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AIRLINE COMPETITION

-- Note by Peru --

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*More documents related to this discussion can be found at
<http://www.oecd.org/daf/competition/airlinecompetition.htm>.*

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1. Introduction

1. The Peruvian air transport industry has experienced a solid growth over the last few years, following the positive business cycle of the economy as a whole. Indeed according to the Central Reserve Bank of Peru, between 2003 and 2013 the Peruvian GDP grew at a stable rate of around 6,4% in real terms¹, which coincides with an average annual increase in the number of airline passengers in national commercial routes of 13,7% between 2003 to 2012, last year for which there are updated figures.²

2. The Office of the Chief Economist at Indecopi conducted in 2012 a market consultation to gain knowledge on the current status of the airline services covering national routes.³ According to the information provided by the most important airline companies that were consulted, the steady growth of the business is the result of a combination of the industry's financial and economic improvement and the sensible increase in consumers' wealth.

3. During the 90's the reforms aim at deregulating the business stimulated the entry of new private companies in the national and international markets following the exit of former leaders in the market such as Expreso Aereo, Faucett and Aeroperu.⁴

4. In 2004 five airlines were actively operating domestic flights on regular national routes, Aero Continente, LAN Peru, Aero Condor, TACA and TANS. By the end of the same year, one of the leading companies, Aero Continente, which changed its name to Nuevo Continente, experienced legal problems that ended in the termination of its license, a fact that introduced a new order in the commercial flights business. Currently, domestic flights are covered by five major companies.

5. In this paper we offer an executive review of the main structural and performance indicators related to the passengers' air transportation services with a specific focus on commercial domestic flights.

2. Main agents involved in the Domestic Commercial Flight Services

2.1 Airlines

6. Currently, domestic commercial flights are served by five major private airlines: 1) LAN Peru S.A. 2) Star Peru S.A., 3) Peruvian Airlines S.A., 4) Avianca S.A.⁵, and 5) LC Peru S.A.C.

7. Between 2003 and 2012 LAN Peru transported 25,6 million passengers, notably the largest customer base for a commercial airline in the country. The next company in terms of customer base, Star Peru, transported 4,6 million passengers and the rest have transported less than 2 million passengers each. LAN Peru serves most of the commercial national routes and offers the largest number of frequencies in each of them.

¹ These figures and other statistics regarding the macroeconomic performance of the economy can be consulted at: <<http://www.bcrp.gob.pe/statistics.html>>.

² This information is available at: <<http://www.mtc.gob.pe/estadisticas/transportes.htm>>.

³ The document can be consulted at Indecopi's web page following the link: <<http://www.indecopi.gob.pe/repositorioaps/0/0/jer/publicacionesqs/ObservatorioMercados-2012.pdf>>.

⁴ Plan Intermodal de Transportes 2004-2023. Ministry of Transportation and Communications (2005).

⁵ Since May 28, 2013 Avianca S.A. is the new commercial name of TACA Peru S.A., See: <http://www.elfinancierocr.com/negocios/TACA-Avianca-nuevo_nombre-aerolinea_0_294570543.html>.

8. In addition, there are about 18 minor companies offering non regular flights. As a whole those firms transported around 6,9 million passengers between 2003 and 2012.

2.2 *National Airports & Infrastructure*

9. According to the Ministry of Transportation and Communications, MTC, Peru has 136 airfields (commercial and non-commercial airports and heliports). The region of Loreto that covers most of the Peruvian Amazon concentrates 29 airfields, followed by Cusco with 20 and Ucayali, other important Amazon region, with 15 landing infrastructures. Other cities or regions have less than 8 of this kind of facilities.⁶

10. The country's most important airport is Jorge Chavez International Airport, which is managed by Lima Airports Partners (LAP), a multinational venture which was awarded the concession for the operation of the airport in 2001 for a time horizon of 30 years. In 2012, about 3,4 million passengers used a commercial national flight from that airport.⁷

2.3 *Authorities*

2.3.1 *Directorate General of Civil Aviation (DGAC)*

11. In Peru the MTC is the national authority for civil air traffic. Specific regulations are proposed by the MTC's Directorate General of Civil Aviation (DGAC) which has the mandate to regulate, supervise and sanction all civil aeronautical activities, including any activity carried out by the State.

2.3.2 *National Supervisory Agency For Investment In Public Transportation Infrastructure (Ositran)*

12. This agency is in charge of regulating and supervising transportation infrastructures and related services offered to transport operators and is responsible for controlling public transportation conditions as well as the enforcement of all commitments and conditions agreed by private infrastructure companies in the corresponding concession contracts. In addition, this agency also controls that the conditions stipulated in the concession contracts meet both national and investors' interests.

2.3.3 *National Institute for the Defense of Competition and Protection of Intellectual Property (Indecopi)*

13. Indecopi has several responsibilities in what regards civil air transportation services in the Country. Although the list of attributions to supervise, regulate and sanction is numerous, here we provide a short sample of the most critical issues on which Indecopi has a key role as a public agency:

- Supervise public regulations that might constitute an illegal or irrational bureaucratic barrier to entry for any investor to the market,
- Prosecute public and private conducts that might constitute disloyal acts against competitors in the market that will distort the normal development of the competition process,
- Promote and supervise free competition in the market, prosecuting any anticompetitive behavior, including the abuse of dominant position and unlawful horizontal and vertical agreements,

⁶ This information is available at: <<http://www.mtc.gob.pe/estadisticas/transportes.htm>>.

⁷ Annual Report LAP (2012). This information is available at: <http://www.lap.com.pe/lap_portal/pdf/memoriaanual2012.pdf>, pp. 129.

- Manage failing firms processes to secure a sound restructuring or an organized and transparent liquidation of firms,
- Manage airline companies' trademarks and logos,
- Manage of consumers' complaints related to airline services.

3. Market structure

3.1 *Services offered to the market*

14. Airline passenger and freight services are characterized by a sensible reduction of time with respect to alternative modes of transportation in the Country. This is so because distances between destinations are usually relatively long and land transportation services are limited by a complex geography. However, alternative passenger transportation services have in common the fact that most service costs are fixed. For instance, once an airplane takes off, the cost of fuel consumption and aircraft maintenance is does not depend on the number of booked seats.

15. In the same way, airline companies are multiproduct providers as they offer several services, such as passenger, charter or cargo transportation. Also, airlines are different in the sense that they offer different combinations of relevant service attributes between departure and arrival points.⁸

16. Corporate customers seem to value time more than the cost of airline services, whereas individual customers pay more attention to price differentials rather than time.⁹

3.2 *Market situation*

17. For the analysis of air transportation services competition authorities commonly base their judgment on "departure and arrival points" (DAP).¹⁰ According to this approach each flight combination must be considered a separate market from the user's perspective. This is so because passengers commuting between two specific cities do not consider alternative routes as effective substitutes. It is not reasonable to expect a large number of marginal passengers to substitute a specific destination for an alternative one upon a price increase in the cost a ticket for the former.¹¹

18. In order to establish if there exists competition in a particular market defined by a DAP, it is necessary to consider the different transportation choices available in such market (intermodal competition). This means that the analysis need to consider both non-stop flights over the route and flights within reasonably defined areas of influence of the DAP, as well as indirect air routes and alternative modes of transportation. Usually for DAP that are far apart, transport modes such as bus or private cars do not make up for a good substitution. In fact according to MTC (2005), the expected degree of competition in a route depends on both the cost and duration of each trip. Therefore, one might expect some routes, such as Lima – Trujillo and Lima – Ayacucho, to be more prone to competition than routes where DAP are

⁸ Section 3.2 explains in more detail why each combination of offered point of origin and destination should be treated as a different product.

⁹ According to information provided by companies' managers in several meetings conducting during the research process for the elaboration of a market consultation conducted by the Office of the Chief Economist in 2012.

¹⁰ See, for example, Commission of the European Communities (2001).

¹¹ Agostini (2008).

far away. Examples of the latter could be Lima – Tumbes, Lima – Tarapoto, Lima – Tacna and Lima – Cusco.¹²

19. Another aspect to take into consideration is that “time” is an important attribute for some passengers. Specific needs of these passengers could only be met by flights of short duration or flights departing at a specific time. Sometimes they can only make reservations with little time ahead or they may also require flexibility for departure time and date changes. These passengers are usually less reluctant to pay higher prices in order to get the corresponding advantages than other type of passengers that usually tend to be much more sensible to ticket prices and less demanding about time schedules and rescheduling flexibilities.¹³

20. The identifiable features that differentiate these two groups of consumers have a direct implication on how airline companies approach the market. LC Peru, for instance, is mainly focused in serving corporate and business customers where “time” is a key element. For that reason other flight services provided by rival companies do not represent close substitutes from the point of view of the LC Peru managers.¹⁴

3.3 Concentration

21. Competition assessment is commonly performed by means of an analysis of market concentration frequently measured in terms of the Herfindahl-Hirschman Index (HHI). The HHI gives a preliminary flavor on the expectations about the dynamics of competition in the market.¹⁵ The U.S. Department of Justice (DOJ) considers that a market is likely to be fairly competitive if the HHI is inferior to 1 500 and it is moderately concentrated if the index is between 1 500 and 2 500. When the HHI is greater than 2 500 the DOJ considers that the market is highly concentrated.¹⁶

22. It is instructive to have a long run view of the evolution of concentration of the number of passengers served for each commercial airline company. To that aim we consider the whole set of firms serving both regular commercial routes and operating chartered flights for the period 2000 to 2012.

23. Graph 1¹⁷ depicts the long run evolution of the HHI along with the inverse of the number of firms active in the market ($1/n$) which is equivalent to a hypothetical HHI index where firms are symmetric. Given that the HHI can increase because of a drop in the number of firms, an increase in the dispersion of market shares or both, departures of the HHI with respect to the inverse of the number of firms will reflect more asymmetric distributions of the market shares among rivals.

24. During the first years of analysis both the number of firms and the distribution of market shares were fairly stable, for an HHI ranging from 2 717 in 2000 to 2 891 in 2004. Those levels could be considered already highly concentrated by DOJ standards. From that point on the HHI index climbed considerably, coinciding with the exit of Aero Continente, a leader in the market. The HHI peaked in 2009

¹² It is noteworthy that these impressions are shared by the airlines’ representatives who were interviewed during a market consultation conducted by the Office of the Chief Economist in 2012.

¹³ Commission of the European Communities (2001).

¹⁴ According to the Administration and Finance Manager of LC Peru, the only exception would be the Lima-Cajamarca-Lima route, which would compete with LAN Peru in terms of the preference of passengers.

¹⁵ Church, J and R. Ware (2000).

¹⁶ United States Department of Justice and Federal Trade Commission (2010).

¹⁷ See Annex.

with a figure of around 6 480 points, whereas the symmetric HHI (1/n) remained stable across time. The market became much more asymmetric than was observed at the beginning of the period of study.

25. In recent years though, the observed trend towards asymmetry changed remarkably, lowering towards the symmetric HHI (1/n). Yet the industry remains highly concentrated by common standards as the HHI is still above 4 000.

3.4 *Entry Barriers*

26. According to Bain (1956) “entry barriers” are key elements that allow incumbents to obtain short run benefits without effectively attracting potential entrants in the market.

27. It is informative to examine barriers to entry in this market by means of the observation of entry and exit episodes. Between 2000 and 2012, three companies entered the market whereas seven exit.¹⁸ Along the time period analyzed, the number of companies operating commercial routes on the basis of regular flights (that is not considering those operating chartered services) fluctuated between five and eight.

28. In order to have a first impression about the existence of relevant barriers to entry the number of entry and exit episodes should be considered together with the evolution of market size. As it was mentioned at the introductory part of this article, the number of passenger grew steadily from 2003 to 2012 at an annual rate of 13,7%, so that the number of entry episodes, related to the number of exits, for such grow rates might seem low. This simple analysis reflects the existence of seemingly important barriers to entry, as the number of active firms appears to be bounded below with respect to market size.

3.4.1 *High investment costs for companies*

29. One of the features of structural costs associated to airline companies is soaring levels of capital inversion. This is due to the fact that operating facilities for aircraft maintenance and handling are highly costly (Financial Regulation Bureau of Colombia, 2009). Companies providing air transportation service in Peru need to fulfill two requirements: acquisition and leasing. There is no marked preference to neither of them, although LAN Peru owns the aircrafts it works with. LC Peru, on the other hand, prefers leasing the airplanes.¹⁹

30. Other costs include infrastructure (such as hangars, land equipment and offices), as well as trained personnel (for maintenance works, spare parts control, marketing technology, among others). In addition, companies’ representatives coincide in pointing out the lack of professional and sufficiently qualified pilots. According to them, Peruvian experienced pilots are offered positions in foreign companies, especially from Asia, making it more difficult for local companies to attract and retain valuable human capital.

31. Considering the current situation depicted above investments costs and hiring qualified personnel may constitute barriers and limitations to the entry of new companies into the local air transportation market.

¹⁸ The entry and exit of the Nuevo Continente as a new company, despite of being an extension of Aero Continente that ceased operations in 2004, is considered.

¹⁹ Information provided during interviews with representatives of the companies.

3.4.2 *Scale and Scope Economies*

32. Airline transportation services are characterized by scale economies, associated to unit cost variations related to proportional changes in the size of the service net as well as the provision of the transportation.²⁰

33. Scale economies can also be attributed to high fixed costs (aircrafts maintenance, counter, personnel and infrastructure) with respect variable costs. That is to say, that major traffic on a specific route will need a bigger aircraft which in turn will result in a reduction of the cost per passenger.²¹ As a consequence, potential entrants could only be interested in the market if they expect to capture a sufficiently large base of clients to be competitive.

34. Additionally, there might be scope economies due to relatively a more efficient provision of several routes in a well-organized net than serving routes individually.²² All in all, scope and scale economies would constitute a limitation for potential entrants as an efficient and competitive service seems to require a large client base as well as an extensive net of routes and complementary services.

3.4.3 *Infrastructure Limitations*

35. Airport infrastructure in the country can also be considered as a relevant barrier to entry for airline companies in a particular route. According to the companies' representatives, in certain regions of the country (Atalaya, Chachapoyas and Espinar) there is an unattended demand by scheduled flights. Nevertheless, airport conditions in those destinations do not offer any guarantee for a safe flight. There is a lack of essential infrastructure elements such as modern radars, lightening elements for night landing and takeoff and other security measures (e.g. fire engines).

36. On the other hand, landing strips' width and length could also limit the access to certain type of aircrafts so that increasing the number of frequencies is restricted to the acquisition of suitable aircrafts, which might in turn might be consider sunk costs for potential entrants.

3.4.4 *Most Relevant Regulatory Barriers*

37. There are not regulatory barriers to entry, according to both authorities and undertakings. The procedures to apply for an authorization to operate air transportation services for passengers are clear and consistent with the general legal framework and the corresponding authorities are thought to resolve the applications in a timely fashion.

38. It is worth mentioning that current regulation requires that at least 51% of the company has to be owned by Peruvian capitals and that requirement is reduced to 30% after six months of effective operations so that this regulation is not perceived as a relevant barrier to entry.

3.4.5 *Frequent Flyer Programs*

39. Several studies analyzing the industry of air transportation services for passengers, coincide that one important feature that might hinder competition is connected to frequent flyer programs. These types of customer programs play an important role at the time of purchasing a flight, due to the fact that it

²⁰ Agostini (2005).

²¹ Office of the Chief Economist (2000).

²² Agostini (2005).

induces different fees and creates potentially relevant switching costs.²³ The main effect of switching costs is that firms acquire some market power with respect to their customers, which in turn increases the likelihood of monopoly rents. In that vein Carlsson and Löfgren (2004) reported that switching costs make up for 12% of fees in domestic flights in Switzerland and Agostini et al. (2012) calculated that 18% of the price charged by the dominant firm in Chile could be related to its frequent flyer program.

40. Frequent flyer programs may also create sunk costs for potential entrants because they often reward customers with free flights in exchange of previous miles accumulated. Potential entrants may need to consider, from the very beginning, a sufficiently large scale of flights so that they can also offer the advantages of a frequent flyer fidelity program.

41. In Peru four out of five major local airlines have frequent flyer programs.²⁴ Airline companies' representatives interviewed during a market consultation conducted in 2012 considered that the impact of frequent flyer programs is limited in the local market though. For example, because the miles that clients can claim from national flights will help only marginally to accumulate enough miles for a reward, they may have a limited effect over the loyalty of customers.

3.4.6 *Product (service) differentiation*

42. Airline companies pay attention to the quality of the service they offer so as to differentiate them from their rivals. For instance, "time" is almost always the decisive attribute when purchasing a specific service. For that reason some airlines focus on timely services, such as those oriented to business and corporate clients, offering a wide range of frequencies in a single route as well as accurately design time schedules. In this way firms concentrating on business and corporate clients can profit from customers that are willing to pay more for flights fitting their specific needs.

43. Other elements of product differentiation, according to representatives of the leading companies in the market, are seats comfort, on board quality service and aircraft age. Some airlines offer a "warm service in silent flights" whereas others offer "punctuality, quality on board services and modern aircrafts". Theory (e.g. Tirole, 1988) predicts that product differentiation softens price competition, yet the significance and magnitude of product differentiation over prices has to be assessed in a more detailed fashion and remains as an important empirical question to explore in future market consultations.

4. **Prices**

44. According to the Article 84 of Law 2761 (Civil Aeronautical Peruvian Act), national, international, commercial, cargo and postal mail flights' prices are freely determined by each individual airline company, according to market conditions and the evolution of supply and demand.

45. The National Statistics and Informatics Institute (INEI) estimates a monthly consumer price index for air transportation services. INEI changed the base year for the calculations to 2009 so that currently the information available provides comparable price variations across time from 2010 on. Graph

²³ To Klemperer (1995), switching costs are derived from the desire of consumers that their purchases are consistent with current investments, both real and psychological, made in previous periods. In that sense, the switching costs include those costs caused by: (i) the need for current purchases are compatible with existing equipment; (ii) the transaction costs associated with changing suppliers; (iii) the costs of ascertaining the existence or prices of competing brands; (iv) the costs of learning to use the new brand, and (v) the uncertainty about the quality of the brands that the consumer has not used before.

²⁴ By December 5, 2012, LC Peru has no frequent flyer programs.

²⁵ shows the evolution of this index suggesting relatively small fluctuations, albeit some seasonal peaks, around its base value (2009=100) from January 2010 until July 2013.

46. From July 2013 until the last month of the series the index has evolved persistently above the base value. The accumulated nominal price variation for the entire sample of periods is, however, half the one observed for the Consumer Price Index (CPI).

5. Antitrust cases related to air transport services

47. The only case in Peru where an airlines cartel was prosecuted involved an alleged agreement among several airlines aimed at reducing the commissions paid to travel agencies for the sale of tickets by the first quarter of 2000. The case was finally closed with a decision in favor of the prosecuted companies, mainly as a consequence of formal issues.

48. However, considering the levels of concentration, entry barriers and the impact of air transport services on consumer welfare, Indecopi is continuously screening the industry for red flags that may signal anticompetitive conducts.

6. Concluding remarks

- Peruvian national aerial transportation service has shown an increasing growth along the last decade. The average annual growth rate in passengers was of about 13,7% between 2003 and 2012.
- The industry is highly concentrated by international standards, mainly because market shares in terms of passengers transported are remarkably asymmetric among rivals. The HHI rose to a maximum of 6 483 in 2009 and has thereof declined systematically to 4 255 in 2012.
- Low number of entry episodes with respect to exit episodes, in a context of steady market size grow, suggest that entry barriers are relevant. Such barriers are most likely due to high capital investments, limited ability to hire trained personnel, scale and scope economies, infrastructure limitations, and to a lesser extent, to loyalty programs that may introduce switching costs. The relevance of switching costs is unclear though and may require additional and more detailed scrutiny in future market consultations.
- Though no cartel among airlines has been yet detected and punished, Indecopi is continuously screening the market in order to detect and prosecute illegal practices that could distort competition and harm consumers.

²⁵

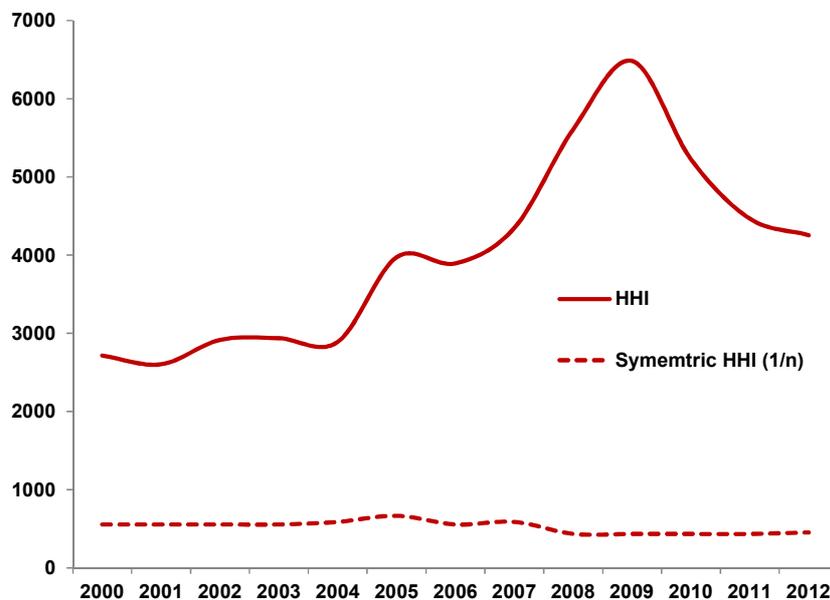
See Annex.

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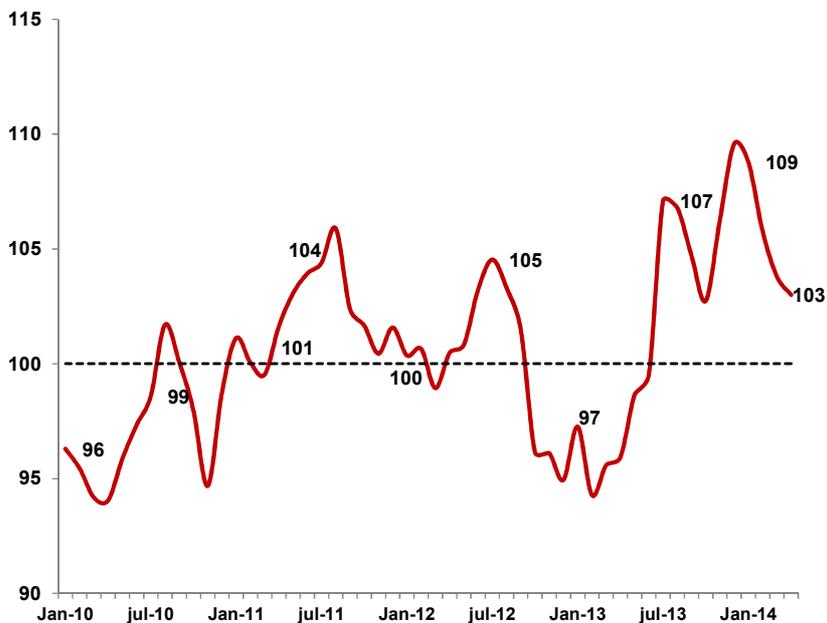
ANNEX

Graph 1
HHI AND SYMMETRIC HHI (1/n) FOR PASSENGERS' AIR TRANSPORTATION SERVICE, 2000-2012



Source: MTC
Office of the Chief Economist at Indecopi

Graph 2
AIR TRANSPORT SERVICE PRICE INDEX (2009=100), 2010-2014*



* Information available as of April 2014.
Source: National Statistics and Information Institute
Office of the Chief Economist at Indecopi