Jamaica	No	No	No	No	No

(**): Information not available for all PPPs.

(**): Information is only available for airports managed by Infraero.

Sources: Argentina: ORSNA (Regulatory Body of the National Airport System), and Ministry of Finance; Brazil: ANAC and Infraero; Chile: Concessions (Ministry of Public Work) and DGAC; Colombia: Civil Aviation, ANI (National Infrastructure Agency), Secop; Costa Rica: Civil Aviation Unit; Ecuador: Guayaquil's Airport Authority; Mexico: STC; Peru: OSITRAN and PROINVERSION; Dominican Republic: Open Data - Government of Dominican Republic and Airport Department; Uruguay: DINANCIA.

ANNEX E

ECONOMIC ASPECTS OF CONTRACTS BY PPP AIRPORT



Annex E - Table 1

ECONOMIC ASPECTS OF CONTRACTS BY PPP AIRPORT – PART 1

PPP airport	Tariffs	Payments to the Government	Government support	Investments
Group of 36 airports (Argentina)	<p>Landing, aircraft parking, tariff for the use of air terminals and for the use of telescopic bridges. Established in the contract for the first 5 years.</p> <p>Then, the tariff regime in the contract is applied (Annex I, as approved by ORNSA).</p> <p>Later on, tariffs are adjusted in the CPI - X formula, where CPI is the inflation rate and X is a factor calculated taking into account a target return rate of planned investments, levels of service, efficiency improvements and traffic projections.</p> <p>This factor is revised every 3 to 5 years.</p> <p>Additionally, the Air Force charges tariffs for security, migration, and flight and landing support.</p>	<p>Annual canon of USD 171 million. Indexed by the United States' Consumer Price Index.</p> <p>In 2001, the operator's environmental expenses are deducted.</p> <p>In 2011, AGN indicated that the operator owed 850 million pesos to the State (approx. USD 200 million).</p>	-	<p>Investments can be modified as long as there are no changes to the annual amount set in the Investment Plan.</p> <p>According to this plan: USD 2.2 trillion altogether for all airports, out of which USD 1.2 trillion for Buenos Aires - Ezeiza.</p> <p>Modified by addendum in 2006: indicates investments for the 2006-2010 as 1,200 million pesos (USD 400 million approx.).</p> <p>As from 2011, five-year plans will be estimated.</p>

PPP airport	Tariffs	Payments to the Government	Government support	Investments
Sao Paulo - Guarulhos (Brazil)	<p>Regulated tariffs: boarding, connections, landing, parking, storage.</p> <p>$RPI - X - Q$, where RPI = inflation, X = earnings in productivity, and Q = service quality indicator.</p> <p>The Q factor is estimated using a technical report and user satisfaction surveys.</p>	<p>Three payments:</p> <p>Fixed annual payment of 810 million reais (USD 400,000)</p> <p>Variable payment of 10% of gross revenue (approximately USD 500,000 for 2012 and USD 950,000 for 2032).</p> <p>If revenue is higher than established in the contract, the variable payment increases to 15%.</p> <p>Monthly payment of around 22.6% of revenue from boarding, parking, aircraft landing and cargo tariffs.</p>	<p>Force majeure, except insurable cases.</p> <p>Clause for the maintenance of the economic and financial balance, except for risks assigned to the operator (including demand).</p>	<p>The operator must make the necessary investments to comply with the service and quality standards indicated in the contract. USD 3.1 trillion (estimated)</p>
Santiago, First Concession (Chile)	<p>The initial tariff is suggested by the winning bidder.</p> <p>It is then adjusted by a weighed average of inflation and exchange rate variation.</p> <p>The weight is suggested by the winning bidder, and the exchange rate one cannot exceed 0.6.</p>	<p>The State receives 50% of revenue from boarded passenger tariff if this exceeds a minimum of UF 9.9 million.</p> <p>Pursuant to Addendum 2, the operator only receives revenue from passengers up to the minimum guaranteed revenue.</p> <p>Addendum 3 extends the term for 2 years.</p> <p>During said period, the operator only receives 80% of commercial revenue.</p>	<p>Minimum guaranteed revenue for 13 years of concession.</p> <p>The guaranteed revenue is express as the product of the tariff proposed by the winning bidder and the quantities set in the conditions (which grow annually).</p>	<p>Conditions: Initial budget: UF 4.6 million.</p> <p>It can be modified by the Ministry of Public Works, and the operator must be compensated accordingly.</p> <p>Maximum amount for new investments: 30% of operator's initial investment, and in the construction phase, 10% of initial budget.</p>

Source: Produced by the authors.

Annex E - Table 2

ECONOMIC ASPECTS OF CONTRACTS BY PPP AIRPORT – PART 2

PPP airport	Tariffs	Payments to the Government	Government support	Investments
Santiago, Second Concession (Chile)	The tariff is fixed by the Government and inflation-adjusted.	The operator shares 77.5% of total revenue (i.e. revenue from passengers and commercial revenue).	The State may choose to pay the operator directly or by reducing the revenue sharing factor.	Budget: USD 610 million. Actual investment: USD 850 million If certain passenger levels are exceeded, the granting agency requests application of works. In that case, the operator must conduct a public tender to execute the works.
Bogotá, Second Concession (Colombia)	Regulated tariffs: Airport fee, tariff for the use of boarding bridges, aircraft parking and use of passenger check-in counters. National rates are inflation adjusted. International rates are fixed in US dollars and adjusted based on the United States' inflation.	The higher amount of (1) 46.2% of gross revenue and (2) USD 2.6 million per semester.	Force majeure or fortuitous event if there is no insurance, and in the following cases: foreign war, terrorist acts, civil war, national or regional strikes, archeological findings.	Contract value: COL 1,063,000 million (USD 452 million). Aerocivil can request additional works. The compensation amount will be defined by the parties. USD 429 million in additional and voluntary works.
Northwest Group (Colombia)	Regulated tariffs: Airport fee, tariff for the use of boarding bridges, aircraft parking and use of passenger check-in counters. National rates are inflation adjusted. International rates are fixed in US dollars and adjusted based on the United States' inflation.	-	Non-insurable fortuitous event	Santa Marta: 110,000 million pesos (USD 56 million). Aerocivil establishes the need or not to undertake additional works.
Center North Group (Mexico)	To be determined by the Ministry of Finance. In 2015, tariffs were determined based on the master plan, discount rate, traffic and efficiency factors.	The operator will pay as subsequently determined by the Department.	-	The operator must submit an investment plan every 5 years, as from the year 2000. Committed investments for the period 2016-2020, 5,400 million Mexican pesos (USD 300 million).

Source: Produced by the authors.

Annex E - Table 3

ECONOMIC ASPECTS OF CONTRACTS BY PPP AIRPORT – PART 3

PPP airport	Tariffs	Payments to the Government	Government support	Investments
Lima (Peru)	<p>Initial tariffs set until year 8 in the contract for passengers, takeoff and landing, and aircraft parking.</p> <p>The X factor is estimated by the regulatory agency every five years. Cargo and boarding bridges tariffs are fixed by the regulatory agency.</p> <p>As from year 9, all the above are regulated by the RPI-X scheme.</p>	The operator shares 46.5% of total revenue.	If, due to changes in the applicable legislation, revenue is reduced by 15% or more, the operator may request the amendment of economic conditions (including tariffs) to keep the economic and financial balance.	<p>By year 4: USD 110 million.</p> <p>By year 8: Completing investments called "Mandatory Improvements".</p> <p>Construction of the second runway (originally year 14, delayed).</p> <p>Construction of new passenger terminal.</p> <p>Total investment commitment: USD 1,061.5 million.</p>
Grupo 2 (Peru)	<p>Tariffs: unified fee for airport use (TUUA), takeoff and landing, aircraft parking, boarding bridges, use of cargo facilities and overtime.</p> <p>Tariffs cannot be changed until the end of the third year of concession.</p> <p>Afterwards, tariffs will be matched to those charged at that time by the operator of the first group of airports.</p>	-	<ul style="list-style-type: none"> - Guarantee of full and timely transfer of funds allocated to the Trust. - The State assumes the removal and expenses in case of outdated or out of service goods that may have environmental impacts - Creditors have: Right of concession; net revenue of the concessions once the contribution rate is deducted by regulation and any other amount committed to State entities; shares or participations that belong to the operator. 	<p>Mandatory works in the Development Master Plan</p> <p>To be paid with payments for works for the winning bidder's amount.</p>

Source: Produced by the authors.

Annex E - Table 4

ECONOMIC ASPECTS OF CONTRACTS BY PPP AIRPORT – PART 4

PPP airport	Tariffs	Payments to the Government	Government support	Investments
San José (Costa Rica)	<p>Regulated tariffs: landing, infrastructure, terminal navigation, aircraft parking, cargo, lighting rights, boarding bridges and buses, fuel distribution.</p> <p>Initial levels are established in the contract.</p> <p>From then on, tariffs are annually adjusted using the formula $1 + \text{Inflation} + X + P$, where X = efficiency factor, and P reflects investment depreciation costs.</p> <p>The operator can request an exceptional review under certain circumstances, such as a reduction in demand, workers strike, political measures or new laws, increase in cost due to environmental reasons or exchange risk, or prices influenced by the Government, competition of a new airport, among others.</p>	<p>35.2% of total revenue excluding the following reserved revenue:</p> <p>USD 4.5 per passenger for departure tax, terminal navigation charge, USD 1.7 million per year, 25% of revenue from landing fees.</p>	<p>Financial and economic balance.</p> <p>Significant reduction in demand, legal measures affecting the airport operation, State measures, new legislation impacting profitability, unreasonable withdrawals on tariff approval, increase in environmental requirements competition of a new airport, substantial changes in investment requirements, changes in country risk, change in Libor rate for over 250025.</p>	<p>The contract details type of investment and technical specifications required.</p> <p>Originally estimated amount: USD 160 million.</p>
Guayaquil (Ecuador)	<p>Landing, lighting, aircraft parking, passenger tariff.</p> <p>Inflation-indexed by 20% (local CPI) and 80% (US CPI).</p> <p>Besides, tariffs can be revised once a year by mutual agreement of the parties.</p>	<p>50.3% of revenue go to a trust for the development of the new airport in Guayaquil.</p> <p>Annual payment of USD 1.5 million.</p>	-	<p>Initial phase: 29 first months.</p> <p>Final phases: 8 years.</p> <p>USD 92 million of mandatory investments.</p> <p>New works at the operator's cost.</p>

Source: Produced by the authors.

ANNEX F

INFORMATION ON CONTRACTS - SOURCES OF INFORMATION AND LINKS



Annex F - Table 1

LINKS TO GOVERNMENT AGENCIES PER COUNTRY WITH INFORMATION ON AIRPORTS - THEY CONTAIN, IF APPLICABLE, CONTRACTS, AMENDMENTS, BIDDING DOCUMENTS, PASSENGER STATISTICS AND MORE

Country	Links
Argentina	https://www.argentina.gob.ar/organismo-regulador-del-sistema-nacional-de-aeropuertos http://www.uniren.gov.ar/
Brazil	https://www.anac.gov.br/assuntos/paginas-tematicas/concessoes http://www4.infraero.gov.br/
Chile	www.concesiones.cl http://www.jac.gob.cl/estadisticas/
Colombia	https://www.ani.gov.co/aeropuertos2 https://www.contratos.gov.co/consultas/detalleProceso.do?numConstancia=15-1-153103 http://www.aerocivil.gov.co/atencion/estadisticas-de-las-actividades-aeronauticas
Costa Rica	https://www.dgac.go.cr/wp-content/uploads/2017/06/contratamarca.pdf
Ecuador	http://www.tagsa.aero/tagsa-licitacion.html http://aeropuertoquito.com/control-de-la-concesion/
Honduras	http://coalianza.gob.hn/cartera-de-proyectos/cartera-app-nacional/aeropuertos http://www.interairports.hn/ http://sapp.gob.hn/wp-content/uploads/projects-docs/Aeropuertos/1/CONTRATO%20DE%20CONCESION%20AEROPUERTOS.pdf
Mexico	http://www.sct.gob.mx/transporte-y-medicina-preventiva/aeronautica-civil/2-marco-normativo/212-concesiones-aeroportuarias/ http://www.sct.gob.mx/transporte-y-medicina-preventiva/aeronautica-civil/5-estadisticas/55-estadistica-operacional-de-aeropuertos-statistics-by-airport/
Peru	https://www.ositran.gob.pe/aeropuertos/ https://www.lima-airport.com/eng
Dominican Rep.	http://da.gob.do/?page_id=981
Uruguay	https://www.dinacia.gub.uy/aeropuertos-uruguayos/aeropuertos-internacionales.html

Source: Produced by the authors.

