INDUSTRY **INSIGHTS**

Aviation Briefing

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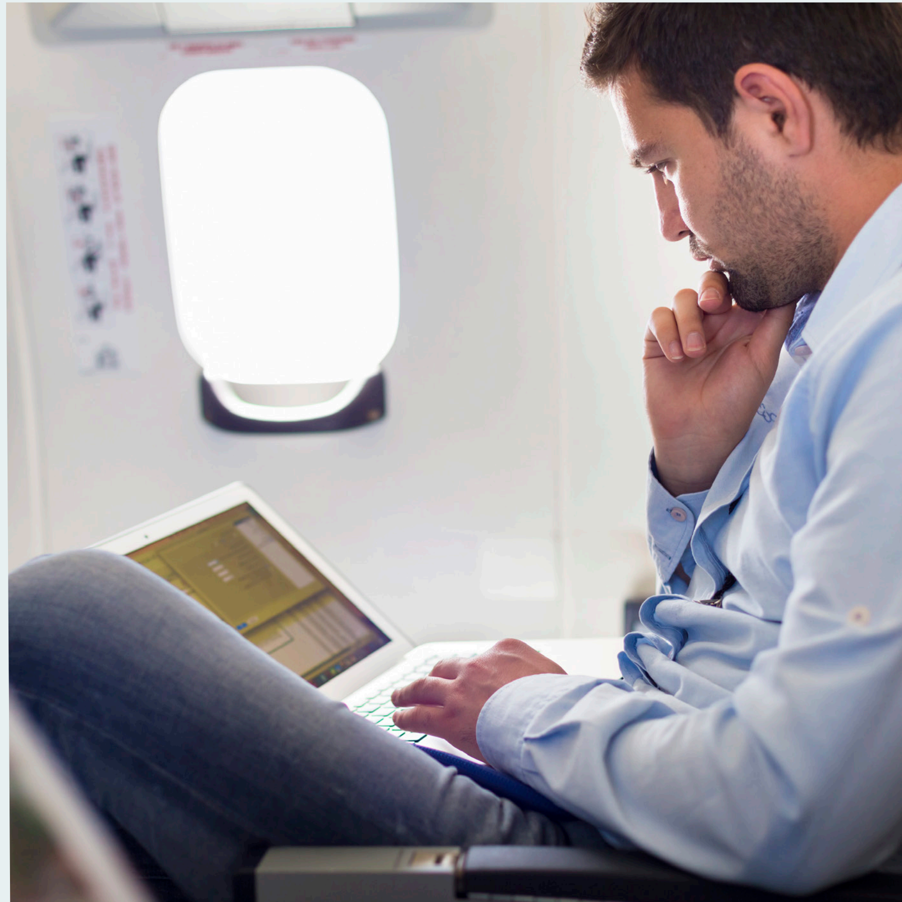
2016 Edition 3



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AVIANCA BRASIL – A BRIGHT SPOT IN BRAZILIAN AVIATION

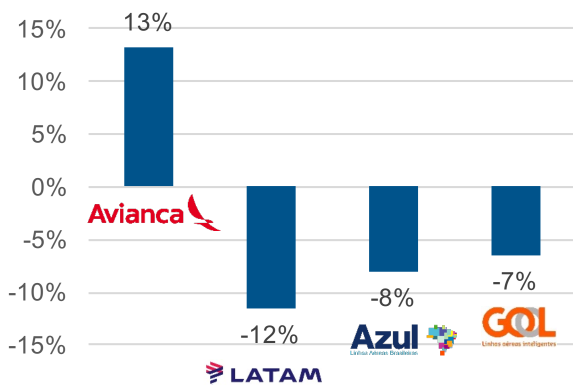
by Eric Toler | Eric.Toler@icf.com

2016 has been another difficult year for Brazil's aviation market, as the country's economic challenges continued and its political crisis reached a climax with Dilma Rouseff's impeachment. The largest Brazilian airlines – LATAM, Gol, and Azul – responded to these tough conditions by slashing capacity and deferring aircraft deliveries. Unlike its rivals, however, Brazil's fourth largest airline, Avianca Brasil (AVB), has executed its growth plans. With a large order for next-generation aircraft, new code-share opportunities, and potential new strategic partner on the horizon, AVB is continuing to build its presence in Brazil as a formidable competitor.

Amidst continued economic recession and currency devaluation in 2016, LATAM, GOL, and Azul made significant capacity cuts. In the domestic market, LATAM has pulled back capacity the most with a 12% reduction, while Azul and Gol have cut capacity 8% and 7%, respectively. In sharp contrast, Avianca registered 13% growth in 2016. According to ANAC data, AVB's traffic growth exceeded capacity growth in September YTD 2016, resulting in a slight increase in average load factor to 83.5%, up from 82.5% over the same period in 2015.

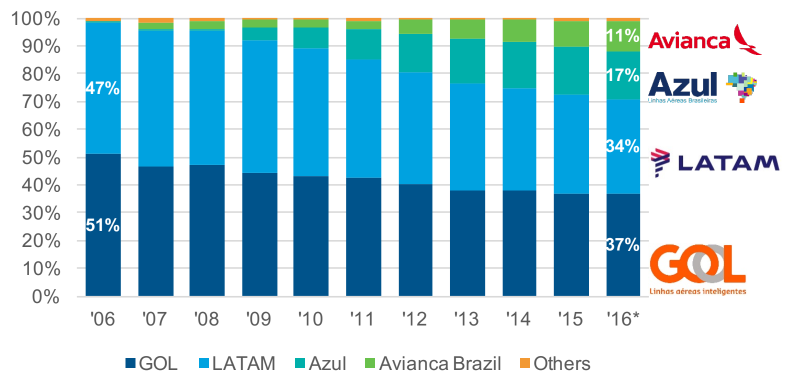
AVB's domestic market share has risen steadily since 2011, from 3% in 2011 to 11% in 2016. AVB and Azul have been the fastest growing Brazilian airlines in the domestic market in recent years, taking market share from LATAM and GOL.

CY 2016 DOMESTIC BRAZIL ASK GROWTH



Source: Innovata Schedules

HISTORICAL SHARE OF DOMESTIC BRAZIL ASKS BY AIRLINE 2006-2016



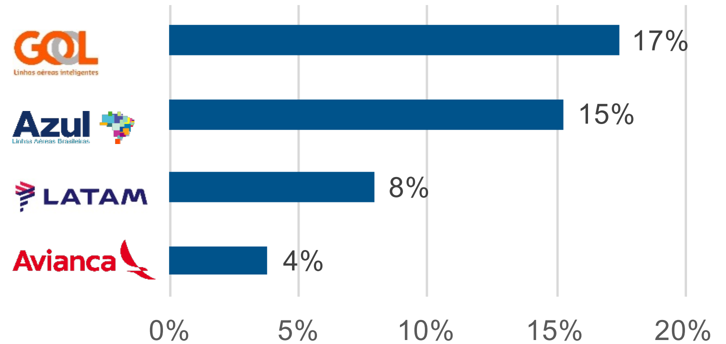
Note: GOL and LATAM include merged/acquired airlines | Source: Innovata schedules

Avianca Brasil's network decisions have softened the impact of the recession on the airline's results. Although it serves the fewest stations of any Brazilian airline, it has a relevant presence where it flies, averaging a 20% market share on those routes.

- AVB's network is concentrated on the largest (and most recession-proof) city pairs in Brazil with 61% of its seat capacity on the Top 20 routes in Brazil by traffic, more than any of its rivals.
- AVB has less exposure to regional markets and secondary routes that have suffered most from the economic downturn.
- Over the last 5 years, the majority of AVB's growth has been focused on its top 5 stations, which account for 65% of the airline's total capacity.

Although AVB does not have the brand recognition in Brazil of its rivals, the airline has differentiated itself through a premium offering that appeals to business passengers, with the most legroom in coach among its peers, free meals, and plans for onboard WiFi. Avianca Brazil's operational performance is also better than its competitors. In 2015, AVB cancelled just 4% of flights, compared to GOL which cancelled 17%.

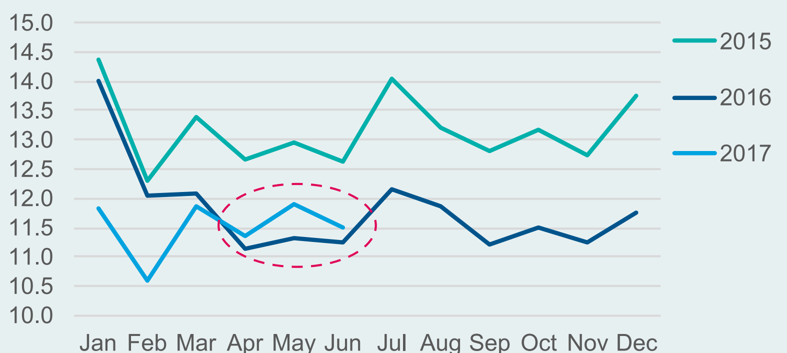
PERCENT OF FLIGHTS CANCELLED CY 2015



Source: ANAC

Looking ahead to next year, there are preliminary indications that Brazil's recession bottomed out in 2016 and that a recovery will begin in 2017. The IMF's latest GDP projections for Brazil from October show 0.5% growth in 2017, up from flat growth in its April forecast. In addition, forward schedules for 2017 show an increase in capacity for the first time in two years beginning in Q2.

BRAZIL MONTHLY TOTAL SEAT CAPACITY (MILLIONS)



Source: Innovata Schedules

U.S. airlines have registered some improvement in yields to Brazil, and other airlines such as TAP have announced plans to resume flights suspended in the last couple of years.

In 2015, Avianca Brasil joined Star Alliance, and since then has signed codeshare agreements with fellow alliance members United, Air Canada, Turkish Airlines, South African, and Ethiopian. These partnerships should provide a boost to its traffic, allowing AVB to provide feed for international flights out of the country's primary gateways in Sao Paulo and Rio de Janeiro.

Although there are no immediate plans to merge Avianca (Colombia) with Avianca Brasil, AVB remains interested in a strategic partnership. Bloomberg recently reported that AVB is seeking an investor to acquire a 20% stake (the maximum foreign ownership allowed by Brazilian law). In October 2016, CEO Frederico Pedreira stated "we are not closed, on the contrary, we are open to having a stronger partnership with a strategic partner…in other words, a large carrier, and we're analysing this possibility."

Although Avianca Brasil is a relatively small player in the Brazilian market today, it should not be underestimated.

A NEW GOLDEN AGE OF AIRCRAFT CABIN INTERIORS

by Jonathan Berger | Vice President
Aerospace & MRO Advisory

Jonathan.Berger@icf.com

They say the past is prologue, history has a way of repeating itself, it's déjà vu all over again, (insert your own cliché here). I find it fascinating that over the past two decades, aircraft cabin interior design has transitioned from a 3 class configuration (first, business, coach) - to two classes (business and coach) - and now back to 3, albeit with different names (business, premium economy, economy).

So what has driven many of the leading global airlines to come full circle? There are three primary factors driving global air carriers to upgrade their aircraft interiors; 1) growth of the Middle Eastern and Asian carriers, which have raised the bar for passenger amenities and comfort, 2) airlines with more excess cash thanks to low fuel costs and consolidation, and 3) a fierce global battle for the lucrative business traveler market.

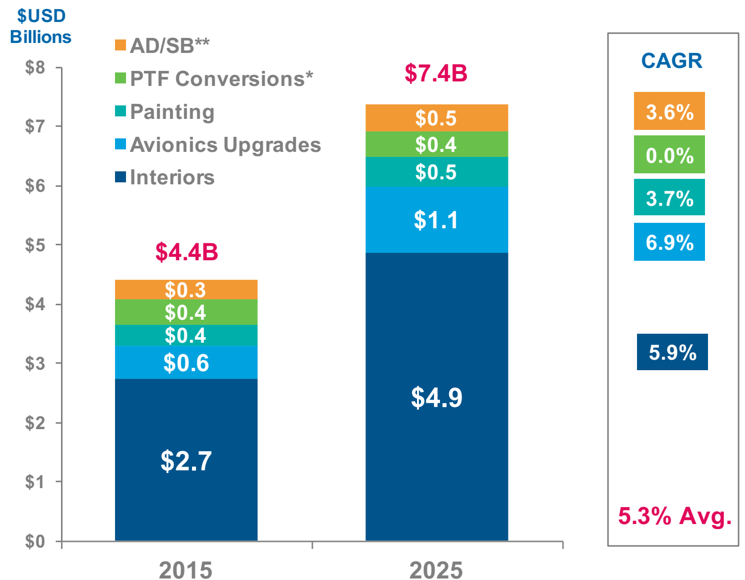
Historically, airlines refreshed their cabin interiors once a decade during a major aircraft overhaul. Today, the situation has clearly changed. Similar to the constant need to upgrade your smart phone every few years, the fiercely competitive airline industry must keep up with the rapid pace of on-board product and technology innovation.

This confluence of competitive dynamics has ushered in, what I believe to be, a new golden era of aircraft cabin interiors that will have a lasting impact on the air transport industry. And this new golden age is not limited to the major international carriers - cabin interior product suppliers have recently introduced a host of new, innovative products designed specifically for low cost carriers as well.

The term "cabin densification" - squeezing in more seats on an aircraft - is all the rage with cabin interior designers and manufacturers. There are now a host of innovative new slim seats, slim lavatories, slim galleys, slim coat closets, etc. And on-board, high-speed wifi is no longer a novelty or competitive differentiator, but a basic passenger expectation.

As a result, the aircraft MRO modification market has surpassed engine maintenance as the fastest growing MRO segment with a compound annual growth rate (CAGR) of 5.3%. Here at ICF Aviation consultancy, we size the MRO modification market at US$4.4 billion growing to US$7.4 billion over the next 10 years.

COMMERCIAL AIR TRANSPORT MODIFICATIONS FORECAST



Modifications demand includes labor and material spend | *Passenger-To-Freighter Conversions
**Airworthiness Directives / Service Bulletins | Source: ICF analysis, constant 2015 US$

For airframe MRO providers, this equates to tens of thousands of man-hours. We anticipate this will create increased competition for hangar slots, and could drive up labor rates, which have been flat for over a decade.

Surprisingly, one would think that these are the best of times for seat and cabin parts manufacturers. But ask any airline or OEM who their lowest performing suppliers are and their answer is unanimous: “our seat and cabin interior suppliers”.

The situation reminds me of the classic “I Love Lucy” episode where Lucy and Ethel are working on the chocolate candy assembly line and hilariously can’t keep up with the production volume. The cabin suppliers are attempting to simultaneously manage both historic OEM demand to meet record aircraft production rates AND surging airline demand for the latest cabin interior products. The supply chain is clearly overwhelmed and simply cannot keep up. Should the major cabin interior suppliers fail to get their respective acts together – and soon – then we should logically expect to see a proliferation of new market entrants and significant growth opportunities for PMA suppliers.

That said, at long last it appears that we have found ourselves in the midst of an epic global battle to improve aircraft interior product quality and comfort in order to attract and retain a discerning customer base. So bring on ever more comfortable, fully lie-flat seats (each with aisle access!), celebrity chef inspired “farm-to-aircraft” meal options, and widescreen LED in-seat video with the latest creative internet streaming content.

As a hardcore road warrior, I’m excited to reap the benefits from this new golden age of aircraft cabin interior products and design.

CREATING NEW VALUE BY INTEGRATING REVENUE MANAGEMENT AND FREQUENT FLYER PROGRAMS

by Mark Drusch | Vice President
Aviation Commercial Advisory

Mark.Drusch@icf.com

Technology has always been the driving force in the airline industry. In fact, without the first technological developments in aerospace over 100 years ago, there would not be an airline industry.

In the 1960's and 70's airline revenue management was developed when American Airlines began utilizing the power of the first computers to book flights and determine which fares should be offered on which flights. Since then, some of the best mathematicians and operations research scientists in the world have been focused on developing forecasting models and allocation algorithms, with constant improvements leading to progressively higher contribution to an airline's bottom line.

In the 1980's, American again launched a far reaching innovation in the airline industry (and ultimately other industries) with the creation of the AAdvantage frequent flyer program. Initially designed to keep track of an airline's best customers, and reward them with free trips to desirable vacation destinations, airline loyalty programs have evolved in the last 30+ years into a separate, major source of revenue from the sale of miles (or points) to partners.

Interestingly, these developments, while occurring within most airlines, were evolving independently from each other, with management and technology silos almost ensuring that effective cooperation and synergies were not possible. This lack of integration of the functions and databases leaves untapped a valuable source of customer information that can be utilized by the revenue management systems to merchandise customer-specific offers, similar to what retailers do today. The ability for today's technology to manage massive amounts of data, mining for specific behaviors, and almost instantaneously generate a personalized, relevant offer to customers can create new revenue streams for airlines.

Connecting the data an airline's frequent flyer program has on a customer, such as typical cabin class flown or past purchase of ancillary products, can drive specific offers at the time of booking. This information, combined with the forecasted demand for specific flights or cabins or products, can create a specific, non-dilutive offer to targeted customers, if desired, and without upsetting the public pricing environment.

As an example, if a customer frequently flies long-haul flights in coach in a high coach booking bucket, and the airline is offering a premium coach product in that market, when the customer looks to book, the integrated platform, after checking premium coach availability through the revenue management system, can offer the customer a discounted premium coach fare to induce trial. This tactic has been in practice with retailers that leverage their loyalty programs for years, yielding measurably net positive incremental revenue results.

THERE ARE THREE KEY COMPONENTS TO SUCCESSFULLY EXECUTING THIS STRATEGY.

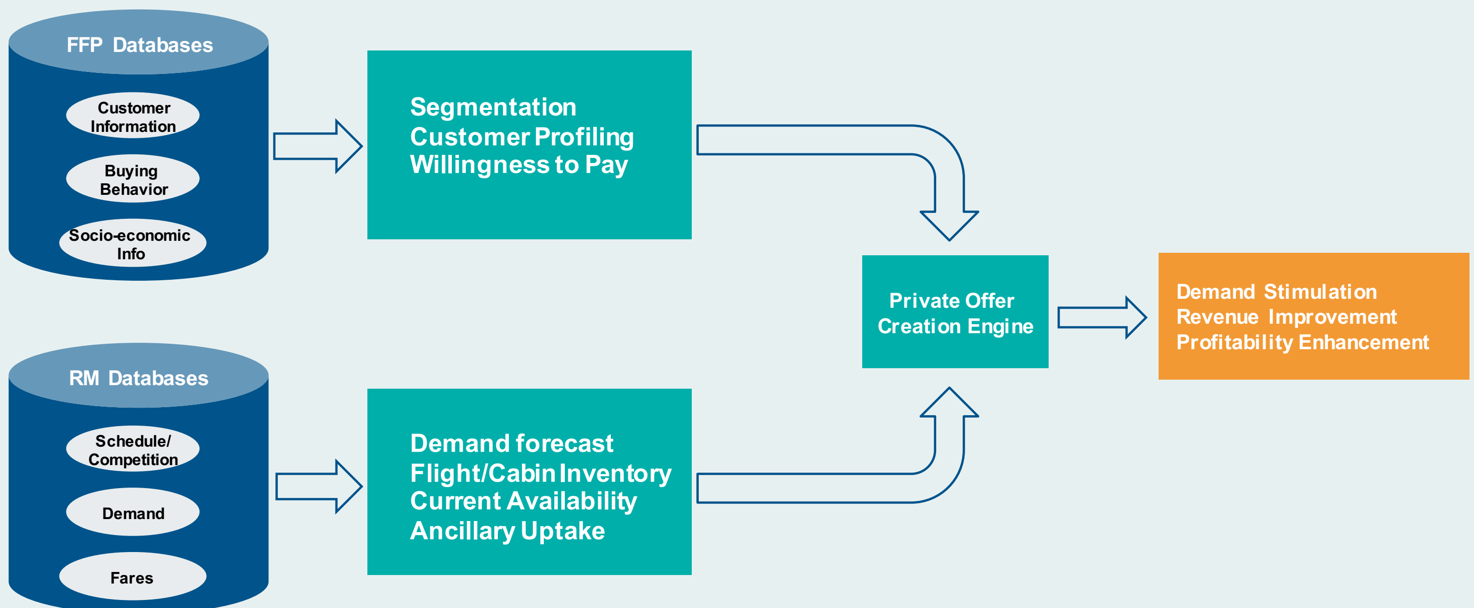


Figure 1: Combining data from RM and FFP could enhance airline's revenues and profitsas

1. Integrating the independent data sources of the revenue management system and the frequent flyer program.

2. An enhanced database of customer profiles based on existing purchase data and status from the frequent flyer program (e.g. address, change in travel patterns), new data collected by the frequent flyer program (e.g. self-reported status on other airlines), and external demographic data.

3. An offer generation module that is dynamic and heuristic, to ensure it is creating (or not creating) offers based on the most current customer behavior, forecasted demand, and desired purchase behavior.

Integration of databases is a new frontier that will yield valuable returns, in both the revenue and cost areas, through leveraging interdependent data and approaching functions holistically. One of the easiest ways to grow the bottom line is to optimize the contribution of existing customers through the smarter use of available data sources.

VIVA LA LOW COST CARRIER REVOLUCIÓN? NOT QUITE YET…

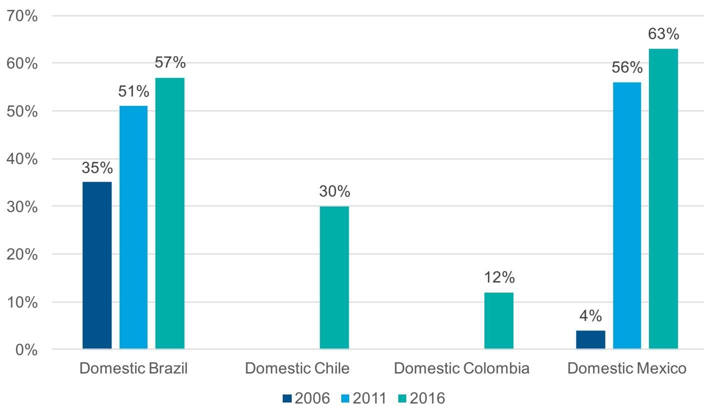
by Carlos Ozores | Principal, ICF

Carlos.Ozores@icf.com

Nearly two decades have passed since the emergence of Low Cost Carriers (LCCs), but their presence across Latin America lags behind most other world regions. This is in part due to market characteristics that present an obstacle to LCC growth, although there are many untapped opportunities that will eventually be exploited. Existing carriers that fail to adapt quickly will fall prey to LCCs.

The LCC boom began in the late 1990s in developed markets in North America, Europe and Australia, and spread quickly to emerging markets, including to Latin America. Today, LCCs operate the majority of seats in the Brazilian and Mexican domestic markets and have a growing presence in Chile and Colombia.

LLC SHARE OF DEPARTING SEATS

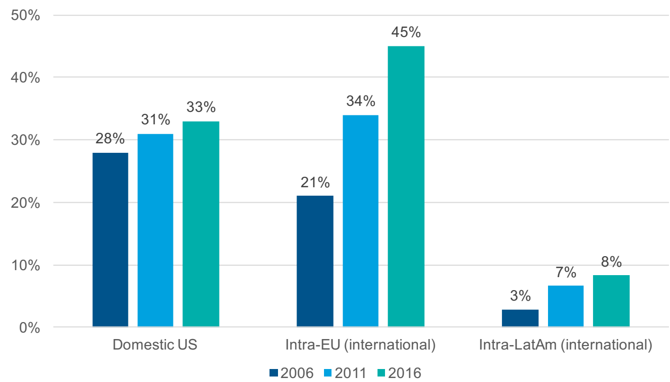


Source: Innovata schedules

However, on international routes within Latin America, LCC penetration remains very low, representing only 8% of scheduled international seats – significantly less than in the domestic U.S. or intra-European markets. More surprising is the fact that this share has only risen about 1 percentage point in the last five years.

LCC penetration on international routes within Latin America is concentrated on routes between Argentina, Brazil, Chile and Uruguay. Elsewhere, LCC coverage is limited. The one international market where Latin American LCCs have made significant inroads is between Mexico and the U.S.

LLC SHARE OF DEPARTING SEATS



Source: Innovata schedules

The Latin American aviation market has very strong fundamentals. So, given this, what is constraining LCC growth across Latin America?

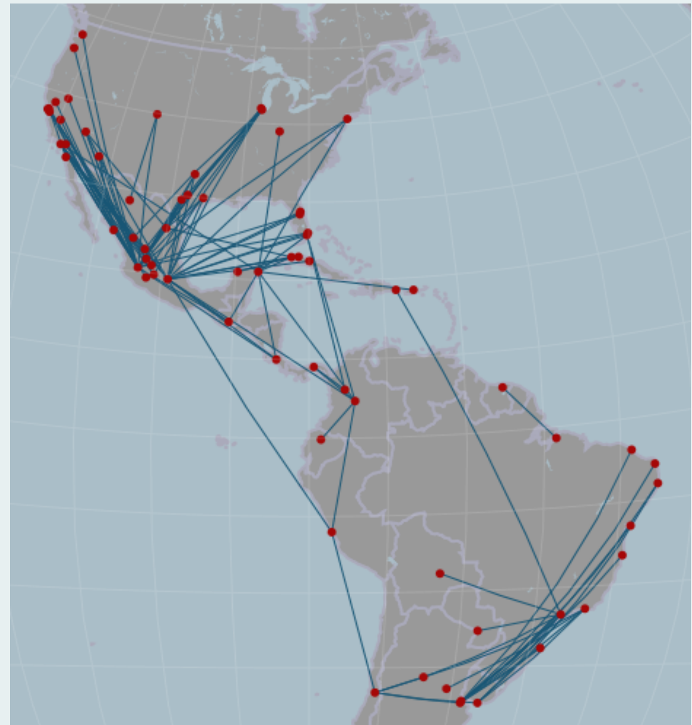
There's a lot of media noise about new LCC start-up plans, many involving Irelandia Aviation, which owns VivaAerobus and VivaColombia. There has been talk of Viva airlines in Costa Rica, Peru and Argentina. Volaris has also been mentioned in connection with a start-up in Costa Rica. Yet there has been little progress in new LCC start-ups in the region.

Despite all the noise, there are several obstacles to increased LCC penetration on international routes, such as:

- **Long distances in most large markets:** the weighted average distance on the largest O&D markets (those with over 100 daily passengers each way) is 2,200km or about a 3 ½ hour flight – equivalent to London-Kiev, New York-Dallas, or Miami-Caracas. However, the LCC model is best suited to short-haul flights, which is why successful LCCs like easyJet, Ryanair and Southwest have average stage lengths of about 1,200km, or 2 hours. Why is this? Because while operating costs are directly linked to distance traveled (i.e., a 2-hour flight will cost about 50-60% more than a 1-hour flight), airlines cannot pass on a proportional increase to airfares. An ICF Aviation analysis of domestic fares across the top 1,000 domestic U.S. markets proves this: whereas the average one-way fare on a 1,000km trip is about $160, the fare on a 2,000km trip is only about $200 – only 25% more. As a result, it is more productive for an LCC to operate six 1.5-hour sectors per day than three 3-hour sectors per day, all else being equal.

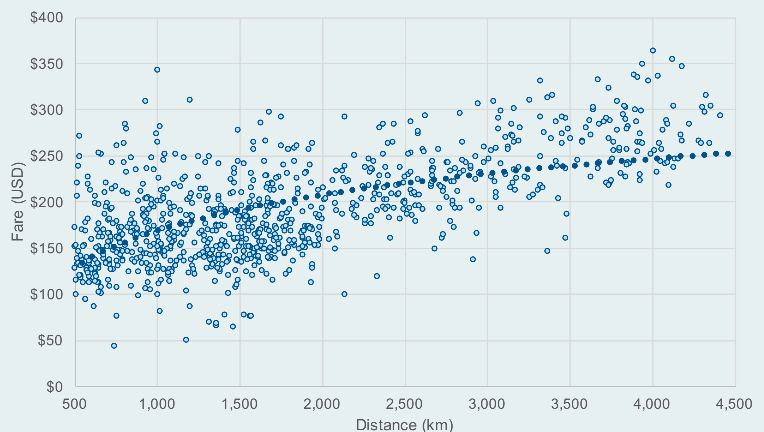
- **High ticket taxes on international travel:** Airport and government surcharges applied to international travel in Latin America can easily exceed $100 per round-trip ticket when origin and destination country charges are summed, significantly more than add-ons to domestic tickets. Consequently, LCC efforts to reduce airfares are limited by governments that penalize international travel, although there are noteworthy exceptions such as Brazil and Chile, which have the region's lowest ticket taxes. Note that the blame lies entirely on governments, which impose taxes and regulate the amount that airports – public or private – can charge. With few exceptions, government policy vis-a-vis international ticket taxes is incompatible with their trade and tourism development goals.

INTERNATIONAL ROUTES OPERATED BY LATIN AMERICAN LCCS, AS OF OCTOBER 2016



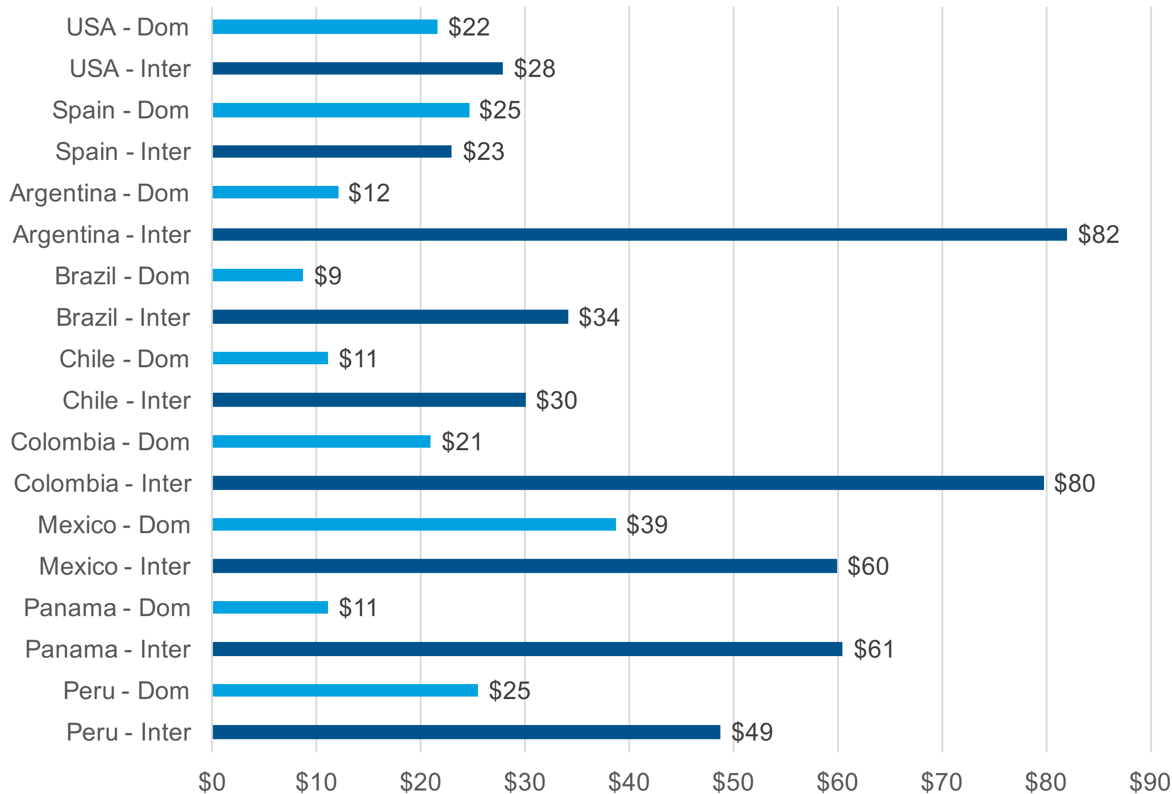
Source: Innovata schedules

DISTANCE VS. ONE-WAY FARE IN TOP 1,000 DOMESTIC U.S. O&D MARKETS



Source: US DOT O&D Survey, CY2015

AIRPORT AND GOVERNMENT TICKET TAXES FOR DOMESTIC AND INTERNATIONAL ITINERARIES ONE-WAY TICKETS, IN USD



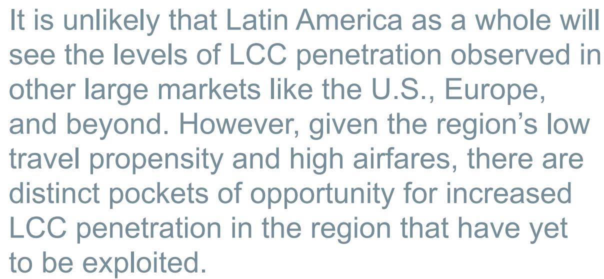
Source: airfare searches on ITA Matrix (as of October 2, 2016)

- **Other factors such as infrastructure and regulation:** While their impact is not limited to LCCs, the lack of infrastructure at large hubs and at secondary airports, and regulations limiting foreign ownership, bilateral route rights, etc., add additional obstacles to LCC growth.

Despite these challenges, several markets present opportunities for increased LCC penetration to reach the levels of developed markets:

- Large domestic markets:
- Peru and Argentina have large populations and territories, significant long-distance ground travel and high domestic fares – key ingredients for an LCC.
- In Chile, Sky Airline has smartly decided to transition to an LCC model to pre-empt a new LCC start-up, although it remains to be seen whether it can achieve true low cost operations. Otherwise, the country's high income per capita and low travel propensity will attract new entrants.
- Brazil's high LCC share is misleading, as there are no pure-play ultra-LCCs along the lines of Ryanair, Spirit or VivaColombia. Significant portions of the population still do not travel by air, so there is plenty of up-side, although there are many structural barriers to entry.

- **Southern South America:** There are natural economic and tourism links between the region's countries, but international travel remains a luxury good. Lower fares can stimulate demand by making air travel accessible to the emerging middle class. Helping matters is the fact that most South Americans do not require passports to travel internationally within the region.
- **Central America:** Economic and migrant ties within Central America and between Central America and the U.S. are very strong, but air connectivity is often poor and expensive. The fundamentals are there to support a regional LCC; however, the small scale of any one country means that to grow, an LCC needs "flag" status from various countries to set up multiple bases.



It is unlikely that Latin America as a whole will see the levels of LCC penetration observed in other large markets like the U.S., Europe, and beyond. However, given the region's low travel propensity and high airfares, there are distinct pockets of opportunity for increased LCC penetration in the region that have yet to be exploited.

What happens once LCCs do establish themselves? Perhaps Mexico provides a good indicator. Prior to the surge of LCCs in the mid-2000s, Mexico had two loss-making full service carriers (FSC) and a handful of poorly-run regional airlines. Fifteen years later, domestic traffic is up over 50%, the market has a single profitable FSC in Aeroméxico, and three well-managed LCCs (Interjet, Volaris and VivaAerobus). The poorly-run regional carriers went bankrupt.

Similarly, we can expect LCCs elsewhere in Latin America to stimulate demand while driving further market consolidation, squeezing out those carriers that cannot create differentiation by offering a superior product or achieving true low cost operations.

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