

## **ANNEX B**

### **Leigh Fisher report for CAA, Comparing and Capping Airport Charges at Regulated Airports, December 2012**

#### **Interim comments by M.A.G pending disclosure of revised report and executable model**

##### **Summary**

1. The CAA places significant weight in the Consultation Document on the Leigh Fisher results for Stansted as indicative of the competitive price in the market. This is unsound for two main reasons. First, it is clear from Leigh Fisher's terms of reference that they were not asked to use their comparator exercise to assess the competitive price for Stansted. Had this been the question, they would most likely have approached it differently – for example, the omission of the relative GDP/cost levels of the regional economies within which different airports sit would have been an even more significant omission. Rather, Leigh Fisher were asked to consider whether it is possible to benchmark prices at other airports in order to regulate charges at Stansted and Gatwick. We have significant doubts about both their comparator methodology and its results, which serve to compound the difficulty of the CAA relying on evidence generated anyway for a purpose different from that to which it has been put.
2. Having registered this general point, the remainder of this note focusses in more detail on the problems we see with the exercise that Leigh Fisher have undertaken.
3. The inevitable judgements applied in the design of any benchmarking exercise, questions of data quality and limited availability, and the heterogeneous nature of comparator airports, mean that significant caution has to be exercised in taking any single point result and applying it directly to either a competition assessment or any price cap or other form of regulation. Furthermore, there are several methodological flaws in Leigh Fisher's particular approach which undermine the validity of the report's conclusions. As such, no reliance can be placed on the results of Leigh Fisher's analysis of Stansted's aeronautical charges and their relativity to other airports. Certainly any conclusion, on the basis of the current analysis, that Stansted's current charges are above competitive levels would be unsound.
4. A more informative and robust approach would be to identify ranges of airport charges, based upon a more soundly derived comparator group, and to weight them in ways which properly represent an average of passenger experience. The application of these benchmarking results should then be considered carefully as an input to the CAA's regulatory judgement, taking into account other factors, and not allowed to constrain the range of regulatory options which are considered. As identified above, the relevance of the methodology to assessment of the competitive price as opposed to price regulation would need to be properly and transparently considered. Most of the detailed analysis below is in terms of use of comparator information for purposes of regulation, consistent with the original Leigh Fisher terms of reference, though many of the points would also be relevant to an exercise which sought to use comparator information to inform an assessment of competitive price.

5. The comments below relate primarily to those parts of the report relevant to Stansted. These comments build on the earlier submission by M.A.G in October 2012, commenting on Leigh Fisher's Emerging Findings report of September 2012.

### **Applicability of findings**

6. The terms of reference for the study, as they relate to Stansted and Gatwick, are *"To assess the scope for capping airport charges at Gatwick or Stansted airports based on charges at comparator airports"*. While the consultants have produced a clear framework for analysis and collated a certain amount of useful data, they have not addressed a fundamental question of the relationship between the quantitative findings of the benchmarking, the qualitative judgements that must then be applied by the regulator, acting under its statutory duties, and any resulting price cap which the CAA may decide to set – all issues that are very relevant to the terms of reference they were set.
7. Leigh Fisher themselves draw attention at various places in their report to the outstanding weak points in the analysis and results derived from it, e.g.:

"8.5 ... comparing charges can usefully inform the regulatory process if certain obstacles can be overcome. It may be possible to use comparators directly as a limit on prices. Agreement between airports and airlines as to the various issues raised over the technical basis of the comparators and cut-off points etc., can provide a basis for their assistance in the necessary data collection which would enhance the robustness and timeliness of that process.

*Price comparisons could (subject to further analysis that is beyond the scope of this study) provide a proxy for a competitive price, albeit generated from comparators operating in various degrees of necessarily imperfect market conditions, and could be employed as part of a price monitoring approach."*

8. Notwithstanding these significant reservations expressed by the CAA's own expert advisers, the Consultation Document itself does not demonstrably address the limitations of the benchmarking results contained in the Consultation Document. Instead, it simply adopts the single data point average aeronautical charge per passenger of around £5.20 in 2010 as the primary measure of the competitive price in the market in which Stansted operates, and concludes firmly on this basis that Stansted is pricing above competitive levels. In turn, this is one of the key factors cited in concluding that Stansted may currently have substantial market power. This is an incorrect application of tentative statistical conclusions (which are themselves open to significant criticism, as we set out above and below), and one likely to lead to incorrect conclusions as to both Stansted's market power and its current pricing.
9. Setting aside the continuing differences over whether Stansted has substantial market power, and looking ahead to any CAA proposals for the economic regulation of Stansted, it would be important for the CAA to take care in any application of the Leigh Fisher results to the benchmarking or setting of prices at Stansted. In particular, simple extrapolation of these results to a price cap would be wrong on at least two broad counts.
10. First, the CAA would need to set out clearly how any price cap based on benchmarks is consistent with the CAA's new statutory duties to further the interests of air transport users (as distinct from airlines), and to promote competition in the provision of airport services. This will require an explanation of the regulator's judgement, taking account of

the very specific circumstances at Stansted now and over the economic licence period. There is no direct linkage in such an assessment between a single average of a very imperfect measure of charges at potentially comparable airports in a single year three years ago, and the price cap that might be appropriate at Stansted for the period 2014-19.

11. Second, the remaining data and methodological weaknesses in the Leigh Fisher report should cause the CAA to proceed with caution before placing much weight on this study. More work could and should be undertaken by the CAA to broaden the data sets, to make obvious adjustments to improve data comparability, and to derive a richer array of statistical results from the data than just a simple point average for 2010.
12. The comments below address two areas of criticism of the study: first, methodological concerns; and second, comments on the comparability of data for the specific airports within Stansted's comparator group.

### **Methodological comments**

#### ***Availability of aeronautical charge data***

13. It is notable that of the 19 airports identified as comparators for Stansted, data on aeronautical charges is only publicly available for 9. Given the potential importance of this study to inform the CAA's future regulation (and possibly de-regulation) of Stansted, and the importance of additional relevant data to help construct a robust and valid comparator set for Stansted, the CAA might consider what steps it could take over the coming months to obtain additional data which are not currently in the public domain. There would appear to be sufficient time within the price control review process to allow for a further few months to be spent on data gathering. The CAA might consider requesting the data directly of the airports concerned, or requesting it via the offices of Airports Council International (ACI). Assurances could be given that any commercially sensitive data would not be published in a form that would reveal the data, but rather they would be used to broaden the set of comparators from which summary statistics (means, medians, ranges) of aeronautical charge per passenger were calculated.

#### ***Comparability of price data between Emerging Findings and Final Report***

14. Although both the Initial View and the Consultation Document both use 2011 prices (defined by own country inflation) and using 2011 exchange rates, and both attempt to account for cargo-only charges and differences in treatment of air navigation service charges, nevertheless there is a marked difference between the two reports in the aeronautical revenue per passenger in 2010. The Stansted charge per passenger is £6.20 in the Consultation Document, £0.6 (9%) less than the £6.8 reported in the Initial View. For the five airports which are in the Stansted comparator group in both reports, the average reduction in charge per passenger is £0.4, or 8%. This is a significant variation which does not appear to be explained in the Consultation Document, and which thus undermines confidence in the Leigh Fisher findings.

#### ***Criteria for selection of comparator group for Stansted***

15. It appears that the factor which has the strongest correlation with airport charge revenue per passenger (namely, percentage of traffic accounted for by network carrier) is also very strongly correlated with percentage of connecting traffic, and percentage of long haul traffic. All are measures of the same underlying phenomenon. Network carriers tend to have more long haul operations than the other airline types, and carry more connecting passengers themselves as well as supplying connecting passengers to other airlines at

their hub airport. Including all three factors as explanatory variables in determining airport charge revenue would create the problem of multi-collinearity, whereby it is impossible to determine any stable relationship between the independent and dependent variables. In turn, this approach could distort the weighting of all the criteria used to determine the comparator group for Stansted. It is suggested that only one of these three factors is used.

16. This problem of multi-collinearity is also likely to arise to a lesser degree with the use of price cap regulation, catchment area, proximity to main city, and perhaps runway utilisation. Price cap regulation tends, across different countries, to be applied to busy main airports close to large (often capital) cities, so these four factors are measuring aspects of the same underlying phenomenon (strong and concentrated passenger demand).
17. Although price cap regulation is found to have the strongest explanatory power of any factor, it is excluded from the criteria for selection of comparators as *"this would have the perverse effect of biasing the benchmarking to the other price capped airports, whereas the objective of the study was, where feasible, to benchmark against a proxy for the market or competitive price"*. This approach appears statistically unsound, as it discards valuable data in a study which is already reliant on very small and heterogeneous samples. A better approach would be to include it, derive the resulting comparator group using all the weighted criteria, and then analyse the results, distinguishing where need be between the full comparator group and subsets excluding price regulated airports. The Leigh Fisher approach is also internally inconsistent, as it excludes price cap regulation from being a criterion to determine the comparator group, but then includes price capped airports (such as Gatwick) within Stansted's comparator group. We would argue that Gatwick should be in the Stansted comparator group (and indeed operates in the Stansted market and is an effective competitor for Stansted). The Leigh Fisher report as it stands is methodologically inconsistent on this point and thus unreliable.

#### ***Weighting of criteria***

18. There appears to be a statistical error in the weighting of the criteria, arising from the omission of price cap regulation as one of the criteria. Leigh Fisher present the regression analysis in Figure 5, based on a full regression using all factors, including price cap regulation. They then exclude this latter factor (for debateable reasons, as discussed above), but then go on to use the measures of statistical significance (P-value) derived from the original full multivariate regression. To the extent that there is any correlation between price cap regulation and any other factors (such as catchment area, proximity to main city, and runway utilisation), then Leigh Fisher's approach would be likely systematically to underweight these factors. A better approach, if it had been decided to exclude price cap regulation from the criteria, would be to re-estimate the multivariate regression using the remaining 10 independent variables, and use the resulting P-values to derive weights for these criteria.

#### ***Weighting of prices to derive statistical summary measures***

19. The CAA's statutory duty towards passenger interests could argue for an analysis more clearly focused on the charges faced by the average passenger across the group of comparator airports, rather than weighting each airport equally, or (alternatively) focusing on a smaller sub-set of airports which are bases for a small number of low cost carriers. The unweighted mean, presented by Leigh Fisher, effectively gives equal weight to, say, the 2.8 million passengers using Leeds Bradford airport as the 31.4 million passengers using Gatwick. Weighting the charges at each airport by the passenger traffic served by

that airport would seem to give a better representation overall of the passenger experience across the benchmark group, and provide a better basis for assessing where in relation to the various average measures (mean, median, inter-quartile range) it might be appropriate to set any price cap for each airport.

20. The Leigh Fisher report justifies the absence of any weighting of aeronautical charges per passenger as follows (paragraph 3.2.3):

*"It is essentially a matter of opinion which of these weightings best matches the relative importance of the data point. ... Weighting by scale also tends to increase the relative contribution of large airports, which might distort the outcomes. To avoid such distortions and for simplicity, the averages shown in the example calculations are unweighted. ... We report unweighted results. This is because other weightings have systematic effects on the indices calculated, which may be hard to justify, given their application is essentially a subjective matter. Applying different weightings creates different values for the average, although this is not significant (Figure 11 shows a maximum range of 15% from the unweighted average), although we consider the unweighted average to be most appropriate."*

21. We would strongly disagree with this reasoning. As noted above, the CAA's primary statutory duty towards passengers gives it a clear locus to assess the benchmark prices in terms of average passenger experience, which would lead to weighting the prices by passengers at each airport. Such a weighting would not be "a matter of opinion" or "hard to justify" or "essentially a subjective matter", but would be grounded in the regulator's legal framework. All approaches to summarising a set of data in a single mean, whether weighted or unweighted, have systematic effects when viewed from a particular vantage point. The real question is what forms of calculation of different summary statistics from the data set would better represent the underlying reality of passenger experience which should form the basis of the CAA's assessment.
22. Furthermore, the argument of insignificance put forward by Leigh Fisher is factually wrong. The unweighted mean of aeronautical charges per passenger in 2010 is reported as £5.2. The mean weighted by passenger is £6.3, 21% higher than the unweighted mean (not 15% as Leigh Fisher cite). This is a very significant difference, both in absolute terms (especially given the very small sample size of the study) and in relation to Stansted's price, at £6.2, which would move from above to just below the average. The switch from unweighted to weighted averages would also increase the median from £5.5 (Birmingham) to £6.1 (Hong Kong), and the inter-quartile ranges from £4.2-7.4 to £5.6-7.4. Stansted's 2010 charge of £6.2 per passenger would thus move from above the mean and the median to around both, and from the higher end of the inter-quartile range to somewhere closer to the bottom. A very different picture of Stansted's position relative to its comparator group emerges from this alternative analysis.

### **Reporting of results**

23. As noted above, the report and the use of it in the Consultation Document focuses too heavily on a single point estimate. This is neither good statistical or regulatory practice. In the face of limited data, with significant questions about the direct comparability of this data, and conceptual questions about what a competitive price would be for an airport with Stansted's product and geographic characteristics, then it would be prudent for the CAA to examine a richer array of results. This should include different measures of the average and range of the available price data, focused on the latest available comparable data (2010 at present). It should also include an analysis based upon weighting prices by

passenger traffic at each airport, to provide an airport user perspective, in line with the CAA's statutory duties.

24. These concerns about the reporting of results and regulatory use made of them are echoed by the CAA's own consultants First Economics in their separate report on Price Monitoring as an Alternative to RAB-based Price Cap Regulation, December 2012. Specifically, First Economics state:

"6.3 *Our overall sense is that price benchmarking is a useful piece of evidence for the CAA to have on its books and could quite easily become a component part of the ongoing monitoring work that the CAA does within options B and C. But we worry that the benchmarking analysis might not be able to bear the weight that the CAA would be placing on it if it tried to extract a specific metric from the analysis and were to build a binding monitoring threshold around that metric. Importantly, the specific concerns that we have are not ones that the CAA can eliminate by revisiting Leigh Fisher's report and altering specific aspects of the consultants' work. They relate to the intrinsic limitations of benchmarking exercises.*"

"Annex 2

*We should nevertheless highlight that Leigh Fisher's suggested benchmarks present the CAA with a number of challenges. For the avoidance of doubt, these are not the consequence of deficiencies in the consultant's work, but rather a function of the natural limitations in the data set. We note that:*

- *Leigh Fisher cautions that there is a +/-10-15% margin of error in their calculated benchmarks;*
- *given the number of comparators, any summary statistics that the CAA takes from the data – e.g. average, upper quartile – will be quite sensitive to changes at individual airports."*

25. We also have concerns that the results of the Leigh Fisher study have only been partially reported, with the potential thereby to provide a partial and biased set of conclusions. The report states, at paragraph 8.3, that:

*"The issue of selection of comparators could be reduced by applying an econometric approach based on multivariate regression analysis where the airport characteristics (the criteria used for comparator selection) are the independent variables and the aeronautical revenue per passenger is the dependent variable. ... a very simple model was constructed to test this approach using 2010 data. This indicated that the approach is feasible on a single year basis. ... However, the approach could be used to build up a comprehensive picture on an on-going basis going forward and might be beneficial for price monitoring purposes."*

26. It appears, therefore, that there is a further unreported analysis of the available data, which Leigh Fisher consider to be potentially useful and statistically sound, and which could provide more information to the CAA and to stakeholders. Not to publish this analysis would appear perverse, particularly when the study already suffers from limited data availability, and its availability for a single year only does not of itself limit its usefulness for the CAA's purposes since the CAA already focuses on a single year. It

would be better practice to make the maximum use of all available data, setting out explanations of the relative pros and cons of each statistical approach used.

### ***Comparability of airport data***

27. Leigh Fisher have sought to identify suitable comparator airports for Stansted, based on a range of objective assessment criteria. Irrespective of the merits of Leigh Fisher's methodology, this leads to a relatively small number of comparator airports, which is then reduced further by issues relating to availability of data. Of the 19 airports regarded by Leigh Fisher as comparable, data is only available for nine of them.
28. With such a small sample a high degree of confidence is required in the comparability and integrity of the sample, if any meaningful and statistically significant conclusions are to be drawn. Whereas differences between airports' individual circumstances might conceivably be 'evened out' if a large enough sample is used, there are specific factors relating to many of the nine airports in Leigh Fisher's sample which mean that it is not possible to draw any meaningful conclusions regarding competitive levels of airport charges. Examples of such specific factors include: (a) short-run versus long-run pricing; (b) different methods of operation; (c) differences in cost base; and (d) differences in non-aeronautical revenues.

### ***Short-run versus Long-run pricing***

29. It is evident that many airports in the UK and elsewhere have substantial spare capacity (particularly runway capacity) and are seeking to accelerate short-term growth in order to increase market share. The cost structure of airports is such that a 'critical mass' of traffic is required so as to achieve profitability at the operating level. As a result, the focus of many airports is on achieving such a critical mass by pricing on the basis of short-run marginal costs – any consideration of achieving a satisfactory return on historic (or indeed future) investment is a secondary issue. At such airports, current aeronautical yields cannot be regarded as indicators of competitive long-run pricing. A comparison might be made with the pricing policy of Stansted itself in the period 2002-2007, where the airport operator was faced with a substantial sunk investment and the need to stimulate traffic growth by prices which were materially below long-run levels. In relation to the Leigh Fisher analysis, aeronautical yields at Liverpool, Leeds and EMA are reflective of such a short-run pricing policy – it is noteworthy that these are the three 'cheapest' airports in the sample. It would not be appropriate to draw any meaningful conclusions from the current pricing policy of those airports, in relation to the competitive level of long-run pricing. As capacity constraints bite, such that further material capital expenditure is required, it is inevitable that such airports will seek to push prices towards long-run levels.
30. Historical analysis of aero yields is also complicated by the existence of historic pricing agreements that may not be reflective of longer term pricing and are probably unsustainable into the future. Such deals, lasting 5-15 years, are generally linked to projections of traffic growth, and are often based on considerations of short-run marginal costs, as noted above. Buying (and protecting) market share through such short-run pricing is a reasonable approach to achieving a critical mass of traffic, but the yields implied by such historical deals cannot be regarded as indicative of competitive, sustainable pricing levels. When such deals expire, airports will seek to shift pricing upwards. Again, an example is that of Stansted itself, where the five-year deal with airlines in 2002 achieved its aim of achieving a critical mass of traffic, but following which there was an inevitable uplift in pricing towards more sustainable long-term levels. In relation to Leigh Fisher's sample, historic pricing agreements are certainly pushing down yields at Liverpool and Leeds, and probably also to some extent at EMA and Luton. This

downward bias, which might reasonably be expected to be corrected in the longer term, needs to be recognized in drawing any conclusions regarding the competitive level of aeronautical charges and benchmarking the charges of Stansted which is at a very different stage of development.

#### ***Different methods of operation***

31. A common problem with all such benchmarking exercises is the need to adjust for differences in the method of operation of individual airports. This is a particular problem when airports in different jurisdictions are being considered – governments vary in the way in which they expect aviation to meet all its costs, and the split of activities between airports, airlines (and other stakeholders such as handling agents) varies between – and indeed within – countries. It is not clear to what extent Leigh Fisher have sought to adjust for such factors. As an example, we have a serious concern about the inclusion of Melbourne airport in the sample of comparators. At many Australian airports – including Melbourne – the domestic terminals were constructed and operated by their airline occupants under long term lease arrangements. Although some airports have since bought in such leases, some of the domestic terminal facilities at Melbourne are still under lease. Melbourne airport applies substantially lower charges when passengers are handled through such leased facilities. It is not clear that Leigh Fisher have adjusted their analysis to reflect this factor, but without such an adjustment the aeronautical yield calculations for Melbourne will be biased downwards, and cannot reasonably be compared with those of Stansted.

#### ***Differences in cost base***

32. There are (at least) two issues relating to differences in the cost base of airports within Leigh Fisher's sample:

- (a) It is problematical to compare airports operating in a high cost environment with those in a lower cost environment. Factors such as regional or national variations in labour and other costs, will inevitably affect the results of benchmarking exercises. Within the UK, it is hazardous to compare airports in the London area (e.g. Stansted, Luton) with those in the regions (e.g. Liverpool, Leeds, East Midlands and Birmingham), where labour and other costs might be expected to be lower. A 'competitive' price at a regional airport would not be expected to be the same as in a London-area airport.
- (b) For historical reasons some UK airports are required to meet the agreed costs of policing, while others are not (these arrangements have been under review for some time). Of those UK airports within Leigh Fisher's sample, only Gatwick, Stansted and Birmingham are so 'designated'. Liverpool, Leeds, East Midlands and Luton are not designated, and are therefore not required to meet the costs of policing. The CAA will be aware that police costs at Stansted are substantial, and cannot be disregarded in comparing Stansted's aero yields with those of other UK airports in Leigh Fisher's sample.

#### ***Differences in non-aeronautical revenues***

33. While this is perhaps a separate issue to those described above, it is interesting to note that Stansted's total revenue per passenger (aero plus non-aero) is shown by Leigh Fisher to be in line with that of the average of comparator airports. It would be interesting to explore this in more detail, and we would welcome the CAA's views on this point. In a competitive airport market it is reasonable to assume that aero pricing might have regard to factors such as the attractiveness of certain types of passenger, from the perspective of

commercial revenues. An airport might consider offering lower prices to airlines whose passenger base generates higher commercial revenues, and vice versa. In terms of both short-run and long-run pricing this is what would be expected in a competitive market. The fact that an airport is generating higher aero yields than its peers might be related to the fact that its passenger mix is less attractive in terms of non-aero income. For example, an airport dominated by LCCs operating primarily to EU destinations (less duty-free, restrictions on cabin baggage) and with a higher-than-average proportion of inbound traffic (lower car parking revenues) might be at a disadvantage to an airport with a more balanced traffic mix (e.g. more non-EU) and a predominantly outbound market.

34. Leaving aside our wider concerns about the Leigh Fisher analysis, therefore, the indication that Stansted's total revenue yield is in line with its peers might be regarded as supporting the view that any differential in Stansted's aero yields is an expected outcome of differences in traffic type which lead to lower-than-average non-aero yields, such as would be reasonable in a competitive airport market. This issue warrants further study.

### **Conclusion**

35. The purpose of this note is not to attempt to invalidate the scope for benchmarking to inform regulatory judgements. However, the desire to ensure that airports in the sample are as comparable as possible (based on selected objective criteria), coupled with problems relating to the availability of data, has led to an extremely small sample size of just nine airports. As we have shown above, there is a range of specific issues relating to some of these nine airports, and to the statistical approaches used to assess the available data, which mean that any firm conclusions based on the Leigh Fisher analysis would be unsound.
36. If it is still considered that such benchmarking analysis is a useful contribution to the current regulatory review, there would appear to be two alternatives:
- (a) Add more airports to the sample by relaxing/amending the assessment criteria. We have noted that the number of airports in the sample has reduced materially from earlier versions of Leigh Fisher's analysis, which in itself casts doubt on the robustness and durability of the methodology. Further, some of the exclusions from the sample are intuitively hard to understand, particularly in relation to those UK regional airports that are excluded (and indeed those that are included). We have also previously noted that some of the assessment criteria appear to be different sides of the same underlying issue, and that consideration should be given to a smaller set of criteria, weighted in a more appropriate way. We would hope that changes could be made to the assessment methodology in a way which does not undermine the 'apples with apples' principle, but which leads to a substantially larger sample size that can form the basis of meaningful conclusions.
  - (b) Seeking the use of confidential data (on a non-attributable/identifiable basis) from those airports for which data are not currently in the public domain, as we have suggested previously. Again, the aim would be to expand the sample size so as to produce a more meaningful and statistically reliable analysis.
37. Without one, or probably both, of these changes, and corrections to the methodological flaws identified in this note, no reliance can be placed on the results of Leigh Fisher's analysis of Stansted's aero charges. Certainly any conclusion, on the basis of the current

analysis, that Stansted's current charges are above competitive levels would be unsound. It is in the interests of all parties that the CAA undertakes as comprehensive an analysis as possible (including of how such material might best be used in forming regulatory judgements), before seeking to draw any conclusions on the current level of Stansted's charges and the relevance of this historical data for either the competitive price (with implications for the CAA's significant market power analysis) or future economic regulation of the airport.