

# The Impacts of Low Cost / No Frills Airlines on Airport Growth Forecasting

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## 1 Introduction

In the past, forecasts of the growth in passenger traffic at individual airports were commonly able to treat large parts of the airport market as a monopoly, any competition between airports usually being limited to specific, usually minor segments. In Europe, for example, large international gateway airports competed for the transatlantic market (to the USA) but there was little or no competition in the dominant major domestic and short haul European routes.

While this may still be largely true in Australia and New Zealand, there have also been some signs that there may be change in the future.

Change has already occurred in the UK. In the past decade, following the achievements of Southwest Airlines in the USA, the growth in 'no frills' (or 'low cost') airlines has led to large and rapid changes in air passengers' travel choices, changes which significantly impact on forecasting the development of individual airports.

Very fortunately, there is much UK data publicly available which can be used to start to measure these impacts on the air passenger market and on the competitive position of each airport, which we attempt in this paper. We draw on published data, which we have subjected to a limited analysis, and the published commentaries and research of the UK Civil Aviation Authority (CAA), particularly CAP754, CAP770 and CAA, 2005a. All the airport passenger statistics are from CAA published data.

The paper traces the history of growth at the major and minor UK airports over the past 15 years - the period during which the no frills airlines entered the market – seeking to identify the overall impacts on growth and the substitution effects between airports and between different business sectors. A map showing the locations of these airports is included at the end of the paper (Figure 9).

## 2 The UK Airport Context

There are about 20 commercial airports in the United Kingdom (UK) carrying more than 1m passengers per year and 30 carrying more than 0.5m pax/year (Table 1). The number of Australian airports of similar size is about half of this but, of course, the population of Australia is one third of that of the UK. But of more relevance to this paper, the greater number of UK airports serve a very much smaller land area, approximately the size of the State of Victoria. As a result, as our simplified statistics in Table 1 suggest, there is a degree of competition between airports generally not present in Australia because the airports are much closer together and their ground catchments overlap.

Statistics for the primary UK airports are given in Table 2. All are associated with a conurbation or large city. Except for Manchester and Liverpool airports which both serve the NW region of England, all are located in separate UK regions and thus geographically well separated. Consequently, as we discuss later, the competition between airports is largely between secondary and primary airports.

**Table 1 Comparative Airport Statistics**

Statistic	Australia	United Kingdom
No. of airports carrying more than:		
1m pax/year	11	20
0.5m pax/year	17	30
Population	20m	61m
Land area	7.7m sq kms	0.24m sq kms
Population per large airport	1.2m	2.0m
Land area per large airport	450,000 sq kms	8,000 sq kms
Mean distance between airports*	750kms	100kms

*\*Indicative, simplistic figure: assumes a uniform distribution of airports and uniform circular catchments.*

**Table 2 Major UK Airports and their Locations**

Airports	Airport Passengers (millions, 2006)	Populations (millions, 2001)		UK Region
		Conurbation	City	
London Heathrow Gatwick Stansted Luton	67 34 23 9	7.3		SE
Manchester	22	2.5		NW England
Birmingham	9	2.6		Midlands
Glasgow	9	1.7		W Scotland
Edinburgh	9		0.4	E Scotland
Bristol	6		0.4	SW England
Newcastle	5	1.1		NE England
Liverpool	5	1.4		NW England

### 3 Background to no Frills Airlines in the UK

No Frill airlines are those which operate scheduled services using a low cost model, such as, single class, high density seating and a minimised service on board and at the airport. No frills services commenced with Ryanair in 1991 and easyJet in 1995 and, while new airlines have proliferated in this sector, these two original airlines still account for over 50% of domestic and 70% of international No Frills routes out of the UK (note that the UK is GB plus Northern Ireland).

No Frills airlines do not serve long haul routes, but compete in the domestic and European markets. Accounting for around an insignificant 4% of domestic and European passengers in 1996, in the following 9 years to 2005 the share of No Frills airlines increased to 45% of all domestic and European passengers.

No Frills airlines have tended to favour the secondary airports, to reduce costs. For example, of the 4 airports serving London, Heathrow is the largest and nearest to London and has no such services, while the second largest and next nearest, Gatwick, has few. It is at the two originally smallest and furthest away airports, Stansted and Luton, that major No Frills airlines Ryanair and EasyJet have located their major hubs.

## 4 Airport Substitution: Case Studies of the Introduction of No Frills Airlines

### 4.1 Introduction

The case studies which follow illustrate the growth patterns of airports serving similar catchments (ie in the same region) where one of them (usually the secondary airport) has become the base for No Frills airlines.

The air passenger trends at each airport are illustrated for the period 1992-2006, encompassing the introduction of No Frills airline services. In order to provide some sort of comparative datum, we have also superimposed a notional trend for each airport based on the overall UK trend in air passengers through the period (as a dotted line).

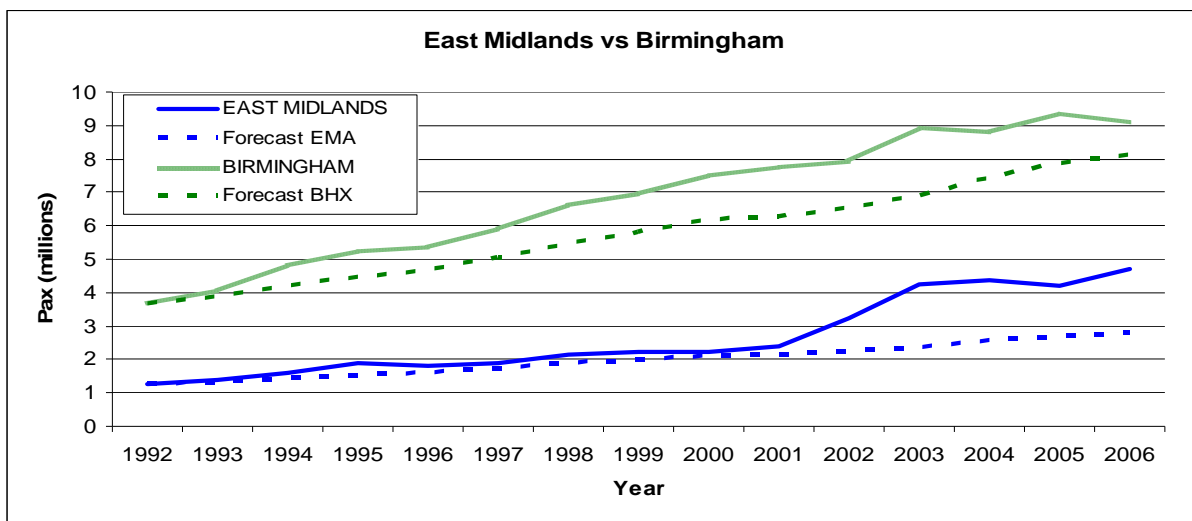
In the tables below we have also identified where the major No Frills airlines are based (easyJet and Ryanair, plus Flybe and Bmibaby which are much smaller), approximately when their services commenced at each airport and the (small) distances between the airports. There are many other No Frills airlines, generally very much smaller, and charter airlines such as Monarch and Thomsonfly which also offer scheduled services.

### 4.2 Birmingham (BHX) and East Midlands (EMA)

Both airports have had noticeable increases in passenger numbers with the introduction of No Frills airlines (Figure 1) but the secondary airport (EMA), whose route network is mainly No Frills provided by the two dominant No Frills airlines (Table 3), has substantially increased its share of the regional traffic compared to Birmingham (which is a full service airport) from one fifth to one third between 2000 and 2006, more than doubling its passenger numbers over the period.

**Table 3 No Frills Hub Airlines at Birmingham and East Midlands Airports**

Birmingham (BHX)	East Midlands (EMA)
Ryanair: from 1993 to 2004 Bmibaby: from 2002 Flybe: from 2002	Bmibaby: from 2002 Go Fly: from 2002 (later absorbed by EasyJet) Ryanair: from 2005 (shifted from BHX)
Airports are 50kms apart	



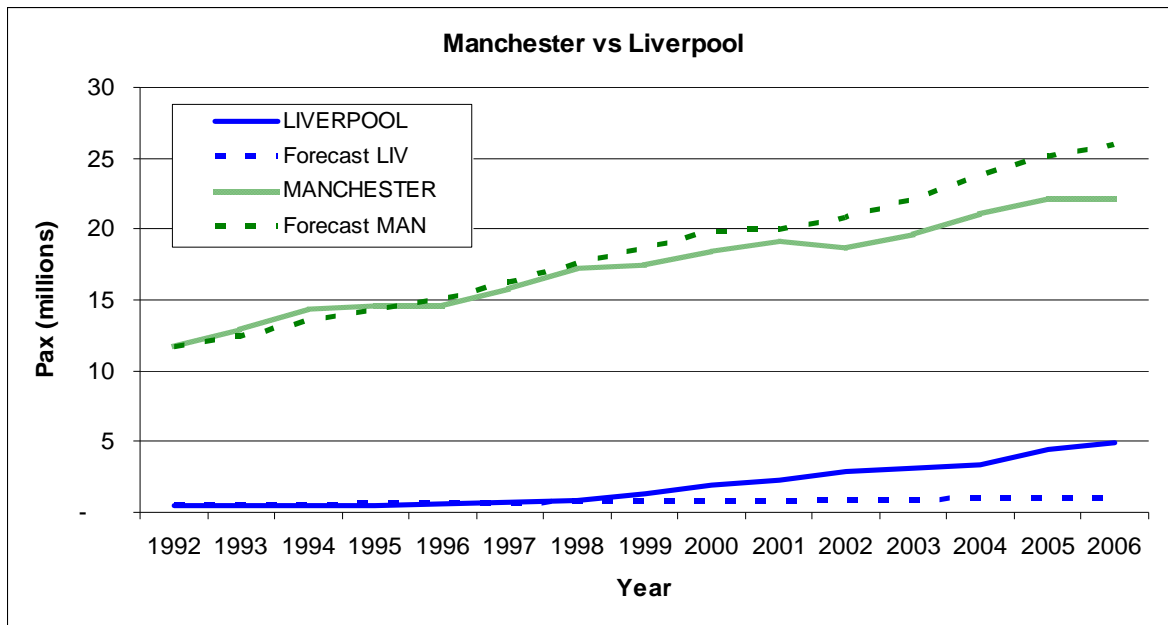
**Figure 1 Annual Air Passengers at Birmingham and East Midlands Airports**

### 4.3 Liverpool (LPL) and Manchester (MAN)

Liverpool has made a conscious effort to cater for low cost operators, which account for most of its route network (Table 4); while the full service airport Manchester does host some low cost airlines it is not its main business. With the development of Liverpool into a No Frills airport based on the two largest No Frills airlines, Manchester has lost market share and experienced lower than average passenger growth (Figure 2).

**Table 4 No Frills Hub Airlines at Liverpool and Manchester Airports**

Liverpool (LPL)	Manchester (MAN)
Easyjet: from 1997 Ryanair: from 2005	Flybe Bmibaby
Airports are 40 kms apart	



**Figure 2 Annual Air Passengers at Liverpool and Manchester Airports**

### 4.4 Glasgow (GLA), Glasgow Prestwick (PIK) and Edinburgh (EDI)

While all three airports have embraced low cost airlines, Prestwick has been by far the most aggressive with Ryanair using it as a maintenance hub (Table 5). The re-birth of Prestwick as a low cost airport combined with Glasgow approaching capacity has caused a shift in trips from Glasgow to the other airports (Figure 3). Edinburgh has also increased strongly in passenger numbers but, being more distant from Prestwick, has not been affected by its rapid growth.

**Table 5 No Frills Hub Airlines at the Scottish Airports**

PIK	EDI	GLA
Ryanair: from 1997	easyJet: from 2002	easyJet: from 2002
Glasgow and Prestwick airports are 40kms apart Edinburgh and Glasgow Airports are 70kms apart Edinburgh and Prestwick airports are 100kms apart		

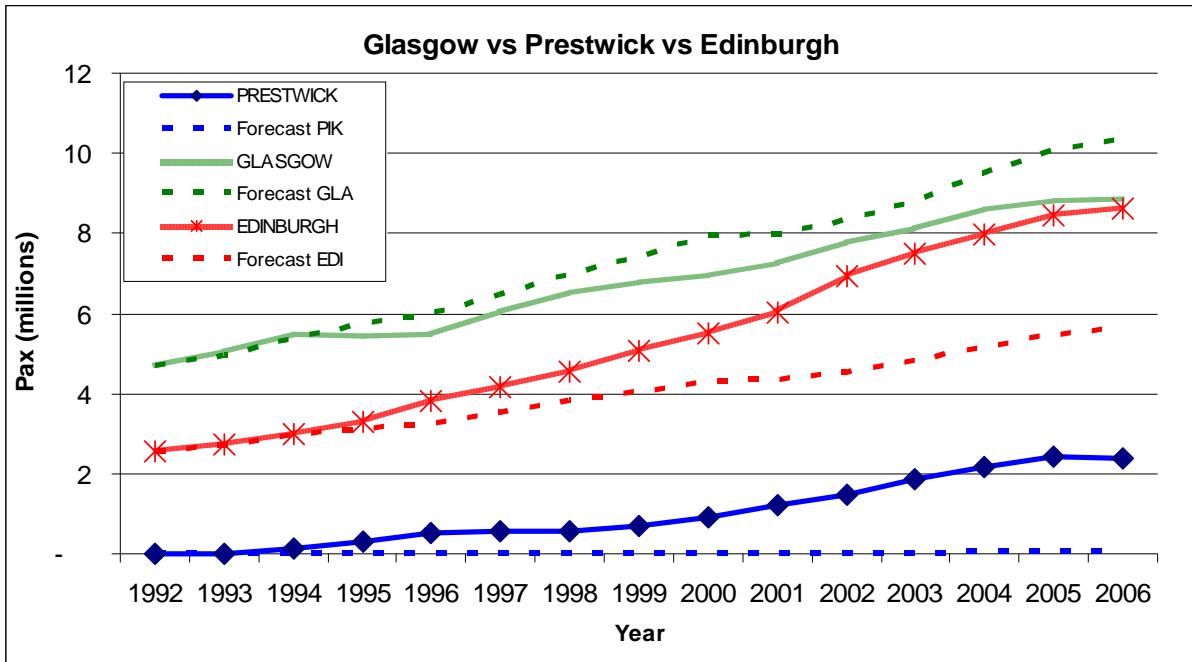


Figure 3 Annual Air Passengers at the Scottish Airports

#### 4.5 London Airports (Stansted STN, Luton LTN, Gatwick LGW and Heathrow LHR)

Stansted and to a lesser extent Luton have shown phenomenal growth (Figure 4) since the deregulation of the European air industry in 1997 and their new roles as hubs for the major No Frills carriers (Table 6). Heathrow is at capacity and does not cater for No Frills carriers. Gatwick caters for little No Frills traffic and its leisure market has traditionally been based on charter/inclusive tours. Although the airport is busy it is not yet at capacity and seems likely therefore to have lost traffic to the No Frills airports.

Table 6 No Frills Hub Airlines at the London Airports

LTN	STN	LGW	LHR
easyJet: the airline's main hub since 1995 Ryanair: since the 1980s	Ryanair: the airline's main hub from 1991 easyJet:	easyJet: from 2001	-
All 4 airports serve London and the South east region of England			

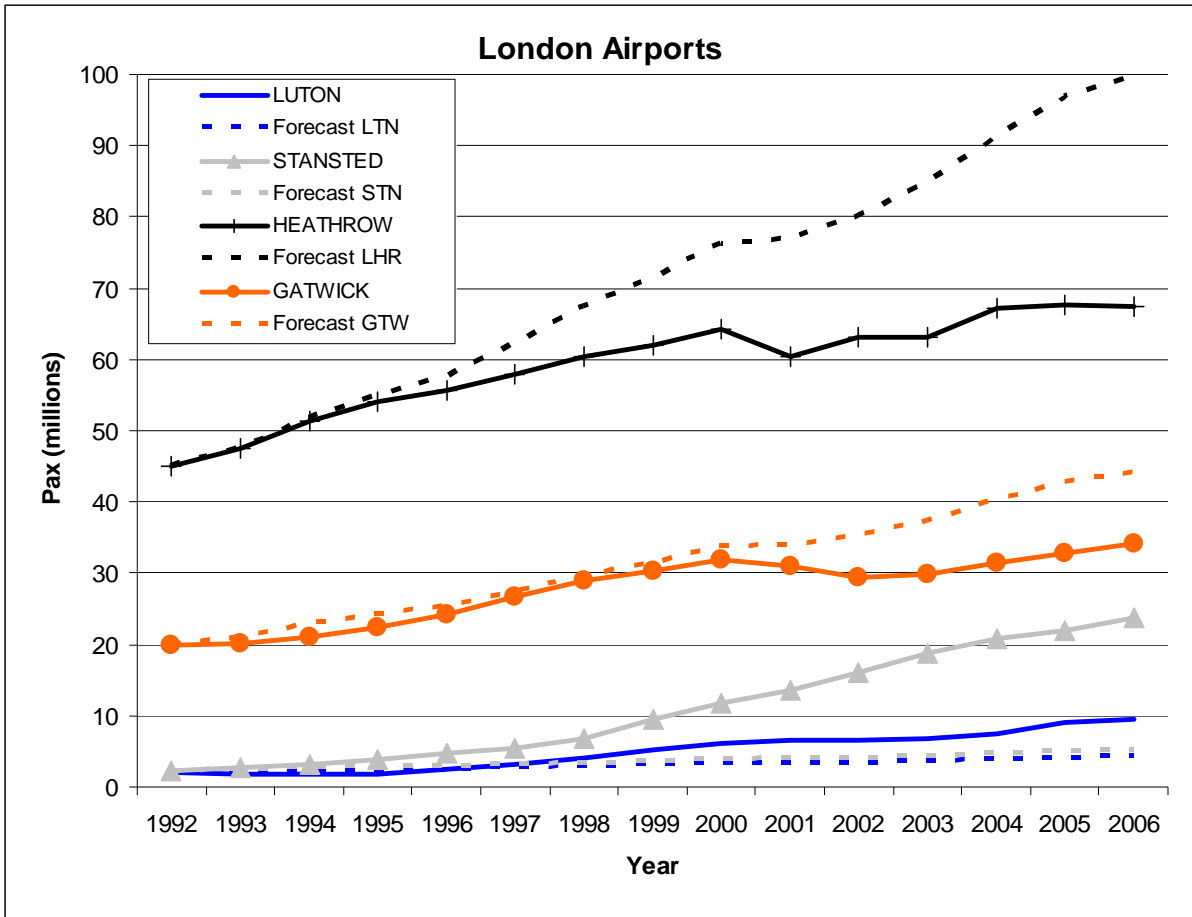


Figure 4 Annual Air Passengers at the London Airports

#### 4.6 Bristol and Cardiff Airports

Unlike the other examples both Bristol and Cardiff are secondary airports serving respectively S.W. England and S. Wales, whose primary airport options would be the London airports or Birmingham via the national motorway network.

Bristol has attracted both major No Frills airlines (Table 7), which CAP754 says “has stimulated the market”, and recorded stellar growth rates in recent years (Figure 5). Wales, with only one smaller No Frills airline, has recorded slightly above average growth.

Table 7 No Frills Hub Airlines at the Bristol and Cardiff Airports

Bristol (BRS)	Cardiff (CWL)
easyJet: from 2002/3 Ryanair: from 2007	Bmibaby from 2002
The airports are 80kms apart.	

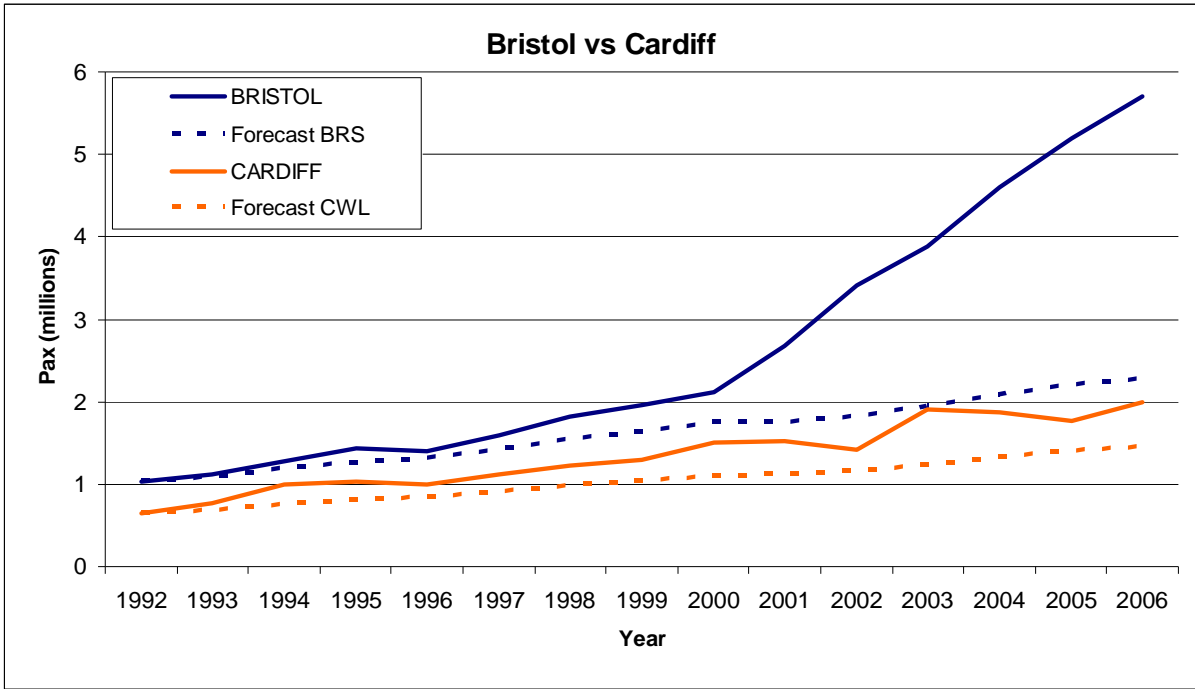


Figure 5 Annual Air Passengers at Bristol and Cardiff London Airports

#### 4.7 Summary

The relative growth rates of these airports are summarised in index form in Figure 6, where it is apparent that the main secondary airports serving No Frills airlines (eg LPL, STN, PIK, BRS & LTN) have recorded many times larger growth rates than the full service primary airports and the UK as a whole (the equivalent 2006 index for the UK is 160).

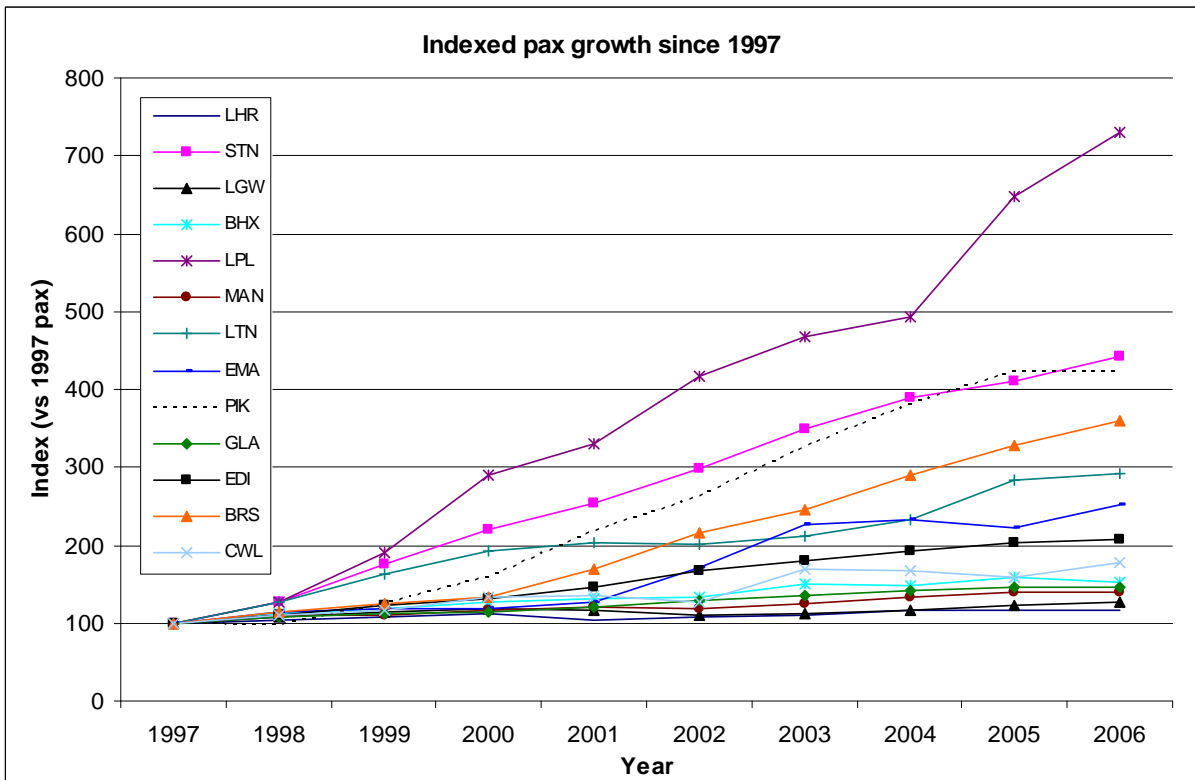


Figure 6 Indexed Air Passenger Growth Rates

From the comparisons of the primary full service and secondary No Frills airports it is apparent that, while there are many factors which affect growth at individual airports, including particularly capacity, there appears to be reasonable evidence that the primary airports are losing significant market share to those nearby secondary airports which have attracted the major No Frills airlines.

In the past, primary airports have tended to dominate the market and forecasting has commonly been able to largely ignore airport competition (with the exception of the competition of the regional airports with the market-leading London airports) and focus on economic and catchment area effects. In the future this will not be appropriate and the business of forecasting the growth at individual UK airports has become considerably more complex and sensitive to airline strategies.

## 5 Sector Substitution

Prior to the No frills product, charter flights mainly catering for inclusive tours (in which the flight and accommodation were packaged together) provided the low cost air product to UK holiday-makers. In 1997, charter flights accounted for 23% of all UK air passengers and this share was maintained as air traffic increased through to 2000. During the period of most rapid growth of No Frills routes after 2000, the trend reversed and the charter market share dropped to just 14% by 2006.

**Table 8 Passengers on Scheduled and Charter Flights**

Year	Scheduled	Charter	% Charter
1997	115,587,001	33,869,653	23%
1998	124,843,549	36,814,369	23%
1999	133,737,136	37,340,941	22%
2000	124,843,549	36,814,369	23%
2001	145,160,609	38,522,381	21%
2002	152,706,749	38,417,184	20%
2003	164,422,361	37,925,331	19%
2004	181,334,009	36,802,107	17%
2005	195,908,524	34,712,483	15%
2006	203,671,684	33,888,385	14%

*Note: scheduled includes No Frills passengers.*

Figure 7 illustrates this for individual airports. The dotted lines relate to those secondary airports which have become major bases of No Frills airlines and it is apparent that they have lost most of their charter traffic. Although less marked, a significant decline in the charter share of air passengers is apparent at the other, primary airports.

Evidently the new low cost product provided by No Frills airlines has won market share from the original low cost product, inclusive tours associated with charter flights.



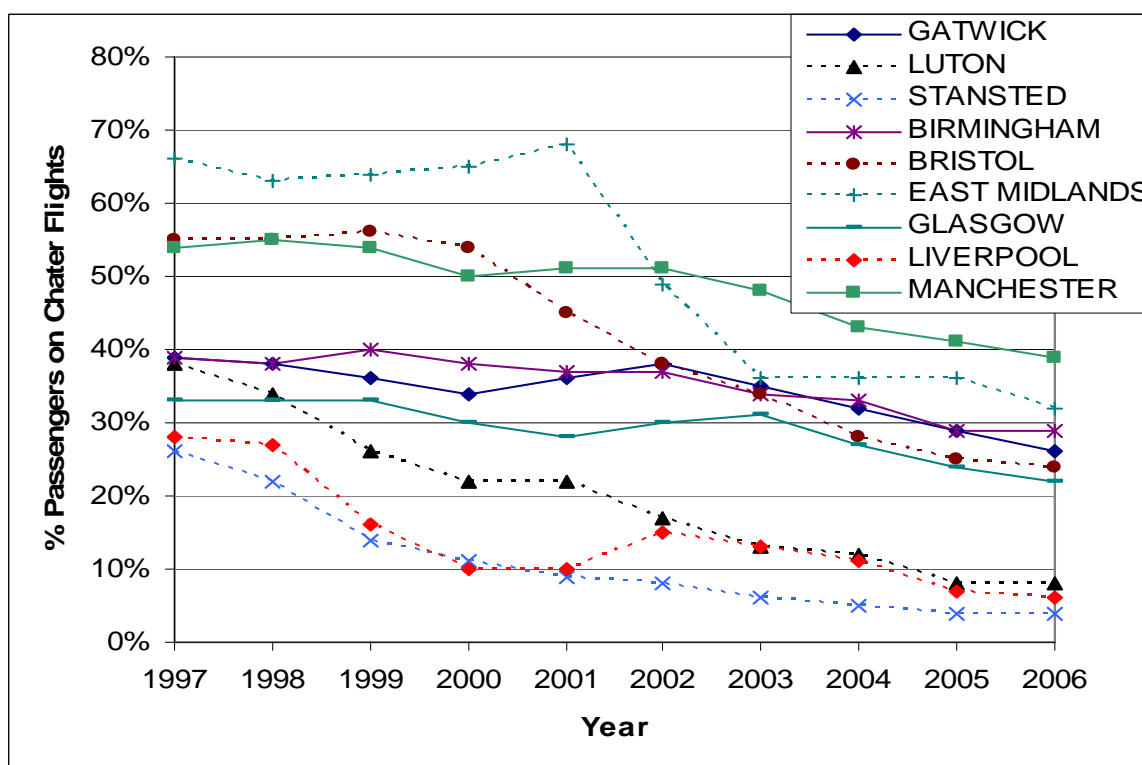


Figure 7 Trends in the Charter Passenger Share by Airport

## 6 Effects on Overall Growth

Past forecasts of aviation growth in the UK have been assembled in Table 9. A range of forecasts were made in all of these studies, but for the purposes of this paper we have quoted the midpoint or central case – we have emboldened the forecasts for 2005. All forecasts under-estimated the actual number of UK air passengers in 2005, by 9-18%, although the forecast ranges generally encompassed the outturn value.

Table 9 Past UK Air Passenger Forecasts (central forecasts by government agencies)

Forecast Year	Forecast (agency and year forecast made)							Actual Air Passengers
	DOT 1986	DOT 1988	DOT 1991	RUCATSE 1993	DETR 1994	CAA 1994	DETR 1997	
1990	90	95						105
1995	115	130	126	117	117	125	130	130
2000			163	148	150	156	168	180
<b>2005</b>			<b>208</b>	<b>191</b>	<b>188</b>	<b>188</b>	<b>206</b>	<b>228</b>
2010				234	232	224	253	
2015				277		261	310	

Source of forecasts is given in the references at the end of the paper.

While there can be many reasons why forecasts should under-estimate growth, it is of interest to ask whether the introduction of No Frills services since these forecasts were made could account for some of the under-estimation.

The effect of the No Frills airlines has in broad terms been to increase the number of international services from UK airports and to reduce fares.

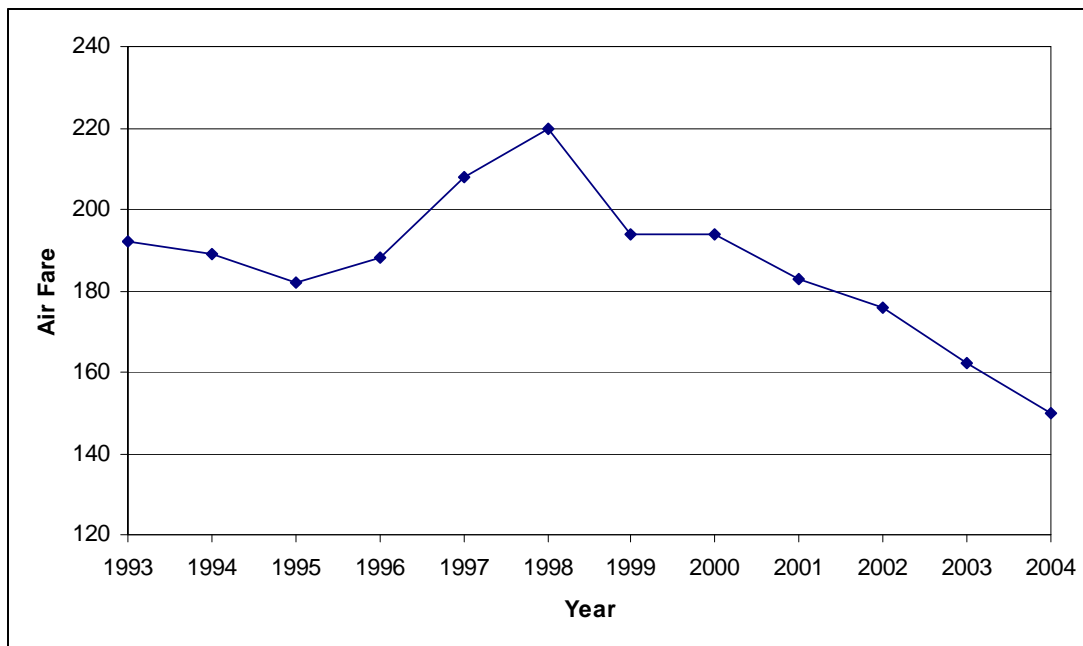
As Table 10 illustrates the increases in international destinations serviced by the secondary regional airports has been remarkable, and much greater than the primary airports.

**Table 10 International Scheduled Services from Regional Airports**

Airport	Services		
	1996	2003	% Increase
Birmingham	30	58	93%
East Midlands	7	24	240%
Manchester	58	83	43%
Liverpool	1	14	1300%
Glasgow	17	21	24%
Edinburgh	9	26	189%
Prestwick	2	14	600%
Bristol	6	18	200%
Cardiff	4	15	275%

Source: CAA, 2005a.

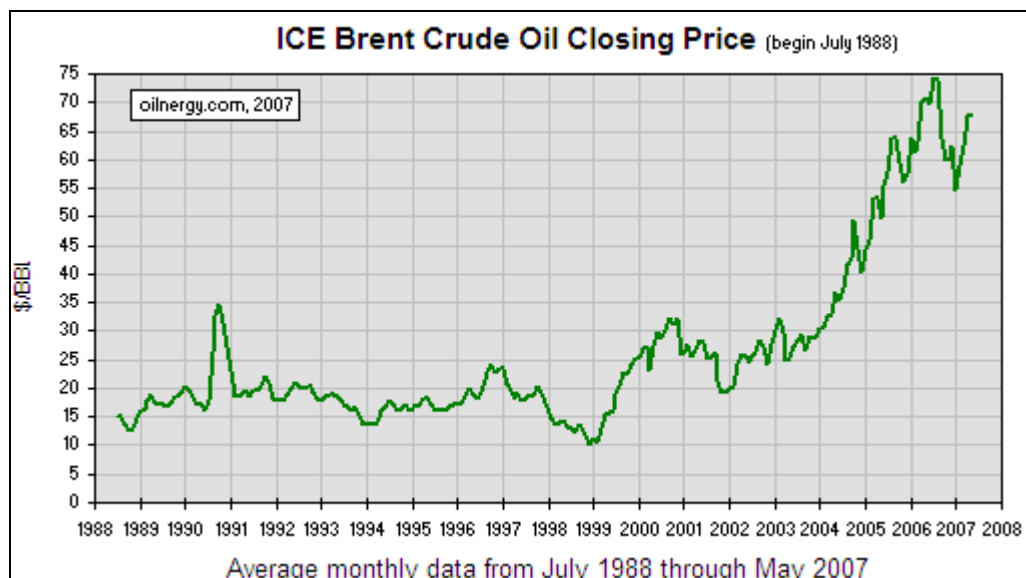
Aviation forecasts are commonly sensitive to air fares, particularly for leisure journeys where fares elasticities typically approach -1.0. It is not easy to find evidence of historic air fare trends but Figure 8 shows the trend for European air fares in real terms (source CAA 2005a).



**Figure 8 Average spending (in £2004) on air fares per visit to Europe by UK residents**

This may be compared with the crude oil (Brent) price trend (Figure 9) which we understand to quite closely relate to jet fuel prices. Since 1999 the trend has been upwards, the opposite of the trend in European air fares, from which we infer that the recent decline in fares is not related to oil prices, and we presume it is related to the growth in No Frills air services.

The decline in real fares since the late 90s in Figure 8 is around 25%. This is corroborated by an analysis of leisure fares from the London airports to a variety of European destinations (CAA, 2005a) which showed dramatic reductions between 1996 and 2003 of typically 30-40%, but with a range by destination varying between 16% and 62%.



**Figure 9 Historic Oil Price Trends**

The UK government model reports using a fares elasticity of demand of -1.0, although typically such high elasticities would only be attributed to leisure travel. More moderate elasticities would still suggest that these fare reductions would be expected to increase UK residents European air trips significantly (by ca. 5-20%).

## 7 Conclusions

The information which we have presented and analysed and our views expressed herein are based on associations and presumptions, not on rigorous statistical analysis. Nevertheless, it is clear that No Frills airlines have grown over a decade from nothing to be a major player in the UK market for domestic and European flights. They have substantially changed the competitive position of secondary airports, which are commonly the hubs for the dominant No Frills airlines and it appears that they have abstracted traffic from the primary airports.

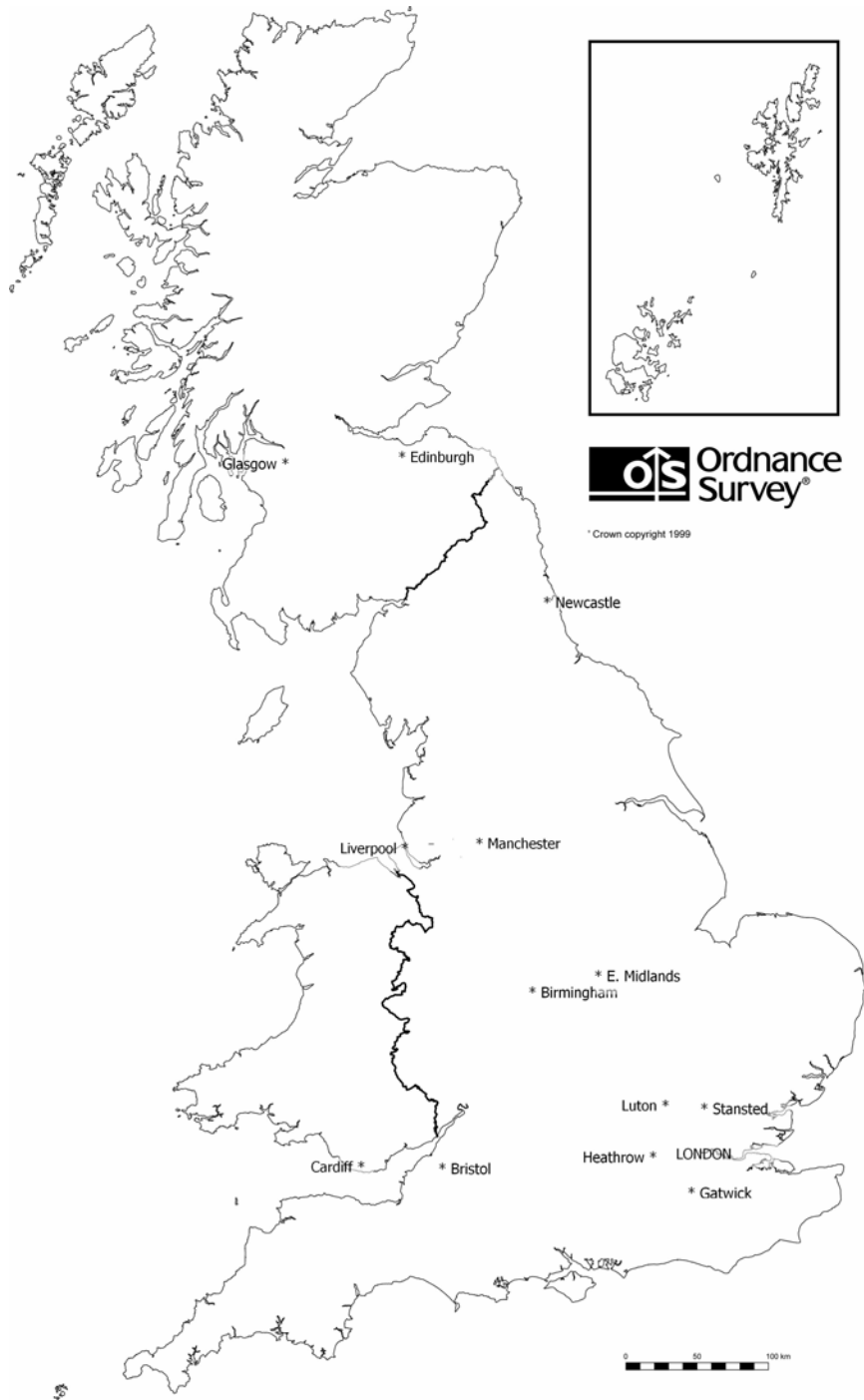
It also appears that one major component of the growth in demand for No Frills routes is a transfer from charter flights, the long-standing supplier of low cost inclusive tour air holidays.

Aside from these two substitution effects, in which No Frills airlines have won traffic from the primary airports and the charter sector, we are interested in the impact of the No Frills on the overall demand for air travel in the UK. In CAP770, it is argued that "the growth of air passenger traffic has been fairly stable when examined over the long term" and that "there is little, if any, evidence of growth acceleration in the European and domestic markets coinciding with the advent of No Frills carriers..".

We have undertaken no analyses which can establish the facts here, but we have noted that past forecasts have tended to underestimate growth and that the limited evidence on the consequent reductions in air fares reflects the view expressed in CAP754 that "Traffic statistics provide considerable evidence to back up the general assertion that the addition of a competitive service can stimulate the whole market ...".

If the evident fares reductions are combined with the fares elasticities adopted in UK practice (and indeed commonly used elsewhere), it is hard to reject the view that a further component of the growth in No Frills air traffic (over and above the substitution effects) has been due to an overall increase in the market arising from the consequent reductions in air fares and, conceivably, the increased range of service destinations.

In Australia, the introduction of low cost airlines is slowly starting to show signs of a change in the operation of airports. With Jetstar beginning domestic flights in 2004 we have seen the introduction of a new low cost hub in Melbourne (Avalon), which could compete (for low cost air passengers) with the primary airport Tullamarine. In Southern Queensland there are 3 airports within 150km of each other. Brisbane as the primary airport, Gold Coast as the secondary airport (40% growth in the past 2 year) and Ballina which, while still very small, has been revived with the introduction of Jetstar. Although still in their infancy, both situations bear comparisons to some of the case studies discussed in Chapter 4 and it will be interesting to see if Australia follows the trends of the UK.



**Figure 10 Approximate Locations of the UK Airports Considered in the Paper**  
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## References

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