Identifying the Drivers of Air Fares

An **ICF** report prepared for

ACI Latin America & Caribbean

April, 2020

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1. Executive Summary

Airport charges can be a contentious subject. Despite most airports in the Latin America region being subject to regulation at national level, airline lobbying groups continue to complain of excessive airport charges which, they argue, force airlines to increase fares with the effect of suppressing consumer demand.

This report shows that airport costs are a relatively small and stable component of an airline's cost base. In general, over the last ten years the share of real airport charges has been broadly flat or slightly decreasing and these variations rarely exceed 7% in the total cost of airlines. This compares to much more significant and frequently observed changes in other airline costs such as fuel and aircraft costs that are both more significant and more volatile. If recent history is to be characterised as one in which air fares have been driven up by an increasing cost base, then the role played by airport charges would be marginal. Multi data-based analyses demonstrate that there is no evidence to suggest the industry is being held back by the pricing decisions of airports and regulators.

Having established this context, price setting by airlines has then been studied, to understand how underlying costs influence the pricing mechanism and whether variations in airport charges have a significant impact on air fares. The analysis demonstrates that airport charges are predominantly second-order drivers of fares. In common with most industries, costs influence profitability and longer-term decision making, but it is predominantly the balance of demand and supply that set the prices, as evidenced by the extreme volatility of air fares and the sometimes counter-intuitive (from a cost of provision perspective) pricing strategies.

The key findings of the report are as follows:

Airport charges represent a relatively small share of airlines' costs

Weighted by passenger volume, 84% of passengers are carried on carriers for whom airport charges represent 7% or less of their total cost.

These charges have been flat or decreasing over the past decade

Evidence have been presented, based on the actual aeronautical yields reported by airports, which demonstrate that on average charges are flat or decreasing. Airline annual reports also confirm that this cost item has not been (in most cases) growing – in absolute or as a share of costs – over time.

There is significant variation by airline type and haul

The type of airline and the nature of the route (specifically, the distance) influence the significance that airport charges play on a per route basis, whilst an airline's route network (and therefore the destinations it operates to) can impact total average airport charges per passenger.

In terms of the linkages between these airport charges and the air fares faced by passengers, the following have been observed:

Airlines price air fares according to market fundamentals

Numerous case studies demonstrate that the price of a seat can vary significantly depending on when the ticket is booked, time of travel and the levels of competition on the route. These variations in price are primarily driven by demand and supply factors, not the cost of operating the flight.

There are numerous factors that influence how an airline will respond to changes in costs

Airlines will monitor their costs at various stages of the planning and sales cycle and will consider their options in the wider context of their own business, the competition and the likely impact from their customers, i.e. passengers. In terms of likely outcomes, many cost changes go largely unnoticed by passengers, either because they are not passed through to fares or because they are relatively low or occur at times or in markets where demand is price inelastic.

Airlines do not always pass on cost changes to passengers

Several case studies in this report demonstrate occasions where changes in costs are not being passed through to passengers, whether positive or negative. In these situations, the airlines have taken a conscious decision to price to the market while taking into account small changes in operating cost base.

Airport charges play a relatively small role in determining the price of an air ticket

Historically, airport charges have been both less significant and less volatile than fuel, staff or aircraft-based costs. As such, these other costs have a greater influence on airline cost bases. However, even these costs are not directly linked to air fares paid, as carriers play a sophisticated game in optimising prices to respond to demand and competitive conditions. That is not to say that airport charges do not play any role, only that their significance should not be overstated relative to other factors.

Government taxes account for a significant portion of airline ticket fares in many countries

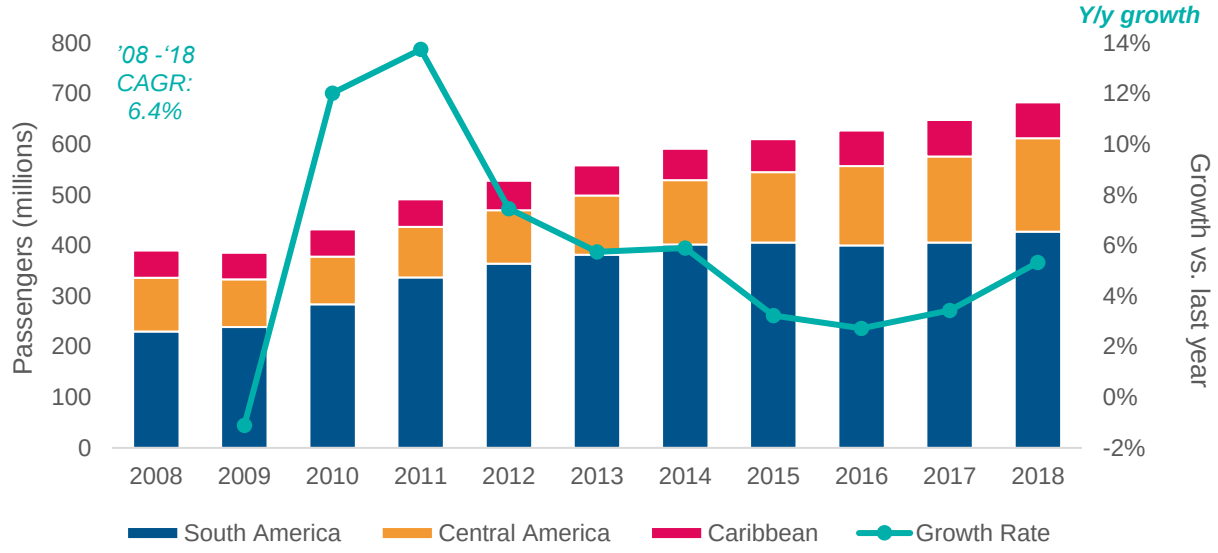
Government ticket taxes can account for a high, if not higher, portion of a ticket price than airport charges, and in some instances, the airline fare itself. Whilst Government ticket tax levels are varied between countries in the LAC region, the average level of taxation is typically higher than significant aviation markets in other regions of the world. Airlines either ‘pass through’ the tax directly on the ticket fare, or the cost is indirectly covered by the overall ticket fare.

2. Introduction and Context

Air travel in the Latin America-Caribbean (LAC) region has increased steadily across all three sub-regions (South America, Central America and the Caribbean) over the last decade. In 2018, LAC airport passengers reached 670m. Traffic in the LAC region is set for further growth. The region's overall low trips per capita, growing middle class and projected passenger growth has also attracted new low cost start-ups. According to Airbus, Latin American air travel is expected to double by 2037 due to anticipated growth of the region's middle class from 350 million people to 520 million by 2037. Although LAC appears to be one of the most promising growth regions in the world, it also appears to be most challenging aviation markets worldwide. The industry must face a range of challenges (e.g. Government taxes, airport capacity constraints) and a relatively low regional GDP growth rate forecast of 2.5%[1] compared to historical rates.

This study covers the geographic region of Latin America and the Caribbean[2]. The airline selection for the analysis is reflective of some of the region's largest markets: Brazil, Chile, Colombia, Mexico, Panama and Peru. The airlines were selected on the basis of airline size and the availability of public financial information.

Exhibit 1: Latin America & Caribbean Airport Passengers, 2008-2018



Source: PaxIS. Notes: based on PaxIS estimates. "Caribbean" segment includes U.S territories.

[1] IMF, World Economic Outlook, October 2019 (2019-2024 average growth rate)
[2] "Latin America & Caribbean" refers to Brazil, Mexico, Colombia, Argentina, Chile, Peru, Panama, Dominican Republic, Ecuador, Bolivia, Cuba, Costa Rica, Jamaica, Venezuela, Bahamas, El Salvador, Trinidad and Tobago, Belize, Guatemala, Aruba, Guadeloupe, Uruguay, Barbados, Honduras, Martinique, Haiti, Paraguay, Curacao, Nicaragua, Cayman Islands, Turks and Caicos Islands, Sint Maarten, Antigua and Barbuda, Saint Lucia, Bermuda, U.S Virgin Islands, Puerto Rico, Guyana, British Virgin Islands, French Guiana, Suriname, Grenada and South Grenadines, Bonaire, Saint Eustatius & Saba, Saint Kitts and Nevis, Saint Vincent and Grenadines, Saint Barthelemy, Saint Martin, Dominica, Anguilla, Montserrat, unless otherwise specified

Passenger numbers at Latin America-Caribbean airports have increased more than eightfold between 1991 and the present day, and have more than doubled since 2002. The major LAC economies dominate the market, with Brazil, Mexico, Colombia, Argentina, Chile and Peru accounting for 80% of passengers in 2018. Similarly, much of the capacity in the LAC region is made up by five largest airlines and airline groups; LATAM, Avianca, Gol, Azul and Aeromexico, with a combined capacity share of 53% of total departing seats in 2018. The top 10 airlines, including Volaris, Aerolineas Argentinas, COPA, Interjet & VivaAerobus, account for 73% of the region's capacity.

Air travel demand has increased at a rate of 6.4% CAGR over the last decade (2008-2018). This has been underpinned by a strong population growth (11% since 2008[3]) and rising income levels. The expansion of the global middle class has been another driver, doubling from 1.8 billion in 2009 to 3.8 billion in 2018, and now representing more than 50% of the global population[4].

Liberalization of the air transport market within the LAC region has also been a growth catalyst, yet there is still potential in this respect. Unlike the United States and Europe where there is single regulation for passenger rights, the regulatory aviation environment in the LAC region is complex since there is a range of rules at the national level that can vary considerably. The Latin America and Caribbean aviation community would likely benefit from greater consistency across more liberalized regulatory regimes. Similarly, the aviation community would benefit from decreases in Government tax levels, which are relatively high in Latin America and the Caribbean compared to other regions of the world.

Despite this period of sustained growth, where the real cost of air travel has been declining while the real purchasing power has been increasing, there have been suggestions that increasing airport charges have been a constraining factor. Addressing these concerns directly, this report will demonstrate the following:

1. **Airport charges are a relatively small share of airline costs** (Section 4.3)
2. **These charges have generally not been increasing over time** (Section 4.4)
3. **Government taxes frequently account for higher shares of international airline ticket fares than airport charges** (Section 5.1)
4. **In common with most competitive industries, prices are primarily a function of demand and supply, and changes in underlying costs are not automatically passed through to consumers** (Section 6)

[3] Population Division, Department of Economic and Social Affairs, United Nations, *August* 2019
[4] Homi Kharas, *"The unprecedented expansion of the global middle class",* Brookings, 2017

3. Airport Charges: some definitions

3.1. Not all charges incurred at an airport are the airport's responsibility

The term 'airport charge' needs to be clearly defined. 'Airport charges' are designed to recover the costs supported by an airport to provide facilities and services that **are paid by an airline to an airport**.

Airport Visiting Costs
Ground Handling typically paid to third parties
Government taxes typically intended for States
Airport Charges are charges set by an airport for the use of its runway and terminal facilities

The wider term 'Airport Visiting Costs' is used to include all of the costs that are related to landing and taking off from an airport, and **which includes costs and taxes that are not under an airport's jurisdiction**. Previous studies have conflated airport charges with Airport Visiting Costs, which can result in misleading conclusions. Government taxes (discussed in section 5) and ground handling should not be considered as an airport charge, since the airports have little to no influence on the price levels. This approach is consistent with how airports report revenues. Furthermore, some revenue categories can be passed directly through to another party (e.g. ATC related revenues are typically passed through to the ATC provider), and therefore airports generally do not benefit from these revenues.

3.1.1 Government Taxes

For the purposes of this report, taxation refers to taxes levied on aviation activities (a ticket, or a flight or a unit of cargo) for which no specific service is provided in exchange. The most common form of tax is applied to an airline ticket (i.e. collected by the airline and passed on to the government), and goes to central government's budget. In some countries, the state provides certain services at the airport for which they charge the airport operator – these are considered as part of 'Airport Charges' in our report (see section 3.1.3 below). In certain countries, security charges are set and provided by the Government or State and the airport has no say in these.

3.1.2 Ground Handling Charges

Ground-handling is undertaken by a range of parties across the LAC region on a country by country basis, including third party companies (independent of airport and airlines), airlines or by the airport operator. Airlines incur ground handling charges to pay for a wide variety of services required to operate flights from an airport. These services cover areas such as baggage handling, ramp handling, aircraft maintenance and cleaning, fuel provision and cargo handling. They can also cover passenger liaison and other supervisory services, including ticketing and passenger check-in and connection costs. Ground handling charges in the LAC region are not governed by a single piece of legislation (such as in Europe), but rather are set according to law at the national level. The extent of market liberalisation impacts the level of competition, and therefore the ground handling charges that airlines pay. Airlines may conduct groundhandling

activities themselves, or airlines and ground handlers may enter into private agreements and negotiate on pricing. Airlines are therefore likely pay different ground handling fees.

3.1.3 Airport Charges

The remainder of charges can be considered as 'Airport Charges' and cover the services and facilities expected of an airport operator, including the provision of airside infrastructure (runway, aprons, taxiways), terminal infrastructure and passenger processing.

3.1.4 Concession Payments

In some cases, airport charges must also cover annual concession fees paid by the airport operator to the Government. These payments are typically stipulated under the concession agreements that govern how private companies operate the airport. The nature of concession agreements and the payments included therein can vary widely, but a typical structure would include an upfront payment by the operator and then a volume-linked annual payment for the extent of the concession period. These annual payments can be significant and typically take the form of:

- Fee per passenger
- Revenue share
- Fixed annual payment

The concession agreement will also stipulate whether or not the annual payments are recoverable through airport charges. In the event that the payments are recoverable, the concession fees are included as an operating cost in the calculation of allowable revenues and will therefore directly impact the level of airport charges payable by airlines. This is the case in Montego Bay, for example. Where charges are not recoverable, the payments need to by paid out of the airport operators' profits. In either case, these charges are dictated by the terms of the contract and cannot be influenced by the operator once they have taken over operation of the airport.

The complexities of – often confidential - concession arrangements, with varying degrees of emphasis on annual versus initial payments, and different approaches to the recovery of these fees, make analysing the impacts of these arrangements on air fares challenging and outside of the scope of this report.

4. Airport Charges: Significance to Airlines and Trends over Time

This section analyses how significant airport charges are in an airline's cost base and how materially these change between different airline business models. Trends over time will also be presented, based on both airline and airport published data.

4.1. Airline Segmentation

Airlines typically employ highly specialized business models which seek to target a segment or area of the addressable market for passengers. An airline business model can be considered the sum of its route network, aircraft, target demographic and operating performance. While these factors can be combined across the industry in multiple permutations, and certainly distinctions continue to blur and evolve, industry analysts typically segment the sector into the following categories:

- Full Service Carrier (FSC or legacy carrier)
- Low Cost Carrier (LCC or low fare carrier)
- Regional Carrier
- Charter Carrier

In order to assess how significant airport charges are for airlines we have analysed annual reports and airline investor reports to extract information on the costs reported by airlines. Airline-reported data was analysed over the previous 10 years where available.

ICF selected a sample of Latin American airlines that broadly represent the two different airline operating models that are significant in the LAC region, and cover a number of different geographies, and for which good data could be sourced. The airlines were selected on the basis of airline size and the availability of public financial information.

The following table lists the airlines we have included in our analysis for each of the different business.

Exhibit 2: Airlines Analysed in this Study

	Airline	Comment
Full Service Carrier (FSC)	Aeromexico AM	Primary base at Mexico City Benito Juarez. Mexico's largest airline.
	Avianca AV	Primary base at Bogota El Dorado. Colombia's largest airline
	COPA CM	Primary base at Panama City Tocumen, has an extensive network in North America
	LATAM LA	LAC's largest airline, extensive international and trans-continental route network
Low Cost Carrier (LCC)	GOL G3	LAC's largest LCC, and second largest airline. Main hub is Sao Paulo Congonhas, Brazil.
	Interjet 4O	Primary base at Toluca (near Mexico City), with additional hubs at Mexico City & Cancun International
	Volaris Y4	Primary base at Mexico City

Note: Aerolineas Argentinas not analysed due to lack of sufficient public financial information available.

4.2. Significance of Airport Charges to Airlines

4.2.1 Approach to analysing airline costs structures

Airlines do not report their detailed cost items in a consistent way, complicating comparisons. Airport charges are rarely reported separately and are often combined with other cost items such as air navigation and ground handling. This is further complicated by the fact that some airlines account for some airport charge costs (e.g. passenger service charges) under a revenue category (albeit being netted off) rather than being reported as costs.

ICF have adopted two approaches to estimate the airport charges that airlines pay.

The first approach can be summarised as follows:

- Convert each airline's reporting structure into a consistent format
- Identify the cost item for each airline that contains 'Airport Charges'
- Estimate the share of this cost line that is actually accounted for by Airport Charges
- Triangulate with reported aeronautical yields by key airports

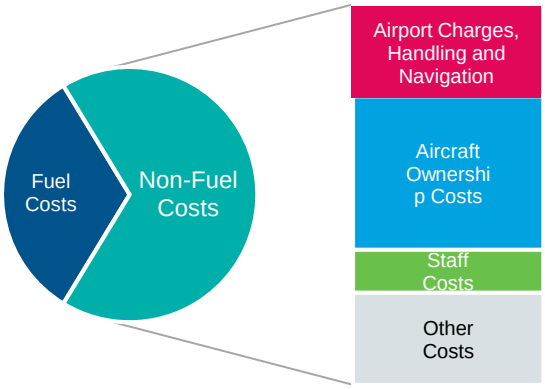
The second approach, to support and validate the analyses in the first approach, is summarised as follows:

- Identify each airline's top two domestic and international bases
- Calculate the domestic and international capacity shares of each of the top bases within the airline's network
- Calculate the average airport charge per passenger at the top two domestic and international bases based on standard domestic and international flight operations at those bases
- Calculate the weighted domestic and international airport charges per passenger separately, by applying the domestic and international shares of the top two bases within each category

- Calculate each airline's total average weighted airport charge per passenger, by applying the weighted domestic and international airport charges per passenger to each airline's domestic and international market shares

For the purposes of this study, ICF have adopted the following high-level cost structure in analysing airline annual reports. Whilst capturing the major cost categories, this approach was also consistent with how most airlines disaggregate their costs.

Exhibit 3: Airline Cost Structure

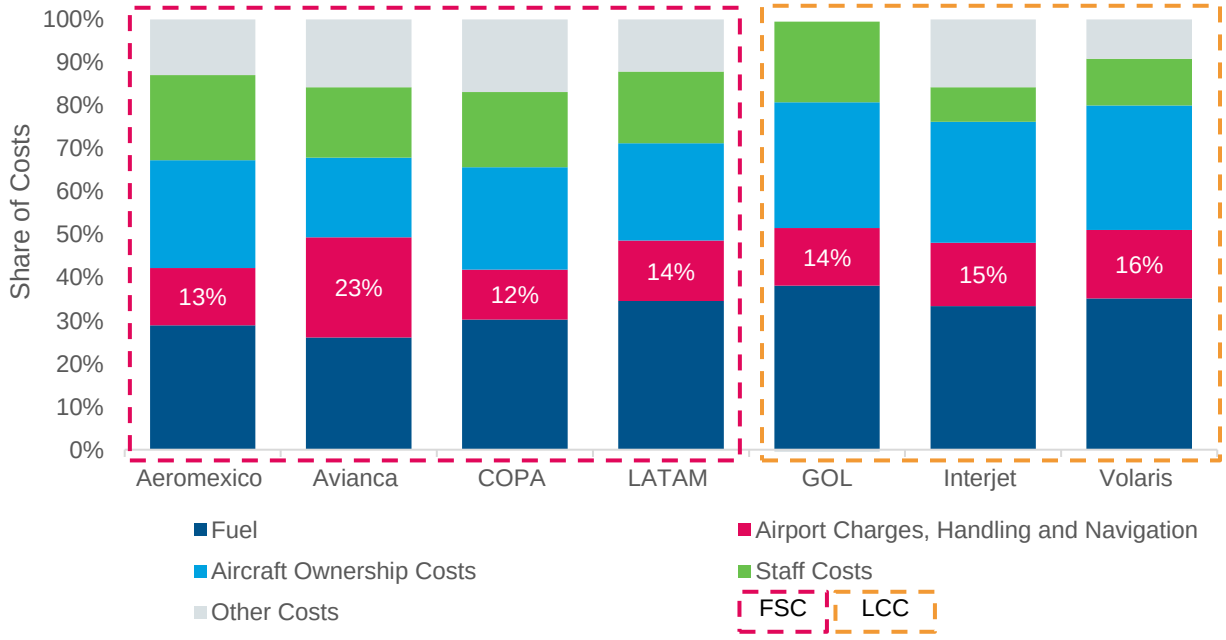


Airport Charges, Handling and Navigation	Airport-related costs (Airport charges, ground handling) and ATC costs (both en-route and tower)
Aircraft Ownership Costs	This includes all cost items related to the ownership and maintenance of aircraft. Ownership costs can be in the form of depreciation (for owned assets) and/or leasing costs (for leased aircraft). The bulk of these costs are incurred whether or not the aircraft flies
Staff Costs	Includes both fixed and variable staff costs
Other Costs	Mainly overhead costs, but also includes ▪ Distribution costs (cost of sale) ▪ Marketing/Advertising costs

Source: ICF analysis

Exhibit 4 shows the breakdown of annual airline costs by the categories laid out in Exhibit 3.

Exhibit 4: Share of Airline Costs in 2018 by Category



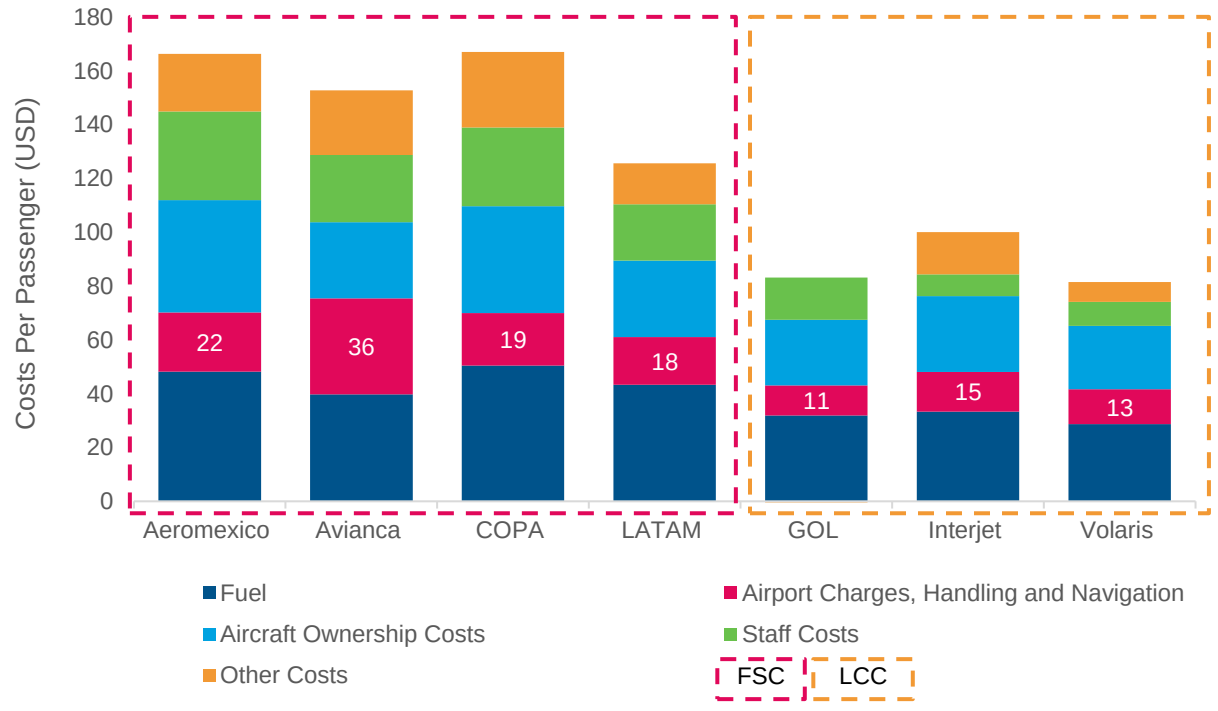
Source: Annual reports, ICF analysis

For most carriers, fuel costs, airport charges, handling and navigation costs, aircraft ownership and staff costs account for a significant majority of the cost base. GOL is a notable exception, mainly due to a nonrecurring positive result from the return and sale of aircraft which netted off the rest of the "other costs" in 2018. Although there is slight variation in the significance of the cost categories across the airlines, there does not appear to be very large differences.

The 'airport charges, handling and navigation costs' category comprises between 12-23% of the cost base for the airlines that were analysed. The share of this cost category does not appear to vary much by business model, because 'airport charges, handling and navigation costs' account for just 2-4% more of the overall cost base compared to the full-service carriers of Aeromexico, COPA and LATAM. Avianca is an exception, where the share of airport charges, handling and navigation costs accounts for a comparatively large share (23%) of the airline's total cost base. This could be because the cost item 'passenger services' in Avianca's annual report is included as part of the airline's 'airport charges, handling and navigation' cost category. The airline reported that 'Passenger services' can include ticketing, passenger check-in, baggage handling, passenger connection & other resource-sharing activities, and may involve offering these services to other airlines within their bilateral alliances.

Exhibit 5 shows per passenger costs by airline. Unit costs (per passenger) are typically a function of both the business model (full service carriers tend to have higher fixed costs than LCCs for example) but also of the length of haul. The higher costs per passenger for the full service carries is therefore partly explained by virtue of their higher average sector length.

Exhibit 5: Airline Costs per Passenger in 2018 by Category

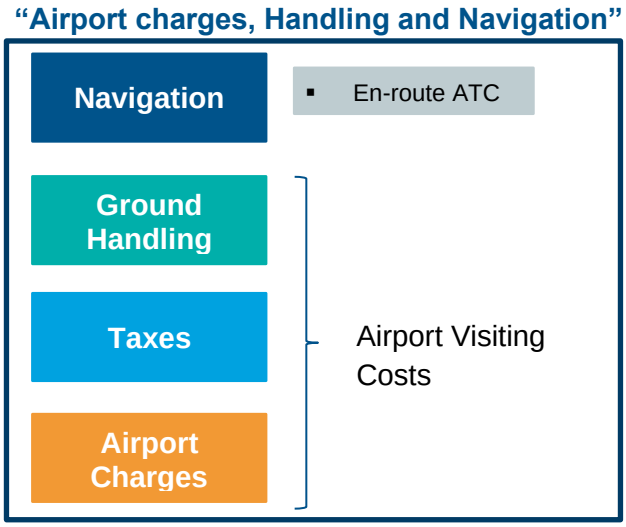


Source: Annual reports, ICF analysis

4.2.2 Estimating the share of airport charges in an airline's cost base

Airport charges are rarely explicitly referred to in airlines' annual reports, and they often appear in combination with ground handling and/or air navigation costs. The relationship between the 'Airport charges, Handling and Navigation' category, the 'Airport Visiting Costs' and 'Airport Charges' are displayed graphically below.

Exhibit 6: Airport Charges as Share of Airport charges, Handling and Navigation Costs



Source: ICF

Where an airline reports airport charges in combination with another category of airport visiting costs/other charges, we have estimated the share of the cost item that is accounted for by airport charges. Exhibit 8 below describes how the selected airlines report the item airport charges. The estimate of the airport charges are based on these categories by following the first analytical approach as described in section 4.2.1 above. We also referred to data points from other airlines' annual reports that were relevant based on similarity of airline business models.

Exhibit 7: Airline's Estimated Airport Charges and Annual Report Item Containing Airport Charges

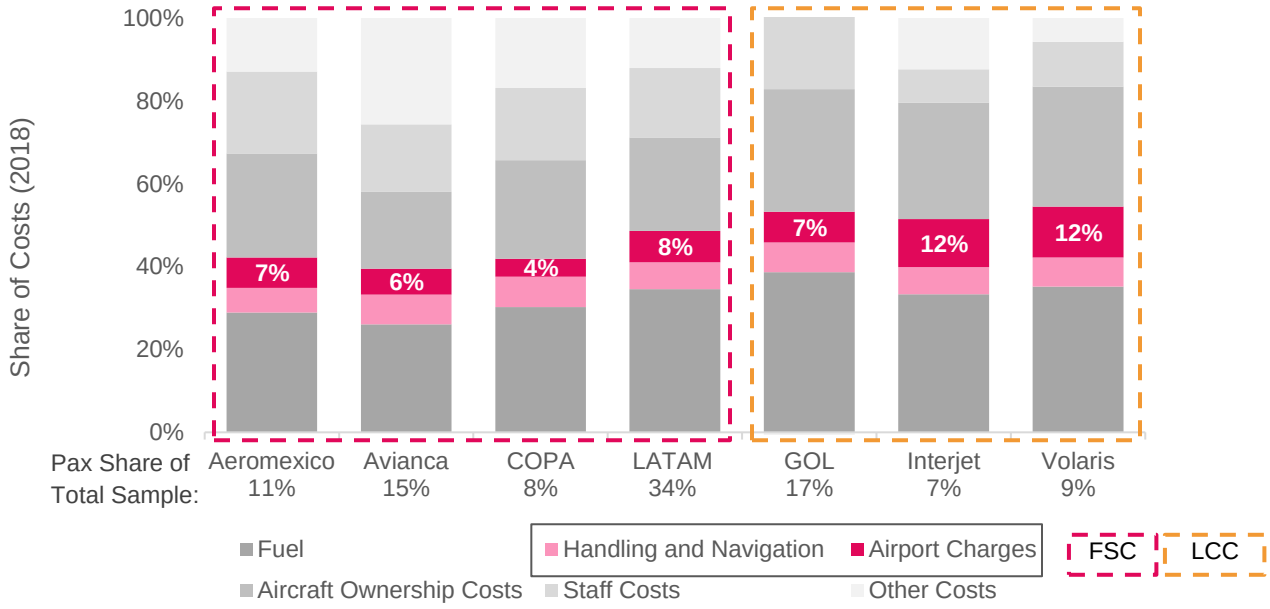
Airline	Airport Charges USD per Pax	Airport Charges % of Total Costs	Estimation Basis
Aeromexico (AM)	12	7%	• 'Ground Connections and Navigation' cost item • Aero yields at MEX, MTY, LAX
Avianca (AV)	10	6%	• 'Navigation' cost item • Aero/pax at BOG, LIM, SAL
COPA (CM)	7	4%	• 'Airport facilities & handling charges' cost item • 'Landing fees & other rental' cost item • Handling charges at LIM (due to in-depth data availability)
LATAM (LA)	9	8%	• 'Other rental and landing fees' cost item • Aero yield info at LIM
GOL (G3)	6	7%	• 'Landing fees' cost item
Interjet (4O)	11	12%	• 'Airport operating and landing fees' cost item
Volaris (Y4)	10	12%	• 'Landing, take-off and navigation expenses' cost item
Weighted Ave.	**9.3**	**7%**	

Source: Annual reports, ICF analysis

Exhibit 8 above represents our best estimate at the airlines' airport charges, but there are unavoidable uncertainties in the calculation due to the inconsistent approach that airlines report their expenses. Aeromexico, for example, report a cost item called 'Ground Connections and Navigation' which is likely to include airport charges amongst other costs. Avianca is another airline example where it is difficult to disaggregate airport charge costs, as the relevant line item in the annual report includes 'ground ops', 'flight ops' and 'passenger services' combined. In these instances, we have had to rely more heavily on the second analytical approach as described above, i.e. the reported aeronautical yields at its main airport bases, weighted by airport capacity share within the airline network, and by airline domestic/international profile.

Exhibit 9 below illustrates the variation of the levels of airport charges incurred by airlines from $6 - $12 per passenger, representing between 4% and 12% of the airlines' cost base. There is no clear trend of airport charge levels between mainline carriers and LCCs in the LAC region. One influencing factor on an airline's average airport charge per passenger is the local airport charges paid within the airline's route network. This could be why Interjet and Volaris, both LCCs, appear to have higher airport charges per passenger compared to GOL, a Brazilian LCC. Furthermore, the widespread practice of discounting charges for domestic passengers and connecting passengers will also play a role in the overall costs incurred by carriers.

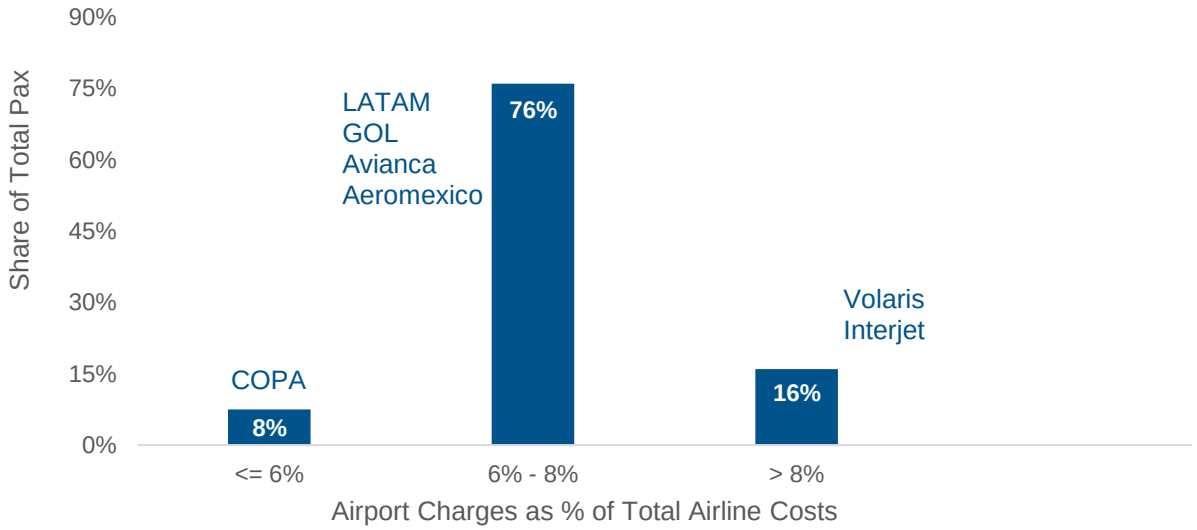
Exhibit 8: Estimated Share of Airport Charges of Total Costs



Source: Annual reports, ICF analysis. Based on 2018 annual reports.
Note: "Pax Share of Total Sample" represents the share of traffic of each airline within the combined total traffic of the seven airlines analysed in this study.

Based on our sample set of seven airlines, Exhibit 9 is a histogram that shows almost 80% of the total sample passengers are carried on airlines where airport charges represent between just 6% and 8% of their total cost base.

Exhibit 9: Histogram: Share of Total Sample Pax, by Airport Charge Share within Airline Total Cost

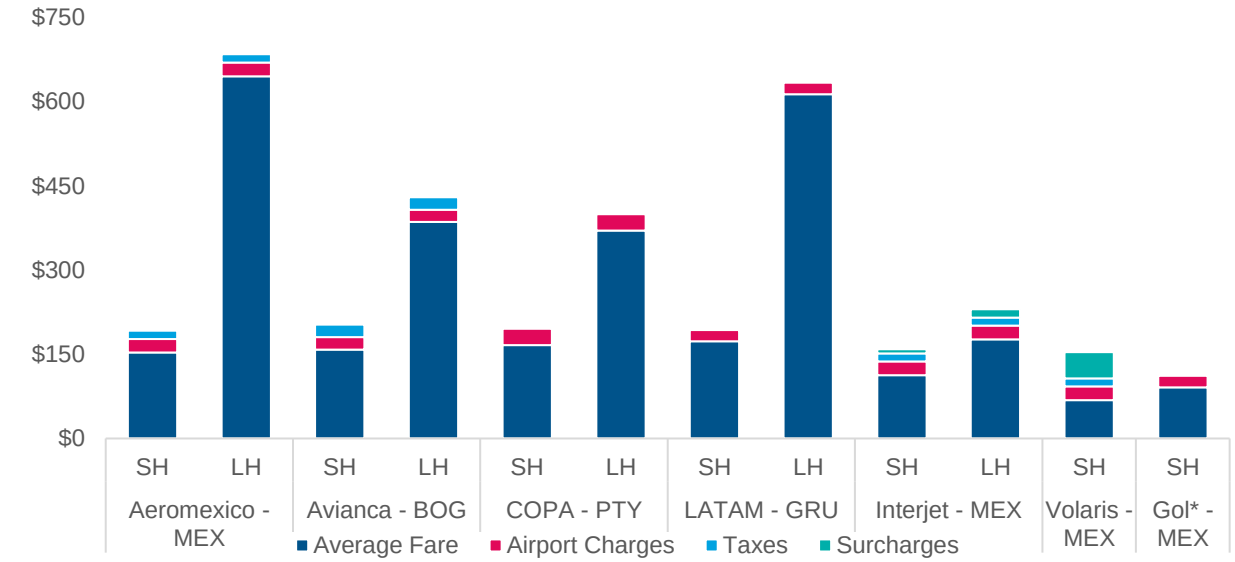


Source: Annual reports, ICF analysis. Based on latest available annual report.

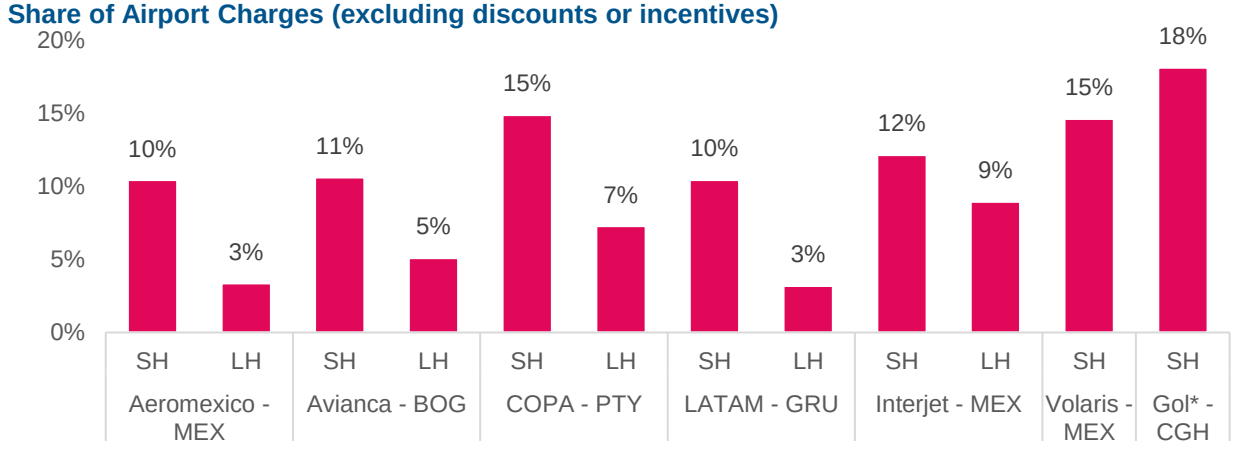
4.2.3 Influence of the length of haul on the significance of airport charges

The relative importance of airport charges as a share of the total price of an airline ticket also depends on the haul. Exhibit 10 shows average air fares of major Latin American and Caribbean airlines at their main base, plus airport charges, taxes and surcharges. For mainline carriers as well as Interjet, airport charges constitute a smaller share of the total price on long haul markets than on short haul markets, despite on average higher airport charges for long haul operations. Long haul routes are defined as being over 2,500miles, whilst short haul routes are less than 1,000miles. Airline fuel surcharges is an extra charge which was introduced due to oil price volatility, no standard is imposed to airlines on the fuel surcharge value, consequently there is variability on the way airlines charge for air fare itself and the fuel surcharges.

Exhibit 10: Average Cost of a One-Way International Ticket from each Airline's Base



Share of Airport Charges (excluding discounts or incentives)



Source: IATA PaxIS, ita Matrix, Airportcharges.com, ICF analysis
Note: Airlines main bases: MEX: Mexico City, BOG: Bogota, PTY: Panama City, GRU: Sao Paulo Guarulhos. Average Fare data based on 12 months up to August 2019. All destinations are international. Volaris does not operate flights >2500miles (i.e. LH Flights). Tax shown is average of both-ways. *Gol data is for domestic only
Criteria: Short haul flights <1,000 miles, Long haul flights >2500 miles

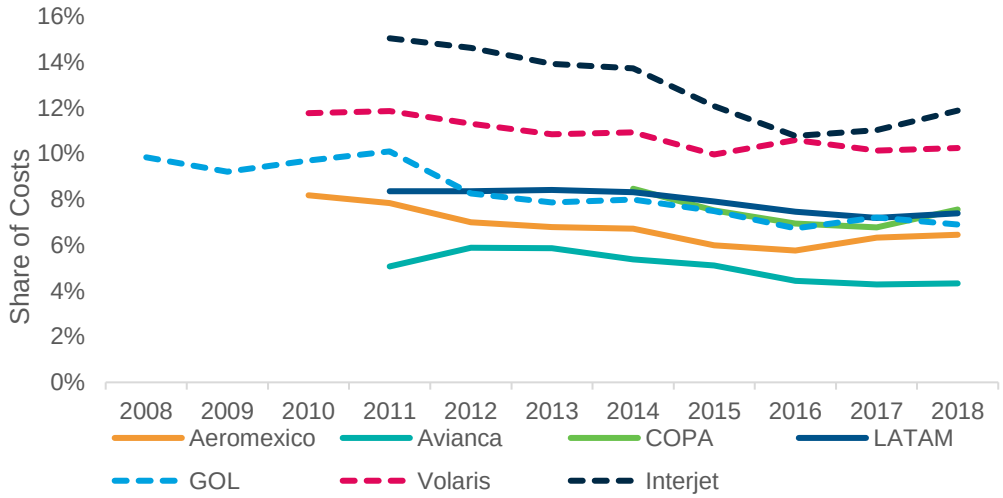
As demonstrated above, airport charges represent between 3% and 18% for all the airline-route combinations analysed. It is also clear that airport charges typically represent a much smaller share of long-haul operations, representing around 5% of air fares compared to 10%-15% for international short haul operations. Airport charges are generally higher on long haul operations than short haul operations due to the higher landing fees (often correlated to the size of the aircraft, such as using MTOW bands). However, the evidence above suggests that this differential is far less than the typical differential in ticket prices (on long haul versus short haul), and therefore comparatively less variability in airport charges than ticket fares as haul length increases.

4.3. Trends in Airport Charges over Time

4.3.1 Analysis of airline-reported data

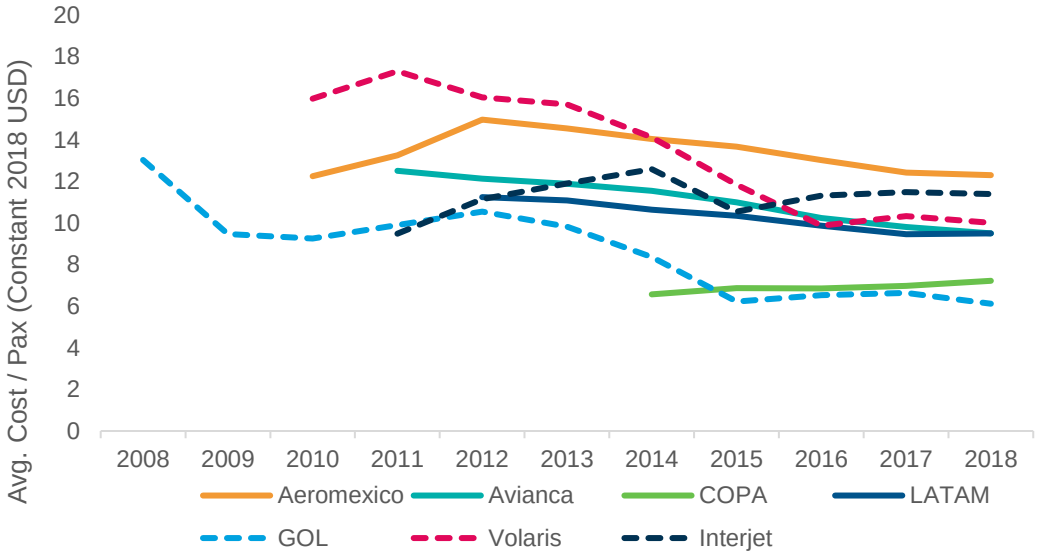
Analysis of airlines' reported costs over time does not reveal a significant shift in the share of costs represented by airport charges. In the exhibits below, airport charges refer to payments made to an airport as detailed in Section 4.1. Historical trends in the share of airport charges are based on the trends observed in the airline-reported cost item that includes airport charges.

Exhibit 11: Estimated Share of Airport Charges* by Airline



Source: Annual reports, ICF analysis
Notes: *Estimates are based on a share of the cost item containing airport charges as reported in the annual report of the airline. Aero yields at main bases were also used for reference where necessary.
For Volaris this is Landing, Take-off and Navigation; Airport Operating and Landing Fees for Interjet; Ground Connections and Navigation for Aeromexico; Other Rental and Landing Fees for LATAM; Landing Fees for GOL, Air Traffic for Avianca, Airport Facilities and Handling Charges for COPA
Time series of airport charges shown based on publicly available data. Historical trends in the level and share of airport charges are influenced by the trends observed in the airline-reported cost item that includes airport charges, and sometimes by aero yields at airline main bases.

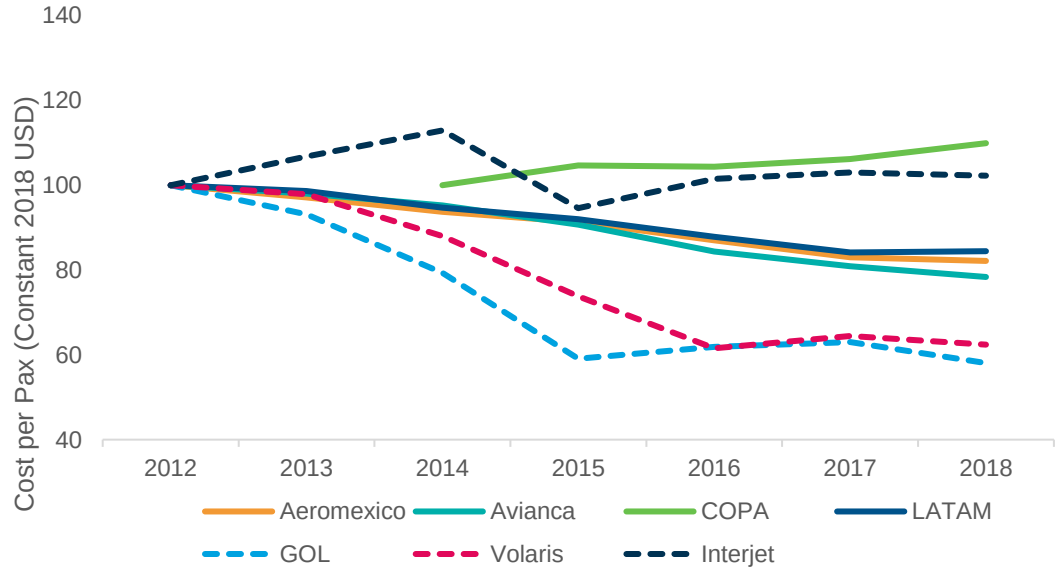
Exhibit 12: Estimated Airport Charges per Passenger by Airline



Source: Annual reports, ICF analysis
Notes: Estimates are based on a share of the cost item containing airport charges as reported in the annual report of the airline. Aero yields at main bases were also used for reference where necessary.
For Volaris this is Landing, Take-off and Navigation; Airport Operating and Landing Fees for Interjet; Ground Connections and Navigation for Aeromexico; Other Rental and Landing Fees for LATAM; Landing Fees for GOL, Air Traffic for Avianca, Airport Facilities and Handling Charges for COPA
Time series of airport charges shown based on publicly available data.

As far as we can tell from the data provided by, and reported by, airlines, airport charge categories have trended downwards for most of the airlines since 2012.

Exhibit 13: Indexed Growth of Estimated Real Airport Charges per Passenger. Index (2012 = 100)*



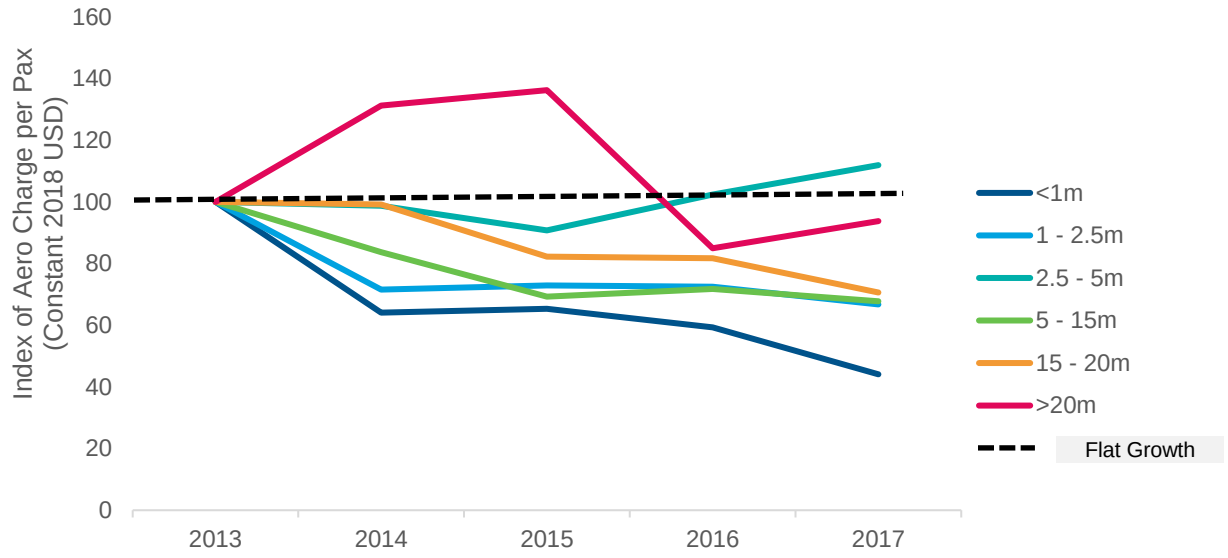
Source: Annual reports, ICF analysis
*COPA is indexed from 2014 onwards due to change in cost item reporting in Annual Report

4.3.2 Analysis of airport-related data

To corroborate our analysis on the historical trends in airport charges we have also analysed airport-reported aeronautical yields (revenue per passenger). Other studies of this nature have focused on the evolution of published tariffs over time, but this approach ignores important factors such as discounts, incentives and rebates offered by airports, long-term airline deals (sometimes entirely independent of the published tariff) as well as the traffic mix that will influence the net result for an airport and airline.

Aeronautical yield analysis on the other hand more truly represents the prices that airlines pay (net of discounts, etc). We have based our analysis on aeronautical revenue data provided by ACI between 2013-2017 on an individual airport level. Exhibit 14 shows the indexed growth of the total average aeronautical revenue per passenger for all airports in LAC. The level of airport charges decreased in five of the six airport size categories between 2013-2017, with the largest decrease in the "<1m" airport size category. The Exhibit shows a decreasing trend of average airport charges over time, which is consistent with the downward trend identified in Exhibit 14 (that airport charge categories have trended downwards for most of the airlines).

Exhibit 14: Real Aeronautical Revenue per Passenger (Yield) of LAC Airports by Pax Size Segment



Number of Airports included in the analysis in the Exhibit above:

Country	2013	2014	2015	2016	2017
<1m	93	90	88	88	88
1 - 2.5m	24	26	27	27	27
2.5 - 5m	14	15	16	16	16
5 - 15m	14	13	13	13	12
15 - 20m	5	6	6	4	3
>20m	3	3	3	5	7
Total	**153**	**153**	**153**	**153**	**153**

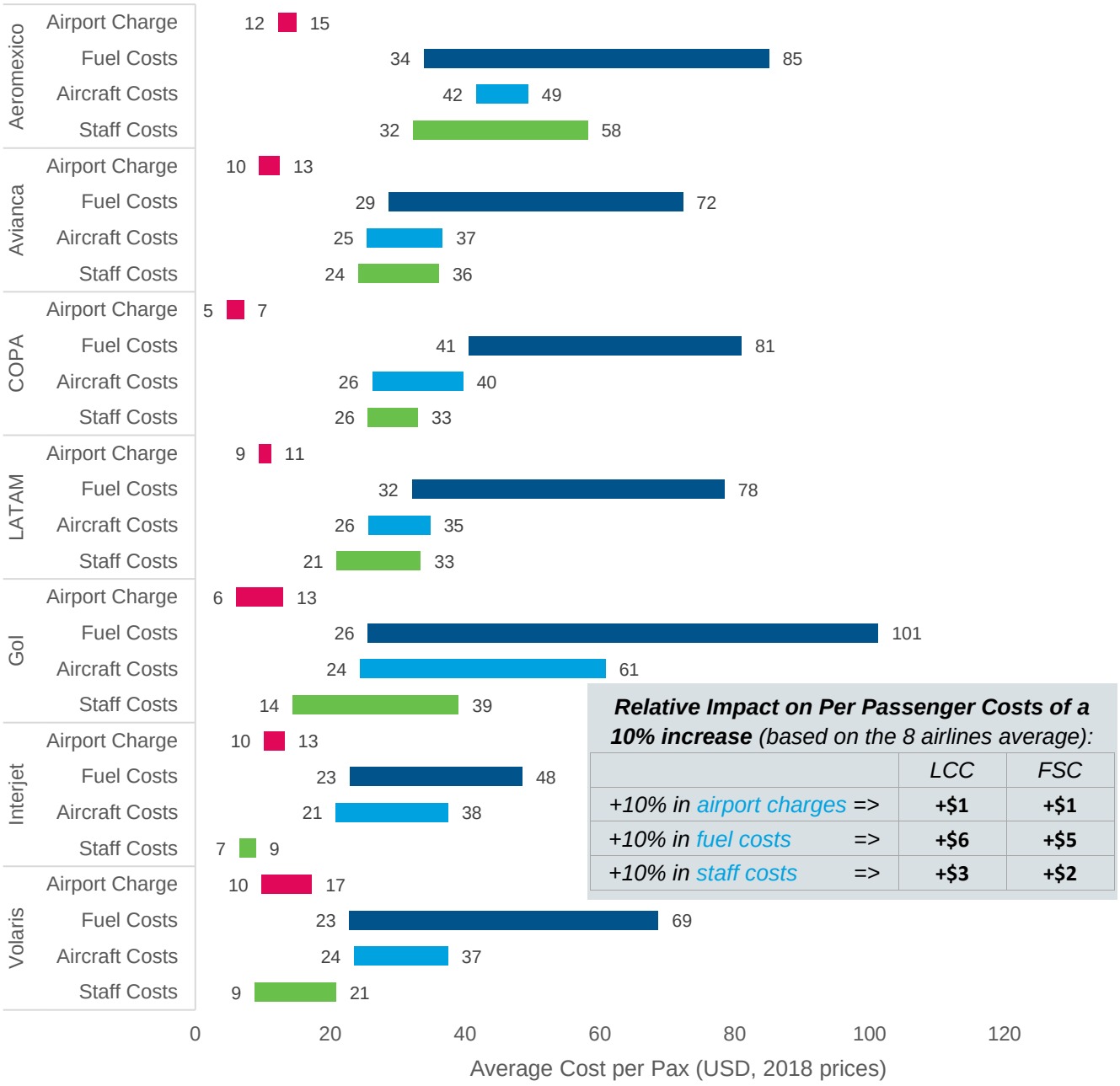
Source: ACI, ICF analysis, WorldBank (for US Inflation Data), IMF (for SDR exchange rates)
Note: Excludes airport data where revenues were reported in ARS, AWG, JMD, GYD and ANG currencies due to high volatility in exchange rates and data availability. Indexed growth trend is based on prices that are constant USD 2018 prices (i.e inflation has been accounted for).

4.3.3 Other airline cost lines are more significant and more volatile

We have shown that, in general, airport charges have remained relatively stable in terms of their share and in their level. This, combined with a relatively low share of costs in the first instance, mean that variations have been small in absolute terms, and demonstrates that airlines are not generally facing more costly access to airports.

This is in stark contrast to the level and volatility observed in the other components of an airline's cost base, as shown in the following Exhibit.

Exhibit 15: Variations over Time of Different Cost Items



Relative Impact on Per Passenger Costs of a 10% increase *(based on the 8 airlines average):*

	LCC	FSC
+10% in airport charges =>	**+$1**	**+$1**
+10% in fuel costs =>	**+$6**	**+$5**
+10% in staff costs =>	**+$3**	**+$2**

Source: Annual reports, ICF analysis

Note: Time period of the data analysed depends of the availability of data per airlines: 2008-2018 for Copa and Gol, 2010-2018 for Aeromexico and Volaris, 2011-2018 for Avianca and Interjet, 2012-2018 for LATAM.

The exhibit above shows the relative size of cost categories, and their volatility over the past 8-10 years. As demonstrated in the example above, a large change in a small category, such as airport charges, is unlikely to have a material impact on an airline's cost base. On the other hand, even small changes in a costly item, such as fuel, can have significant impacts on the total cost base.

The variations in the other cost components are also many orders of magnitude higher than for airport charges. Over the analysis period, for example, fuel prices have varied from $40 per barrel to a peak of $130 per barrel, a peak to trough variance of over 300%. In other categories, airlines have continued to gain efficiencies in staffing levels, booked load factors and aircraft utilisation, which can help drive improvements in unit costs.

4.4. Airport-related Costs

The charges an airport can levy on an airline can be subject to regulation, the nature of which can vary between countries and even within countries. The structure of tariffs and the extent to which the tariffs are differentiated can also vary significantly. In this section we consider the range of published tariffs in operation in Latin America.

4.4.1 Airport charge categories

Up to this point, airport charges have been considered as a single item. They do, in fact, cover an assortment of charges which are incurred by an airline when using an airport. According to ICAO they can generally be broken down into the following categories:

- Landing charges (Including lighting and approach/aerodrome control charges),
- Parking and Hangar charges
- Passenger service charges
- Cargo Charges
- Aviation Security charges
- Noise-related charges
- Emission-related charges
- Other charges on air traffic operations.

Landing, parking and noise/emission related charges are typically applied to an aircraft movement (either landing, take-off or both). Landing and parking charges typically vary by size of aircraft, while noise and emissions charges will be directly correlated to the noise and emission-generation of the aircraft types. Since these charges are levied on the aircraft, the per-passenger amount will vary depending on the number of passengers onboard. Ground Air Traffic Control services are typically the responsibility of the airport and the cost of this can be recovered as part of the general airport charges or as a separate charge component.

Passenger service charges and security charges are typically charged on a per-passenger basis (departing, arriving or both). Security charge, which covers for instance passenger and luggage screening services, can be part of the general Passenger Service Charges or in some cases it is isolated as a separate charge. Often discounts are provided for domestic passengers or connecting passengers.

Also, in addition to charges for use of the airside and terminal infrastructure, many airports provide common use facilities (such as check-in desks and boarding gate terminals) to their airline user, and to cover this cost apply a Common use charges.

4.4.2 Distribution of airport charge categories

The table below illustrates the range of charging levels across LAC airports based on published tariffs, grouped into different categories. The table shows that on average, landing & passenger service charges typically account for a significant share (91%) of total airport-related costs.

Most airports have a separate charge for security charges and infrastructure charges. When differentiated, Security charges can represent, on average, 8% of the total airport charge at the 17 airports that apply security charges. Infrastructure charges on the other hand represent, on average, just 5% of total airport charge where they are disaggregated. eview

Exhibit 16: Distribution of Airport-Related Costs

	Typical Charges per 2-way Pax (Avg[1])	**Airports with disaggregated charge** (out of 28)	**Typical %*** (for airports with a disaggregated charge)
Landing & Passenger Service Charges	$18.40	28	91%
Security charges	($1.17)	17	8%
Infrastructure (Jet Bridges, Apt Improvement Fees)	($0.83)	21	5%

Source: Published airport tariff documents, airportcharges.com
Notes: *%s will not sum to 100% since the %s only refers to the airports which have differentiated charges for that category. based on charge per 2-way passenger for a A320-200 short haul international rotation in summer at 28 Latin American and Caribbean airports.

On average, the ‘regulated airport charge’ (Landing & Passenger Service Charges) represents 91% of the total airport charge. It can vary between 100% (e.g. Rio De Janerio (GIG) and San Salvador (SSA) in Brazil), who include security charges within the regulated landing and passenger fee) to ~50% (e.g. the infrastructure and security charges at Kingston, Jamaica (KIN) account for ~30% and ~20% of the total airport charge respectively).

4.5. Section Summary

The levels of airport charges incurred by airlines varies significantly, from less than $6 - $12 per passenger depending on the airline. This represents between 4% and 12% of the airlines' cost base. The weighted average airport charge per passenger across the target airlines in this study is $9, equivalent to 7% of total costs. Factors influencing an airline's average airport charge per passenger include the local airport charges paid within the airline's route network, and the widespread practice of discounting charges for domestic passengers and connecting passengers. Furthermore, the relative importance of airport charges as a share of the total price of an airline ticket also depends on the haul.

This section also highlights two key trends. First, as far as we can tell from the data provided by, and reported by, airlines, airport charge categories at all airlines analysed have either remained broadly flat, or trended downwards since 2012. This is contrasted by observed trends in other cost categories including fuel, staff and aircraft related costs, which have shown far greater volatility. The second trend identified is consistent with the first trend, that average airport charges per passenger in the LAC region have generally decreased between 2013-2017. The level of airport charges decreased in five of the six airport size categories with the largest decrease in the "<1m" airport size category.

5. Government Taxes

5.1. Taxes

Local authorities, national governments and regulatory bodies impose taxes on airport customers in some jurisdictions. Aviation may be subject to different types of taxes depending on the jurisdiction, and these include; ticket taxes, value added tax, taxation on aircraft fuel, environmental tax, and air cargo tax. These taxes are introduced for a variety of reasons. Most are designed to contribute to public finances, others as a funding mechanism for airport-related infrastructure and services whilst some are imposed on environmental grounds. Some taxes are even designed to promote tourism, which may seem counterintuitive. Despite cost items often being described as “airport taxes” and included in benchmarking studies of airport charges, many of these taxes are collected by the airline directly from the passenger. In cases where the airport is responsible for collection, the revenues are typically passed on to the body responsible for administering the tax and have no contribution towards airport net revenue. In fact, the existence of these taxes is often a detriment to the airport as it artificially curtails demand for air transport services. Both airlines and airports have a history of cooperating to advocate against taxes which are introduced to provide another source of revenue to national governments and are not strictly predicated on the needs of the aviation industry.

5.1.1 Ticket Taxes in Latin America & Caribbean

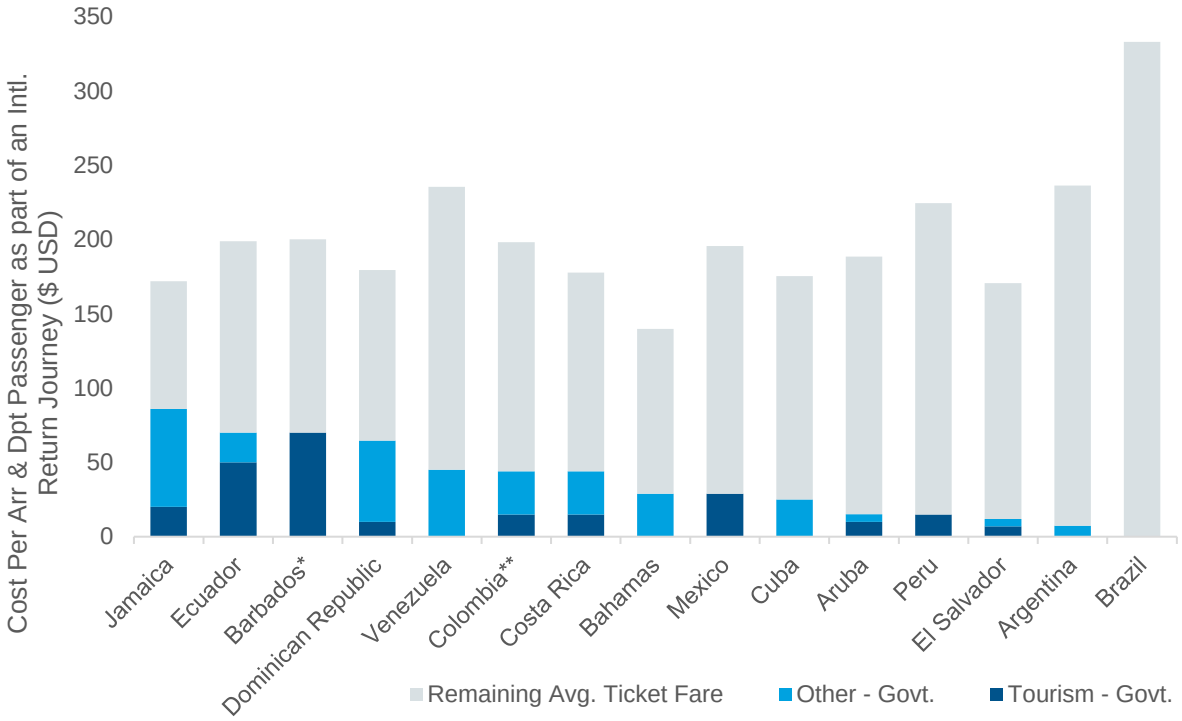
Government taxation is common practice in the Latin American and Caribbean region. In many airports across the Latin America and Caribbean region, Government ticket taxes can account for a high, if not higher, portion of an airline ticket fare than airport charges. Exhibit 18 illustrates the relative significance of aviation taxes in many countries in the LAC region, as it shows the average proportion of an international ticket fare that Government ticket taxes typically account for.

Governments can levy one or a range of ‘ticket taxes’ on air travel (mostly on international travel), which are typically passed directly through to the passenger’s ticket fare. Governments tax air travel for a range of purposes, and ticket tax examples include: ‘Airline Passenger Levy’ in Jamaica, ‘Travel and Tourism Development Fee’ in Barbados and ‘Government Health Insurance Charges’ in Cuba. Given there are various tax exemptions within each jurisdiction, not all passengers pay the same level of taxes or the same taxes at all.

Whilst direct taxes (e.g. ticket taxes and VAT) are typically shown on the air fare ticket price, indirect taxes such as fuel tax and air cargo taxes are generally not. These taxes normally fall within the airline’s cost base (unless an airline includes a fuel surcharge separately) and are typically covered by the base ticket fare.

Some taxes such fuel taxes can impact an airline’s cost base quite substantially. The Brazilian state Government recently cut the rate of sales tax on fuel by half (25% to 12%) in February 2019, and it will be the airlines’ decision as to whether this change in cost is reflected in lower ticket prices.

Exhibit 17: International Govt. Taxes by Largest LAC Markets (Return International Journey)



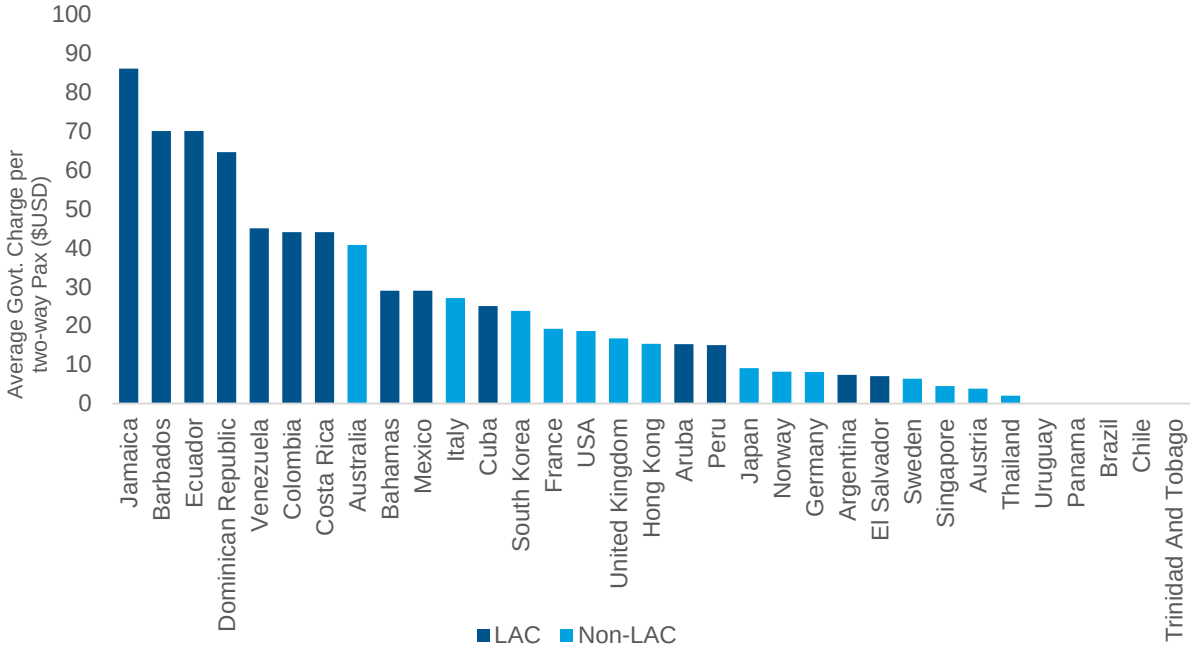
Source: ICF analysis, ita Matrix, Airportcharges.com, airport charges publications, PaxIs
Notes: Only countries that are within the top 20 largest international LAC markets and who impose international ticket taxes are shown. Tax rate levels as of November 2019. This list is not exhaustive, and these rates may not apply to every arriving/departing passenger. The tax level paid may vary due to the passenger's exact journey itinerary and changes in exchange rates. Unique charging rules may apply to specific routes, which may not be shown here.
Tourism Fee International included; applies when journey point of origin is Ecuador.
* USD$70 Travel & Tourism Development Fee included; applies to travel outside CARICOM-Caribbean Community
** USD$29 Resident Exit tax included; also applies to visitors who stay in Colombia for over 60 days
[1] Estimated average international air fare (both-ways) in July 2019 (source: PaxIs).

The exhibit above illustrates that ticket taxes vary quite significantly within the LAC region at countries where ticket taxes do exist, from less than $10 per two-way passenger to, in some instances, over $100 per two-way passenger. In a few markets such as Ecuador and Jamaica, Government ticket taxes account for a significant share - over 50% - of the average international ticket price.

Not only is there significant variation of Government ticket taxes within the LAC region, but the average level of taxation is typically higher than other significant aviation markets in other regions of the world. Whilst Australia's average tax amount of approximately $40 for a two-way SH international passenger is the highest between the non-LAC countries, there are seven jurisdictions in the LAC region with higher average levels. However, countries in the LAC region generally do not have different tax rates for different flight sector lengths, whereas this is more common in other regions of the world. For example, the UK's Air Passenger Duty per departing passenger for a flight less than 2,000 miles (in the lowest available cabin class) is approximately $17 (£13), versus $100 (£78) for a flight over 2,000 miles. Similarly, the German Air Transport

Tax per departing passenger for a short-haul flight less than 2,500km is approximately $8 (€7.5), versus $46 (€41) for a long-haul flight over 6,000km[5].

Exhibit 18: Benchmarking of Estimated Ticket Taxes on Short Haul International Return Journey



Source: ita Matrix, airport charge documents
Notes: data is as of November 2019. Uruguay, Panama, Brazil, Trinidad and Tobago not shown. Short-haul = flight distance less than 2,000miles. Non-LAC countries included are those within the world's top 20 largest markets and who impose ticket taxes.

Appendix A1 contains a list of aviation taxes in the largest aviation markets both in the LAC region and the rest of the world.

5.1.2 Value-Added Tax (VAT)

Many countries within the LAC region also impose VAT on air fares, both domestic and international. However, according to ICAO (policy doc 8632[6]), the 'normal practice with respect to the sale or use of international transport is to [apply a] zero [VAT] rate'. As well as imposing VAT on air fares, Governments may also impose VAT on fuel, or on charges such as airport charges, air navigation charges or service fees. The Exhibit below shows the effective VAT rates on domestic and international flights in the LAC region, as well as similar taxes in the world's largest aviation markets. What is noticeable is that it is not uncommon practice in the LAC region to charge VAT on both domestic and international flights compared to outside the LAC region, where European countries follow ICAO's guidelines by not charging VAT on

[5] Germany's coalition government reportedly revealed plans to raise the aviation tax from April 2020 onwards (short haul flight at €13, long haul flight at €59)

[6] ICAO's Policies on Taxation in the Field of International Air Transport, 3rd edition, 2000

international air transport. Some countries apply reduced rates (e.g. Mexico), whereas other countries apply general VAT rates up to 19%.

Exhibit 19: VAT (Sales) Tax by Largest Countries in LAC Region and Rest of World

Country	International	Domestic
Argentina	7.0%	Range of VAT values
Aruba	-	NA
Bahamas	-	7.5%
Barbados	15.0%	NA
Brazil	-	-
Chile	-	-
Colombia	19.0%	19.0%
Costa Rica	4.0%	4.0%
Cuba	-	-
Dominican Republic	18.0%	NA
Ecuador	12.0%	12.0%
El Salvador	13.0%	NA
Jamaica	-	-
Mexico	4.0%	4% - 16%
Panama	7.0%	7.0%
Peru	18.0%	18.0%
Trinidad And Tobago	12.5%	NA
Uruguay	7.5%	NA
Venezuela	15.0%	NA
Australia	-	10%
Canada*	-	5-10%
Germany	-	19%
Indonesia	10%	10%
Italy	-	10%
Japan	8%	8%
Spain	-	10%
Vietnam	-	10%

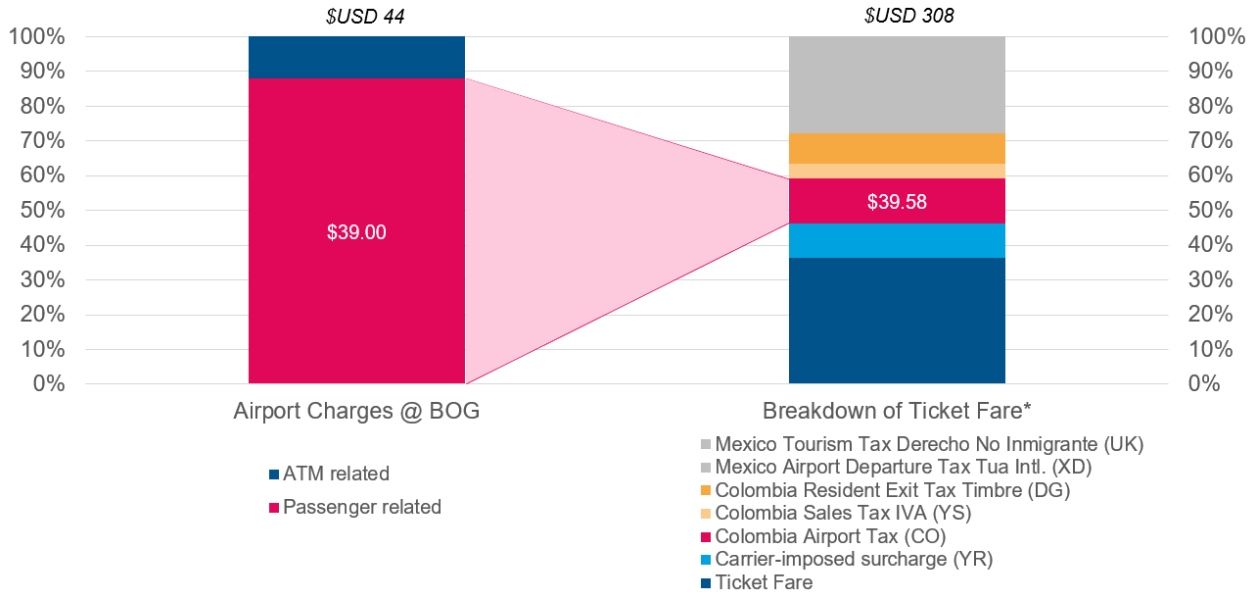
Source: Grant Thornton (International Indirect tax guide, 2018), vatlive.com, European Commission, news reports
Note: Non-LAC countries included are those within the world's top 20 largest markets and who impose VAT on air travel *Canada includes different rates for its Goods and Services Tax, Canadian Harmonized Sales Tax and Quebec Sales Tax

5.1.3 Case Study: Airport Charge Direct Pass-Through

The method in which airlines decide to build up their fares can influence what cost charges appear on a ticket fare, and whether airport charges are passed through directly or not.

InterJet's ticket fare breakdown on its MEX-BOG service is one example of a direct pass-through of a passenger airport charge to the air fare. Some airport charges (on the ticket fare displayed by ita Matrix) appear to be labelled as taxes (e.g. Colombia Airport Tax (CO) in the Exhibit below), but are in fact related to the operation of the airport (albeit a pass-through cost) and as such fall under ICF's definition of 'airport charges'.

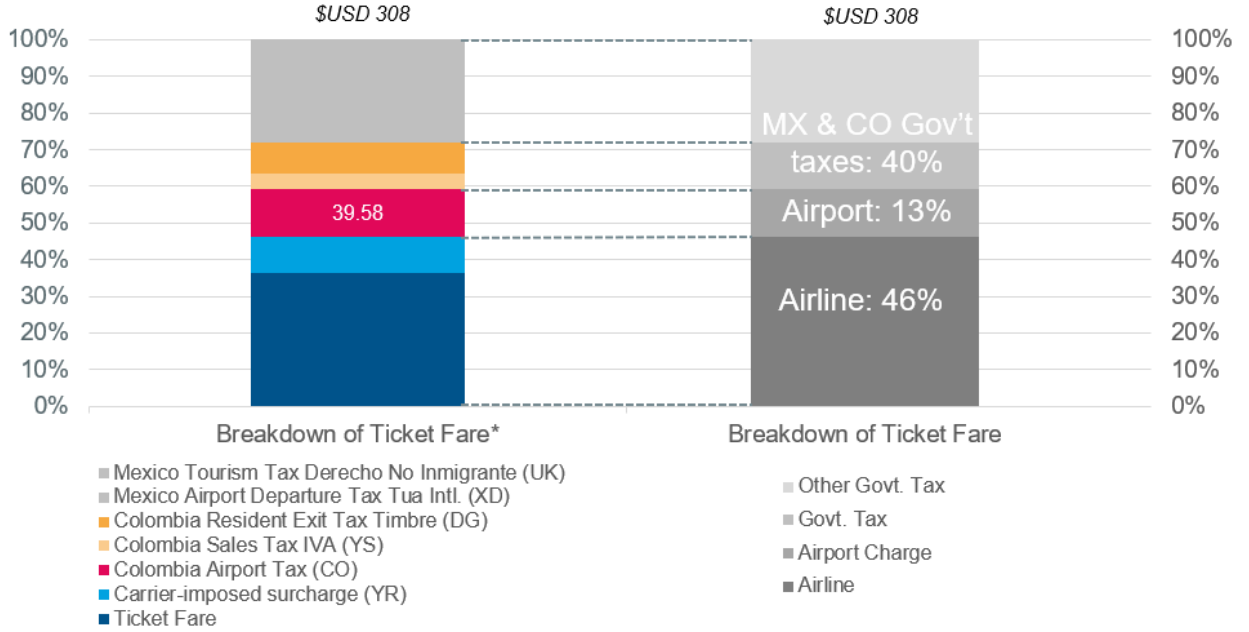
Exhibit 20: Ticket Fare (MEX – BOG, InterJet return)



Note: ticket fare reflects an InterJet economy ticket in November, booking 3 weeks in advance.
Source: Ita Matrix, airporcharges.com

Based on the same ticket fare data in the exhibit above, the exhibit below shows that airport charges account for 13% of the ticket fare. This is significantly lower than the Government taxes share, which account for approximately 40% of the total ticket fare. Exhibit 22 below shows the same ticket fare as in Exhibit 21, but shows the fare breakdown by cost category.

Exhibit 21: Ticket Fare (MEX – BOG, InterJet return)



Note: ticket fare reflects an InterJet economy ticket in November, booking 3 weeks in advance.
Source: Ita Matrix, airporcharges.com

This section shows that aviation taxes can account for a significant portion of airline ticket fares in many countries in the LAC region. In fact, Government ticket taxes can account for a high, if not higher, portion of an airline ticket fare than airport charges. Not only is there significant variation of Government ticket taxes within the LAC region, but the average level of taxation is typically higher than other significant aviation markets in other regions of the world. Airports and airlines typically do not have control over taxes that are imposed by the Government, and these costs are passed through to the passenger. Airlines may either ‘pass through’ the tax directly on the ticket fare, or the cost is indirectly covered by the overall ticket fare.

6. Drivers of Air Fares

This section explores the key drivers in determining the price of air travel. It will show that, in the most part, prices are driven by fundamental demand and supply side factors, and that prices show considerable variation over time that have little to no connection to underlying costs.

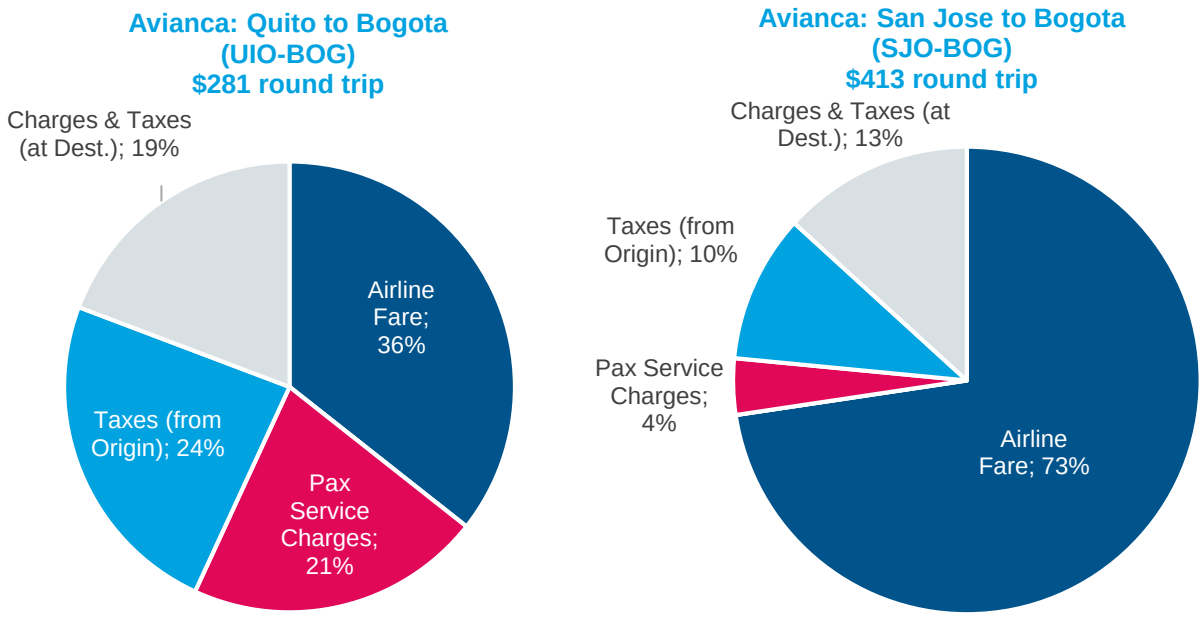
6.1. Components of Air Fares

Airlines tend to advertise 'all-in' fares, which are in fact a combination of air fares, surcharges and taxes. Of the three main groups of airfares described in the table below, categories B & C, whilst at the airline's discretion, tend not to vary dynamically. The 'Airline Fare' (A) is the element of the fare that is varied dynamically via the airlines' revenue management systems.

	Description	Airline Discretion
A. Airline Fare	Typically the dynamic portion of an air fare – airlines will manage this part of the price to optimise revenue	Yes
B. Surcharges	Some airlines will impose 'surcharges', for example fuel surcharges. However, the airlines are (in most cases) free to set the levels and are not obligated to ring fence this revenue to pay for a specific purpose (e.g. to pay for fuel).	Yes
C. Passenger Service Charges (or similar)	Some airlines (typically legacy airlines) include explicit fare components that are meant to represent the costs levied by airports. These fare components are essentially applied at the airline's discretion, and are not necessarily reflective of the actual charges paid by the airline (due to airline deals, discounting etc)	Yes
D. Taxes	Airlines collect a number of taxes through ticket sales that are passed through to local and national government agencies. Airlines have no discretion in whether these are applied or their level, and they are not counted as revenue (they are pass-through costs). Examples include the Airport Departure Tax in Mexico or the International Travel Tax in Jamaica	No

In addition to the components of airfares, airlines are increasingly benefiting from ancillary revenues. These are discretionary purchases by the passenger in addition to the core fare, and include items such as baggage fees, advanced seat selection, travel insurance, etc. As airlines continue to un-bundle fares, these ancillary revenues have become an increasingly large proportion of airlines' total revenues. Airline fares that are below marginal cost make up the shortfall through ancillary services and cargo revenues to achieve a profit. (Ancillary services are not considered in this study).

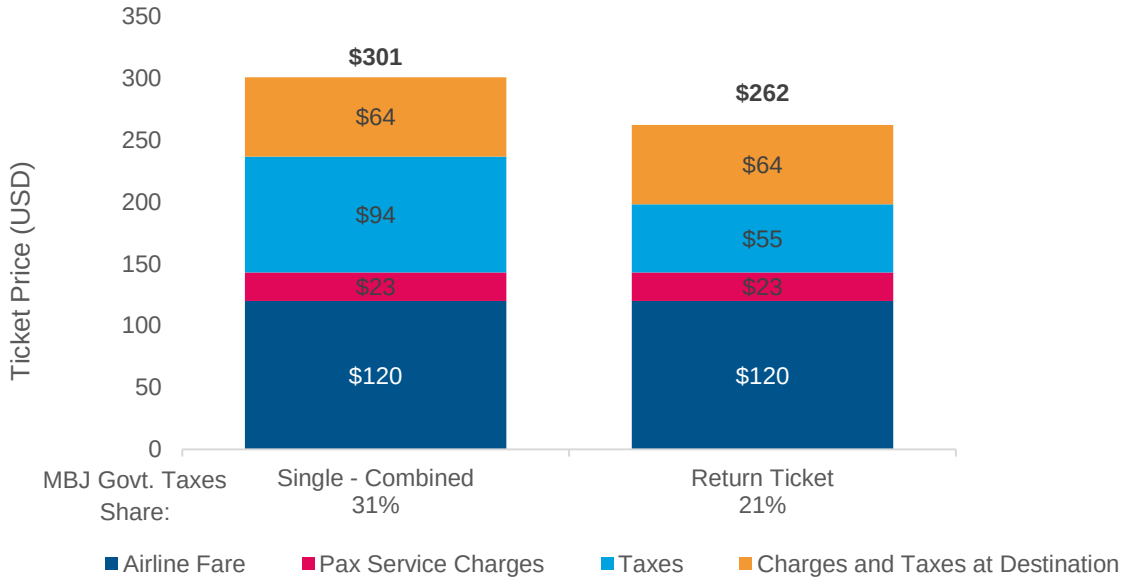
Exhibit 22: Typical Fare Structure for Short-Haul Roundtrip Itineraries



Source: ita Matrix
Note: Outbound journey on 10 Jan 2020 and inbound journey on 17 Jan 2020. Ticket prices shown are the lowest fare available. Ticket fare prices accessed on October 2019. Taxes (from origin) include tourism fee, auxiliaries tax and transportation tax.

The Exhibit above shows that Government Taxes from can represent very different shares of an airline ticket price. In Quito, for example, the International Tourism Fee is $50 for all tickets (equivalent to 18% of the ticket cost in the example above), and combined with other taxes, Ecuador taxes account for a combined share of 24%. This compares to just 10% for the share that taxes account for on Avianca's SJO-BOG route. Despite the difference in the total ticket price, the composition is very different, with higher taxes on the UIO-BOG route possibly offset by a lower airline fare component ($100, compared to $300 on SJO-BOG).

Exhibit 23: Southwest Airlines Ticket Prices for Single Leg and Return Journeys (MBJ - FLL)



Source: Southwest Airline website, ICF analysis
Note: Outbound journey on 10 Jan 2020 and inbound journey on 17 Jan 2020. Ticket prices shown are the lowest fare available. Ticket fare prices accessed on 31 October 2019.

The Exhibit above illustrates a couple points. Firstly, Jamaica Government taxes account for a significant share of an airline ticket fare of over 30%. Secondly, the tax amounts disclosed on Southwest Airlines' air fare tickets between Montego Bay (Jamaica) and Fort Lauderdale (USA) are different depending on the journey. Taxes disclosed on a return ticket fare are $40 less than the combined amount disclosed on single journey tickets. This is because the tourism enhancement fee and passenger levy taxes are not disclosed, nor accounted for in any increase in the airline fare segment of the ticket price.

6.2. Airline Pricing

At an airline, the Revenue Management and Pricing departments manage the pricing algorithms, and therefore the price displayed to customers. Prices are determined according to the price elasticity of demand, the responsiveness of the demand to a change in the price, which can be influenced by the brand, the purpose of the trip, the availabilities of substitutes (competitors as airlines or other transport modes) or the travel date and time.

The practice of airline revenue management is underscored by the principle that different passenger segments are willing to pay different amounts for the same product – price sensitive leisure passengers tend to book early, while less price sensitive business passengers tend to book closer to departure. This is why prices for the same product, a seat, tend to increase as you get closer to departure.

Crucially, the role of the Revenue Manager is to optimise ***revenue*** on a given flight, not profit. The revenue manager cannot influence the costs, and so instead is tasked with striking the optimal balance of yield (prices) and volume (load factor). The revenue manager will perform

this role based on actual and forecast performance on the route and competitor's pricing – there is little to no reflection in prices of any fluctuations in underlying costs. If this were the case, the levels of fluctuation in price on a given flight for the exact same product would not be seen.

This is not to say that costs have no influence on pricing, but that there is often no direct linkage between costs and the price in the short-term. Airlines will consider route performance (profit) on a medium-term basis and can redeploy capacity if a route is unprofitable.

6.3. Drivers of Air Fares

Much like any other commodity, the price an airline charges for an airfare is a reflection of demand and supply.

For a given air route, underlying demand will vary according to the following factors (not exhaustive):

- **Seasonality** – for example, many leisure destinations will see very significant peaks during school holiday periods (particularly summer, Easter and Christmas holidays)
- **Day of week** – depending on the destination, peaks could occur due to patterns of business travel (e.g. Mon-Fri) and leisure travel (e.g. Sat-Sat for example for resort holidays, or Fri-Sun for weekend breaks)
- **Time of day** – business travellers tend to require timings that allow them to maximise business hours at their destination (e.g. for short haul early mornings and evenings tend to be a peak, for long haul routes, overnight flights are preferred)

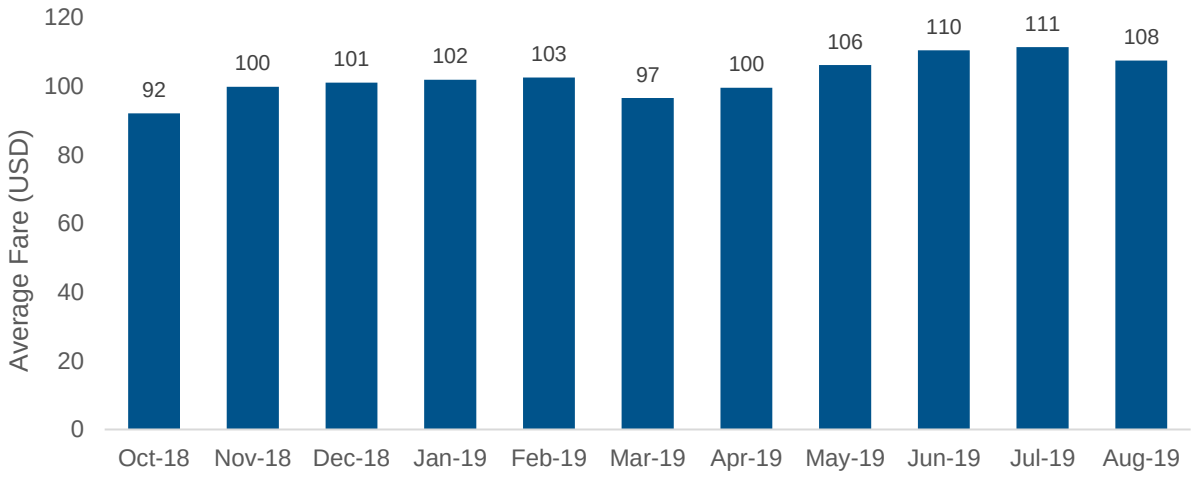
Unlike other commodities, airlines are selling a product that is finite (there are only so many seats on each flight) and difficult to substitute (if you need to travel from Buenos Aires to Bogota on a specific date and there are no seats left, your alternative options are limited). In periods of high demand, travel tends to be less elastic to price; in off-peak periods travel is often more discretionary and flexible which results in a more elastic relationship to prices. Moreover, due to the fact that aircraft are expensive assets that are typically bought or leased on a long-term basis, airlines cannot readily match their schedules to demand without incurring significant inefficiencies (e.g. grounding aircraft in off-peak periods). As a result, peak periods are often under-supplied and off-peak periods are often over-supplied.

The combination of these two factors means that air fares can vary considerable throughout the season, day of week and time of day.

6.3.1 Seasonality case studies

On one of Latin America's busiest routes, Mexico-Cancun, the average air fare was approximately 21% higher between the highest and lowest months (July compared to October respectively). Exhibit 26 illustrates this seasonal variation trend.

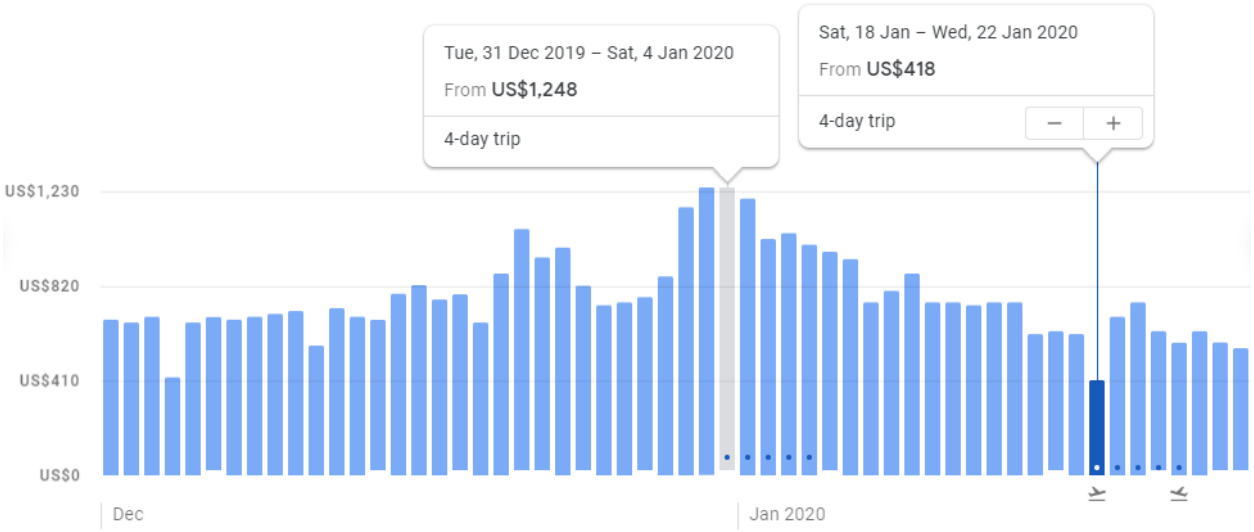
Exhibit 24: Mexico-Cancun Average Fare by Month, 2018-2019



Note: Fares represent average of economy class travellers
Source: IATA PaxIS

Seasonal fluctuations in airline ticket prices is common on most routes. The Exhibit below shows the range of ticket prices for a roundtrip journey from Mexico City to Rio de Janeiro, including a difference of almost 300% in the same month, December.

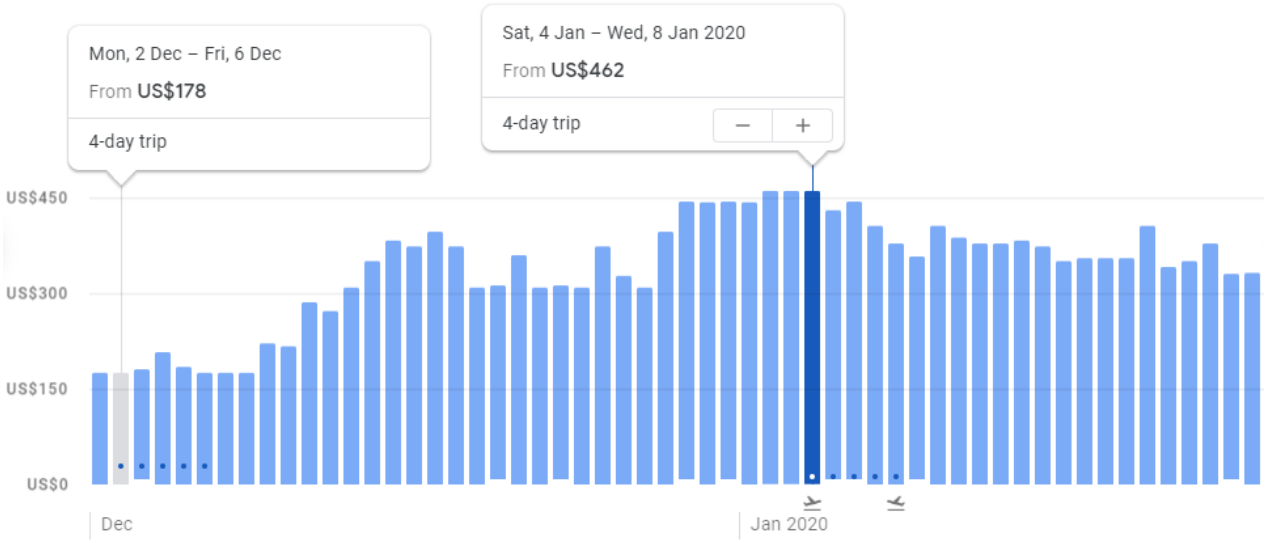
Exhibit 25: Mexico-Rio de Janeiro Lowest Fares, December 2019 – January 2020



Note: Fare prices accessed on 30 October 2019
Source: Google Flights

Seasonality fluctuations are even more accentuated and sustained at leisure dominated destinations. Compared to the sharp increase in fares in late December in the Exhibit above, the Exhibit below shows a sustained period of higher fares which is reflective of the higher levels of demand throughout the peak season.

Exhibit 26: Rio de Janeiro-Recife Lowest Fares, December 2019 – January 2020

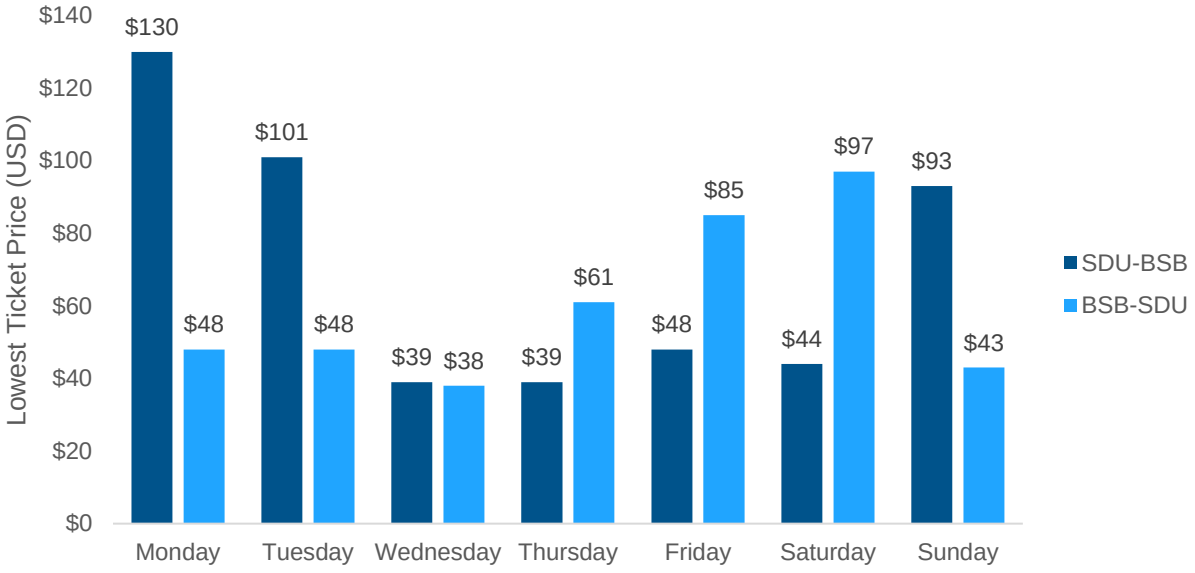


Note: Fare prices accessed on 30 October 2019
Source: Google Flights

6.3.2 Day of week and time of day case studies

In addition to seasonal variation, there is significant variation among the days of a single week. For the week of 25 November 2019, Monday is the most expensive travel day on the Rio de Janeiro - Brasilia route, with the cheapest available ticket at $USD130. This is more than three times more expensive than the cheapest available price on Wednesday and Thursday in the same week at $USD39. On the opposite Brasilia - Rio de Janeiro route, Friday and Saturday are the most expensive days with a cheapest ticket available at $USD85 and $USD97 respectively, compared to $USD38 on Wednesday.

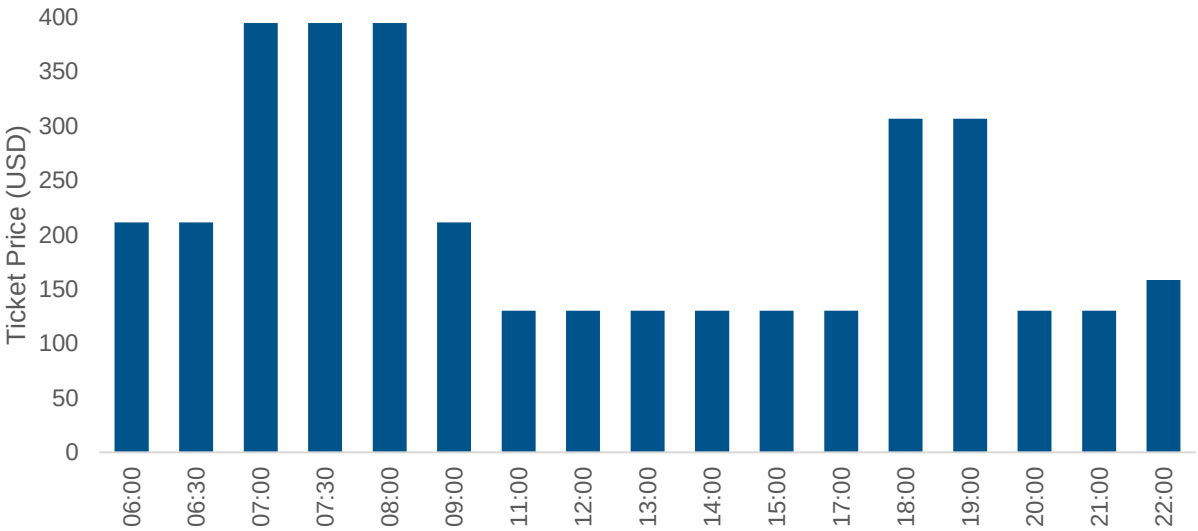
Exhibit 27: Rio de Janeiro-Brasilia Lowest Fares for the Week 25. November 2019



Source: Google Flights
Note: Fare prices accessed on 30 October 2019

A further factor influencing the ticket price is the time of day. Looking two weeks ahead to 12 November, Aeromexico offers seventeen departure flights from Mexico to Monterrey. For the same day tickets, the ticket prices range between $USD130 and $394, as shown below. The price variation observed for this day is reflective of passengers' preference for more convenient morning and evening travel as compared to midday or very early/late flights.

Exhibit 28: Aeromexico Mexico (MEX) – Monterrey (MTY) One Way Ticket Prices by Time of Day, Tuesday 12 November 2019

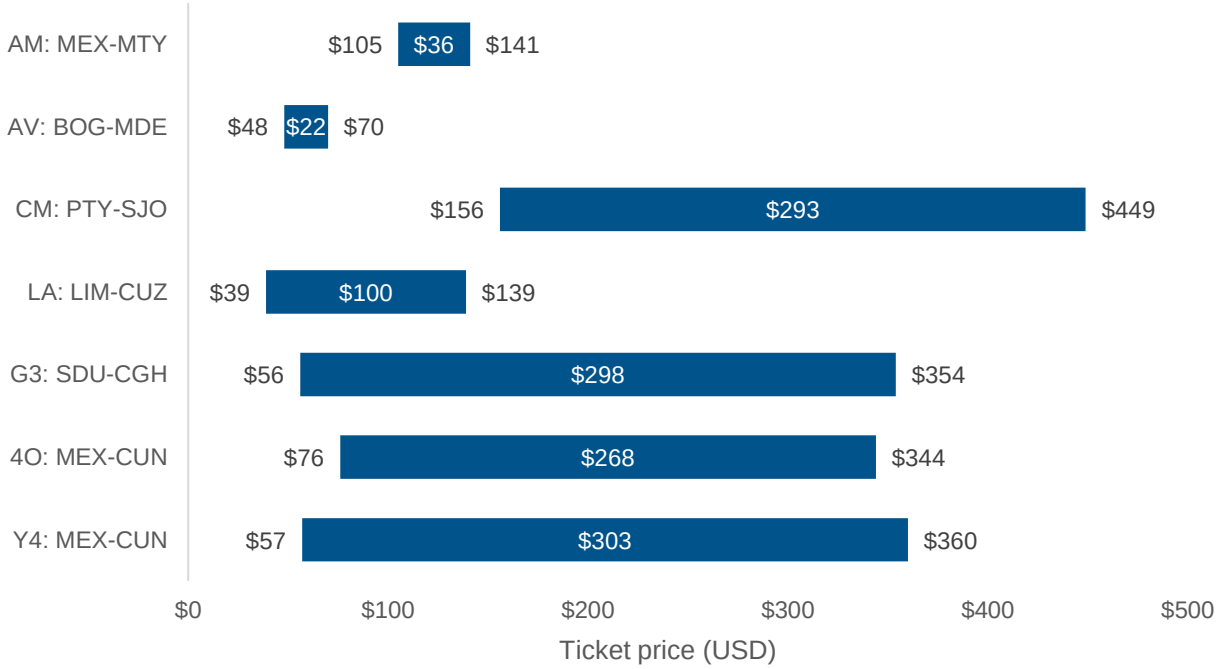


Source: Aeromexico Website
Note: Fares requested on 30. October 2019

6.3.3 Ticket price volatility

As the previous exhibits show, seasonality, day of week and time of day variations are significant. Combining these factors, variations in ticket prices for the same product can reach 600%.

Exhibit 29: Price Variations for Return Economy Class Tickets on Major Routes



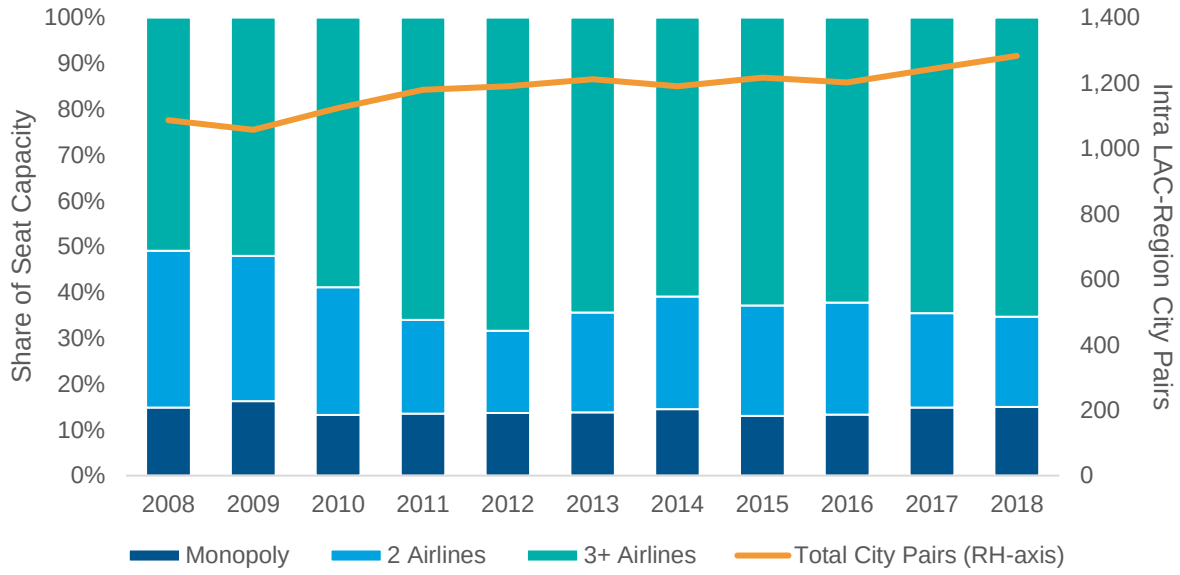
Source: Google Flights
Note: Ticket prices shown are from November 2019 to April 2020 and are the lowest fare available. Ticket fare prices accessed on October 2019.

Clearly this range of prices is **not a function of costs**, which, for the most part, remain relatively static for a given airline/route combination.

6.4. Impact of Competition

As illustrated in the above case studies, demand (and price) naturally varies according to when people wish to fly. Competition is another factor that can significantly impact prices on a route. Much like any commodity, higher levels of competition tend to force prices down. As will be demonstrated, there is an increasing amount of competition in the LAC region (both within the LAC region and LAC region to Rest of World (RoW)) with LCCs playing a greater and greater role.

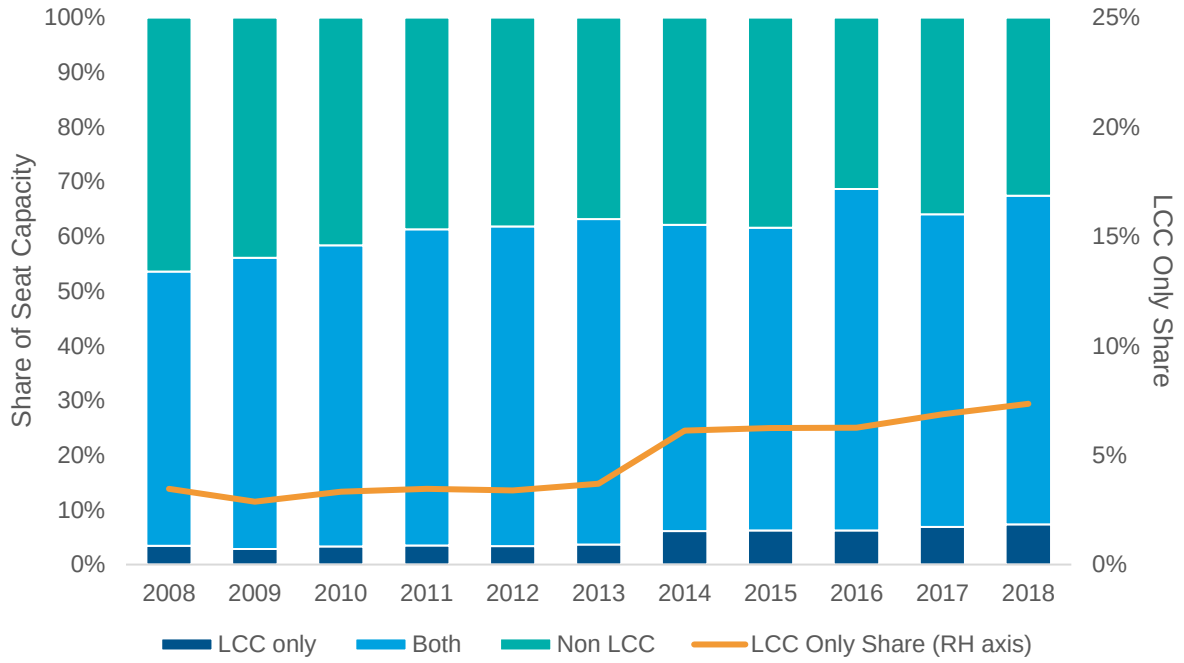
Exhibit 30: Intra-LAC Region City Pairs by Level of Competition



Source: OAG, airline-route must be operated at least 2x weekly to be counted
Notes: airlines within groups (e.g. Copa, Copa, Wingo) are not considered to be 'competitors'. For example, if a route is operated by both Copa and Wingo, then this would be counted as '2 airlines' pre-merger, and a monopoly route post-merger.

The number of Intra-LAC city pairs has steadily increased over the last decade to almost 1,300. The share of city pairs served by at least 3 airlines has increased by almost 15% since 2008, whilst the share of city pairs served by only one carrier has remained constant at around 15%. This represents the combination of two trends – on the one hand the increasing penetration of LCC airline types, and on the other, a trend towards consolidation among (primarily, but not exclusively) traditional carriers. The role that LCCs play in the intra-LAC markets is illustrated in the Exhibit below.

Exhibit 31: Intra-LAC Seat Capacity Share per Airline Business Model



Source: OAG. Criteria: airline-route operated at least 2x weekly
Notes: LCC = 'Low Cost Carrier', 'Both' = at least one LCC operating at one non-LCC carrier operate the city pair

LCC's have grown rapidly in the LAC region over the last decade, accounting for approximately 40% of total seat capacity on intra-LAC routes in 2018, up from 20% in 2008. However, the share of capacity on 'LCC-only' routes is approximately 7.5%, lower than the Non-LCC share of 30%. Much of the LCC growth has been driven by GOL in Brazil and Volaris in Mexico, both now enjoying strong positions within their respective domestic markets. Overall LCC seat capacity on intra-LAC routes has increased at an average rate of 11% (2008-2018), higher than non-LCC growth rate of 3%. The share of market capacity on routes operated by 'both' LCCs and non-LCCs has gradually increased to 60% in 2018, up from 50% in 2008.

One consequence of the increased exposure to LCC competition is a gradual blurring of the boundaries between what is considered a full service carrier and a Low Cost Carrier. One aspect of this is that mainline carries are adopting LCC strategies such as one-way pricing, baggage fees etc. At the same time, LCCs are increasingly trying to penetrate business markets that were once the preserve of full service carriers. This is evidenced by a move into more 'primary' airports, as well as the introduction of loyalty programmes and working with GDSs (Global Distribution Systems).

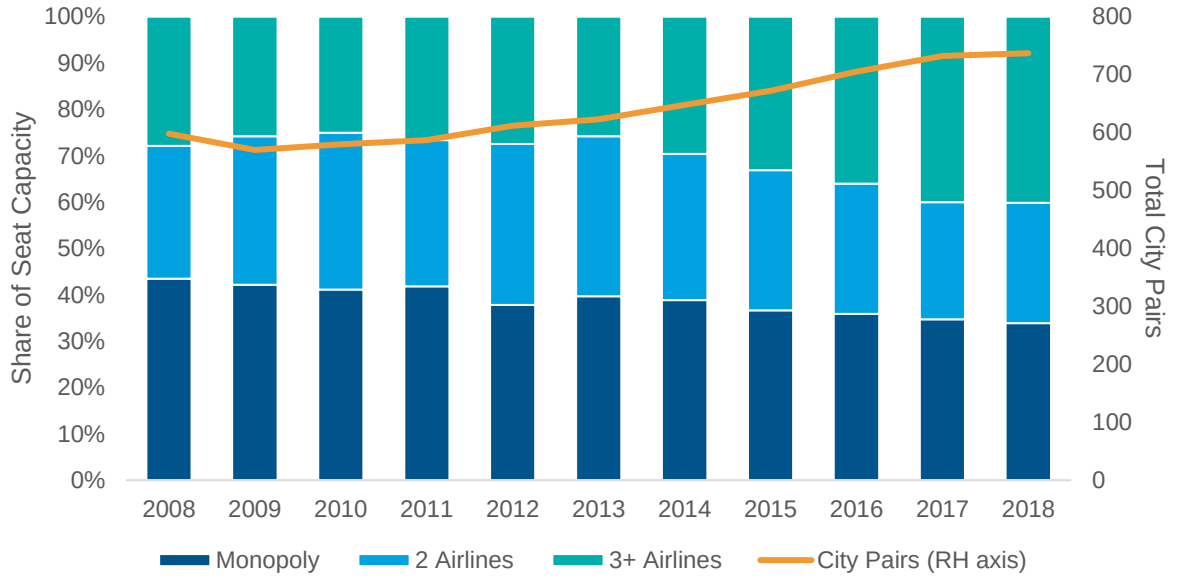
The impact of LCC penetration has generally been to put downward pressure on consumer prices. Abda (2012)[7] state that LCCs had a significant impact on decreasing average air fares.

[7] Abda, Belobaba and Swelbar: "*Impacts of LCC growth on domestic traffic and fares at largest US airports*" Journal of Air Transport Management Volume 18, Issue 1, 2012.

An IATA paper[8] estimated the effect of several cases of added competition on air fares. The study shows that in the US, the commencement of non-stop service by Southwest on a given route reduced fares by 27% to 29%. Furthermore, airlines do not only adjust air fares as a reaction to new airlines commencing service on a route but also do so as a reaction to a threat of entry as shown by Golsbee (2005)[9] in the case of Southwest in the US domestic market.

The Exhibit below demonstrates that the level of competition on routes from the LAC region to RoW has increased steadily since 2013, with the share of routes operated by three or more airlines increasing from 26% in 2013 to 40% in 2018. On the other hand, the proportion of monopoly routes has decreased to 34% in 2018.

Exhibit 32: LAC-RoW City Pairs by Level of Competition

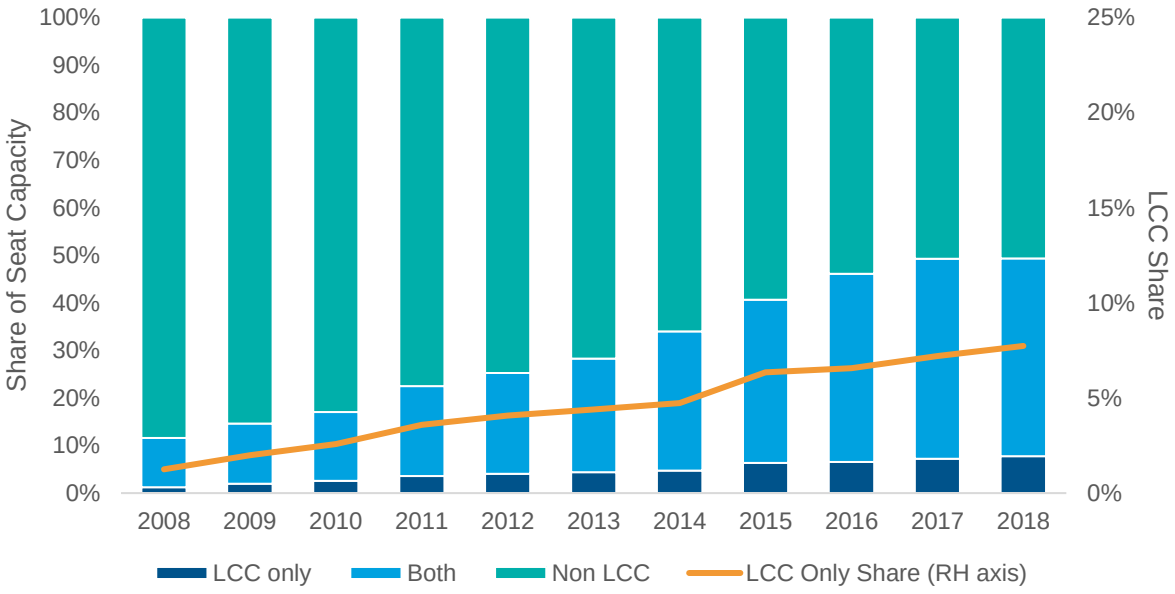


Source: OAG. Criteria: airline-route operated at least 2x weekly
Notes: airlines within groups (e.g. Copa, Copa,Wingo) are not considered to be 'competitors'. For example, if a route is operated by both Copa and Wingo, then this would be counted as '2 airlines' pre-merger, and a monopoly route post-merger.

The following Exhibit highlights that LCCs have helped drive this increased level of competition, as the share of seat capacity on non-LCC only routes has decreased from 90% to 50% between 2008 and 2018. Of all the LAC-RoW routes, 15% are operated by LCCs, up from 3% in 2008.

[8] Brueckner, Lee and Singer: "*Key Policy Issue, Network vs. LCC Competition and Airfares: New Empirical Evidence from the US"* IATA, 2010.
[9] Golsbee, Syverson: "How do Incumbents Respond to the Threat of Entry? Evidence from Major Airlines" NBER Working Paper 11072, 2005.

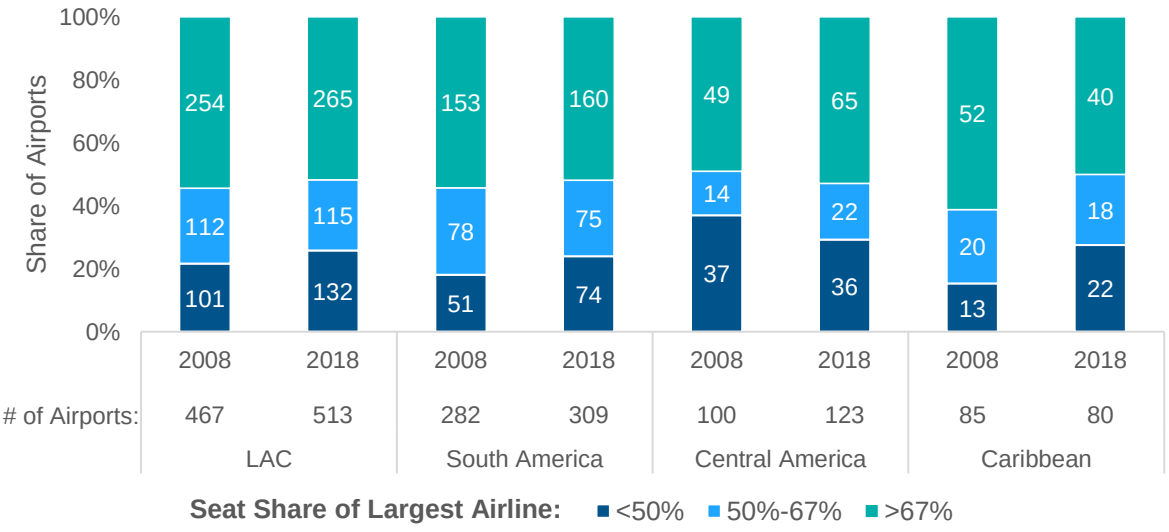
Exhibit 33: LAC-RoW Seat Capacity Share per Airline Business Model



Source: OAG. Criteria: airline-route operated at least 2x weekly
Notes: LCC = 'Low Cost Carrier', Both = at least one LCC operating at one non-LCC carrier operate the city pair

Another aspect of competition is the extent to which capacity is concentrated on a single carrier at a given airport, also known as the airport's negotiating position. A dominant share allows a certain degree of pricing power on behalf of the airline, accruing due to its scale (one example of this is the impact that loyalty schemes (miles) can have on customers), but it is also a measure of the balance of power in the airport-airline relationship. As demonstrated in the chart below, a significant proportion of airports are reliant on a single airline for more than two-thirds of their offered seats.

Exhibit 34: Number of Airports by Market Share of Largest Carrier



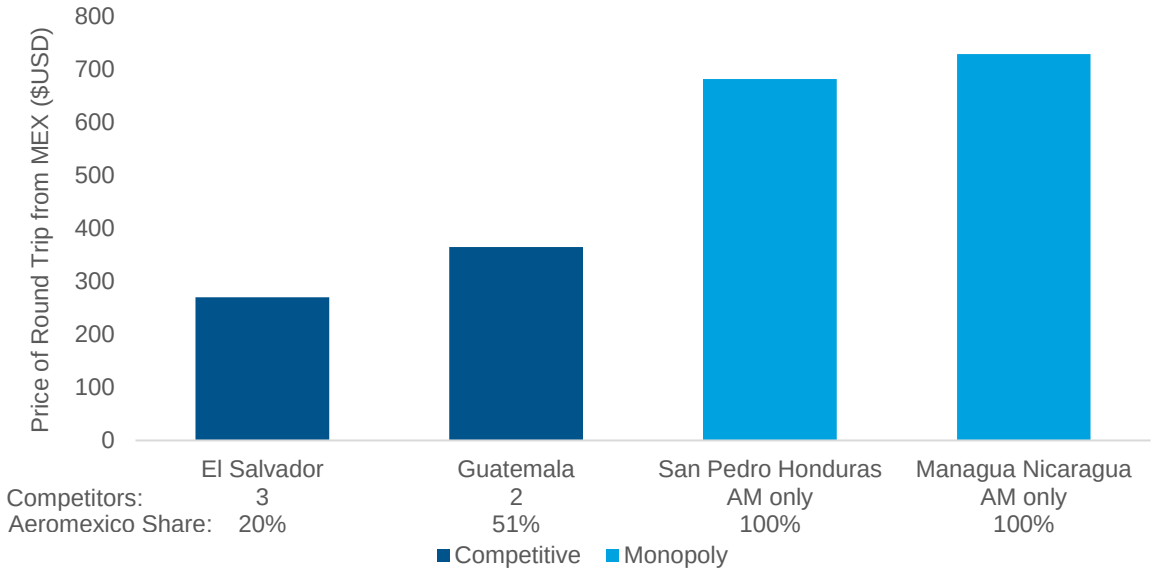
In the case studies below we look at the impact on air fares of the levels of competition.

6.4.1 Competition case study: Mexico City, Mexico

As the main hub carrier at Mexico City airport, Aeromexico accounts for almost 40% of the airport's total seat capacity (12 months to October 2019). Within its extensive route network at MEX, Aeromexico faces varying levels of competition. On one hand, the mainline carrier competes for market share on routes including El Salvador and Guatemala City, whilst on the other hand, it holds a monopolistic position on routes to San Pedro (Honduras) and Managua (Nicaragua).

Th Exhibit below shows Aeromexico's available ticket fares on routes of similar distances where the airline faces different levels of competition (as defined by number of competitors and market share). The fares for non-competitive routes in the Exhibit below are almost 2x higher than for the two competitive routes. The routes are of similar distances from MEX and therefore any ticket price differential is unlikely to be due to distance.

Exhibit 35: Lowest Price for an Aeromexico Return Ticket from Mexico City



Source: Aeromexico website, SRS Schedule Analyser
Notes: Ticket prices are for direct flights. Outbound on 3 Dec 2019 and inbound 9 Dec 2019. Fares accessed on 31 October 2019. Aeromexico share refers to its share of seat capacity on the route (12 months to Oct 2019). Route distances between 650 to 1,000 statute miles.

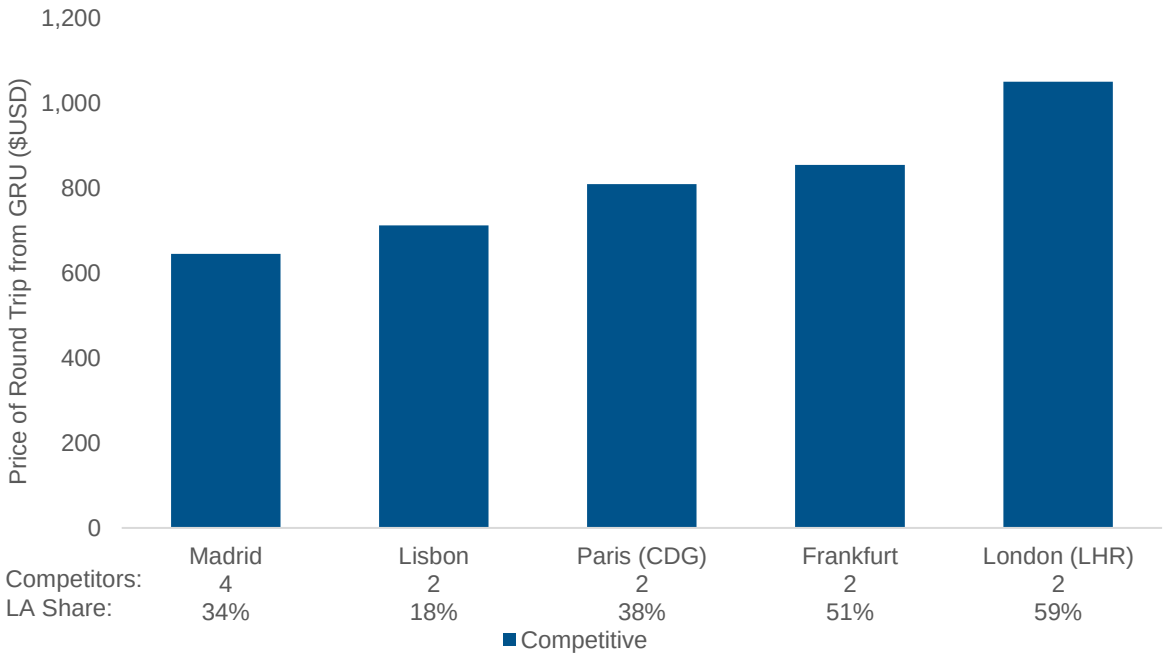
This pattern is reflected in the average estimated airline fares reported via IATA's PaxIS database, as shown in Appendix A2.

6.4.2 Competition case study: Sao Paulo – Europe

Another airport example of a dominant mainline carrier operating to a range of destinations is LATAM Airlines at Sao Paulo Guarulhos (GRU). Similarly to Aeromexico's market share at Mexico City, LATAM accounts for approximately 40% of GRU's total seat capacity (12 months to October 2019).

The Exhibit below shows the available ticket fares on some of LATAM's trans-Atlantic routes to the European region. The Exhibit illustrates that as the level of competition on LATAM's routes decreases (measured by market share and number of other competing airlines), LATAM's available fare increases. The routes are of similar distances from GRU and therefore any ticket price differential is unlikely to be due to distance.

Exhibit 36: Lowest Price for a LATAM Return Ticket from Sao Paulo, Brazil



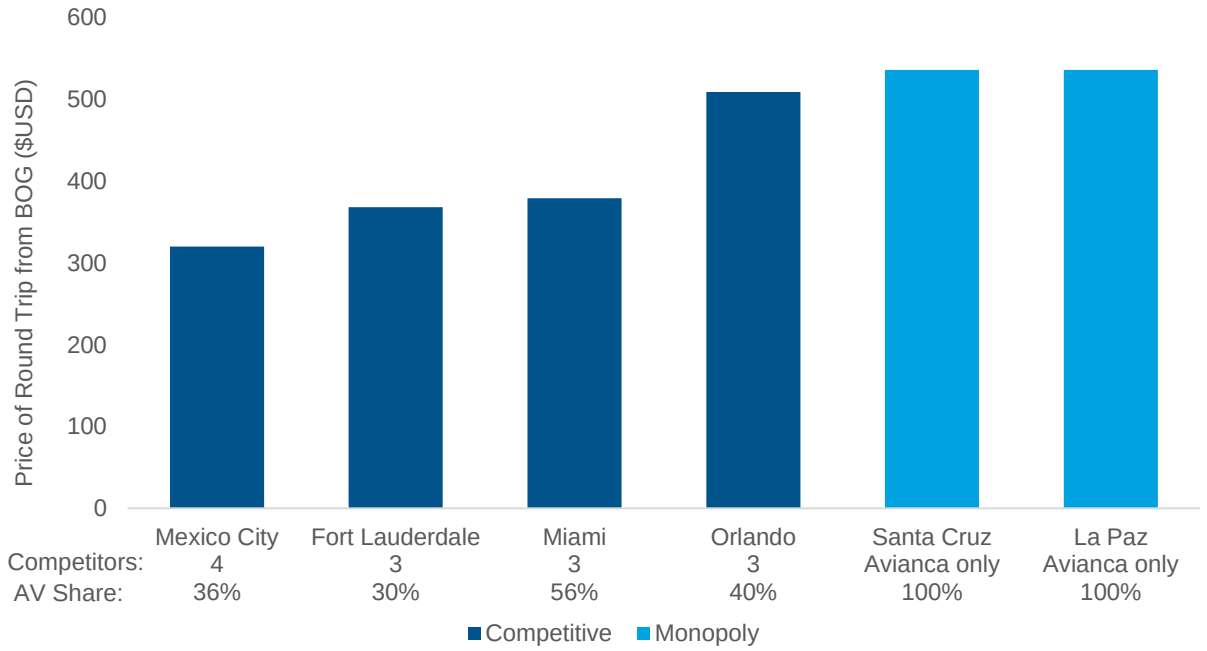
Source: LATAM and other airline websites, SRS Schedule Analyser
Notes: Ticket prices are for direct flights. Outbound on 24 Mar 2020 and inbound 31 March 2020. Fares accessed on 04 November 2019. LA share refers to its share of seat capacity on the route (12 months to Oct 2019). Route distances between 5,000 to 5,800 statute miles.

This pattern is also reflected in the average estimated airline fares reported via IATA's PaxIS database, as shown in Appendix A2.

6.4.3 Competition case study: Bogota, Colombia

A further example of a dominant mainline carrier operating to a range of destinations is Avianca at Bogota (BOG). Avianca accounts for approximately 60% of BOG's total seat capacity (12 months to October 2019). The exhibit below demonstrates the increase in fares as the number of competitors serving the same route decreases.

Exhibit 37: Lowest Price for an Avianca Return Ticket from Bogota, Colombia



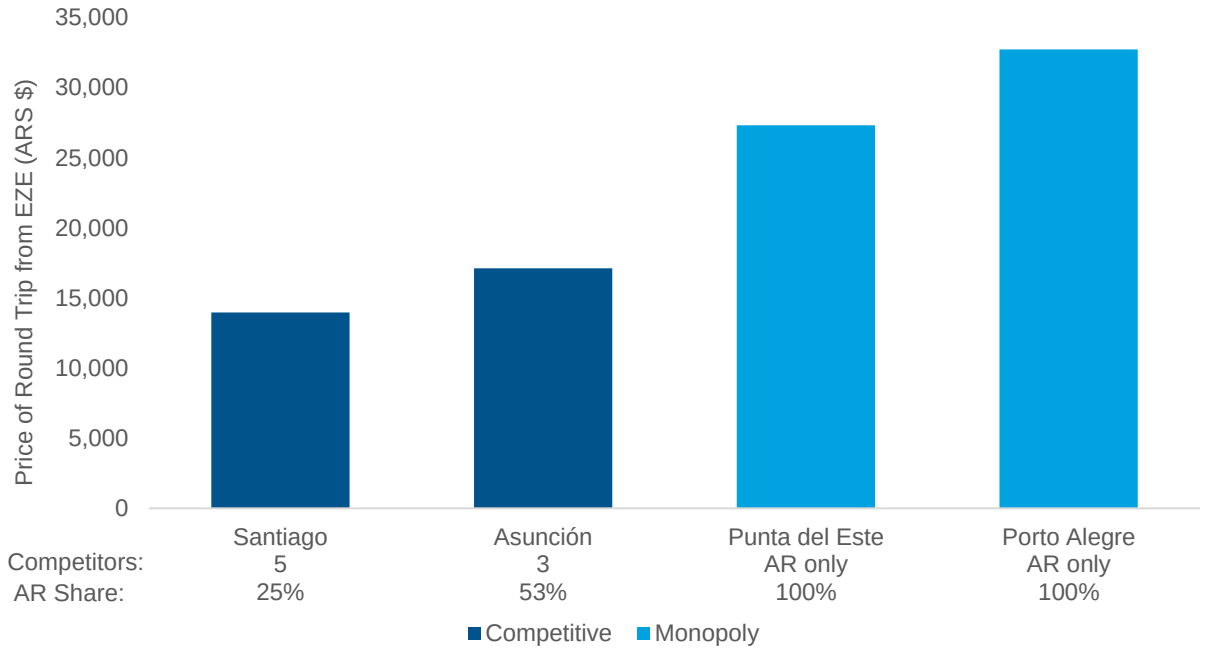
Source: Avianca airline website, SRS Schedule Analyser
Notes: Ticket prices are for direct flights. Outbound on 24 Sep 2020 and inbound 30 Sep 2020. Fares accessed on 17 February 202. AV share refers to its share of seat capacity on the route (12 months to Dec 2019). Route distances between 1,000 to 1,400 statute miles.

This pattern is somewhat reflected in the average estimated airline fares reported via IATA's PaxIS database, as shown in Appendix A2.

6.4.4 Competition case study: Buenos Aires, Argentina

A final example of a large mainline carrier operating to a range of destinations is Aerolineas Argentinas at Buenos Aires (EZE). The airline accounts for approximately 31% of EZE's total seat capacity (12 months to December 2019). The exhibit below demonstrates the increase in fares as the number of competitors serving the same route decreases.

Exhibit 38: Lowest Price for an Aerolineas Argentinas Return Ticket from Buenos Aires, Argentina



Source: Aerolineas Argentinas airline website, SRS Schedule Analyser
Notes: Ticket prices are for direct flights. Outbound on 4 Mar 2020 and inbound 11 Mar 2020. Fares accessed on 21 February 2020. AR share refers to its share of seat capacity on the route (12 months to Dec 2019). Route distances between 200 to 700 statute miles.

6.5. Pass-Through

6.5.1 Factors affecting pass-through

As demonstrated in the previous sections, the price of an air fare can vary significantly due to the balance of demand and supply, and there is not a strong mechanism by which costs are transmitted to the ultimate price that consumers pay.

However, clearly costs do influence airline behaviours in the medium to long term. Airlines will be monitoring their costs at various stages of the planning and sales cycle and will consider their options in the wider context of their own business, the competition and the likely impact from their customers, i.e. passengers.

The importance of a change, which can be positive or negative, will of course have an impact on the reaction, as a change of a couple of cents per seat up or down will make a much smaller difference than say $5 or $10 overnight. For example, a 10% change in airport charges will represent a change in total costs of between $0.5 to $1.5 per passenger. By contrast, a 10% change in the fuel price could result in a change in total costs of over $10 per passenger.

Timing is also a factor – if a change in airport charges, for example, is announced a year or more ahead of the change being implemented, airlines will have much longer to consider their options and react, than if it is an overnight change.

Depending on the timing and the magnitude of the change, an airline may simply choose to absorb the change in costs, or they may choose to pass-through – as many airlines did via fuel surcharges, which still lingered on when fuel prices returned to pre-spike levels, illustrating the asymmetry in some pricing decisions. Airlines may alter capacity in the face of changing costs – they may reallocate aircraft from one base to another if the change is localised, they may add or remove a second or third daily frequency on a route or they may temporarily cut capacity to signal their dissatisfaction with a change, only to return again the next season when the overall economics of a route proves too compelling.

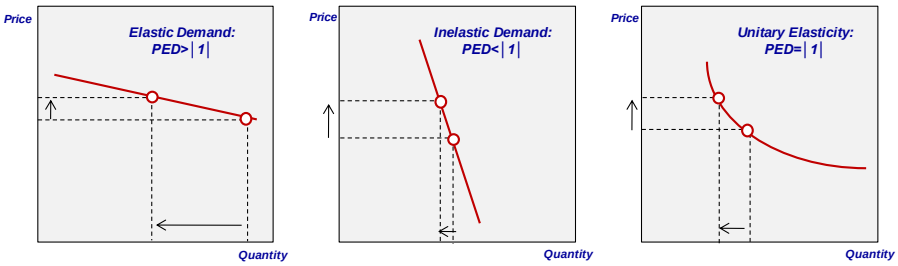
Exhibit 39 highlights just some of the factors that will impact the price elasticity and thus the pass-through decision of an airline, ranging from the highly generalised to the very specific.

In terms of likely outcomes, many cost changes go largely unnoticed by passengers, either because they are not passed through to fares or because they are relatively modest or occur at times or in markets where demand is price inelastic (during peak summer, for example, or first thing in the morning on a poplar business route). Sometimes, there are meaningful market changes – competition is increased as additional airlines are attracted by low costs of operating in a particular market, or fares overall increase following the imposition of security charges on all airlines. The key question underpinning how a change in airport charges, or any other airline cost, will impact air fares, is the airline's assessment of price elasticity of demand. And as we will see, this may be a simple concept but is far from simple to measure or predict.

In simple terms, the price elasticity of demand (PED) is measured as:

$$PED = \frac{\%\ Change\ in\ Quantity\ Demanded}{\%\ Change\ in\ Price}$$

Exhibit 39: Illustrative price elasticity charts



Higher Elasticity	Dimension	Lower Elasticity
One route, one airline	Market definition	All routes, all airlines
Short haul	Length of haul	Long haul
Leisure	Trip purpose	Business
Off-peak season	Seasonality	Peak season
Off-peak time	Time of day	Peak time
Lower income	Passenger income	Higher income

Between the extremes of perfectly elastic (increase price from equilibrium and demand will disappear completely) and perfectly inelastic demand (can increase price infinitely and demand will remain), there are varying degrees of sensitivity to price.

Elastic demand occurs when customers are highly sensitive to price levels, and a given percentage change in price elicits a proportionally greater response in demand. This can work positively and negatively. Faced with sensitive demand, suppliers are able to stimulate the market by lowering prices. Since the percentage increase in the quantity demanded will outweigh the percentage decrease in price, total revenue (price times quantity demanded) will rise. On the other hand, a small rise in average prices will lead to a proportionately larger decline in demand, reducing total revenues.

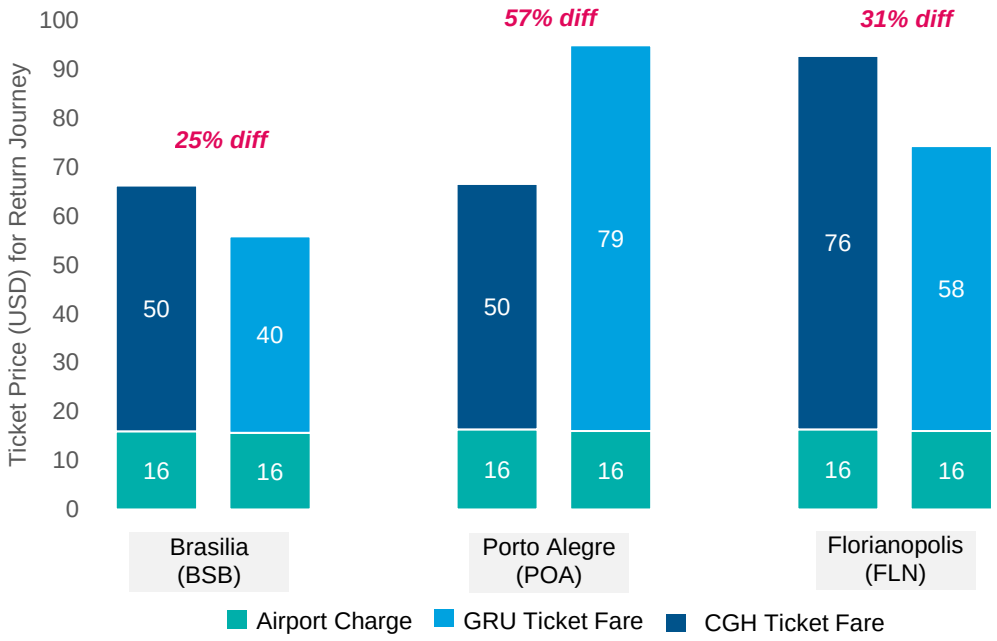
Inelastic demand occurs when demand is relatively insensitive to changes in price. This occurs in the case of necessities, for example basic food stuffs, and also in cases where the consumer is not directly responsible for the cost of the product or service, such as business travel. This means suppliers have relatively little ability to stimulate demand through lowering prices, but on the other hand they are able to raise prices with a proportionally smaller decline in demand and thus an overall increase in revenues, as shown in the middle chart in the charts above.

6.5.2 Pass-through case study: Airport charges

One way to analyse whether carriers pass-through differences in their cost base to their customers is comparing ticket prices of highly comparable routes (sharing the same city origin) that have different cost characteristics.

Below we present examples of LATAM airlines pricing to the market rather than reflecting relative costs. LATAM operates from both major airports in Sao Paulo (CGH and GRU) to some domestic destinations including Brasilia, Porto Alegre and Florianopolis. Although the airport charge element of the ticket fare is the same, the price differential of the airline fare portion of the ticket price ranges from 25% to 57% with respect to the three routes highlighted in the chart below. The ticket price levels indicate that Brasilia and Florianopolis are more expensive markets from CGH (vs. from GRU), whilst Porto Alegre is 57% more expensive from GRU than CGH.

Exhibit 40: LATAM Airlines Ticket Fare Comparison from CGH and GRU to the Same Destinations

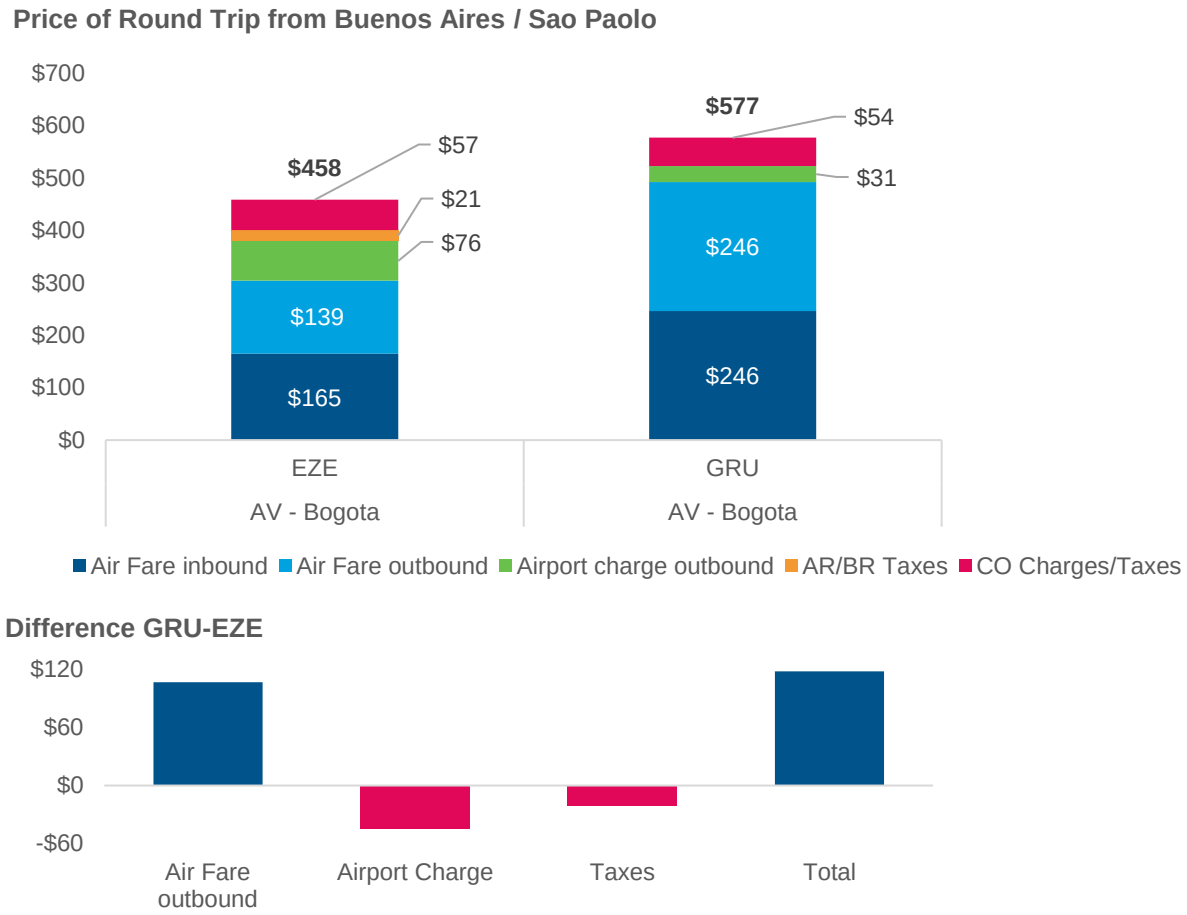


Note: "Diff" is the % difference between the higher and lower ticket fares (excl. airport charges)
Source: ita Matrix. Lowest fares available between Jan - Feb 2020. Fares accessed on 04 November 2019. Exchange rate applied from www.xe.com

A similar pattern of pricing to the market rather than setting ticket prices in line with a

The example below shows that the prices for an Avianca round trip between Bogota and Buenos Aires (EZE) and Sao Paulo (GRU). Although Avianca incurs higher taxes & charges at EZE ($97) than at GRU ($31), the ticket price is much lower from EZE than from GRU, even though both routes are of similar distances (~2,000 - 2,200 statute miles).

Exhibit 41: Avianca Pricing Comparison to Bogota

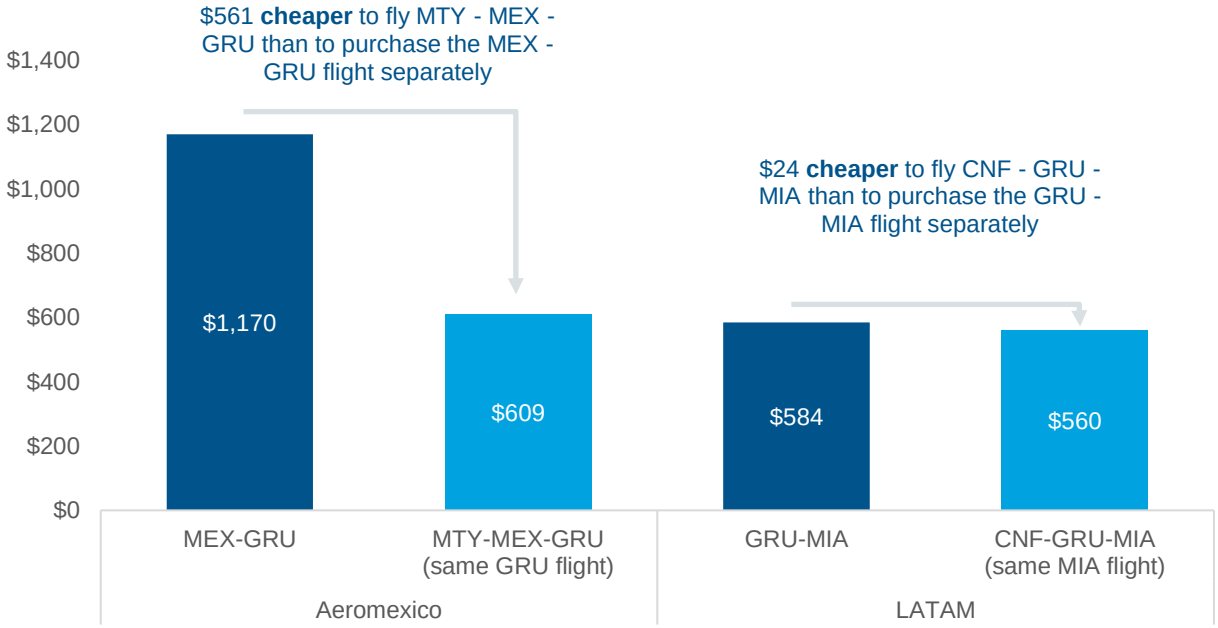


Source: ita Matrix.
Note: Lowest available fare from Mar-Apr 2020, requested on 06 November 2019.

6.5.3 Pass-through case study: Cost of connecting itineraries

Counter-intuitively, adding another leg to an itinerary can actually *lower* the price of a ticket. This is a consequence of a practice known as 'O&D Pricing' whereby airlines price connecting itineraries differently to the sum of the two legs. Clearly, the marginal cost of carrying a passenger on two flights is greater than for a single flight, but in order to attract business, airlines will heavily discount connecting itineraries. The other driver is a reluctance by airlines to set precedents of low prices in their core ('home') markets, thus keeping up prices in markets where they rely most heavily on for their traffic. We present two examples below: Firstly, An Aeromexico ticket from Mexico City to Sao Paulo (GRU) is significantly more expensive than a ticket from Monterrey to GRU connecting onto the same MEX-GRU flight, despite the additional cost of the Monterrey-Mexico City flight and additional airport charges and taxes. Secondly, a LATAM ticket from Sao Paulo (GRU) to Miami is $24 more expensive than a ticket from Belo Horizonte to Miami, connecting onto the same GRU-MIA flight, despite the additional cost of the Belo-Horizonte to Sao Paulo flight and additional airport charges and taxes.

Exhibit 42: Ticket Price Comparison with an Additional Flight Leg

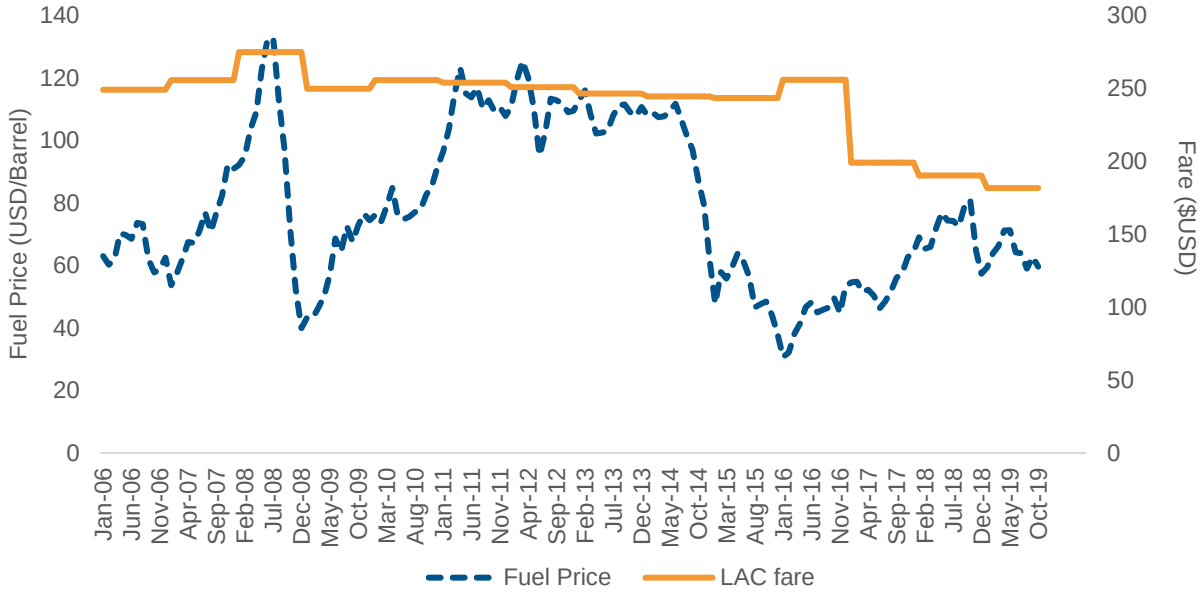


Source: ita Matrix
Note: Fares were requested on 06 November 2019. Both the Aeromexico and LATAM flights are for a roundtrip from 13-20 March 2020.

6.5.4 Pass-through case study: Fuel

The Exhibit below indicates there is a weak correlation between changes in fuel prices and changes in air fares. Fuel prices have increased and decreased quite significantly over the last 10 years, fluctuating between a maximum of $130 in July 2008 to a low of $30 in January 2016. The fuel price per barrel was approximately $60 as at the end of October 2019. Despite the highly volatile trend of fuel prices, air fares have remained almost constant relative to the changes in fuel prices. When fuel prices dropped in 2008 by more than three times from $130 to $40, average air fares barely changed. Furthermore, during the period (2008-2011) when fuel prices increased again to over $120 in 2011, air fares remained practically the same, same as when fuel prices decreased again in mid-2014.

Exhibit 43: Latin America & Caribbean Air Fare and Fuel Price History

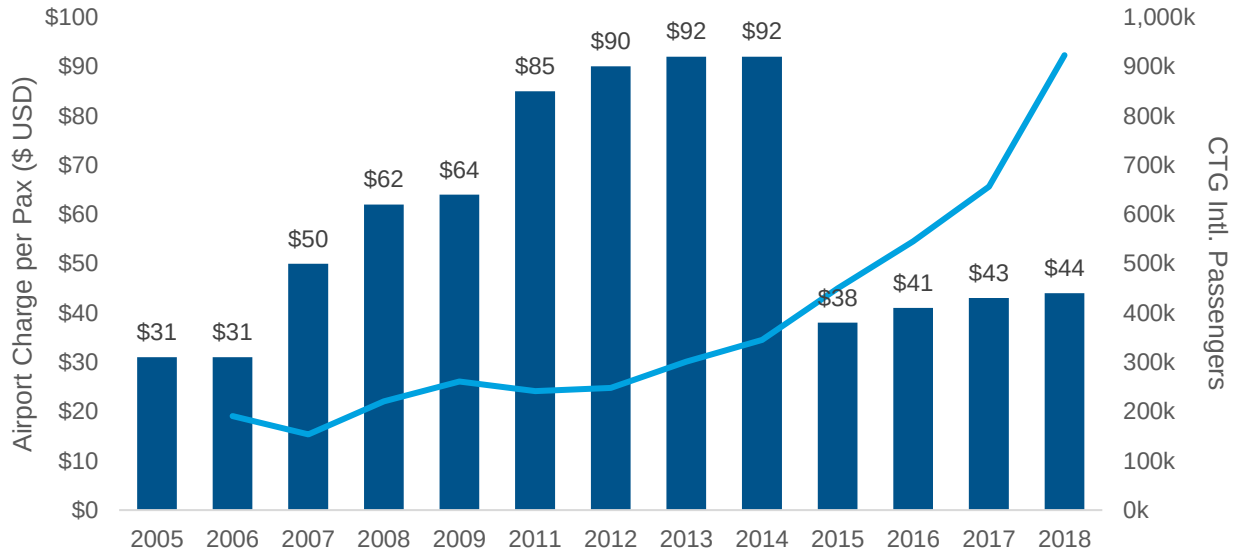


Source: IATA PaxIS, EIA

6.5.5 Cartagena (CTG) Airport Charges Case Study

Cartagena Airport (CTG) has experienced consistent traffic growth since 2005, in both the domestic and international markets. A range of actions taken by CTG have contributed to this airport's growth which will be outlined later in this section. During this period of growth, international airport charges at CTG increased by almost 3x between 2005 and 2014, and in 2015, the charge per passenger was lowered to $38 per passenger in 2015. The trend in traffic growth and international charges are outlined in the exhibit below.

Exhibit 44: CTG International Airport Charge & International Passengers



Source: CTG
Note: Historical airport charges per pax shown using exchange rates used as of 05.16.2019.

The increase:

The change in airport charges up to 2014 was not imposed by Sociedad Aeroportuaria de la Costa S.A (SACSA, the airport operator). Instead, it was the result of the formula within the original contract signed with Aeronautical Civil. SACSA complied with the provision of the contractual documents and applied the formula contained in the agreement.

SACSA did not determine the airport charge rate. The rate responded and was based on the formula stipulated by Aeronautica Civil with Resolution 01016, this document is an appendix to the contract signed with Aeronautical Civil. The formula is set out as follows:

$$TI = TV (\$USD) * (1 + IPC) / ID$$

Where:

TI = Adjusted international charge

TV ($USD) = current international rate ($ USD)

IPC = Consumer Price Index (for bi-annual period)

ID = Devaluation index of each bi-annual period (formula stipulated within contract agreement)

The formula was adjusted year after year, applying the differential factor between the Colombian consumer price Index (IPC) and the devaluation of the Colombian peso against the dollar. When the devaluation exceeded the consumer price index (IPC), CTG's international airport charge per passenger did not change. When the consumer price index (IPC) exceeded the devaluation, the charge increased.

The decrease:

In 2014, SACSA and Colombia's Agencia Nacional de Infraestructura (ANI) signed the addendum No. 8, to change the formula to calculate the rate that determines the airport charge. The airport charge per passenger was lowered to $38 per pax in 2015.

International traffic at CTG increased three-years in a row before the international departure charge was lowered to $38. International traffic continued to grow from the year that CTG's international rate was decreased (2015). A range of factors and actions have supported this traffic growth, which include:

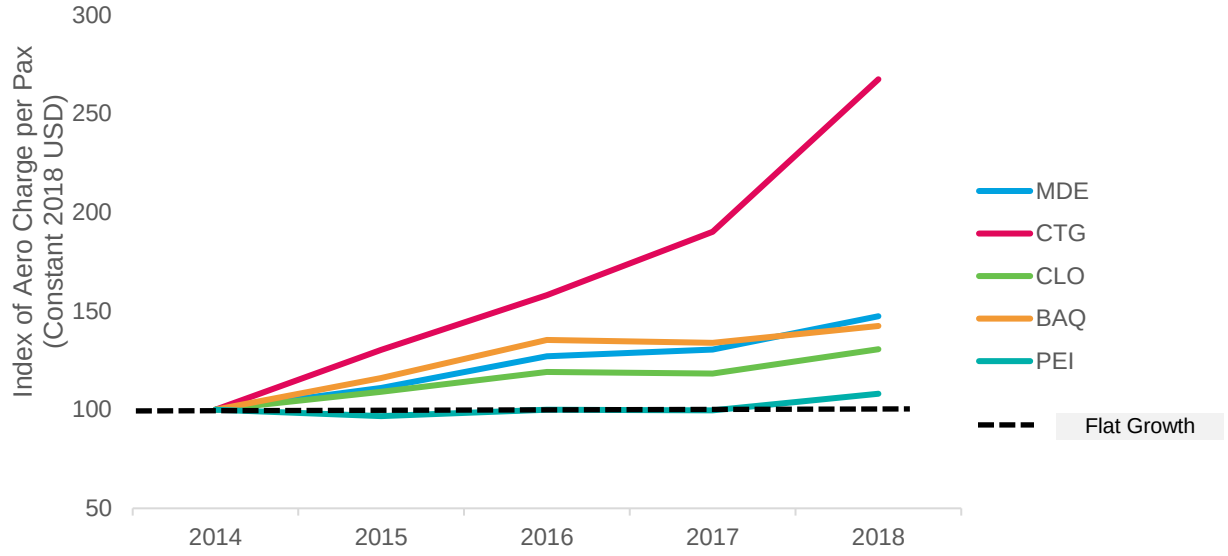
- The airport's marketing plan
    - Since 2011, CTG has designed and implemented a marketing plan, which also includes airline incentives
- CTG's efforts in collaborating with the Cartagena district, hotels, and other stakeholders in the tourism sector. Since then, the airport has attracted a range of direct international services, such us:
    - Spirit (Fort Lauderdale, Orlando); Jet Blue (New York, Fort Lauderdale), Delta (Atlanta); Latam (Peru); American (Miami); KLM (Amsterdam), Interjet (Mexico City)
- CTG's strong international traffic base in 2014. At the time the international airport charge was lowered; there was consistent international traffic growth every year between 2011-2014, even when airport charges per passenger were at their highest levels (above $90)

Furthermore, whilst a range of new international routes have supported traffic growth, the airlines opening these new routes appear to have made no public references to any reported change in CTG's airport fees as a reason for launching the new routes. The Exhibit below outlines some of the airlines' reasons for opening new services to Cartagena:

Airline	Route	Description / reason for opening route
LATAM	CTG - LIM	Consolidate LATAM Airlines' network and connectivity to the Caribbean CTG considered a growth opportunity
KLM	CTG - AMS	Opened this route at the expense of ending KLM's service to Cali. The airline believes the strong tourism draw to Cartagena will make for a better option than Cali. Note: the flight from Europe was not direct (stopped first in Bogotá) but the Cartagena-to-Amsterdam return leg is non-stop.
Delta	CTG – ATL	Announced 06 April 2015 it would launch 3x weekly from Atlanta to Medellin
JetBlue	CTG - FLL	JetBlue launched FLL route on 29 Oct 2014

Source: CAPA News Articles

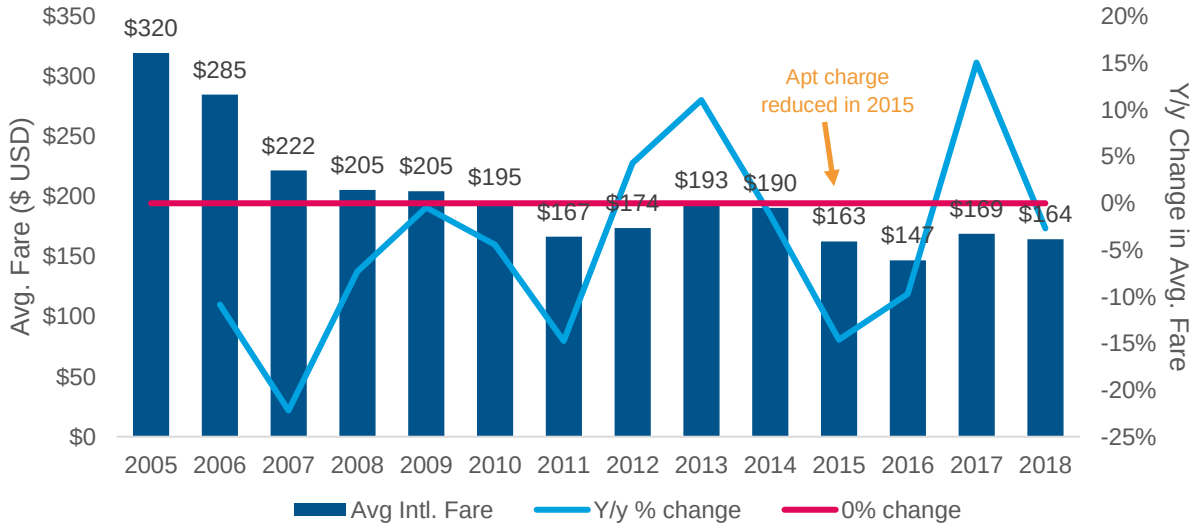
Exhibit 45: Indexed International Passenger Growth at CTG and Peer Airports (2014 = 100)



Source: ACI

The Exhibit below demonstrates that there has been no significant change in international air fares since international airport charges were reduced in 2015. Furthermore, average fares have not changed much between 2011 (when the intl. charge was $85) and 2018 (when the intl. charge was $44).

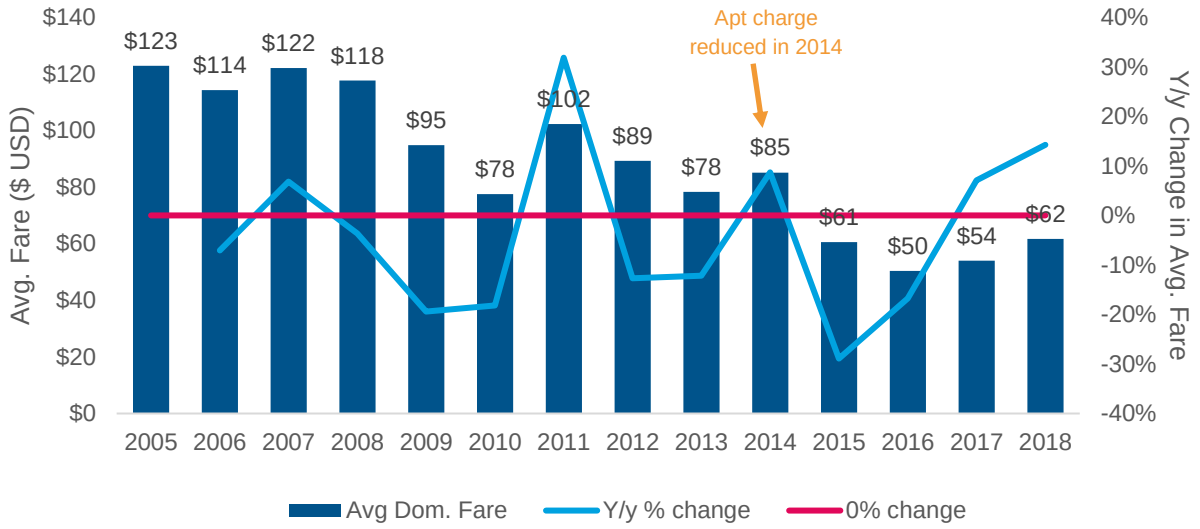
Exhibit 46: Average One-Way International Air Fare from CTG to All Destinations



Source: PaxIS Note: Fares are estimates based on reported and actual pax. Fares are only for direct international flights. Fare data accessed as of 13.02.2020, and only available up until end of 2019.

Similarly to the downward trend of international air fares, average domestic fares have also trended downwards.

Exhibit 47: Average One-Way Domestic Air Fare from CTG to All Destinations



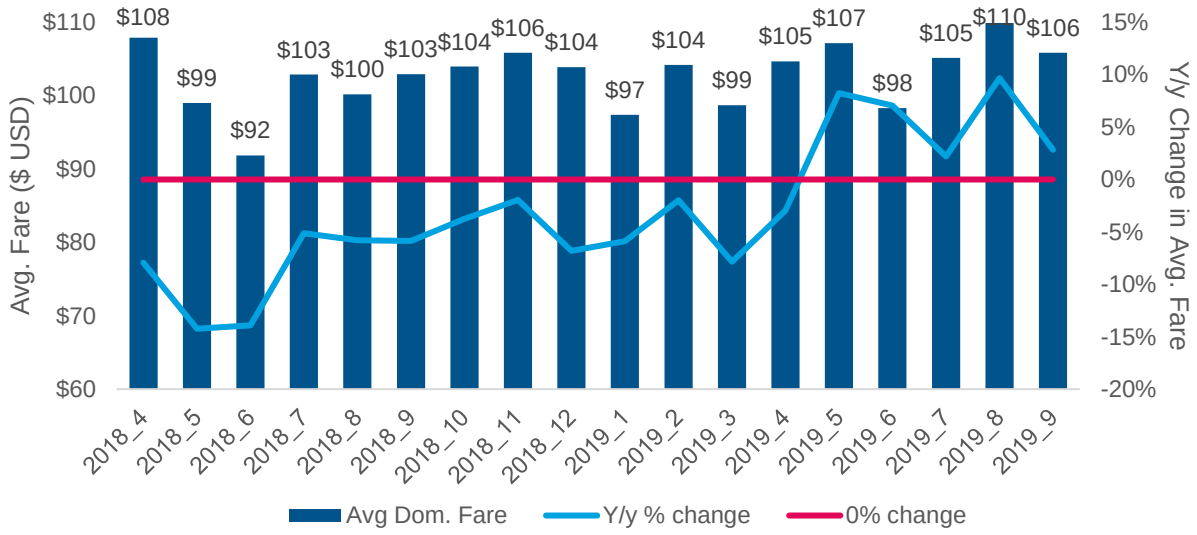
Source: PaxIS Note: Fares are estimates based on reported and actual pax. Fares are only for direct domestic flights. Fare data accessed as of 13.02.2020, and only available up until end of 2019.

6.5.6 Chile: Airport Charges Case Study

In October 2018, the Chilean Government decreased both domestic and international airport boarding charges at all airports in Chile. It is uncertain whether these changes have had any direct impact on the fares offered by airlines, and therefore the level of traffic volumes in Chile.

As shown in the exhibit below, airline fares were falling y/y between -4% and -14% before the reduction in airport charges during the period of April to October 2018. As previously illustrated in this report, air fares generally change depending on the season and time of year, which is why year on year changes in air fares by month should be considered. Despite the reduction in airport charges in October 2018, air fares increased in October and November 2018, and this change is likely a reflection of Summer seasonal demand. Similarly, the average domestic fare at CTG fluctuated significantly between Jan-Sept 2019, and in fact increase to levels higher than before the domestic charge was reduced.

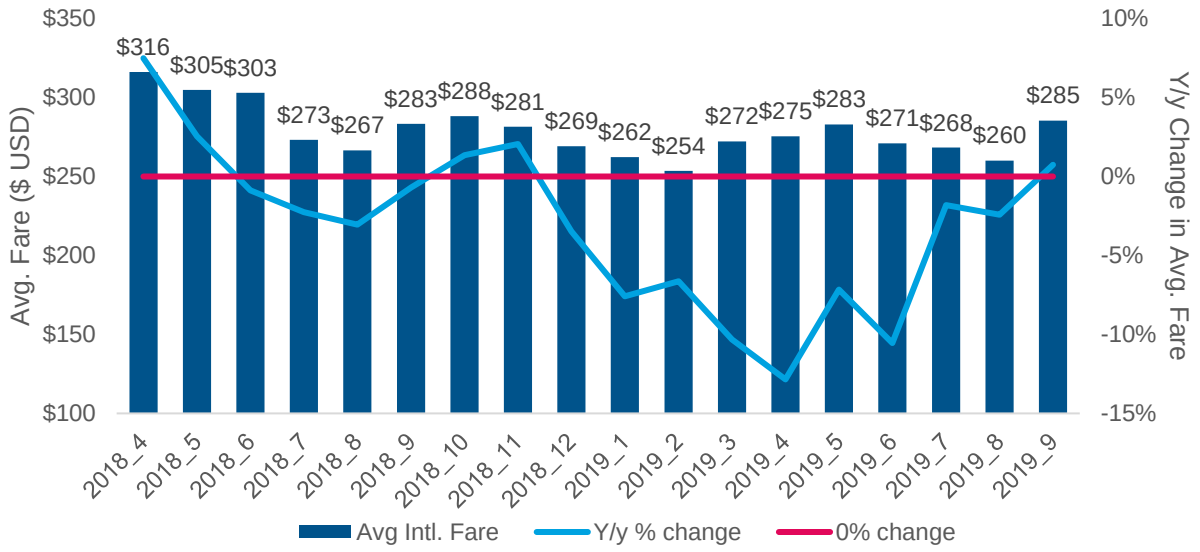
Exhibit 48: Average One-Way Domestic Air Fare from Chile



Source: PaxIS Note: Fares are estimates based on reported and actual pax. Fares are only for direct domestic flights. Fare data accessed as of 13.02.2020, and only available up until end of 2019.

Similarly to domestic charges, the Chilean Government reduced the international airport boarding charge in October 2018 from $30 to $26, equivalent to a 13% decrease. Although the average international fare appears to have decreased year on year between Dec 2018 and August 2019, the difference in fares has decreased since April 2019 and fares were in fact higher in September 2019 year on year.

Exhibit 49: Average One-Way International Air Fare from Chile



Source: PaxIS. Note: Fares are estimates based on reported and actual pax. Fares are only for direct international flights originating in Chile. Fare data as of 13.02.2020, and only available up until end of 2019.

6.6. Section Summary

Airline ticket prices are driven by demand and supply factors. Revenue managers set ticket prices largely without cost mind. Instead, airlines use complex pricing algorithms to maximise revenue on a flight-by-flight basis.

Several factors drive volatility in air fares; the resulting variations cannot be explained by the underlying costs. Seasonality, day of week and time of day can lead to variations for the same product of more than 300%. The level of competition on a given market is another major driver of fares. Despite the impact of LCCs on the LAC aviation market, there is still a significant share of capacity that is served by only one airline group, especially on LAC-RoW routes. The case studies in chapters 6.4.1 and 6.4.2 provide evidence that airline groups do exercise their market power if they have the ability to do so.

Whether an airline will pass through changes in costs to consumers depends on a number of factors, and there are multiple instances where airlines will choose to absorb cost increases or benefit from cost decreases. We showed this on the example of fuel surcharges as well as airport charges. As illustrated in chapter 6.5.2, changes in airport charges do not always lead to changes in air fares in the same direction, suggesting that there is no strong connection between charges and fares.

7. Conclusions

7.1. Summary of study findings

This study by ICF has clarified the significance of airport charges to airlines operating at airports in the Latin America and Caribbean region. We have covered a range of representative airline business models and airports of all sizes, using traceable, consistent data sources.

What we have found from this analysis is the following:

Airport charges represent a relatively small share of airlines' costs

Weighted by passenger volume, 84% of passengers are carried on carriers for whom airport charges represent 7% or less of their total cost.

These charges have been flat or decreasing over the past decade

Evidence have been presented, based on the actual aeronautical yields reported by airports, which demonstrate that on average charges are flat or decreasing. Airline annual reports also confirm that this cost item has not been (in most cases) growing – in absolute or as a share of costs – over time.

There is significant variation by airline type and haul

The type of airline and the nature of the route (specifically, the distance) influence the significance that airport charges play on a per route basis, whilst an airline's route network (and therefore the destinations it operates to) can impact total average airport charges per passenger.

In terms of the linkages between these airport charges and the air fares faced by passengers, the following have been observed:

Airlines price air fares according to market fundamentals

Numerous case studies demonstrate that the price of a seat can vary significantly depending on when the ticket is booked, time of travel and the levels of competition on the route. These variations in price are primarily driven by demand and supply factors, not the cost of operating the flight.

There are numerous factors that influence how an airline will respond to changes in costs

Airlines will monitor their costs at various stages of the planning and sales cycle and will consider their options in the wider context of their own business, the competition and the likely impact from their customers, i.e. passengers. In terms of likely outcomes, many cost changes go largely unnoticed by passengers, either because they are not passed through to fares or because they are relatively low or occur at times or in markets where demand is price inelastic.

Airlines do not always pass on cost changes to passengers

Several case studies in this report demonstrate occasions where changes in costs are not being passed through to passengers, whether positive or negative. In these situations, the airlines

have taken a conscious decision to price to the market while taking into account small changes in operating cost base.

Airport charges play a relatively small role in determining the price of an air ticket

Historically, airport charges have been both less significant and less volatile than fuel, staff or aircraft-based costs. As such, these other costs have a greater influence on airline cost bases. However, even these costs are not directly linked to air fares paid, as carriers play a sophisticated game in optimising prices to respond to demand and competitive conditions. That is not to say that airport charges do not play any role, only that their significance should not be overstated relative to other factors.

Government taxes account for a significant portion of airline ticket fares in many countries

Government ticket taxes can account for a high, if not higher, portion of a ticket price than airport charges, and in some instances, the airline fare itself. Whilst Government ticket tax levels are varied between countries in the LAC region, the average level of taxation is typically higher than significant aviation markets in other regions of the world. Airlines either ‘pass through’ the tax directly on the ticket fare, or the cost is indirectly covered by the overall ticket fare.

8. Appendix A1

Exhibit 50: List of Ticket Taxes at LAC and non-LAC Countries

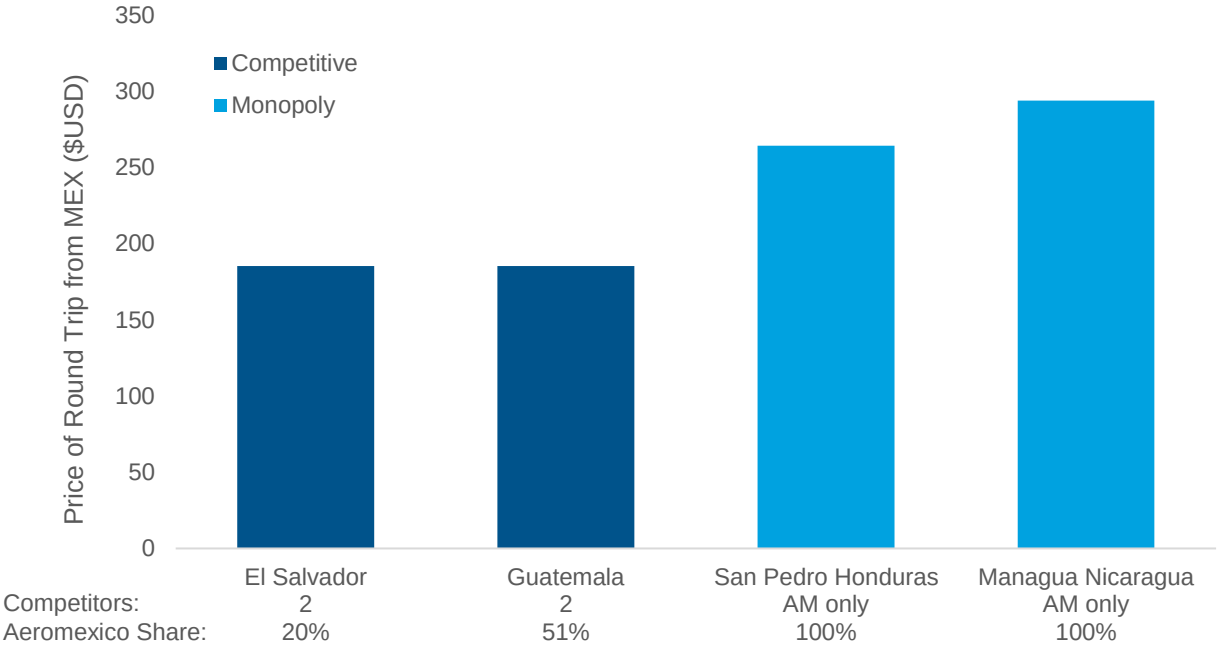
Country	Dom / Int	Tax Name	Tax ($ USD)	Charge Item	Local Curr.	Local Curr Amount	Notes / Condition
Argentina	Int	15% of International Pax Charge	7.4	Per Arr Pax	USD	-	
Aruba	Int	Special Facility Charge	5.3	Per Dpt Pax	USD	-	
Aruba	Int	Travel Promotion Levy	10.0	Per Arr Pax	USD	-	
Bahamas	Int	Passenger Departure Tax	29.0	Per Dpt Pax	USD	-	
Barbados	Int	Travel & Tourism Dev. Fee (ATTDF)	35.0	Per Dpt Pax	USD	-	To countries in CARICOM (Carib. Community)
Barbados	Int	Travel & Tourism Dev. Fee (ATTDF)	70.0	Per Dpt Pax	USD	-	To countries outside CARICOM
Brazil	Int	-	-	-	USD	-	
Chile	Int	-	-	-	USD	-	
Colombia	Int	Tourism Tax	15.0	Per Arr Pax	USD	-	
Colombia	Int	Resident Exit Tax	29.0	Per Dpt Pax	USD	-	Also applies to visitors when stay is > 60 days
Costa Rica	Int	Tourism Arrival Tax	15.0	Per Arr Pax	USD	-	
Costa Rica	Int	Boarding Tax	29.0	Per Dpt Pax	USD	-	
Cuba	Int	Govt. Health Insurance Charge	25.0	Per Arr Pax	USD	-	
D.R (DO)	Int	Authority Fee	15.0	Per Arr Pax	USD	-	
D.R (DO)	Int	Authority Fee	15.0	Per Dpt Pax	USD	-	
D.R (DO)	Int	Tourism Tax	10.0	Per Dpt Pax	USD	-	
D.R (DO)	Int	Airport Departure Tax International	20.0	Per Arr Pax	USD	-	
D.R (DO)	Int	Aeronautical and Agricultural Fees	2.3	Per Arr & Dpt Pax	USD	-	
Ecuador	Int	Airport Auxiliary Facilities Tax	5.0	Per Arr Pax	USD	-	
Ecuador	Int	Airport Auxiliary Facilities Tax	5.0	Per Dpt Pax	USD	-	
Ecuador	Int	Infrastructure Tax Arrivals	10.0	Per Arr Pax	USD	-	
Ecuador	Int	Tourism Fee International	50.0	Per Dpt Pax	USD	-	Only where point of origin is Ecuador
El Salvador	Int	Tourism Contribution Fee Intl.	7.0	Per Arr Pax	USD	-	
Jamaica	Int	Passenger Facility Charge	3.0	Per Dpt Pax	USD	-	
Jamaica	Int	Passenger Aviation Service Charge	4.0	Per Arr Pax	USD	-	
Jamaica	Int	Passenger Aviation Service Charge	4.0	Per Dpt Pax	USD	-	
Jamaica	Int	Tourism Enhancement Fee Intl.	20.0	Per Dpt Pax	USD	-	
Jamaica	Int	Airline Passenger Levy	20.0	Per Dpt Pax	USD	-	
Jamaica	Int	Travel Tax International	35.0	Per Dpt Pax	USD	-	
Mexico	Int	Tourism Tax Derecho No Inmigrante	29.0	Per Arr Pax	USD	-	
Panama	Int	-	-	-	USD	-	
Peru	Int	Tourism Arrival Tax	15.0	Per Arr Pax	USD	-	
Trindad & Tobago		-	-	-	USD	-	
Uruguay	Int	-	-	-	USD	-	
Venezuela	Int	Airport Exit Tax International	45.0	Per Dpt Pax	USD	-	
Austria	Int	Austria Air Transport Levy	3.9	Per Dpt Pax	EUR	3.5	Short Haul
Austria	Int	Austria Air Transport Levy	8.3	Per Dpt Pax	EUR	7.5	Medium Haul
Austria	Int	Austria Air Transport Levy	19.3	Per Dpt Pax	EUR	17.5	Long Haul
France	Int	France Civil Aviation Tax	17.9	Per Dpt Pax	EUR	16.3	Within EEA
France	Int	France Civil Aviation Tax	22.0	Per Dpt Pax	EUR	19.9	All other
France	Int	Air Passenger Solidarity Tax	1.2	Per Dpt Pax	EUR	1.1	Within EEA + French overseas; economy class
France	Int	Air Passenger Solidarity Tax	12.4	Per Dpt Pax	EUR	11.3	Within EEA + French overseas; > biz class
France	Int	Air Passenger Solidarity Tax	5.0	Per Dpt Pax	EUR	4.5	Outside EEA; economy class
France	Int	Air Passenger Solidarity Tax	49.7	Per Dpt Pax	EUR	45.1	Outside EEA; business/first class
France	Int	Fiscal Tax (Corsica)	0.0	Per Dpt Pax	EUR		
Germany	Int	German Air Transport Tax	8.1	Per Dpt Pax	EUR	7.4	Short Haul

Germany	Int	German Air Transport Tax	25.4	Per Dpt Pax	EUR	23.1	Medium Haul
Germany	Int	German Air Transport Tax	45.7	Per Dpt Pax	EUR	41.5	Long Haul
Italy	Dom	Italy Embarkation Tax	18.8	Per Dpt Pax	EUR	17.1	Domestic
Italy	Int	Italy Embarkation Tax	18.8	Per Dpt Pax	EUR	17.1	EU & EEA
Italy	Int	Italy Embarkation Tax	30.4	Per Dpt Pax	EUR	27.6	Non-EEA
Italy	Int	Italy City Council Tax	8.3	Per Dpt Pax	EUR	7.5	Varies by City
Italy	Int	Italy Luxury Tax	11.0	Per Dpt Pax	EUR	10.0	Exec charter (dist. < 100km)
Italy	Int	Italy Luxury Tax	110	Per Dpt Pax	EUR	100	Exec charter (dist. <1,500km)
Italy	Int	Italy Luxury Tax	220	Per Dpt Pax	EUR	200	Exec charter (dist. > 1,500km)
Sweden	Dom	Air Travel Tax	6.4	Per Dpt Pax	SEK	61.0	Domestic, per departure
Sweden	Int	Air Travel Tax	6.4	Per Dpt Pax	SEK	61.0	EU
Sweden	Int	Air Travel Tax	26.6	Per Dpt Pax	SEK	255	ICA < 6,000km
Sweden	Int	Air Travel Tax	42.6	Per Dpt Pax	SEK	408	All other
U.K	Int	Air Passenger Duty	16.7	Per Dpt Pax	GBP	13.0	Lowest class; < 2,000 miles
U.K	Int	Air Passenger Duty	33.4	Per Dpt Pax	GBP	26.0	All Other Classes; < 2,000 miles
U.K	Int	Air Passenger Duty	100	Per Dpt Pax	GBP	78.0	Aircraft > 20tonnes for < 19pax; < 2,000 miles
U.K	Int	Air Passenger Duty	100	Per Dpt Pax	GBP	78.0	Lowest class; > 2,000 miles
U.K	Int	Air Passenger Duty	221	Per Dpt Pax	GBP	172	All Other Classes; > 2,000 miles
U.K	Int	Air Passenger Duty	662	Per Dpt Pax	GBP	515	Aircraft > 20 tonnes for < 19 pax;> 2,000 miles
Norway	Int	Norway Air Passenger Tax	8.2	Per Dpt Pax	NOK	75.0	Final Destination in Europe
Norway	Int	Norway Air Passenger Tax	21.8	Per Dpt Pax	NOK	200	Other Final Destinations
USA	Int	US International Dpt Tax	18.6	Per Dpt Pax	USD	18.6	International
Hong Kong	Int	H.K Air Passenger Departure Tax	15.3	Per Dpt Pax	HKD	120	All destinations
Australia	Dom	Australia Pax Movement Charge	8.5	Per Dpt Pax	AUD	12.5	
Australia	Int	Australia Pax Movement Charge	40.7	Per Dpt Pax	AUD	60.0	
Singapore	Int	Singapore Aviation Levy	4.5	Per Dpt Pax	SGD	6.1	
Thailand	Int	Thai Intl. Departure & Arrival Fee	2.0	Per Dpt & Arr Pax	THB	60.0	
South Korea	Int	South Korea Intl. Departure Tax	23.8	Per Dpt Pax	KRW	28,000	
Japan	Int	International Tourist Tax	9.1	Per Dpt Pax	JPY	1,000	

Source: ita Matrix, airport charge documents, news announcements, IATA TTBS

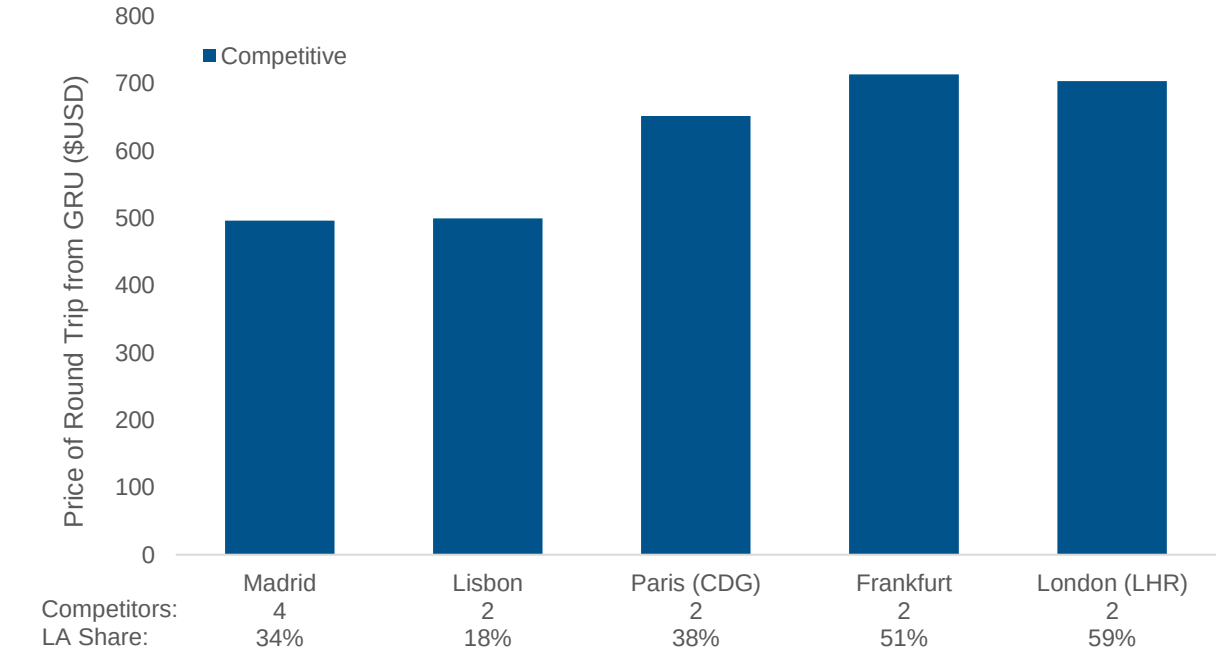
9. Appendix A2

Exhibit 51: Average Air Fares from Mexico City, July 2019



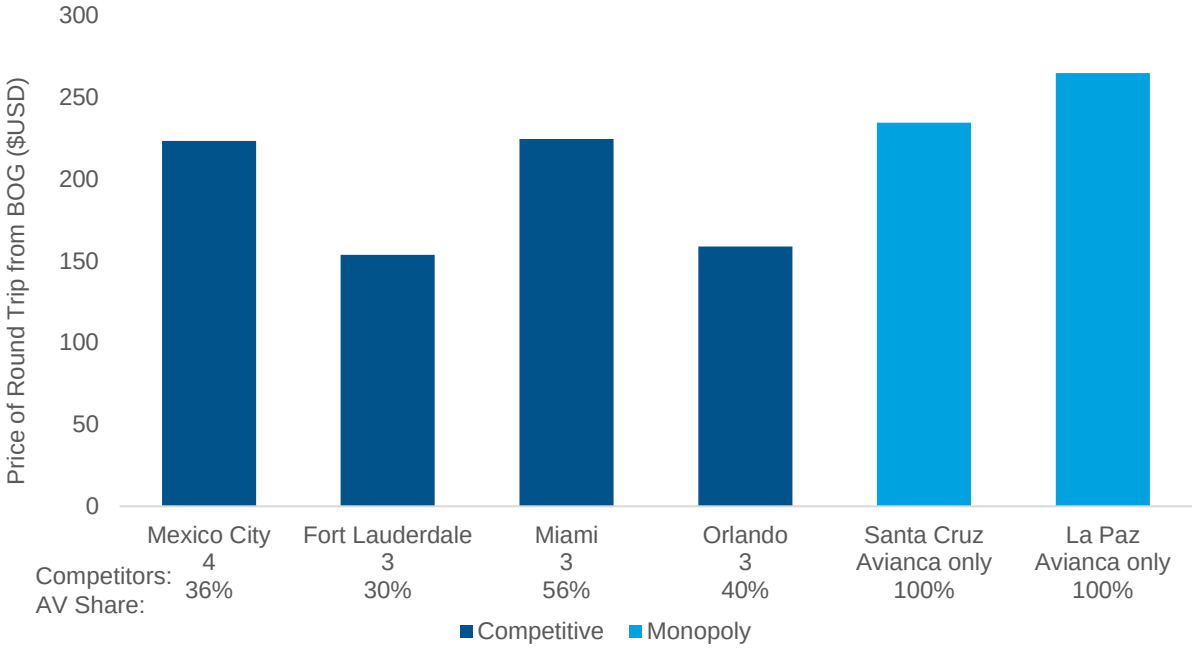
Source: IATA PaxIS

Exhibit 52: Average Air Fares from Sao Paulo Guarulhos, July 2019



Source: IATA PaxIS

Exhibit 53: Average Air Fares from Bogota, July 2019



Source: IATA PaxIS

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