Text commissioned for http://www.idees.net/

CURRENT SITUATION AND FUTURE SCENARIOS OF CATALAN AIRPORTS

Xavier Fageda
(Universitat de Barcelona)

1. Introduction

Airports are very significant infrastructures for the territory in which they are located. Their economic impact mainly comes from three channels. First, airports generate a high volume of jobs thanks to the activities that take place directly in their facilities and in the logistic zones around them. Moreover, the majority of tourists from distant origins fly to reach their destination. Finally, the cities which benefit from airports with an extensive network of air connections have more opportunities to attract advanced technology activities with a high added value.[1]

In this respect, the economic importance of an airport is highly conditioned by the volume of passengers which passes through its facilities. The direct creation of jobs depends on the volume of traffic that the airport moves. The figures for tourists who arrive in a city by plane are an important part of the figure for passengers moved by any airport. Finally, the quality and the levels of international connectivity that the airports offer the big metropolitan areas is determined both by the volume of traffic and by the geographic scope of the destinations with a direct flight.

Airlines decide in which airports to concentrate the bulk of their operations, the network of air routes that they cover and the frequency of the flights, the main determinant of the quality of service in air transport, that they offer. Therefore, the volume and type of traffic moved by an airport at present and that it expects to move in the coming years is considerably influenced by the relative weight of the different types of airlines (network, low-cost, charter) that operate in it.[2]

This study examines the current situation and the possible future scenarios of the three Catalan airports (Barcelona-El Prat, Girona, Reus) in which commercial operations are carried out in 2008.[3] A characterization of the traffic in each of these airports is therefore carried out first, taking into account the volume and relative growth of their number of passengers in the Spanish context, the geographic scope of the main destinations and the type of airlines which have the greatest weight in these airports. Starting from this characterization of the traffic, and while considering that the problems of congestion are tending to become lighter in all three airports, possible future scenarios

[1] See Bel and Fageda (2007, 2008a) for more details.
[2] See Fageda (2008) for more details.
[3] The work for the construction of the new commercial airport of Alguaire (Lleida) is currently under way. There is moreover the aerodrome of Sabadell and other aerodromes planned in Catalonia dedicated to private and recreational aviation, an activity of growing importance worldwide. Without diminishing the importance of all these facilities, this study focuses on the airports which currently record commercial operations. It is particularly difficult to consider possible future scenarios for the other airports.

are considered in accordance with whether or not a reform of the current management model toward individualization is undertaken.

2. The traffic in the main airports of Catalonia

In this section, we analyze the main characteristics of the traffic in the three Catalan airports, focusing in particular on Barcelona-El Prat airport. The analysis of the current traffic is carried out using data from 2007, which is the last year with complete information available, while the evolution in time takes the year 2000 as the reference, the period immediately prior to the arrival of the low-cost companies in the European aviation markets.

2.1. Evolution and type of traffic

Table 1 shows the current volume of traffic and its evolution since 2000 in the three Catalan airports. In 2007, Barcelona airport moved almost 33 million passengers, consolidating its position among the 10 airports with the most traffic in Europe. Since 2000, it has grown above the Spanish average (66% against 49%) and among the big European airports, only Stansted has grown more. However, these positive data conceal some well-known shortages. As shown in graph 1, the main destinations from El Prat airport are the most important cities and tourist destinations of Spain (46% of total traffic) and the European Union (48% of total traffic). The traffic to the rest of the geographic areas (rest of Europe, Africa, America, Asia) is in all cases below 2% of total traffic.

On the other hand, Girona airport has gone from moving just over half a million passengers in 2000 to almost 5 million in 2007, being one of the airports with the highest growth in traffic in Spain and Europe in general. This growth is exclusively due to the decision by Europe's main low-cost carrier, Ryanair, to convert this airport into one of its most important operating bases. Finally, Reus airport is close to moving 1.5 million passengers a year. It has, however, gone down in the ranking of Spanish airports, despite having grown above the Spanish average since 2000. An important limitation to Reus airport is the high traffic channelled by charter airlines, which is a type of traffic of much lower quality than that of scheduled flights due to the greater uncertainty regarding timetables and frequency of flights six months hence.

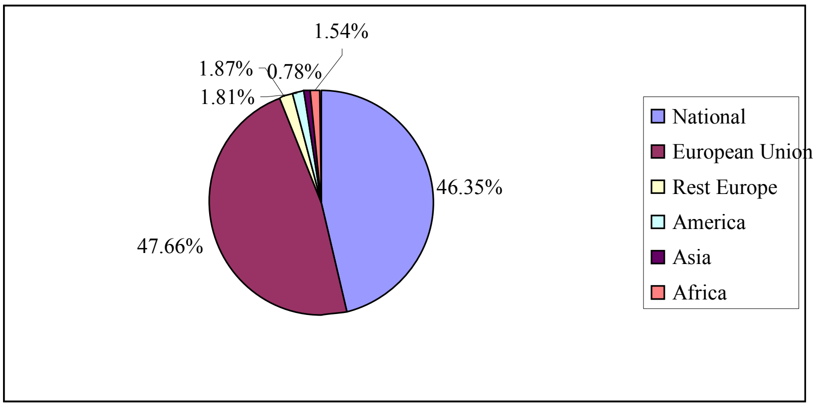
Table 1. Movement of passengers in the airports of Catalonia (2000-2007)

	Total traffic	% scheduled	Growth traffic	Ranking*	Ranking*

	2007	traffic 2007	2000-2007	2000	2007
Barcelona	32,898,249	96.83%	66.07%	2	2
Girona	4,848,604	93.53%	644.33%	23	10
Reus	1,306,785	46.93%	79.45%	20	23
Catalonia	39,053,638	94.75%	84.31%		
Spain	210,498,760	86.62%	49.30%	-	-

*Position in the ranking of Spanish airports managed by AENA in terms of total traffic
Source: AENA

Graph 1. Traffic by geographic area in Barcelona airport (2007)



Source: AENA

2.2. Type of destination and airline in 2007

Table 2 and graph 2 show the distribution of the current traffic in Barcelona airport by airline. Firstly, it is important to stress the high weight of Iberia and associated companies (Clickair, Air Nostrum) in Barcelona airport, which represent a third of total traffic. On the other hand, the corporate movements which are taking place around Iberia (Caja Madrid as its main shareholder, foreseeable merger between Clickair and the other main low-cost company in Barcelona, Vueling, speculation on the future buyer of the second Spanish airline, Spanair) represent a future risk for Barcelona airport. All these corporate movements make us think that it is difficult for Iberia to change its strategy of concentrating added-value operations in Madrid, and low-cost ones in Barcelona. It should not be forgotten that the intercontinental destinations in Barcelona airport are exclusively offered by American companies (Delta, Continental, American Airlines, US Airways, Air Transat, Aerolíneas Argentinas, Avianca). Along the same lines, almost a quarter of the total traffic in Barcelona airport is channelled through low-cost airlines, an excessively high proportion for an airport which serves one of the most populated urban areas of Europe with aspirations to become one of this continent's main business centres.

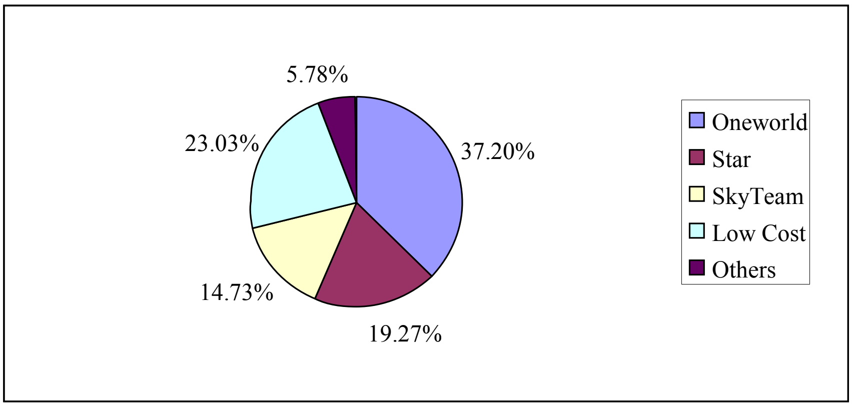
Table 2. Main airlines which operate in Barcelona airport (share > 1%)

Airline	Traffic airline	Share out of total traffic
Iberia	6,431,011	19.71%

Spanair	4,242,728	13.00%
Clickair	3,279,353	10.05%
Vueling	3,082,307	9.45%
Air Europa	2,360,183	7.23%
Easyjet	1,590,886	4.88%
Lufthansa	1,116,608	3.42%
Air Nostrum	1,111,069	3.38%
Air France	845,842	2.59%
British Airways	658,698	2.02%
KLM	583,203	1.79%
Alitalia	565,145	1.73%
Swiss	490,825	1.50%
Air Berlin	464,263	1.42%
Rest	5,964,654	18.02%

Source: AENA

Graph 2. Market share by type of airline in Barcelona airport



Note: The low-cost category includes charter flights. The others category includes network airlines not integrated in any alliance, regional airlines and private aviation companies.
Source: AENA

The huge growth in traffic experienced by Barcelona airport in recent years has clearly been led by the low-cost airlines, and it will be difficult for these airlines to maintain the current rates of growth over the coming years. On the other hand, table 3 reflects another future problem for Barcelona airport. In 2007, Madrid is by far the main destination, representing 14.5% of total traffic. And the competition that the high-speed train will exercise in the coming years leads us to foresee a considerable reduction in traffic on this route. The rest of the major destinations from Barcelona airport are the main European cities and the major Spanish tourist destinations. It therefore seems that Barcelona airport has responded to the tourist-type traffic demanded by the local population and has been used to feed the traffic connecting with the major European hub airports. Undoubtedly, a step forwards would be for the main destinations of Barcelona airport to allow the long-distance traffic to be fed, as it currently represents a very modest amount.

Table 3. Destinations with over half a million passengers a year in Barcelona airport

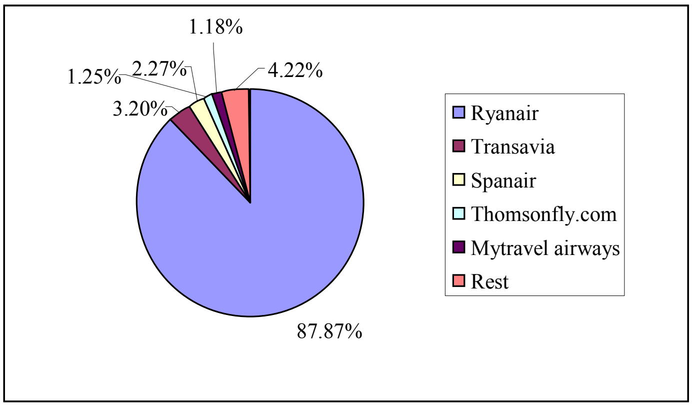
Destination	Traffic
Madrid	4,761,780
Palma de Mallorca	1,780,410

Amsterdam	1,261,092
Seville	1,175,257
Paris-CDG	1,096,292
Ibiza	846,962
Malaga	841,114
London-LHR	809,908
Rome-FCO	771,340
Menorca	710,813
Bilbao	675,369
Milan-MXP	672,346
Frankfurt	663,484
Lisbon	654,505
Paris-ORY	591,430
Munich	590,051
Brussels	571,331
London-LGW	539,957

Note: The destinations of the table represent 28% of the total traffic
Source: AENA

Graph 2 shows one of the main future weaknesses of Girona airport: the excessive dependence on the decisions made by one airline with such an aggressive market strategy, Ryanair. This company concentrates almost ninety per cent of the total traffic in Girona airport. Table 4 shows that the main destinations from Girona airport are secondary airports of big cities or airports in medium-sized cities. Therefore, many of the main cities served with a direct flight from Girona airport do not generate a high volume of demand as a destination but rather as an origin. That is to say, an important part of this airport's traffic is related to the demand from European citizens flying to Girona to enjoy the tourist attractions of the area or as an alternative route to reach Barcelona metropolitan area.

Graph 2. Main airlines operating in Girona airport



Source: AENA

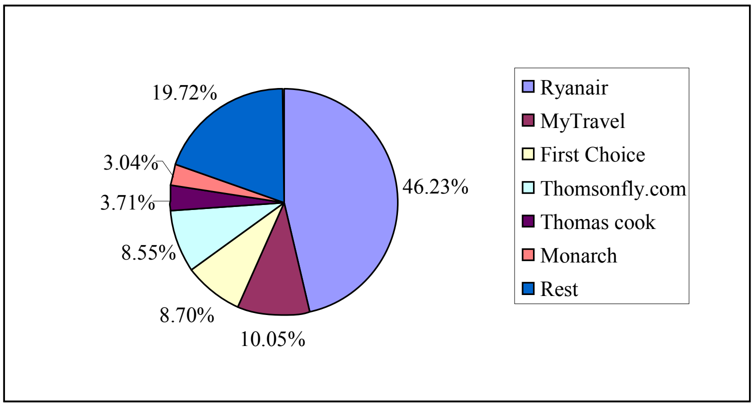
Table 4. Destinations with over a hundred thousand passengers a year in Girona airport

London-STD, Paris-BVA, Rome-CIA, Bergamo Orio al Serio, Brussels-Charleroi, Frankfurt-Hahn, Eindhoven, Nottingham, Dublin, Glasgow-PIK, Madrid, Liverpool, Venice, Stockholm-NYO, Niederrhein, Florence, Bournemouth, London-LTN, Alghero, Karlsruhe

Note: The destinations of the table represent 68% of the total traffic

Source: AENA

Graph 3. Main airlines operating in Reus airport



Source: AENA

Table 5. Destinations with over fifty thousand passengers a year in Reus airport

Dublin, London-STD, London-LTN, Liverpool, Frankfurt-Hahn, Manchester, London-LGW, Glasgow, Birmingham

Note: The destinations of the table represent 73% of the total traffic
Source: AENA

Finally, graph 3 and table 4 show an important limitation to Reus airport. A large part of the traffic is channelled by airlines from the United Kingdom and Ireland, the main destinations being cities in these countries. The traffic to Spanish or continental European cities is very modest, so the geographic scope of the traffic channelled by this airport is excessively limited.

3. Conclusions: Future prospects

All three Catalan airports have experienced positive evolution in traffic in the 21st century, Barcelona becoming established as one of the ten airports with most traffic in Europe and Girona among the ten with most traffic in Spain.

At present investments are being implemented in the three Catalan airports to expand the capacity available. As regards Barcelona airport, the new south terminal will come into operation in 2009 and it is expected that this new facility will make it possible to almost double the current capacity available to 55 million passengers a year. Furthermore, the advisability or not of building a third (parallel) runway is being discussed. The restrictions around El Prat airport have led to the proposal by different institutions from Catalan civil society to build this third parallel runway by reclaiming land from the sea. Irrespective of what is the most appropriate technical option for this third runway, it should be said that the number of aircraft which an airport can move per hour depends both on the surface area available in the terminals and, even more crucially, on the capacity available in the airfield. The construction of the third runway may, therefore, be necessary in the long term to avoid the problems of congestion that this airport has suffered from until very recently. However, the current facilities (once the south terminal comes into operation) are sufficient to attend to the growth in traffic forecast in the short and medium term. The aspects of management which have to take into account the type of connectivity that El Prat offers Barcelona metropolitan airport will probably be what will determine the future development of this airport and its impact on the reference territory. The improvement of the intercontinental connections, increasing the goods traffic (in particular the high added value traffic) and promoting the intermodality between the air mode, the high-speed train and sea transport are clearly the elements of connectivity that should become priorities in the coming years, with a view to the year 2025.

As for Girona airport, investments are under way for the expansion of the current terminal in order to increase the capacity available to 10 million passengers a year. Moreover, a study is being carried out on the possible construction of a second runway and a second terminal which would allow the current capacity of this airport to be doubled. In this respect, the expected improvement in the rail connections, both high speed and commercial, can allow the potential demand of Girona airport to be increased exponentially, given the expansion that this will represent in its immediate geographic area of influence. A key element of Ryanair's operations is undoubtedly to operate from airports which are not congested so the investments foreseen may be essential for this airline to expand its offer in this airport.

The objective of the current important investments that are being carried out in Reus airport in order to build a new terminal and to expand the apron is to be able to move 7 million passengers in 2020. The improvement in the connectivity of the different towns of Camp de Tarragona with the airport is the basic axis of this ambitious strategy of growth in traffic.

To summarize, the three Catalan airports have experienced important growth in traffic in recent years and the investments under way make us foresee that there will not be problems of congestion in the short term. With a longer term perspective, the third parallel runway in El Prat airport and new facilities in Girona airport may be necessary to sustain the growth in traffic in these airports.

In the short term, the three airports present weaknesses which endanger their future growth, taking into account that it is the volume and type of traffic that an airport moves which determine the size of its economic impact on the territory in which it is located.

As already mentioned, Barcelona airport has a very modest proportion of intercontinental traffic, way below the majority of the other big European airports. Moreover, we noted an excessive dependence on one airline, Iberia, which has decided to concentrate the majority of its activity in another airport. Furthermore, the foreseeable saturation of tourist activity and the growing competition from the high-speed train are important future threats for this airport. Girona airport shows an extremely high dependence on one airline with a very aggressive market strategy which, at any moment, may decide to "offshore" its activity to another airport. Finally, in Reus airport the proportion of non-scheduled traffic is excessive and a large part of the activity is channelled by airlines from the United Kingdom and Ireland which have towns from these islands as destinations.

In this context, it is being discussed whether or not to reform the airport management model toward individualization. As we mentioned earlier, all three Catalan airports are benefiting from considerable investments, so we can consider that the capacity will be sufficient to attend to the growth in traffic foreseen for the coming years. Thus, in relation to airport management, an even more crucial aspect than decisions on investments for the coming years will be the agreements and negotiations that the airport managers establish with the airlines.[4]

In Spain, AENA and the Ministry of Public Works play a decisive role in the negotiations which may be established with the airlines in relation to the assignment of slots on the landing and take-off runways, the awarding of spaces in the terminals, the prices that are charged for them, the aid that may be granted in terms of advertising, etc. Despite the fact that the European regulations limit the margin of action that airport managers have in this field, they have great discretion, especially in periods such as the current one in which considerable investments have been made which allow them to have surplus capacity.

The responses to the future challenges that the three Catalan airports have considered in relation to the future evolution of traffic will be determined by the outcome of the current discussion on the airport management model in Spain. Integrated management obliges AENA to take into account the needs of all the Spanish airports for which it is responsible. This makes it difficult for Barcelona airport to be able to promote network companies other than Iberia and alternatives to the low-cost carriers, in order to be able to promote long-distance traffic and maintain, once and for all, the rates of growth of aggregate traffic of recent years. It also makes it difficult for Girona airport to be able to reduce its current dependence on Ryanair or for Reus to try to attract airlines which offer scheduled flights to destinations in continental Europe.

Individualized management, the most common in Europe and reference Anglo-Saxon countries, is the organizational formula which maximizes the opportunities for the airport manager to negotiate with the airlines which it considers to be the most appropriate and with all the instruments possible at its disposal.

References

Bel, Germà and Xavier Fageda (2008a), "Getting There Fast: Globalization, Intercontinental Flights and Location of Headquarters", *Journal of Economic Geography*, 8(4), pp. 471-495.

Bel, Germà and Xavier Fageda (2008b), "Preventing competition because of "solidarity": Rhetoric and reality of airport investments in Spain", *Applied Economics*, in press.

Bel, Germà and Xavier Fageda, *Aeroports i Poder*, Edicions 62.

Fageda, Xavier (2008), "Infrastructure dominance in short-haul air transport markets", *Revista de Economía Aplicada*, in press.

[4] See Bel and Fageda (2007, 2008b) for more details on airport management in Spain and the regional distribution of investments.

Generalitat de Catalunya (2007), *Pla d'aeroports, aeròdroms, i heliports de Catalunya*.