



The De-designation of Stansted Airport

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1 Introduction & summary

- 1 Stansted Airport is currently “designated” under the terms of Section 40 of the Airports Act 1986, which means that the maximum level of its airport charges is limited by regulation. This maximum level is determined by the Civil Aviation Authority (CAA) every five years, following a reference to the Competition Commission.
- 2 The latest consultation from DfT on the Status of Stansted Airport¹ contains advice from the CAA to the Secretary of State which recommends the de-designation of Stansted Airport, albeit on the balance of evidence. If Stansted were de-designated Stansted Airport’s charges would no longer be subject to a regulatory limit. Stansted would be free to set whatever level of charges it sees fit, subject to whatever competitive constraints it faces.
- 3 The CAA’s recommendation stems from two key conclusions. It has concluded that Stansted does not hold significant market power, (SMP), and therefore does not have the ability to set excessive prices even if price regulation were withdrawn. Secondly, the CAA considers that in any event competition law is sufficient to address any abuse of a dominant position if Stansted were subsequently to acquire SMP².
- 4 In this report we primarily focus on the CAA’s conclusion that Stansted does not hold SMP. This falls into two distinct parts; the issue of market definition and the assessment of pricing and whether there is any evidence of excessive pricing (or a tendency towards excessive pricing) on Stansted’s part.
- 5 In the **first part** of this report we review the CAA’s approach to geographic market definition.
- 6 This review identifies a number of deficiencies with the CAA’s analysis. What is particularly apparent is that the CAA’s work on geographic markets is based on limited empirical analysis. It concentrates on the overlap of arbitrarily defined catchment areas and the results of passenger surveys which indicate that passengers do, from time to time, alter the airport from which they fly.
- 7 In particular, the CAA presents no evidence to demonstrate how significant is the role of distance to airport in determining passenger choices between airline services. As a consequence, although the CAA has observed that there is overlap in practice between the airport catchments, it has no evidence to show how strong is the effect of these overlaps and whether they are sufficient to justify treating various airports as if they operate in the same economic market.

¹ CAA (2007), *De-designation of Manchester and Stansted airports for price control regulation - The CAA’s advice to the Secretary of State*, July 2007

² The CAA also concludes that the costs of regulation outweigh the benefits. However, in our view this conclusion stems from the prior conclusion that Stansted does not hold SMP; hence the benefits of regulation are very limited.

8 Furthermore, the CAA interprets the fact that airlines operate from multiple bases as evidence that the airlines consider these airports to be substitutes for each other. This interpretation appears to miss the more obvious interpretation of the facts: airlines operate multiple bases because they serve **different** geographic markets.

9 As a result of our critique of the CAA's geographic market definition the **second part** of our report presents an empirical analysis, making use of data from easyJet's booking system, to establish the true importance of distance from a given airport in determining the choices made by passengers and the extent to which change in price can compensate for greater travelling times. This database consists of more than three million customer records.

10 This analysis shows that passenger preferences for using different airports are very sensitive to the distance that they have to travel to each airport. Presented with a choice of origin the propensity to take an air service from a given airport declines sharply as distance from that airport to the passenger's point of origin increases. This propensity also tends to decline sharply as the passenger's point of origin approaches an alternative airport offering a competing service.

11 The strength of this preference is such that airports as distant from London as East Midlands can be shown to provide little or no competitive constraint on the pricing of airports in the London system. Given these findings our view is that the CAA is wrong to conclude that Stansted Airport operates in a relatively broad geographic market. In particular it is wrong to assert that the market extends as far as Birmingham and East Midlands Airports.

12 The **third part** of our analysis considers the significance of the evidence available from Stansted's historic pricing. We identify that the CAA's analysis is insufficient to draw conclusions about the extent or otherwise of Stansted's market power on a forward-looking basis. However, we also identify that the CAA does not articulate a clear theory of how airport prices are determined in an unregulated market and how these charges would be expected to evolve over time. In particular we note that the CAA has overlooked the impact of current levels of airport capacity at Stansted and other alternative airports and how this is likely to impact on the airlines using those airports.

13 To rectify this we present a coherent description of the way airport prices are determined. This clearly identifies the conditions which would tend to give an airport market power.

14 This analysis shows that the key facts in determining the strength of inter-airport competition will be geographical proximity, the extent to which airport capacity is fixed in the short to medium term and the presence or otherwise of switching costs for airlines, that may create lock-in effects.

15 The conclusion of this discussion shows that the most important factor in determining airport pricing is the extent to which capacity is developed in large lumpy increments and can only be extended at relatively infrequent intervals.

Under these conditions it is very unlikely that airport pricing will ever conform to the efficient long-run level in any given year or quinquennium. In the presence of excess capacity prices will tend to be low; towards short run avoidable costs. But when capacity is constrained prices may rise well in excess of long run incremental costs.

16 Indeed, given this structure of airport costs, it will only be possible for investment to be remunerated adequately if there is an expectation that at some point during its life cycle the airport will enjoy market power, which will allow it to recover the costs of its past investment.

17 It is therefore only possible to draw inferences about market power and potential abuse from data on airport pricing by considering information, including forecasts, that covers the expected life of the assets concerned. This analysis must also take into account the existing and future capacity constraints at rival airports.

18 In contrast the CAA's analysis looks only at price data for five years, without any apparent consideration how these figures fit into the long run capacity cycle for the London airports.

19 Furthermore, we show that there is a material risk that airports will strategically restrict capacity so as to reduce the intensity of competition and raise prices in the long run. This is a result of the fact that airports know that their rivals, as well as themselves, cannot readily alter capacity. We note that although competition law could be used to rectify the negative effects of excessive pricing, it cannot rectify the more important market failure: the risk of under-investment. Indeed if competition law is used too vigorously to control airport profits in the short run, when capacity is constrained, the effect may actually be to reduce further the incentive for airports to invest in appropriate levels of capacity.

20 Our analysis goes on to show that there are reasons to consider Stansted already enjoys market power with regard to based aircraft. These aircraft have to have access to early morning departure slots for their operation to be economic. But additional peak capacity is not available at any of the other major London airports. In particular, lack of airport stands at Luton means that there is no additional capacity for airlines to park aircraft overnight.

21 Furthermore, we also demonstrate that there are material switching costs involved in altering the base of an existing aircraft, which could be well in excess of the equivalent of a 10% increase in airport charges at Stansted. As a consequence based aircraft at Stansted are subject to a significant degree of lock-in, which further enhances Stansted's market power in that segment.

22 In the **final part** of our report, we bring together our conclusions and present some observations regarding the appropriate regulatory structure for an airport in Stansted's position.

2 The CAA's analysis of geographic market definition

23 This section reviews the airport market definition analysis carried out by the CAA in relation to the de-designation of Stansted airport.

24 The CAA's assessment of the relevant market is based on previous work undertaken in December 2006 as part of its review of airport price controls (this work is referred to as the December 2006 market analysis hereafter).³ For this reason, we focus on the CAA's December 2006 market analysis, except where noted otherwise.

25 As regards the geographic definition of the market in which Stansted operates, the CAA argues that:

- Stansted airport operates within a geographic market that includes London and the East Anglia regions;
- there is strong evidence that Birmingham and East Midlands airports are in the same market as Stansted; and
- there is some basis for the inclusion of Bristol and Southampton in the same market, and also that indirect competitive constraints may exist with more distant airports due to a chain of substitution that links them economically to Stansted airport.

2.1 SUMMARY OF KEY FINDINGS

26 Our main findings are as follows:

- The CAA's airport catchment analysis is not sufficient to demonstrate that Stansted operates in a wide geographic market, as it provides no empirical evidence of the likely extent of passenger switching in response to an increase in airport charges at Stansted.
- The CAA's analysis of passenger switching is based on the assumption that airlines will pass on a significant proportion of any increase in airport charges in the form of higher airfares, despite the lack of evidence to support this. In practice, because of the competitive pressure between airlines and the way in which airlines price their services to drive load factors it is far from clear that an increase in landing charges at one airport would be passed through to passengers to any material extent. In any case, the CAA's own analysis indicates that the number of leisure passengers who would be prepared to switch airports would be insufficient to make a fully passed through 10% increase in airport charges unprofitable.
- The CAA's analysis of airlines switching between airports is largely anecdotal and does not contain any proper quantification of the likely strength of this

³ CAA (2006a), *Initial price control proposals for Heathrow, Gatwick and Stansted airports, Supporting paper II*.

competitive constraint. The CAA also does not adequately consider the relevance of airport capacity constraints to the decision to relocate services.

- The CAA uses the fact that airlines operate multiple bases to conclude that airlines can readily switch aircraft to alternative locations. This disregards the likelihood that airlines offer services from multiple airports because these airports are complementary to one another in their overall offering because of the local nature of passenger demand. In other words the fact that airlines base aircraft in various locations may be a demonstration that these airports do not fall within the same market.
- Finally, the CAA's analysis ignores the potential response of inbound passengers (as opposed to passengers originating in the South East of England) to an increase in airport charges at Stansted airport and the implications of these for airline switching.

2.2 THE CAA'S FRAMEWORK FOR GEOGRAPHIC MARKET DEFINITION

27 The CAA's December 2006 market analysis considers geographic market definition within the conventional SSNIP framework. Under this approach, the starting point is to consider whether it would be profitable to increase charges at Stansted airport by 5-10% above the competitive level (referred to as a SSNIP); taking into account the competitive constraints faced by the airport from other UK airports. If this price increase would not be profitable, then the geographic market must be widened to include neighbouring airport(s) (i.e. other London airports), and the test repeated for a hypothetical monopoly owner of Stansted and neighbouring airport(s).

28 The CAA argues that the strength of the competitive constraints faced by Stansted airport depends on the interrelated responses of both airlines and passengers to an increase in charges at the airport. In this regard, the CAA focuses on the possibility that:

- airlines may switch some or all services from Stansted to an alternative airport. The extent to which this is a feasible and profitable response to a price increase at Stansted will depend on a range of factors, including the availability of capacity at other airports, the cost of switching, and the willingness of passengers to use an alternative airport to Stansted; and
- passengers may choose an alternative flight from a different airport. The extent to which passengers are willing and able to switch in this way will depend on the extent to which airlines pass on an increase in airport charges at Stansted in higher fares, the responsiveness of passengers to changes in airfares, the availability of a suitable alternative service at another airport, and the willingness of passengers to use this airport.

29 The CAA also notes that airport profitability is likely to be quite sensitive to small changes in passenger numbers or aircraft movements. This reflects the fact that a significant proportion of airport costs are fixed with respect to traffic volumes,

The CAA's analysis of geographic market definition

and also the leveraging effect of revenues created by retail activities which are likely to vary with traffic volumes. The CAA estimates that a 5% increase in airport charges would be profitable provided that the associated reduction in passenger numbers is less than the ‘critical loss’ level of 0.9 mppa (or 3.75%).⁴

30 We consider that the CAA has broadly adopted the correct framework for analysing geographic framework, and that it is correct to focus attention on the likely responses of airlines and passengers to a 5-10% increase in airport charges. However, we note that the CAA’s analysis is incomplete in that does not consider the likely response of inbound passengers to an increase in airport charges at Stansted, nor the impact the behaviour of inbound passengers might have on airline switching.

31 To address this omission, it would be necessary to analyse the ability and willingness of inbound passengers to switch to another airport in the London area or elsewhere in the UK. This can be expected to depend on the availability of flights to alternative airports in the UK, and the willingness of inbound passengers to switch to another airport given its proximity to their ultimate destination in the UK. By ignoring the response of inbound passengers, the CAA cannot properly assess the profitability of a 5-10% increase in airport charges at Stansted.

2.3 THE CAA’S EMPIRICAL ANALYSIS

32 We turn now to the CAA’s empirical analysis of the likely strength of the competitive constraints faced by Stansted airport. The CAA focuses primarily on the behaviour of short-haul leisure passengers travelling on scheduled flights, and examines evidence in relation to:

- the extent of overlaps between the “catchment area” of Stansted and other airports in the London as well as more distant airports;
- the response of passengers to an increase in airport charges, taking into account the extent to which airlines are likely to pass these increases on in the form of higher airfares; and
- the likely response of airlines to an increase in airport charges.

33 We summarise and comment on the CAA’s analysis in each of these areas below.

2.3.1 Analysis of overlaps between airport catchment areas

34 The CAA argues that the relevant geographic market for short-haul leisure passengers is likely to be affected by the surface access times to/from individual airports, the geographic distribution of UK outbound passengers, and the intended final destination of non-UK inbound passengers. Using a two-hour drive time for leisure passengers travelling to an airport for an outbound flight,

⁴ Ibid, paragraph 3.22.

the CAA defines catchment areas around Stansted airport and each of the other London airports. According to the CAA, these catchment areas include 90% of UK short-haul leisure passengers travelling on scheduled flights.

35 The CAA argues that:

- significant parts of Greater London fall within the catchment areas of all of the London airports, and that it is reasonable to conclude that the strength of overlaps between these airports is significant enough to suggest that they are all in the same market as Stansted;
- Stansted attracts a material number of passengers from outside the London and East of England areas (including around 1.5 million passengers for whom Stansted is not the closest airport, and 2.4 million interlining passengers), and a significant proportion of these passengers will have the option of switching to a regional airport should Stansted raise its charges; and
- the strength of overlaps between the catchment areas of neighbouring airports creates a ‘chain of substitution’ which suggests that Stansted is in the same market as Birmingham, Luton and NEMA, and possibly also more distant airports such as Manchester, Liverpool and Bristol.

36 The CAA also notes that passengers with a strong route-specific demand will only be willing to switch to an alternative airport to Stansted if the alternative airport offers a similar service. In contrast, passengers who are willing to switch between destinations (e.g. alternative ski, beach or city destinations) can be expected to be more willing to switch between airports. The CAA argues that:

- there are a large number of leisure passengers (around 9.8 million passengers) at Stansted whose journey purpose (i.e. not visiting friends or relatives) suggests that would allow them to switch between alternative destinations; and
- the significant and growing number of route overlaps between Stansted and the other London airports, as well as between Stansted and regional airports, suggests that Stansted will face competitive constraints from other airports even for those passengers with route-specific demand.

37 Finally, the CAA argues that information collected from passengers as part of its departing passenger survey provides further evidence of the scope for competitive interactions between Stansted and other airports. For example:

- over 40% of passengers at Stansted had used each of LHR, LGW and STN in the preceding two years, 20% had used Luton, and 15% had used a regional airport;
- a significant proportion of passengers departing from Stansted considered using an alternative London area or regional airport when planning the trip they were taking; and

- whilst passengers tend to use their preferred airport, a significant number of departing passengers from Stansted would prefer to travel from another London area or regional airport for the trip they were taking, assuming that their flight/destination was available at every airport.

38 In our view the CAA's airport catchment analysis is inconclusive in relation to the determination of the appropriate geographic market.

39 The first point to note is that airports do not sell services direct to passengers. Airports sell capacity to airlines. Clearly one of the main appeals that an airport may have will be providing airlines with access to a customer catchment. But the size of the catchment from the point of view of the airline will depend on many factors.

40 Airport catchment areas can be expected to reflect a range of factors, including passenger airport preferences, travel times, travel purpose, the availability of suitable flights, and the level of airfares. These factors can also be expected to vary with the intensity of demand for a given destination. Whilst passengers in the vicinity of two or more airports might reasonably be assumed to regard these airports as possible alternatives on the basis of travel time, this does not imply that the airports can be assumed to be in the same geographic market. This can only be determined by assessing the likely strength of response of passengers and airlines to an increase in airport charges, taking into account all of the factors that are relevant to the decision to switch.

41 The CAA suggests that there would be a material level of passenger switching, given the number of passengers for whom Stansted is either not the closest airport or not the preferred airport, the willingness of passengers with non-route-specific demand to switch, and the increasing extent of route overlap between Stansted and other airport in the London area. This evidence is, however, at best suggestive, since it does not allow any proper quantification of the strength of passenger response to an increase in airport charges, nor has the CAA performed any analysis to understand why these passengers are choosing Stansted when closer choices appear to have been available.

42 In particular, defining the catchment of an airport as being within two hours drive time for leisure passengers appears to be completely arbitrary. Granted a large proportion of passengers will come from within this area. But not all passengers will do so. Furthermore, this arbitrary boundary gives no indication whatsoever as to the rate at which the preference to use airline services from a particular airport declines as distance from that airport increases. Hence it is impossible to say from the CAA's analysis how marginal passengers located between two airports are likely to react to changes in the cost of travel at one or other airport.

43 We also consider that the CAA's departing passenger survey evidence in relation to airport preferences is unreliable. As the CAA acknowledges, the question that asks departing passengers to indicate which other airports they considered for their current trip are likely to reflect the current availability of suitable services from each airport, and it therefore cannot be used to infer passenger preferences

between different airports. The CAA sought to address this by asking passengers to state their first and second choice airports under the hypothetical assumption that their flight/destination was available at all airports. As noted above, this indicated that whilst passengers tend to use their first choice airport, there were material preferences expressed for other airports. No inference can be drawn from this observation, however, without some analysis of the extent to which the assumption that all airports offered passengers' flight/destination is in fact correct.

44 Finally, as noted earlier, the CAA's catchment overlap analysis focuses only on UK outbound passengers, and there is no analysis of the extent to which inbound passengers would be willing to switch from Stansted to an alternative airport.

2.3.2 Passenger responsiveness to airport charges

45 The CAA notes that, in order to analyse the strength of the response of passengers, it is necessary to consider:

- the degree to which increases in airport charges will be passed on to passengers;
- the response of passengers to increases in airfares at Stansted; and
- the impact of changes in passenger behaviour on airport profitability.

46 The CAA argues that the nature of airline competition in relation to the market in which Stansted operates appears to be sufficient to expect that an increase in variable costs (such as fuel and airport charges) would be passed on to passengers in higher fares. However, as noted by the CAA, there is no evidence of a strong relationship between airline costs and airfares, which may reflect the wide range of factors that affect airfares, and possibly also the use of yield management techniques by airlines.

47 Using data collected as part of its passenger survey at each of the London area airports, the CAA assessed the likely response of passengers at Stansted to a £5 increase in their single airfare. This data indicates that 17% of outbound short-haul leisure passengers on scheduled flights would either change airport or not travel, which yields an approximate elasticity of passenger demand at Stansted of -1.15. On this basis, the CAA estimates that a 10% increase in airport charges would result in a reduction in the number of short-haul leisure passengers at Stansted of 0.61 mppa.

48 The CAA actually notes that this estimated reduction in the number of leisure passengers at Stansted in relation to a 10% increase in airport charges is below their estimated critical loss value of 0.9 mppa for a 5% increase, an observation that suggests that passenger switching by outbound leisure passengers alone would be insufficient to act as a constraint on airport pricing at Stansted.

49 Finally, the CAA uses survey responses to assess which airports will be used by those passengers who choose to switch. Passengers were asked to indicate their first and second choice airports, assuming that suitable services were available at

the same price as their current flight. The CAA argues that this evidence shows that:

- a relatively high proportion of passengers at each of the major London airports would switch to an alternative airport outside the London area; and
- the major London airports are likely to face the strongest competitive constraint from Birmingham, Southampton, London City, Bristol and East Midlands airports, each of which might be expected to obtain more than 3% of any passengers using the major London airports who decide to switch airports.

In our view there are three main flaws in the CAA's analysis of customer responsiveness to an increase in airport charges.

50 First, as the CAA notes, there is no evidence that an increase in airport charges would be passed on to a material degree in fares. In noting that its own figures show the passenger response at Stansted would be significantly below its own critical loss calculation, the CAA comes up with a number of unsubstantiated reasons why the effect could be bigger than measured. They do not, however, note the fact that if competition forces the airlines to absorb some or all of the price increase then the effect could be much smaller or non-existent.

51 In its discussion of airline competition it states that the “nature of airline competition, as it directly affects the level of competition in the market within which Stansted operates, appears sufficient to expect that increases in variable costs – such as fuel and airport charges – would be passed on to passengers in the form of higher airfares”⁵, yet it fails to observe the clear difference between these two cost increases in this context: if fuel prices were to increase these would do so for all airlines - at Stansted and elsewhere – whereas an increase in airport charges at Stansted only might have to be absorbed because of competition from airlines at *other* airports whose airport charges had not risen.

52 Furthermore, the CAA's analysis does not reflect the reality that airlines use price algorithms that vary prices as the date of a flight approaches and the seats fill up, to ensure that the highest possible load factors are maintained. Consequently, if demand conditions have not changed (including competition from airlines at adjacent airports whose landing charge has not changed) there may be little or no change in airline prices in the short to medium term to a 5% to 10% increase in airport charges. Air fares would only be expected to change in the event that one airline withdraws an aircraft in response to the increase in airport charges. If that happens then the supply of seats contracts and fares could be expected to rise. Such a response might only occur in practice over the medium to long term.

53 Second, even if it is assumed that an increase in airport charges is passed on to some extent, the CAA's elasticity analysis indicates that the reduction in

⁵ Ibid, paragraph 3.82.

passenger numbers for a 10% increase in airport charges is significantly below the critical loss of a 5% increase in airport charges. The comparison between an actual loss for a 10% increase in airport charges against a critical loss for a 5% increase in airport charges also biases the appearance of CAA's results by overstating the potential loss of passengers by 100% and hence exaggerates the likelihood that the price increase would unprofitable.

54 Using the CAA's figures, the actual loss for a 5% price increase should be 0.3 mppa (rather than 0.6 mppa), which is the correct figure to compare to the critical loss of 0.9 mppa. In any event, as the CAA notes, the comparison of actual and critical losses implies that passenger switching would be insufficient to constrain airport charges at Stansted airport.

55 Furthermore, the exact derivation of the CAA's results is unclear, but does not appear to be consistent with its own figures. Table 3-3 estimates the elasticity of demand at -1.15 and states the average fare at Stansted at £35. A 10% increase in airport charges (c. £5) even if *fully* passed on to passengers would only increase fares by c. 1.4%. Given the stated elasticity and total passenger numbers of 22mppa, the loss in passengers would be only 0.36mppa, halved to 0.18mppa for a 5% change in airport charges. This seems to be the proper figure to compare to the CAA's critical loss estimate of 0.9mppa. In other words, it appears CAA's own figures indicate that the loss of passengers at Stansted from a 5% increase in airport charges would be only one-sixth of the level required for that increase to be unprofitable.

56 Third, the survey evidence is based on the assumption that the services offered at the major London airports are available at all other airports. No detailed evidence is provided to test this assumption, and as the CAA notes, if services are not available at all airports, then the survey will tend to over-state the likely level of switching.

2.3.3 Airline responsiveness to airport charges

57 The CAA argues that the willingness of airlines to absorb an increase in airport charges will depend upon:

- the likely response to passengers of an increase in airfares;
- the materiality of airport charges to airline profitability; and
- the ability of airlines to relocate services profitably to other airports.

58 The CAA argues that an increase in airport charges at Stansted would have a material impact on airline profitability. In this regard, the CAA estimates that an increase in airport charges of £1 per passenger at Stansted would result in a 6% reduction in group operating profit for Ryanair and easyJet. This increase in charges is equivalent to a 20% increase in the current level of airport charges, which is above the 5-10% increase usually considered in market definition analysis. According to the CAA, however, the percentage increase in charges would be equivalent to a smaller percentage increase in the competitive level of airport charges if this is above the current level of charges.

59 The CAA argues that the ability of airlines to relocate services profitably to other airports will be affected by the level of sunk costs that would be incurred when relocating services (either existing services or future new services), as well as by the extent to which passengers would be prepared to switch to the airport to which services are relocated by an airline. The CAA does not attempt to quantify the sunk costs involved in relocating services, beyond the observation that it will be less profitable for an airline to relocate services away from an airport if there are significant levels of interlining passengers at the airport concerned, and that about 12% of passengers at Stansted are interlining.

60 Finally, the CAA argues that the historic evidence indicates that airline would be willing to consider whether existing or future new services could be relocated to other airports. In this regard, the CAA argues that:

- there are some recent example of routes being relocated in response to airport charges, including the relocation by Ryanair of its Dublin-Cardiff route from Cardiff airport to Bristol airport in May 2006, and the relocation by Ryanair of a substantial part of its business from Luton airport to Stansted airports in the early 1990s;
- there is evidence that the observed fluctuation in the annual growth in passenger numbers at airports over the past decade is due to airlines relocating services between airports;
- the fact that no-frills airlines have opened bases in multiple countries suggest that they are willing and able to relocate their aircraft over a wide geographic area (including to airports outside the UK), depending upon the relative profitability of a wide range of airport pairs; and
- airline conduct suggests that they are able to operate profitably at multiple bases and to refocus their growth between airports. In this regard, the CAA notes that easyJet offers a number of routes from three London airports, and that over the period 2004-05 it added 10 new routes at Gatwick whilst the rate of its new route openings has slowed at Stansted. The CAA also notes that Ryanair also offers a number of routes from multiple London airports, that it appears to treat Luton and Stansted as substitutes, and that it had announced ten additional services from East Midlands.

61 Our view is that the CAA's analysis of the likely response of airlines to an increase in airport charges at Stansted suffers from a number of serious flaws:

62 First, the CAA's assertion that an increase in airport charges would have a material impact on profits is based on a 20% increase in charges at Stansted. If a 10% increase in charges is considered, in line with the conventional approach to market definition, then the CAA's figures imply that easyJet and Ryanair would suffer a reduction in group operating profits of less than 3%. The CAA argues that airport charges may be below the competitive level at Stansted, and hence that an increase in airport charges of £1 per passenger may be lower as a percentage of the competitive level. However, no quantification is provided to support this claim or its impact in terms of the application of the SSNIP test.

63 Second, the CAA's evidence on historic switching is very limited (the CAA cites only two actual examples of route relocation that were due to airport charges). Furthermore, the claim that fluctuations in passenger growth rates at airports is due to airline switching is entirely speculative and not based on any rigorous analysis.

64 Third, the CAA asserts that the fact that airlines operate multiple bases, and that easyJet and Ryanair operate a number of routes from multiple London airports indicates that airlines are willing to relocate services. This suggestion is unfounded. Indeed it appears to fail to recognise the most obvious reason why airlines may offer services from multiple bases. On the assumption that the airline incurs higher costs by operating from multiple bases there are in fact two clear reasons why an airline would nevertheless operate in this way:

- either the airports are capacity constrained, so it is simply not possible to offer all the desired services from one airport, or
- the airports represent distinct geographic markets as far as the airline is concerned – hence it generates more revenue from operating from the different bases. In this sense the different bases.

65 In neither of these cases can the CAA use the operation of multiple bases as proof that airlines will switch base in response to increases in airport charges. If the airports are capacity constrained switching will simply not be possible. If they operate in different markets then switching would represent leaving the (relevant) market, which is unlikely to be a proportionate response to a 5-10% increase in airport charges. In **Section 3** below we return to this issue to demonstrate empirically the extent to which the London airports really seem to serve concentrated local markets.

66 Finally, but by no means least important, we note that the CAA's analysis of airline switching fails to take into account the potential impact of airport capacity constraints. These are clearly vital for several reasons.

67 The availability, or otherwise, of spare capacity at airports can be shown to be one of the primary drivers of airport pricing in the short run. Consequently it is not possible to interpret annual pricing and profit figures, or the potential for an airport to generate excess profits over the life of its assets, without proper consideration of long run capacity issues

68 In practice, significant capacity constraints currently exist at the London airports. In the case of Stansted and Luton these relate predominantly to movements at peak times. However, because of the operating model of short haul airlines, peak capacity constraints have a material impact on the ability of airlines to switch part or all of their operations to alternative airports.

69 Furthermore, relaxing these capacity constraints requires significant investment and cannot be achieved within a short timescale. Therefore the options that might be available to Stansted-based airlines within the one year timescale usually adopted for assessments of market power could be very limited.

70 Because of the importance of these issues they are explored in more detail in **Section 4** below.

The CAA's analysis of geographic market definition

3 Passenger airport choice model

- 71 In the preceding discussion we have highlighted the arbitrary nature of the catchment areas that the CAA adopted in its market definition analysis. It has identified from survey data that passengers use different airports at different times and that the catchments of the airports overlap. These facts are not in dispute, but it is not clear how relevant they are to the question of market definition.
- 72 In particular, to get a proper picture of the geographic market in which Stansted Airport operates it is necessary to measure the *strength* of the effect which distance has on the propensity of passengers to choose airline services at one airport compared to equivalent services at another, more distant airport. It is also important to measure the extent to which passengers trade off differences in the price of air travel when choosing between competing air services offered at different airports.
- 73 In order to conduct this analysis, easyJet has made available to us its complete passenger booking record data for bookings made in the United Kingdom covering the period September 2006 to August 2007, a data set of 8.4 million records. This data contains details of each individual booking made on easyJet during that period. We have applied statistical techniques to this data to analyse the factors determining individual choices between services. In particular we were interested in modelling the situation where a passenger booking on the easyJet system was presented with a choice of originating airports for the same final destination. In this case, what were the factors that influenced the choice of originating airport and how strong were those factors?
- 74 To perform this analysis we selected a representative sample of 13 easyJet destinations, which were offered from more than one London airport. These accounted for c. 6.2 million records in easyJet's data. The routes selected are shown in Table 1 below.

Destination	Available originating airports
Basel	Stansted & Luton
Palma Barcelona Nice Glasgow Amsterdam Belfast Edinburgh Malaga	Stansted, Luton & Gatwick
Faro Alicante Ibiza Geneva	Stansted, Luton, Gatwick & East Midlands

Table 1: easyJet services analysed

75 For each booking record, the data set contains data on:

- destination and originating airport chosen;
- date and time the booking was made;
- date and time of flight;
- price paid per flight per passenger (including ticket and airport charges but excluding baggage & other ancillary charges);
- post code of the booking passenger; and
- number of seats booked per flight per booking.

76 After a process of data cleaning to remove invalid records⁶ the data set for these routes amounted to c. 3.2 million individual flight records.

77 The great value of this data set is that using the booking post code it is possible to identify the drive time for each passenger to each airport from which it was possible for them to travel⁷.

⁶ Primarily records with invalid post codes that could not be located or booking made by a travel agency (so the post code may not relate to the location of the passenger). This reduced the data set for these 13 routes from 6.2 million to 3.8 million. In addition passengers originating in Scotland and Northern Ireland also had to be removed from the data, which reduced the final data set to c. 3.2 million. There is no reason to believe that this process could have introduced any bias into the remaining data set.

⁷ Drive time was calculated from post codes using MapInfo software. It relates to road transport only, i.e. it does not take into account alternative means of transport such as metro or trains. Similarly, the drive-time calculation incorporates the quality of the road (e.g. highways have a lower drive-time

78 Furthermore, not only do we have details on the price each passenger paid for their ticket, given the size of the data set it is possible to infer the price that the passenger would have paid to take the nearest equivalent flight at an alternative airport. It is therefore possible, in principle, to identify own price and cross price effects.

3.1 THE ANALYSIS

79 In order to look at the drivers of the choice passengers make between airline services at alternative airports we used a statistical approach known as a multinomial logit regression model. This model is commonly used to study discrete consumer choices, such as transport mode. In this case the discrete choice is between airline services operated at a small number of different airports.

80 The multinomial logit regression model assumes that changes in the explanatory variables affect the utility function of the passenger and that this will, in turn, affect the probability of making any given choice. It is assumed that the way explanatory variables affect the probability of choice follows a logistic distribution

81 In this particular analysis, the multinomial logit gives us the probability of a passenger choosing a particular airport, given the drive-time to the different alternative airports and the price charged by the airline at each alternative airport.

82 The model allows us to estimate the marginal effect of distance and price changes on the average probability of choosing a service from each airport. It allows us to calculate the effect of a 1% change in the drive-time to a given airport on the probability of a passenger choosing a service from that airport or from an alternative airport. Similarly, we can see the effect of 1% change in price on the airport choice probability. It is therefore possible to analyse the extent to which differences in price can compensate passengers for differences in distance.

83 We created a separate multinomial model for each of the routes (destinations) in our sample, covering all flights during the sample period. Each model contained the following explanatory and control variables:

- **Price**, as an explanatory variable. One variable was included for each available alternative on a given route. If the airport was chosen by the passenger, the price represented the amount they paid; for the airports not chosen the price included was derived from the amounts paid by other passengers for the nearest equivalent service. This acted as a proxy for the price the passenger would have paid had they chosen a service from another airport.
- **Travel time to airport**, as explanatory variable. One variable was included for each alternative airport available on a given route. The travel time to all available airports was included.

than minor roads) but does not incorporate the likely level of congestion of any given road. Therefore the drive time measure is not a perfect measure of travel time to the airport, but it is the best approximation available.

- **Number of hauls** as a control variable: the number of flights to and from an airport contained in the booking: e.g. either return and multiple flight bookings or single flight bookings;
- **Peak time**, as a binary control variable signifying if the departure was a peak time or off-peak departure.
- **Duration of stay**, as a control. The time (in days) between the departure and the return flight.

84 In our analysis, we considered each flight as a separate decision. This means that each return trip implies two decisions: choosing the airport of departure and choosing airport of return.

3.1.1 Limitations

85 The first limitation of the data is that it only relates to passengers choosing between easyJet services on the company's website. This means that the additional competitive effects of losing passengers to other airlines (at the same or other airports) are not captured in this modelling. As a consequence it may be that the effects of distance on demand are under-estimated in this model.

86 Secondly, we cannot use this data to analyse the way in which passengers may react to price, distance or schedule by trading off one possible destination against another, because we only observe the destination they finally chose. While we would expect many leisure passengers to be making these sorts of trade-offs, the omission would only tend further to under-state the impact of distance-to-airport on customer decisions.

87 Thirdly, it is also important to note that the choices we observe are endogenous to the decisions already taken by easyJet regarding which airports from which to operate and what frequency of service to offer.

88 However, the restriction of the data to easyJet is also a strength. In practice there will be additional factors determining passenger choices that we are not in a position to model, including how closely the airline's schedule fits with the passenger's ideal itinerary and issues relating to the quality of service provided by different airlines. In this case the choices we have modelled are for a remarkably homogenous choice of options, because the choices are all made between the services of one airline. While issues of flight availability and scheduling will still impact on passenger choices (we show this to be the case below) the data nevertheless presents us with a relatively clean experiment in how passengers trade off the issues of price and distance in making their choice of which airline service to use.

89 Finally, we note that, as with any statistical model, the multinomial logit has its limitations. The main limitation is known as the independence of irrelevant alternatives. This feature means that if we were to add another airport, this would affect the probability of choosing the existing alternatives in a similar way⁸. This

⁸ In other words, the ratio of probabilities associated to the choice of two existing airports will remain unchanged after an additional airport is added. This implies that the probabilities associated to the

might be a problem if some airports were regarded by every passenger as being closer substitutes to other airports, independently of the distance and price charged. However, there is no reason to believe that this is the case for the London airports.

3.1.2 Scenario analysis

90 The information obtained with this analysis allows us to test the sensitivity of passenger choices between different points of origination to drive-time and the prices of alternative services.

91 Given the acknowledged capacity constraints at the other London airports, a great deal of the CAA's argument for the competitive constraint on Stansted rests on the viability of East Midlands Airport for passengers as an alternative point of departure.

92 To test this proposition we have performed simulations using the models we have created. We use the models to test the impact of moving an existing service provided at Stansted to East Midlands Airport, by replacing distances to Stansted with distances to East Midlands in the choice model and modelling the likelihood of passengers choosing to fly from East Midlands. In these scenarios we model this likelihood on the assumption that passengers face unchanged prices, and then model the price reduction that would be necessary to achieve the same passenger numbers at East Midlands that are currently generated at Stansted.

3.2 THE RESULTS

93 Given the commercially sensitive nature of the data used for this analysis it is only possible to summarise the results of our analysis. A more detailed presentation of our results is contained in confidential Annexe 1 to this report.

3.2.1 The impact of distance

94 The key finding our model is that the demand for passenger services from a given airport is extremely sensitive to the distance that a passenger has to travel to reach that airport.

95 We have estimated the "elasticity" of demand for services at each airport to changes in passenger travel time. This shows the proportionate change in the likelihood of choosing a service from a given airport as a function of changes in the proximity of that airport. As would be expected, the models create a range of results. The elasticities for the routes analysed fall in the range -1.2% to -4.9%. The vast majority of routes are in the high part of the range.

choice of each of the existing airports will be affected in a similar way, if we consider an additional airport.

Range of distance elasticities
-1.2 - -4.9

Table 2: Range of distance elasticities generated by choice model for Stansted

Source: Frontier analysis

96 An elasticity of x means that a 1% increase in distance from Stansted reduces the probability of choosing Stansted, other things being equal, by $x\%$ (of the original probability).

97 These elasticities are very substantial. It suggests that the preference for using a service from any given airport declines very rapidly indeed as the distance from that airport increases. The two graphs below illustrate this pattern with a simulation from our model, which predicts the likelihood of a passenger choosing Stansted (or Luton) based on location relative to those airports.

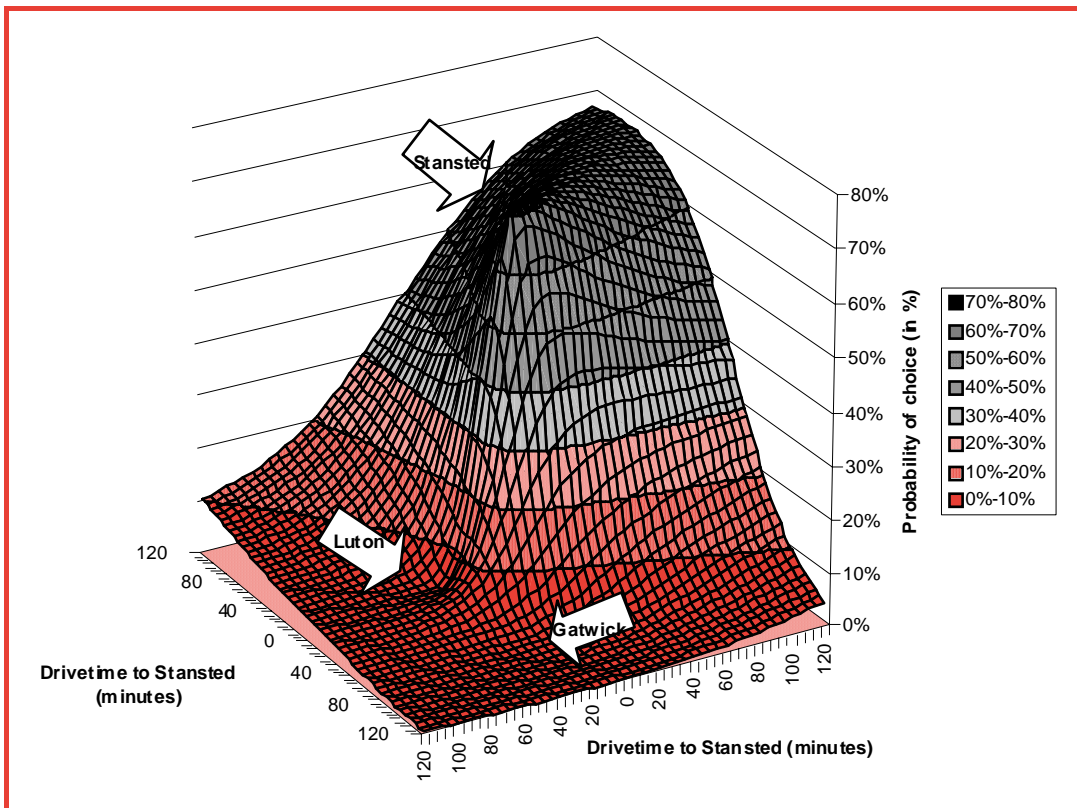


Figure 1: Probability of choosing Stansted Airport for passengers flying to and from typical international destination

Source: Frontier Economics

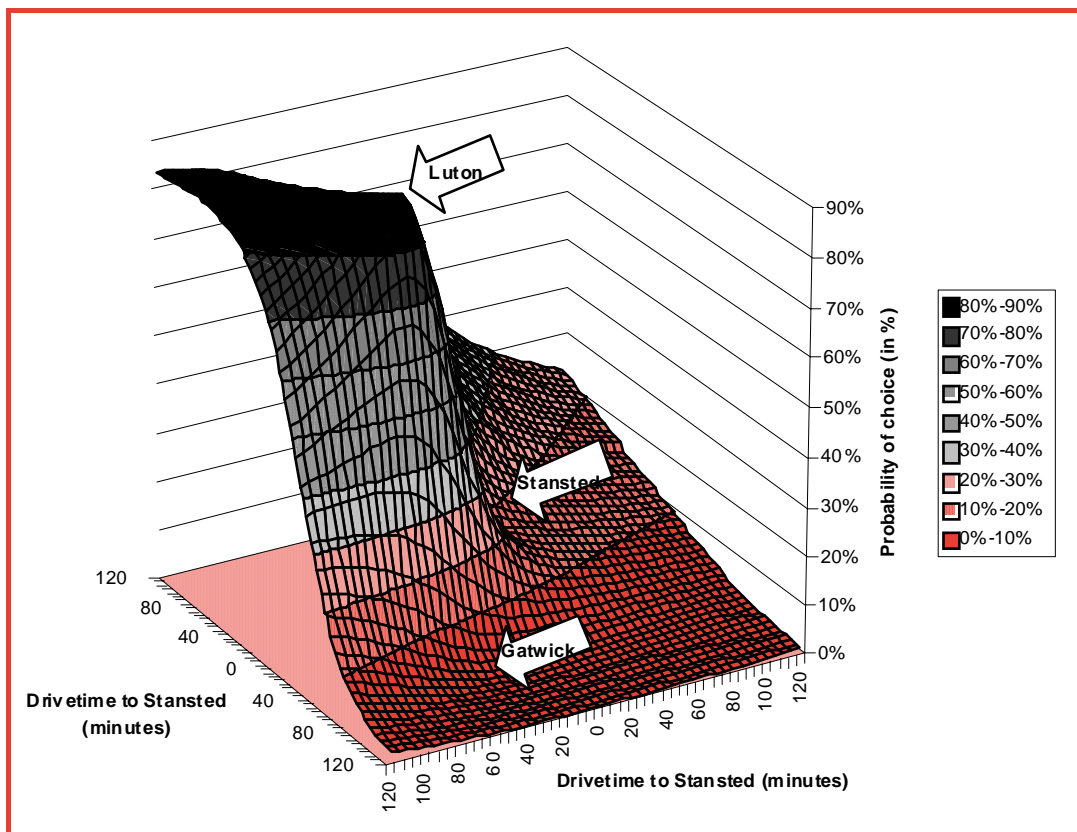


Figure 2: Probability of choosing Luton Airport for passengers flying to and from typical international destination

Source: Frontier Economics

98 The steepness of the decline in preference for using an airport is very striking. These figures illustrate the extent to which the demand for using a particular airport is very geographically localised. These results emphasise the fact that, although there are overlaps in the “catchment” of airports because some passengers will in practice travel a very long way to their chosen airport in any particular circumstance, the probability of them choosing an airport that is very remote from their home location is really very low indeed. Hence the value of these overlaps to the airport is very small. This has the effect of substantially reducing the extent of competition between airports that are located some distance apart.

99 The models also produce sensible measures for “cross-distance” elasticities, which show that the likelihood of choosing Stansted declines as passengers are located nearer to rival airports with air services to the same destination. The values of these cross-elasticities are harder to interpret because they are sensitive to the initial share of each airport in easyJet’s total traffic on a given route. In Annexe 1 we set out tables of “semi-elasticities” that show the absolute percentage point movement in demand from one airport to another predicted in response to a 1% change in distance. These semi-elasticities give an indication of where lost demand goes to when it transfers from one airport to another.

However these figures are in part simply a reflection of easyJet's existing route pattern.

100 Examining the detail of our results, we find that the preference to choose a local airport over a more distant one is roughly the same for domestic flights than for international ones.

101 Furthermore, the results show that there is no significant tendency for distance elasticities to be greater as the number of choices of point of origin increases.

102 In our basic model we used the assumption that the preference for an airport declines proportionately with distance at a constant rate as travel time from the airport increases. We conducted some sensitivity tests that suggest that, in practice, the sensitivity to distance tends to decline once distance to the airport becomes very large. This result makes intuitive sense. It suggests that passengers who are travelling significant distances to an airport are probably motivated by factors other than distance. One possibility is that many of these passengers may be late bookers whose choice of airport was restricted because the flights from alternative airports were already full at the time of booking.

3.2.2 The price/distance trade off

103 The next question is the extent to which price can offset the effects of distance in determining passenger route choices. Our modelling identifies own price and cross price elasticities on the choice of originating airport. Results are shown in Annexe 1.

104 These figures show that price elasticities are typically of a similar order of magnitude to the distance elasticities. The ratio of the price elasticity to the distance elasticity gives some indication of the extent to which price can offset the extent of distance. The range of results is shown in the table below.

Distance to Price Trade Off
0.32 – 2.11

Table 3: Range of distance – price trade-offs generated by choice model for Stansted

Source: Frontier analysis

105 These results show that the distance-price trade off seems to be such that a 1% increase in distance from the airport can be offset by a change in price (on the part of the airline, not the airport) of between 0.3% and 2%.

106 Even the low end of this range, which was not representative of the sample as a whole, indicates that distance can represent a significant barrier to an airline trying to attract passengers to a given airport and that significant price reductions may not adequately compensate for a longer journey to the airport. For instance at a ratio of 0.3 an increase in journey time from 60 minutes from 90 minutes would require a cut in price of 10% to attract the same number of passengers. With a ratio of 1, a price reduction of 33% would be required.

3.2.3 Using the model to predict the spatial distribution of bookings

107 We have used our models to predict the likelihood of passengers choosing a service from a particular airport given the characteristics their actual location, the prices they actually faced and the elasticities identified by our modelling. These results have been plotted on maps and are shown in Annexe 1.

108 The results are extremely interesting, especially when we compare maps based on the prices passengers actually faced with maps of the predicted likelihood of choosing an airport given the assumption of uniform prices.

109 Figure 3 below maps the likelihood of passengers choosing Stansted airport for a typical international service. Each square represents a booking at one of the three London airports.

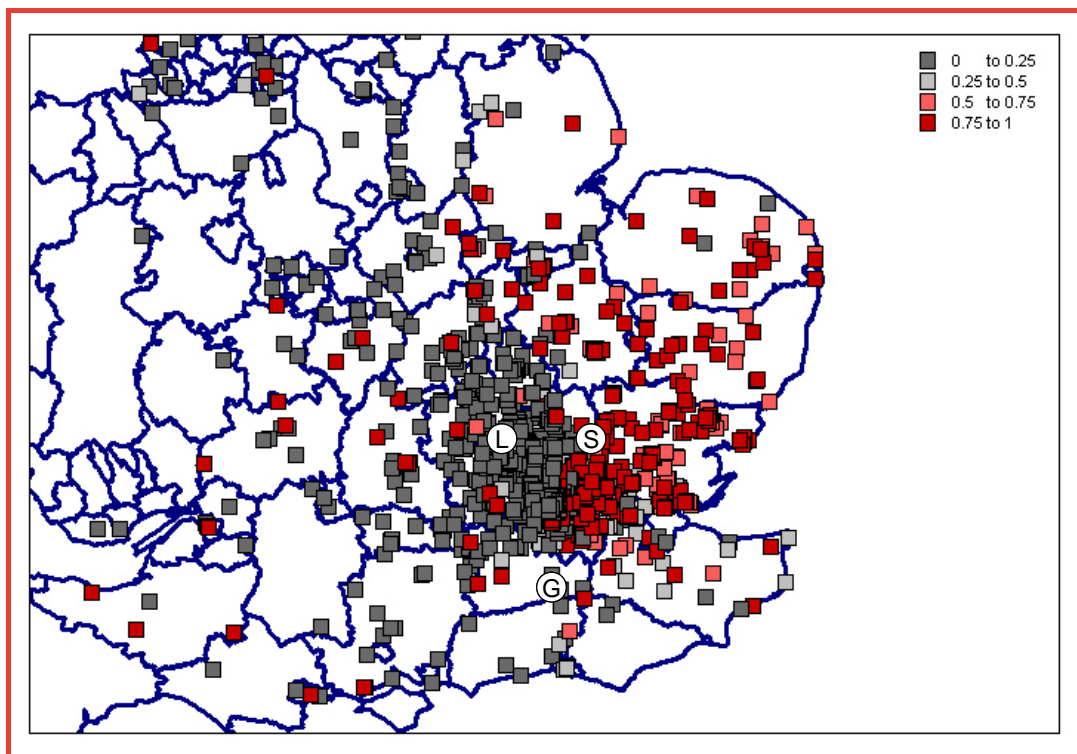


Figure 3: Probability of choosing Stansted Airport for South East England passengers flying to and from a typical international destination for flights

Source: Frontier Economics

110 What is striking about this map is the dispersion of red squares: there are passengers located a long way from Stansted that the model predicts had a high probability of using Stansted, given what we know about them. But what is also notable is that the most remote passengers do not form part of a continuous distribution. It is evident that there are many passengers located closer to

Stansted that the model credits with a much lower likelihood of choosing a service from that airport.

111 The reason for this pattern becomes clearer when the map is contrasted with Figure 4 below, which predicts the likelihood of choosing Stansted if the price faced at all London airports were the same.

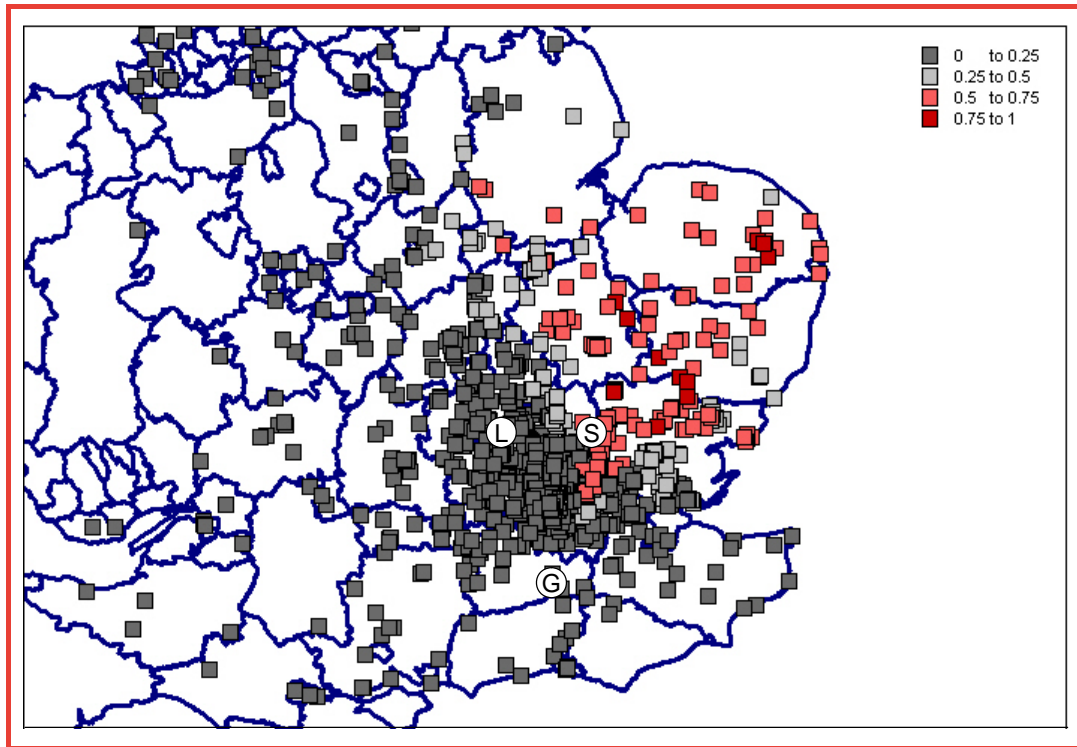


Figure 4: Probability of choosing Stansted airport for South East England passengers flying to and from a typical international destination for a flight with average characteristics

Source: Frontier Economics

112 Figure 4 shows that at constant prices the geographical catchment for Stansted is very localised in the East of England. The contrast with Figure 3 is striking. It shows that in practice passengers must be facing very different prices at the time of booking to explain their pattern of behaviour. Indeed the most likely interpretation is that those most remote passengers are ones booking at a time when the alternative flights were already full, giving them no alternative but to choose the particular service they did.

113 What our model implies is that some passengers *will* opt for services from airports a very long way from their home. But they are very unlikely to do so, and if they do, the reasons probably relate to other constraints such as late booking leading to a shortage of adequate available alternatives.

114 These results further confirm our view that the geographic market around Stansted Airport is very localised and the fact that a few passengers travel a long

way to use services from that airport does not mean that a wider geographic definition of the market is appropriate.

3.2.4 Scenario analysis

115 The final part of our analysis was to use our models to simulate a scenario relevant to the decision that the CAA considers airlines might make in response to an increase in airport charges at Stansted.

116 Our approach to this was to simulate what might happen to demand were easyJet were to move an existing service that is currently operating out of Stansted to East Midlands Airport.

117 The results of these simulation exercises are given in Annexe 1.

118 We find that the loss in passengers that easyJet would suffer would be very significant indeed, and vastly in excess of the cost of a 5% to 10% increase in airport charges. As shown in Table 4 below, the simulation indicates that easyJet would suffer a loss of between 30% and 50% of passenger numbers if it moved a service to East Midlands, while holding prices constant.

	% Loss In Passengers
International Flights	30% - 50%
Domestic Flights	60% – 70%

Table 4: Simulation of moving a service from Stansted to East Midlands

119 Another way of considering this issue is to ask what magnitude of price reduction might be necessary for easyJet to re-establish equal passenger numbers at East Midlands. However, our simulations show that in all cases there is no price, however low, that would attract back a sufficient number of passengers.

120 Before going on to discuss our second scenario, we need to add some additional comments regarding these results.

121 In interpreting these results we must first note that, given the nature of the model we are dealing with, “demand” is restricted to 100% of the passengers who booked with easyJet. As a consequence, it appears that moving a service from Stansted to East Midlands simply drives passengers to other easyJet services at Luton and Gatwick. While some of this may occur in practice it is as likely that easyJet would lose passengers to alternative services at Stansted or to competing airlines at other airports.

122 Secondly, we recognise that an operation from East Midlands would attract new customers not currently using easyJet and that this demand is not included in the modelling. However, as these passengers are not currently systematically using Stansted and, given the evidence we have produced about the localised nature of demand, this seems to us to be capturing demand from a new geographic market. As such the effect should not be included in the assessment of easyJet’s ability to

respond to a price increase at Stansted while remaining within the same economic market.

123 Finally, we consider that the estimates of the traffic easyJet could expect to take with them to East Midlands may be a substantial over-estimate, because this simulation presumes that no other operator fills the void at Stansted by operating the service that easyJet was previously operating. Clearly there has to be a serious risk of this occurring. In which case an operator considering a move to East Midlands in response to an increase in Stansted's airport charges would have to discount even these figures heavily to take into account the likelihood that

3.3 CONCLUSIONS

124 We have analysed easyJet's passenger booking data for a period of one year. This data, covering 3.2 million transactions casts new light on the geographic market in which airlines operate at Stansted and therefore the market in which the airport also operates.

125 The results from this analysis are clear and present a challenge to the CAA's view that Stansted operates in a wide geographic market that extends as far as East Midlands and Birmingham airports.

126 The estimates of distance elasticity clearly show that the propensity to choose an airport, other things being equal, declines dramatically with travel time to the airport. This means that, although there is clearly an overlap in the "catchment" of Stansted Airport with East Midlands, the impact of this overlap on the pricing decisions at Stansted is very limited.

127 We have also shown that the price reduction necessary to offset any increase in travel distance on the part of passengers can be very substantial indeed, making it uneconomic for airlines to choose to relocate services to an airport more remote from the population it is currently trying to serve.

128 We have further provided an indication that passengers who travel a long way to fly from a given airport may be doing so not because they are expressing a preference to fly from that airport, but rather because the circumstances existing at the time they make their booking leave them with a restricted choice.

129 Finally we have shown that, given the distance and price effects found in statistical models, the likely loss of business easyJet would suffer if it attempted to move services from Stansted to East Midlands would dwarf any additional cost imposed by a 10% increase in airport charges. This demonstrates that switching operations to East Midlands Airport is not a viable option for easyJet. The threat of doing so is therefore not a credible constraint on Stansted's pricing.

4 Competitive constraints on airport pricing

- 130 In its advice to the DfT⁹ the CAA presents an analysis of Stansted’s actual and forecast financial performance over the Q4 regulatory period from April 2003 to March 2008¹⁰. This shows that Stansted’s return on its Regulatory Asset Base (or RAB) has been below the CAA’s estimate of BAA’s cost of capital during that period. Furthermore, despite a significant increase in charges in 2007/08, prices are still lower in that year (on average) than is permitted under the regulatory price cap.
- 131 The CAA also presents some estimates of the possible long run incremental cost of airport capacity on a variety of bases, arriving at figures in the range £7.50 to £11 per passenger.
- 132 Given these results, the CAA concludes that “that the current level of charges at Stansted Airport is not excessive and does not, *by itself*, suggest that the airport has, or is likely to acquire, substantial market power”¹¹.
- 133 We agree that, by itself, this evidence casts no light on whether Stansted has market power or may acquire it in the future. But that is because the level of airport pricing at any point in time cannot be assessed without regard the current level of capacity at the airport in question, the level of capacity available at its nearest rivals and the timeframe over which that capacity can be altered. Given the longevity of many airport assets it is not possible to assess whether market conditions mean Stansted has the prospect of earning excess returns without considering those prospects over the life of the assets concerned.
- 134 The CAA does not consider Stansted’s financial prospects over the life of its assets, nor does it conduct any analysis of the capacity constraints present in the system. As a consequence it has not conducted the analysis necessary to conclude whether or not Stansted has, or may acquire market power. Indeed it is unclear from CAA’s analysis whether it has considered in detail the way in which airport prices and/or capacity would be determined in an unregulated environment.
- 135 The CAA does include the statement that “charges in a reasonably competitive capital-intensive industry would be expected to rise to a level that facilitates new entry and/or efficient expansion, whilst also falling at times of relative over-capacity to a level closer to short-run avoidable costs¹². However, it is unclear how the CAA envisages this mechanism working in practice. It is true that at times of relative over capacity prices will fall to a level “closer to short-run avoidable cost”. But the question is how close is close, and what determines how close prices get?

⁹ CAA (2007)

¹⁰ Ibid, Table 8-1.

¹¹ Ibid, paragraph 8.54, emphasis added.

¹² Ibid, paragraph 8.46.

136 It is also true that under reasonably competitive conditions prices “would be expected to rise to a level that facilitates new entry and/or efficient expansion”. But what determines how far prices rise and what constraints exist to ensure that airports do not earn excessive returns in the long run? Also, is it realistic to assume in the airport sector that capacity can optimise itself to the long run level (or trend) in demand?

137 The answer to these questions needs a more coherent model of how airport charges and capacity would be determined in an unregulated environment. This would allow the proper interpretation of Stansted’s historical performance and reveal the conditions that would have to be met to be confident that Stansted is not in a position to generate excess returns over the life of its investments.

138 In the section below we provide a description of how market forces would be expected to determine airport charges and capacity. This identifies the key factors that act as an impediment to inter-airport competition. Finally we address the relevance of these conditions to Stansted Airport and its competitors and draw conclusions about the extent to which Stansted is likely to enjoy market power both now and in the future.

4.1 THE DETERMINANTS OF AIRPORT PRICING

139 CAA rightly identifies that **capacity** is a key factor in determining prices in an unregulated airport market.

140 Although a simplification, the airport sector is characterised by:

- levels of capacity at each airport that tend to be fixed in the short to medium term and can often only be increased in large and discrete increments;
- complications surrounding the increase of capacity created by significant planning constraints;
- short run marginal costs that tend to be low relative to long run average or long run incremental costs; and
- a low likelihood of entry into the market, because of the difficulty of establishing a new airport.

141 Given the spatial nature of competition between airports, the key factors which are likely to determine the intensity of competition between airports will tend to be:

- **physical proximity** – other things being equal, the closer are two airports to each other the greater will be the constraint that one places on the other’s prices;
- **capacity** – spare capacity (of an equivalent quality) at rival airports can provide airlines with greater choice and place more downward pressure on airport charges;

Competitive constraints on airport pricing

- **switching costs** – if airlines incur some form of fixed or sunk costs in using a particular airport, or suffer a commercial loss in switching between the use of different airports, this will give rise to lock-in effects that will give airports a degree of market power.

4.1.1 Pricing in the presence of excess capacity

142 If capacity is a given in the short to medium term and sufficient to meet any reasonable level of demand then the intensity of competition and therefore the level of prices, will be determined by the physical proximity of competing airports, the extent to which *passengers* views these airports as viable alternatives and the costs airlines would incur in switching between airports.

143 In these circumstances this model reasonably closely resembles what economists would describe as a “Differentiated Bertrand” form of competition. In such a world, if competition is intense (the airports are “close” as far as passengers are concerned and switching costs are low) then equilibrium prices will be pushed down towards, but not below, short run avoidable (or marginal) cost.

144 These observations identify three factors that must be analysed before it is possible to interpret the significance of any observations regarding airport pricing in the short run:

- the current (and future projected) capacity situation at the airport in question and at the rival airports;
- the extent to which passengers view airports as substitutes and in particular the trade off that passengers make between price and distance in choosing airline services from any given airport; and
- the extent of airline switching costs.

145 Moreover, the above observations highlight an important feature of an unregulated airport market that is glossed over in the CAA’s simple description of prices in paragraph 8.46 of its 2006 paper: in the presence of excess capacity: intense competition between airports will ensure that the fixed capital costs of those facilities can **never** be recovered by the operators.

146 Consequently we note that for airports to “pay for themselves” in an unregulated world it is necessary either that they:

- locate themselves sufficiently far apart so as to reduce the number of passengers that consider the airports to be close substitutes; or
- restrict capacity to ensure that the scarcity of capacity allows the recovery of capital costs.

147 In either situation it is clear that it is essential for competition between airports be muted to some degree if there is to be a prospect of airport assets earning an adequate return.

4.1.2 Airport pricing with capacity constraints

148 Given the importance of airport capacity in determining short run pricing, it is also worth considering how unregulated airport prices would be expected to be set in the event that some or all airports in a relevant market became capacity constrained. For simplicity, again, it is easiest to discuss pricing if we assume capacity is fixed in the short to medium term.

149 The first point to note is that if an individual airport runs out of capacity then the prices charged at that airport will have to rise so as to ration demand to the level of capacity. The airport can do this because the spatial nature of competition will ensure that passengers located sufficiently close to the airport would still prefer to use that airport, even if it is more expensive than its rivals. The effect of the constrained airport raising its prices is simply to create for itself a more geographically concentrated catchment.

150 However, the consequence of an airport behaving in this way is that any rival airports whose capacity is not constrained will also be able to raise their prices to some extent, although almost certainly not by as much as the constrained airport. This is because, by raising its prices to ration demand, the constrained airport has reduced the competitive pressure it places on its rivals.

151 Thus capacity constraints will cause all airport prices to rise; more so at those airports that have constrained capacity, although those airports will also be foregoing revenues because of the capacity constraint they are under.

152 In this situation the equilibrium level of prices will be determined by the intensity of competition between the airports, how hard the capacity constraint bites and whether capacity constraints are ubiquitous, or present only in one or a small number of competitors.

153 It is possible that equilibrium prices could be significantly above short run avoidable cost. However, the actual cost of fixed capacity does not enter into the determination of prices; capacity could be cheap or expensive, it will be the intensity of competition and the nature of the capacity constraint that will determine prices.

154 These observations reinforce the conclusion set out above that short run pricing cannot be interpreted in isolation without a detailed understanding of the capacity situation at all airports within the relevant market.

155 However, a number of additional conclusions arise when we consider airport pricing in the presence of capacity constraints.

156 First, it is obvious that airport capacity is typically developed in discrete, relatively large increments and the more true this is the less likelihood there is that equilibrium prices will be established at exactly the “right” level to generate a competitive return. Rather, at any point in time capacity will almost certainly either be in too plentiful supply to allow the recovery of capital costs or in such short supply that short-run returns may appear “excessive”.

157 Furthermore, it is clear from the fact that airport capacity tends to be developed in discrete increments that it is impossible to infer any evidence regarding an

airport's market power from its pricing and profits over a small number of years, even if the capacity situation in those years is well known. Evidence of market power existing and being abused requires a much longer time horizon, covering the life cycle of the major airport assets.

4.1.3 Will unregulated airports choose an efficient level of capacity?

158 In the previous sections we have identified a number of issues with airport pricing and profitability on the assumption that airport capacity itself is a given. However, in the long run clearly airport management will seek to set their airport's capacity taking into account the growth demand and the competitive constraints faced from other airports.

159 As already identified above, the key factor that will tend to shape the way airports behave will be the extent to which capacity tends to come in discrete increments and, once determined, is difficult to change in the short to medium term.

160 If that is the case then airports can be expected to choose their profit maximising level of capacity, knowing that once capacity is fixed competition will tend to be played out in the way described in the previous two sections.

161 Given this, it can be demonstrated that airports would tend to set a level of capacity that restricts demand and drives up prices above the competitive level, leading to excessive profits. This observation is true in general and does not depend on the level of capacity costs.

162 The reason airports would be able to behave in this way is that generally restricted capacity can be used to weaken the effects of competition. Once capacity has been determined, competing airports would know that their rivals could not increase profits by reducing prices, because restricted capacity would mean that they could not take advantage of any increase in demand created by such a price reduction. The equilibrium level of capacity would be above that provided by a monopolist, but less than the socially efficient level. At the same time there is a very great likelihood that the participants would generate long run levels of profit in excess of the competitive level.

163 One caveat needs noting at this point. In such a model, if one airport is capacity constrained and its rival is not, we find that generally the incentive on the capacity constrained airport will be to expand capacity. Hence, although there is a general tendency for airports to seek to constrain capacity, the existence of excess capacity somewhere in the system can act as a powerful defence against the general tendency to constrain capacity.

164 The reason for this is as follows. If an airport sees its rival has spare capacity the value to itself of constraining its own capacity is significantly reduced, because it's rival is able to soak up demand driven away by the capacity constraint and will have an incentive to cut prices to do so, reducing the value of constraint to the first airport.

4.1.4 Overall conclusions on the factors determining airport pricing

165 It is clear that the main factors determining airport pricing are the availability of substitute airports located sufficiently close to each other that passengers consider them to be adequate substitutes, the availability or otherwise of spare capacity at those airports and the extent to which other switching costs may create lock-in effects that deter airlines from switching operations from one airport to another in response to increases in airport charges.

166 The CAA has noted that airport prices will be expected to rise as capacity becomes more scarce but appears to conclude that this is a benign process that can simply be expected to bring forward more investment in airport capacity as a response.

167 In our view this conclusion is far from obvious. The conclusion that capacity will respond to short-run price signals, adjusting in line with demand and leading to prices resembling long run incremental costs, depends crucially on the assumption that capacity can be relatively easily adjusted in a reasonably continuous manner. As the CAA itself notes, this is really not the case with airports, where new capacity is often extremely lumpy in nature¹³ and has long lead times in development.

168 This lumpiness has two implications.

○ **First**, investment in airport capacity must be undertaken in the expectation that prices will be low (closer to short run avoidable cost) initially, but will rise significantly as capacity becomes scarce in the future. This means that the decision to invest in airport capacity must imply the assumption that the airport will enjoy some degree of market power in the future, when capacity becomes scarce.

There is no obvious point in time at which prices in this system will approximate either to short run avoidable costs or to long run incremental costs. Consequently any assessment of an airport's market power and whether it may have the potential to abuse such power needs to be conducted over a very long period of time, corresponding to the operational life of the airport's investments.

The CAA does not appear to have conducted such an analysis, and has merely assumed that capacity can adjust to ensure prices are appropriate in the long run.

○ **Second**, there is a material risk of strategic under-investment in airports in a deregulated market, because all airports have an incentive to exploit the lumpiness of the investment decisions *of their rivals* so as to reduce the intensity of competition between them.

¹³ Ibid, paragraph 3.25.

In fairness, the CAA recognises this possibility¹⁴, but appears to be of the view that competition law would be sufficient to mitigate the damaging impact of under investment. This seems to us to be a bold assumption.

It is true that competition law may be able to remedy the damage caused by excessive pricing in the short term. However, correcting the long run cost of creating a structural bias towards under-investment would seem to be beyond the reach of competition law. Furthermore, as the CAA also (rightly) notes, the actions of competition authorities could further *reduce* the incentive to invest in capacity by acting against the high prices created by capacity constraints in the latter (capacity constrained) phase of the investment cycle.¹⁵

Finally we note that the phase in the development of airports where the risk of general strategic under-investment becomes strongest is when capacity is already scarce. In contrast, if some airports in a competing system have spare capacity this acts as the strong incentive for other airports to match them, so as not to lose out.

4.2 THE CONSTRAINTS ON STANSTED

169 In the previous section we have argued that the prime determinants of whether Stansted Airport has market power will be the physical proximity of viable competitors and the availability, or otherwise of excess capacity both at Stansted and elsewhere.

170 These factors are relevant because, in our view the CAA has reached the wrong conclusion regarding both in terms of the geographical market in which Stansted competes and in terms of the significance of capacity constraints at Stansted's rival airports, in particular at Luton.

4.2.1 Geographical market

171 The CAA's analysis of the geographic market in which Stansted operates is based on arbitrary catchment areas with no empirical analysis to show that the overlap between catchments is sufficient for the pricing of one airport to constrain the pricing at another.

172 Our empirical analysis (presented Section 3), based on easyJet's customer sales data, shows that the likelihood of a passenger choosing a given airport is strongly influenced by their travel distance to the opposing choices. Passengers are shown to have an extremely strong preference for their closest airport. The strength of this preference is such that although *some* passengers may travel 2 hours or more to their chosen departure airport, airports as remote from London as East Midlands cannot create a competitive constraint on the London airports.

¹⁴ ` Ibid, paragraph 3.65.

¹⁵ ` Ibid, paragraph 3.59.

173 The CAA has interpreted the fact that airlines operate from multiple bases as evidence that the different airports are substitutes for each other. Our results reinforce the contrary conclusion: that short haul airlines use multiple bases because they serve *different* customer catchments. Therefore the operations are complementary (from the point of view of the business as a whole) and not competitive as the CAA supposes.

174 We conclude that the geographic market in which Stansted operates is best described by the airports in and around London itself. Of the major airports in the London area, it is of course the fact that two of the three, Heathrow and Gatwick, are in common ownership with Stansted. It is therefore inappropriate to ask whether these airports currently operate as a competitive constraint on Stansted, or would do so if Stansted were de-designated.

175 It appears therefore that the key competitive constraint on pricing at Stansted is presented by Luton Airport.

4.2.2 Capacity at Stansted and Luton Airports

176 We have identified that capacity constraints are key to understanding pricing and market power in the airport sector. In this context, the situation at the major London Airports in general is characterised by a lack of available capacity for expansion. This situation is summarised in Table 5 below.

Airport/ Constraint	Slots	Terminal capacity	Planning restrictions	Stand capacity
Heathrow	Yes, throughout the day	T5 will provide some headroom in 2008	Yes, air traffic movements limit	Yes, constrain efficiency of operations
Gatwick	Yes, throughout most of the day in Summer, no room to base additional aircraft	Limited capacity in South terminal	No new runway capacity before 2019	No
Stansted	Yes, at peak times, no room to base additional aircraft as peak departure slots are not available	Yes, terminal flow constraints at peak times.	Yes, limit on total passenger numbers, likely to be reached in 2007 or 2008	No
Luton	Not currently	Not currently	Not currently	Yes, no room to base more aircraft

Table 5: Summary of capacity constraints at London airports

177 In particular we have shown that the key competitive constraint on Stansted comes from Luton Airport. Table 5 shows that Luton Airport is not constrained at present in terms of runway or terminal capacity or in terms of existing planning restrictions (as is the case with Stansted).

178 However, Luton is constrained in terms of stand capacity. As a consequence, it is not possible for airlines to park additional aircraft at Luton overnight, which means that Luton is capacity constrained with respect to “based” aircraft.

179 In its advice to DfT the CAA overlooks the significance of this constraint in terms of the market power that it potentially confers on Stansted. To understand this significance it is necessary to outline the operational model of the short haul operators using Stansted and how capacity constraints on based aircraft differ from those on “in-bound” aircraft.

4.2.3 The significance of based aircraft and peak morning slots

- 180 The business model for short haul airlines relies on getting a high level of utilisation out of the airlines aircraft, while keeping operating costs to a minimum. To do this the airline needs to consider how to maximise the utilisation of their aircraft, which involves both maximising the use of their aircraft during the operational day, given that short-haul services cannot operate overnight and maximising load factors.
- 181 Coupled with this imperative, the airline must take account of the way in which yields vary through the day, in particular the way in which yields tend to be at their highest during the morning peak departure period.
- 182 For this reason based aircraft (over-nighting at the airport) need access to peak morning departure slots. Similarly, access to the peak morning departure slot means that the aircraft needs to be able to over-night at the airport. Without this access based aircraft are limited in their potential flying hours and their potential yield, which will compromise their economic viability.
- 183 For short haul operators the distinction becomes very important between aircraft based at an airport and those using it simply as an inbound destination. Revenues from based aircraft constitute the vast majority of airline revenues at the relevant airport, because of the frequency of movement and the importance of peak traffic.
- 184 Each based aircraft typically flies six sectors in a day. Because of the need for crew to be based in the close vicinity of the airport where the aircraft is based it is generally impractical for an aircraft not to return to its point of origin on each journey. Hence the typical; pattern of almost all aircraft is three outbound and return trips from its home base each day. The destination of each of these journeys will typically vary, however.
- 185 To be economically viable each aircraft has to generate a minimum average margin over the day, as a contribution to overheads to pay for the cost of the aircraft and make a contribution to overheads.
- 186 In practice however, the margin generated on each sector flown tends to be very variable by time of day and by sector. For the purpose of illustration only, an indicative pattern of margins is demonstrated in Figure 5 below¹⁶.

¹⁶ A representative figure has been used because of the commercially sensitive nature of the margin figures for easyJet.

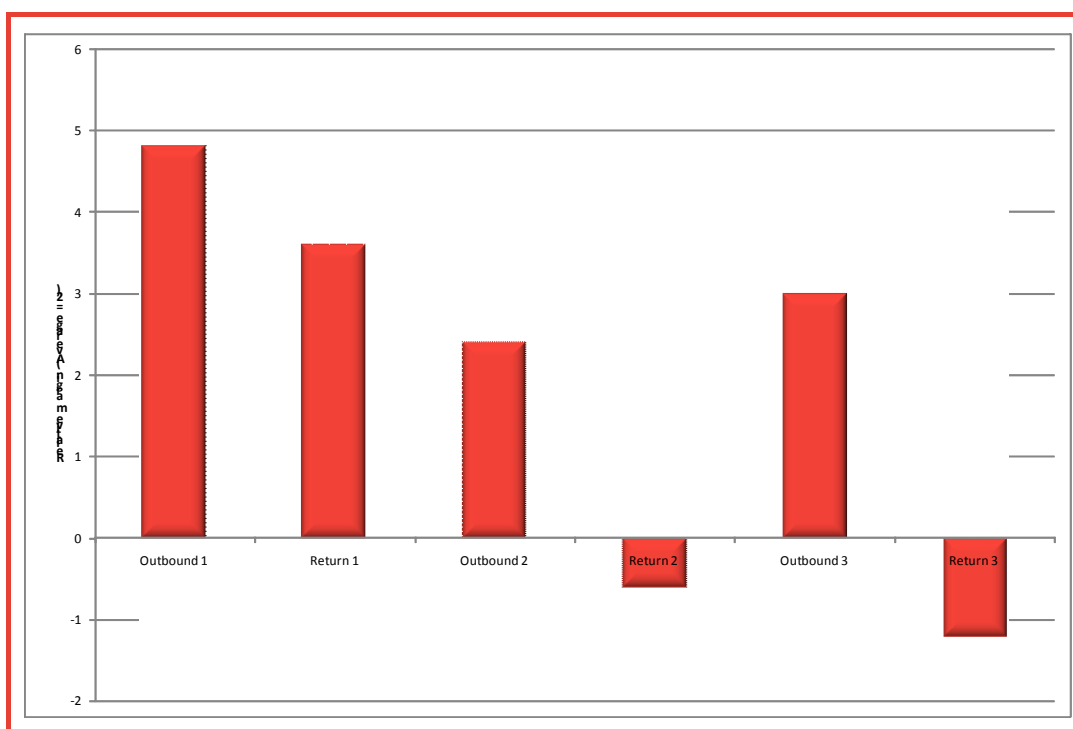


Figure 5: Representative contribution to overheads from based aircraft

- 187 As a whole the based aircraft needs to produce an adequate margin for the airline operator over its entire operation. However, it is also the case that each return journey originating at the aircraft's base must make a contribution to overheads in total. In theory an individual sector may be loss-making, provided the return on the reverse direction justifies the movement. If this is not the case the airline would be better off leaving the aircraft parked than running the additional service.
- 188 What should be clear from the representative figure above is that the economics of a based aircraft crucially dependent on access to a peak time take off slot at the start of each operating day. This slot generates significantly higher margins than average. Without access to this slot the based aircraft would not be viable.
- 189 This means that for a based aircraft to be profitable the first sector of the day is absolutely critical. Hence capacity constraints at the morning peak are the main determinant of whether an airline can re-base aircraft in the face of an increase in airport charges.
- 190 In the case of Stansted, the current situation seems to be clear. We have identified that only the London airports represent realistic alternatives within the same geographic market for the airlines currently based at using Stansted. But as Table 5 demonstrates, there is no available capacity at any of the rival airports. In particular, Luton has no more available stands for parking aircraft overnight. As a consequence it is not possible to rebase an aircraft from Stansted to Luton under the current situation.

191 This situation is very different for inbound aircraft, which are based elsewhere and fly into (and out of) Stansted. Even during peak times it would be possible for these aircraft to switch their destination from Stansted to Luton in response to an increase in airport charges, because there are no capacity constraints slots or terminal capacity.

192 This flexibility does not apply to the based aircraft on its off-peak movements. While it might appear theoretically possible to relocate intermediate stops during the day at another airport like Luton, practical issues of crew rostering, etc., mean that it is impractical for an airline to operate in this way. To do so would also be inefficient in cost terms because of the need to have ground crew in both locations to handle the operation of a single aircraft. As a consequence lack of morning peak capacity elsewhere effectively ties the based aircraft to Stansted for the whole of its operation.

The importance of price discrimination

193 The CAA does not consider the significance of the distinction between based and inbound aircraft in its analysis. This, it could be argued, is justified by the CAA's view that airports are very limited in their ability to price discriminate. If a supplier cannot price discriminate between different segments of its market then it can be argued that the conditions in the most competitive segment of the market will tend to determine overall prices.

194 The CAA's arguments are based on the supposed inability of an airport to discriminate its charges on the basis passenger type or airline business model or passenger type¹⁷. However, the CAA does not adequately address the ability of airports to price discriminate between based and inbound aircraft.

195 Much of CAA's analysis concerns itself with asking whether airports can discriminate between passenger types and in particular between business and leisure passengers. But whether or not their conclusions are correct in this regard, it misses the key point that airports *can* price discriminate between based and inbound aircraft.

○ **First**, it is clearly possible for airports to price discriminate landing and take-off charges by time of day. The CAA tries to show¹⁸ that it is not in Stansted's interest to price discriminate in this way, but its approach is flawed.

The CAA considers survey evidence of the percentage of travellers stating that their purpose of travel was for business. It notes that the variation in the proportion of business travellers by departure time through the peak period is relatively modest. From this it concludes that it is not effective for Stansted to use peak charges to target business travellers. But this is the conclusion to the wrong question. Peak hours are the period when demand for air travel is strongest. This means demand is greater for a given price and consequently the price elasticity of demand tends to be lower. Given this fact it is self

¹⁷ Ibid, paragraph 2.81.

¹⁸ Ibid, paragraph 8.69.

evidently in an airport's interest to charge higher prices at peak times and lower prices off peak, to maximise the use of its assets.

The CAA's analysis only establishes that peak demand is not overwhelmingly driven by demand from business travellers. It says nothing about the airport's incentive to peak price. Rather it calls into question the relevance of the business/leisure passenger classification in understanding passenger behaviour.

Although peak pricing *per se* is neither anti-competitive nor discriminatory, our concern is that Stansted has the power to exploit the market power conveyed by peak capacity constraints to discriminate unfairly against based aircraft¹⁹.

- **Second**, it is relatively simple for Stansted airport to price discriminate between based and inbound aircraft because it levies separate charges for take-off & landing and for parking an aircraft overnight.

The balance of charges between parking and take-off & landing can straightforwardly be used to price discriminate against based aircraft that are locked-in to Stansted because of the lack of available peak capacity at rival airports such as Luton.

Switching costs for based aircraft

196 The final factor that can give Stansted power over its airline customers is the existence of switching costs that an airline would incur in moving its operation away from Stansted in response to an increase in airport charges.

197 The CAA considers the matter of switching costs briefly in its advice to the DfI²⁰. In this discussion the CAA notes a lack of evidence from airline operators about the size of switching costs. But it also infers that these costs cannot be prohibitive from the fact that airlines are opening new bases and have, on occasions, relocated based aircraft.

198 We have noted previously that the historic evidence of switching to which the CAA refers is very limited. Furthermore, the CAA is wrong to conclude that the fact that airlines operate multiple bases implies that these bases form part of the same economic market. The opposite is more likely to be the case.

199 easyJet has provided Frontier with its estimates of the extent of switching costs associated with re-basing an aircraft to an alternative airport. These costs fall into the following main categories:

- If an aircraft is moved to a new base easyJet has to build up the revenues on the new routes served by that aircraft. This leads to a substantial short-term loss in margin per aircraft.

¹⁹ It should be noted that peak pricing *per se* is neither anti-competitive nor discriminatory. With capacity determined by peak demands there are good economic arguments for some form of peak pricing. Our concern, however, is that the peak capacity restrictions identified could lead

²⁰ Ibid, paragraphs 8.73 to 8.81.

- At the same time, easyJet has to increase its spending on marketing for the new routes to re-establish its target margins on those routes.
- There will also be short-term relocation costs associated with the temporary accommodation of crew at the new base until such time as new crew can be recruited.
- There may also be significant redundancy costs related to crew at the existing base.

200 The figures for these costs are highly confidential. Our calculations are set out in Annex 2. The approximate time profile of these losses, which are anticipated to endure for approximately three years, are illustrated in Figure 6 below.

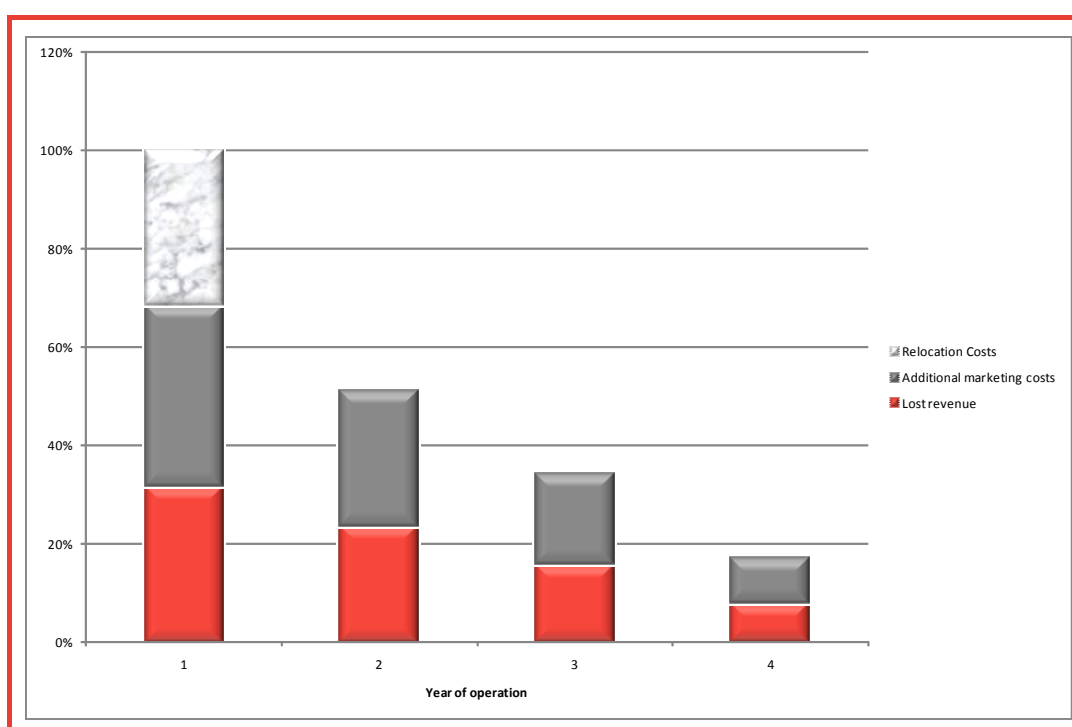


Figure 6: Illustrative losses from re-locating a based aircraft

201 The extent of these losses is substantial when viewed in relation to airport charges. Our estimates indicate that the likely range of these losses is equivalent to a *permanent* increase in airport charges of between [\pounds] per passenger.

202 Given that a 10% increase in landing charges at Stansted is approximately $\pounds 0.50$ per passenger, these figures indicate that the potential lock-in effect of switching costs on an airline with based aircraft could be very substantial.

5 Conclusions

203 In this section we summarise the main conclusions of this report. We then make
 a number of observations regarding the appropriate regulatory regime for
 Stansted Airport given the issues identified here and the problems that the CAA
 has identified in applying RAB-based regulation to Stansted's prices.

Geographic market definition

204 As regards the issue of the geographic market in which Stansted operates, we
 have identified a number of deficiencies with the CAA's analysis, in particular the
 lack of empirical analysis and the arbitrary choice of catchment areas.

205 The CAA presents no evidence to demonstrate how significant is the role of
 distance to airport in determining passenger choices between airline services. As
 a consequence, although the CAA has observed that there is overlap between the
 catchments from which airports draw their passengers, it has no evidence to
 show how strong is the effect of these overlaps and whether they are sufficient to
 justify treating various airports as if they operate in the same economic market.

206 Furthermore, the CAA interprets the fact that low fares airlines operate from
 multiple bases as evidence that the airlines consider these airports to be
 substitutes for each other. This interpretation appears to miss the more obvious
 interpretation of the facts: airlines operate multiple bases because they serve
different geographic markets.

207 We have prepared our own empirical analysis making use of data from easyJet's
 booking system to establish the true importance of distance from a given airport
 in determining the choices made by passengers and the extent to which change in
 price can compensate for greater travelling times. This database consists of more
 than three million customer records.

208 This analysis shows that passenger preferences for using different airports are
 very sensitive to the distance that they have to travel to each airport. Presented
 with a choice of origin the propensity to take an air service from a given airport
 declines sharply as distance from that airport to the passenger's point of origin
 increases. This propensity also tends to decline sharply as the passenger's point
 of origin approaches an alternative airport offering a competing service.

209 The strength of this preference is such that airports as distant from London as
 East Midlands can be shown to provide little or no competitive constraint on the
 pricing of airports in the London system. Given these findings our view is that
 the CAA is wrong to conclude that Stansted Airport operates in a relatively broad
 geographic market. In particular it is wrong to assert that the market extends as
 far as Birmingham and East Midlands Airports.

The factors constraining airport prices at Stansted

210 The CAA's analysis is insufficient to draw conclusions about the extent or
 otherwise of Stansted's market power on a forward looking basis. In particular,
 we note that the CAA does not articulate a clear theory of how airport prices are
 determined in an unregulated market and how these charges would be expected

- to evolve over time. Also, we note that the CAA has overlooked the impact of current levels of airport capacity at Stansted and other alternative airports and how this is likely to impact on the airlines using those airports.
- 211 Our view is that the key facts in determining the strength of inter-airport competition are geographical proximity, the extent to which airport capacity is fixed in the short to medium term and the presence or otherwise of switching costs for airlines, that may create lock-in effects.
- 212 The most important factor in determining airport pricing is the extent to which capacity is developed in large lumpy increments and can only be extended at relatively infrequent intervals. Under these conditions it is very unlikely that airport pricing will ever conform to the efficient long-run level in any given year or quinquennium. In the presence of excess capacity prices will tend to be low; towards short run avoidable costs. But when capacity is constrained prices may rise well in excess of long run incremental costs.
- 213 Indeed, given this structure of airport costs, it will only be possible for investment to be remunerated adequately if there is an expectation that at some point during its life cycle the airport will enjoy market power that will allow it to recover the costs of its past investment.
- 214 It is therefore only possible to draw inferences about market power and potential abuse from data on airport pricing by considering information, including forecasts, that covers the expected life of the assets concerned. This analysis must also take into account the existing and future capacity constraints at rival airports.
- 215 In contrast the CAA's analysis looks only at price data for five years, without any apparent consideration how these figures fit into a long run capacity cycle of the London airports.
- 216 Furthermore, we have shown that when capacity is lumpy and not easily altered there is a material risk that airports will strategically restrict capacity so as to reduce the intensity of competition and raise prices in the long run. This is a function of the fact that airports know that their rivals, as well as themselves, cannot readily alter capacity. We note that it may be possible to use competition law to rectify the negative effects of excessive pricing, but it cannot rectify the more important market failure: the risk of under-investment. Indeed if competition law is used too vigorously to control airport profits in the short run, when capacity is constrained, the effect may actually be to reduce further the incentive for airports to invest in appropriate levels of capacity.
- 217 Our analysis has also shown that there are reasons to consider Stansted already enjoys market power with regard to based aircraft. These aircraft have to have access to early morning departure slots for their operation to be economic. But additional peak capacity is not available at any of the other major London airports. In particular, lack of airport stands at Luton means that there is no additional capacity for airlines to park aircraft overnight.
- 218 Furthermore, we have also demonstrated that there are material switching costs involved in altering the base of an existing aircraft, which could be well in excess of the equivalent of a 10% increase in airport charges at Stansted. As a

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consequence based aircraft at Stansted are subject to a significant degree of lock-in, which further enhances Stansted's market power in that segment.

219 However, in our analysis we have demonstrated that airports such as East Midlands do not present a sufficient competitive constraint on Stansted to be considered part of the same market. Given this fact, the assessment of switching costs for an airline moving to East Midlands is largely irrelevant.

Comparison with the situation in Manchester

220 The CAA has also recommended that Manchester Airport be designated. We consider that the two cases are quite separate and each should be considered on its own merits. There is no reason to believe that the conclusion reached for Stansted Airport should necessarily be the same as the one reached for Manchester.

221 Manchester Airport's situation is different to that of Stansted in a number of respects. Most importantly, both Manchester and its nearest rivals (particularly Liverpool) have significant excess capacity for the foreseeable future. We have noted in this report that the presence of existing excess capacity is likely to be the best defence against excessive pricing by airports.

222 Furthermore, Manchester is far more dependent than Stansted on the Inclusive Tour and Charter markets. In these sectors the point of origin for outbound flights is arguably a less important factor in the passenger's decision than it is for the scheduled short-haul services that make up the vast majority of the services operated from Stansted. This may have important implications both for geographic market definition and the switching costs experienced by airlines.

5.1 THE REGULATION OF STANSTED AIRPORT

223 The CAA's recommendation, albeit given on the balance of judgement, that Stansted should be de-designated must be viewed in the context of its December 2006 report²¹. In that report, the CAA records serious misgivings about the application of the "standard building block" or "RAB-based" approach to price regulation at Stansted.

224 These misgivings stem primarily from the difficulties that appear to have developed between the operators of Stansted Airport and its major users over the expansion of the airport, a plan known as Stansted Generation 2, or SG2. The CAA highlights the sheer scale of SG2 relative to Stansted's existing RAB as the main source of these difficulties.

225 It seems that the CAA may be reluctant to continue with its responsibility to set price caps for Stansted given the difficulty it has experienced in finding a way forward on this issue. This reluctance may have been reinforced by the relatively poor reception given to its alternative regulatory proposal in its December 2006 paper, "market-led" pricing.

²¹ CAA (2006b), *"Airports price control review – Initial proposals for Heathrow, Gatwick and Stansted"*.

- 226 While we recognising the difficulties faced by the CAA in determining price caps for Stansted it would be wrong to leap to the conclusion that deregulation is a superior option. The risks that the CAA in the existing regulation seem to us less severe than those that are presented by the complete deregulation of Stansted's prices. Furthermore, while we do not claim to have the answer to exactly how Stansted's prices should be regulated, we believe that there are changes that can be made to the present regulatory system that may facilitate a more efficient outcome than the present arrangements without running the risks presented by de-designation.
- 227 Our reason for considering that the risks of deregulation are greater than those inherent in RAB-based regulation is reflected in comments made by the CAA in its various papers.
- 228 First, we agree with the CAA that RAB-based approach to regulation tends, in general, to run the risk of biasing towards over investment. But as we have argued in this paper, an unregulated airport sector runs a serious risk of strategic under investment on the part of the airports to artificially restrict capacity and raise prices. Our view is that the dangers of under-investment are more severe than those of over-investment. Under-investment leads to excessive prices for the airport operator, welfare losses from the choking off of legitimate demand and the knock-on loss of the wider economic benefits that are generated by air travel. By contrast, the risks of over-investment fall heavily on the airport operator. Even under price regulation an airport with market power cannot make the market pay for its excessive investment (unless it is a pure monopolist). Over investment may, in principle lead to an over-high price cap. But as we have outlined previously, excess capacity suppresses airport prices severely. Hence the operator will not be able to recover the costs of its investment or raise prices to the regulated cap.
- 229 We believe therefore that the CAA needs to consider alterations to the existing regulatory system to address the problems identified both by them and elsewhere in this paper, without throwing away the whole structure of price cap regulation.
- 230 In that context we believe that the CAA's "market-led" pricing proposal is too subjective and risky to constitute a viable alternative to the standard RAB-based approach. First and foremost, as we have argued above, market power and its exploitation will be a matter of long term cycles in the airport industry. As a consequence there needs to be some reckoning over time to ensure that Stansted does not have the opportunity to earn excessive returns over the whole investment cycle. This is a key function of the RAB that does not seem to receive mention in the CAA's analysis. The RAB is not the only way to achieve this, but if there is no RAB then an alternative must be found.
- 231 Secondly, we recognise the sense in the CAA's argument of trying to let prices adjust above or below long run average costs, to replicate the functioning of the market. But the process as described is too vague and qualitative to provide a reliable basis on which airport investment is likely to be made. So we concur with the view that the CAA's market-led approach would probably damage Stansted's incentives to invest in capacity.

Conclusions

232 Given the discussion presented in this paper, in our view there are two key areas that should be addressed in any revised regulatory scheme:

- there must be a process of ensuring that prices *in the long run* cannot be set at excessive levels, but this process should allow as much flexibility to allow short run demand and supply conditions (rather than the CAA) to set prices; and
- the scope of regulation should be reviewed to reduce the monolithic nature of airport expansion issues, by seeking to focus regulation as closely as possible on those parts of the airport provision that are truly bottlenecks, while allowing market forces to determine provision and prices in all parts of the airport service where this is practicable.

Long run pricing

233 The CAA's proposal for market-led pricing has some good properties in that it appears to allow prices to follow a time path that resembles, at least in principle, the pattern we would expect to observe from unregulated prices. The drawback however is that, by removing the RAB, prices have been cut loose from any fixed point that can ensure prices are not excessive in the long run, while the year-to-year adjustment mechanism as proposed is too subjective and places too great an information requirement on the CAA.

234 On the other hand, RAB-based pricing can produce very unsatisfactory results when the increments to capacity are very large, because the total level of costs rises substantially but the level of demand does not (in the short run). As a consequence prices jump (or at least the price cap does) when new capacity is developed, which is exactly the opposite of the price signal that would be sent in an unregulated environment.

235 One possible answer to this problem is to base regulated charge caps on long run average (or incremental) costs and allow the carry forward of unused price increases over a significant period of time.

236 The first part of this proposition should prevent price caps themselves jumping when new capacity is built, because the forecast cost of the capacity is spread the anticipated levels of demand it will serve over its entire operational life. This figure may be fixed for five years by the quinquennial review, but can be adjusted at subsequent reviews to take account of new information either on costs or on projected long term levels of demand.

237 Such a pricing scheme does not mean that prices will actually be set at long run average (or incremental) cost when new capacity is unveiled. In fact we would expect prices to be low at this point, because of the excess capacity in the system. So while excess capacity persists the airport will fail to recover adequate revenues to pay for its investment. This is why the airport should be allowed to carry forward unused price increases.

238 If prices in the future are capped at a maximum of long run average (or incremental) cost, but are close to short run avoidable cost when new capacity is launched, it follows that the asset will fail to generate an adequate return. Under

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these conditions the airport would not choose to expand. But if the shortfall in early years can be logged up appropriately it could be possible to allow long run returns to finance the investment adequately, by allowing prices to rise above long run average cost when capacity is constrained, but because of the long run constraint of regulation, prices could not rise by so much that excess returns could be generated over the life of the investment.

Breaking down monolithic investments into manageable parts

239 Our second issue addresses both CAA’s concern regarding the size of SG2 relative to the existing Stansted RAB and the issue raised in our paper of the impact that the indivisibility may have on airport’s incentives to choose the right level of capacity.

240 We have identified that with airport capacity available only in large and infrequently-installed tranches there is an incentive for unregulated airport operators to artificially restrict capacity so as to reduce competition and drive up market prices. The key factor we identified was that if an airport knows its rivals are capacity constrained and cannot alter that capacity in the medium term then that airport will also have an incentive to restrict capacity, because it knows its rivals will not be able to capture the demand lost due to their own capacity limitations.

241 It follows that the more can be done to make investment in airport capacity available in flexible quantities and better shaped to the growth in demand and the needs of the airline users the less would be the scope for airports to impose strategic capacity constraints for their own advantage.

242 It is therefore worth the CAA considering the possibility of restricting the scope of the airport assets subject to regulation to just those facilities that are most monopolistic or bottlenecks in nature and least open to flexible capacity development.

243 It would seem that runways and associated taxi-ways, etc., would fall within this core regulated category. It is not so clear, however, that other facilities such as terminal capacity need be treated in the same way.

244 This move would also be consistent with addressing the concerns expressed by the CAA with the effects of RAB-based regulation on Stansted’s incentive to innovate. The CAA points to the trend at other regional UK airports to enter into “longer term contracts with airlines, with commitments on both sides including in respect of service provision, charges, and sometimes marketing” and also to “meet the demands of no-frills airlines through dedicated no-frills terminals”²².

245 The CAA should therefore consider the scope for facilities such as terminals to be excluded from regulation and left to commercial negotiation between airport and airlines for their provision. Innovation and competition could be further

²² CAA (2007), paragraph 4.47.

facilitated by increasing the scope and opportunities for airlines to self-supply these facilities, so as to provide an increased range of alternatives.

- 246 If such an approach can be made to work it would have the benefit of increasing the flexibility of airport capacity relative to demand and improving innovation in the provision of airport services. This greater flexibility could reduce incentives on airports to restrict capacity and could increase inter-airport competition in areas of quality of service as well as price.

Annexe 1: Details of the passenger choice model [Confidential]

[✂]

Annexe 2: Calculation of switching costs [Confidential]

[✂]

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