APPENDIX H

Evidence and analysis on indicators of market power – technical appendix

Introduction

H1 This appendix discusses the CAA's views on the concerns that have been raised by stakeholders on the approach and/or assumptions associated with the long run average incremental cost (LRAIC) based price modelling and the price benchmarking referred to in appendix D and G.

The Consultation

H2 In the Consultation on Gatwick market power assessment (the Consultation), the CAA outlined that:

- The current prices at Gatwick were close to the LRAIC, which is an approximate measure of long run marginal cost.
- Aeronautical revenue per passenger is marginally above the average of comparable airports, and about £2 above the average for the subset of airport operators that are subject to lighter regulation.

H3 The CAA received five responses to the Consultation, although concerns associated with the modelling were largely limited to Gatwick Airport Limited (GAL).[1]

CAA analysis

H4 In light of the representations from stakeholders as part of the Consultation, the CAA has re-evaluated the LRAIC and benchmarking material that was used to help inform the Consultation and continues to consider that:

- The use of LRAIC – an approach that proxies the long-term average price that might emerge from a competitive market – may, in theory, be useful in assisting in the CAA's assessment of market power but that there a number of practical issues associated with using LRAIC for airports.

[1] The responses to the Consultation are available on the CAA's website: http://www.caa.co.uk/default.aspx?catid=1350&pagetype=90&pageid=14784

- The aeronautical revenue per passenger at Gatwick is marginally above the average of comparable airports and about £2 above the subset of airport operators that are subject to lighter regulation.

LRAIC

Consultation view

H5 In the Consultation, the CAA outlined that:

- Price caps based on LRAIC have been used by some regulators as part of their regulatory duties.[2]
- The primary conceptual benefit of using this approach was that it proxies the long-term average price that might emerge from a competitive market.[3]
- While the calculation of LRAIC is relatively straightforward in methodological terms, any estimate is highly sensitive to the assumptions that are used.
- A number of stakeholders had expressed concern with the appropriateness of using such an approach to estimate the competitive price.

H6 It also outlined that, notwithstanding these concerns, it had engaged Europe Economics (EE) to:

- Estimate a LRAIC for Gatwick.
- Identify the advantages and disadvantages of using a LRAIC-based approach to inform estimates of the competitive price for Gatwick (and to set price caps).

H7 EE estimated an initial LRAIC estimate for Gatwick and, taking into account stakeholder comments (including comments received from GAL), later revised its estimates. Under EE's revised model the LRAIC estimate for a replacement airport (the CAA's and EE's preferred increment) increased to around £11, up from the £10.60 originally stated.

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2 For example, in the telecommunications sector Ofcom uses a long run incremental cost approach to inform the likely level of efficient costs in the context of its price cap regulation of mobile termination rates (MTRs). This approach is also used in a slightly different form in the regulation of fixed access charges.

3 CAA, Review of price regulation at Heathrow, Gatwick and Stansted airports (Q6) policy update, May 2012, page 56.

H8 However, EE's model was built using a cost of capital assumption of 6.5 per cent and that if the model was updated to reflect the CAA's view on the cost of capital for GAL (5.65 per cent), the appropriate LRAIC estimate would be around £10.[4]

H9 The CAA concluded by noting that this estimate of LRAIC was well below the level that GAL had suggested and was broadly consistent with the findings from the first EE study. It also highlighted numerous drawbacks associated with using a LRAIC approach for airports.[5]

Stakeholders' views

H10 GAL considered, notwithstanding the revisions to EE's LRAIC model which the CAA had continued to underestimate the LRAIC for Gatwick. It also considered that the CAA had:[6]

- Failed to consider the relevance of the additional runway capacity to the estimate of LRAIC notwithstanding EE softening its views on this issue.
- Failed to recognise that historic costs are largely irrelevant to how prices are set in a competitive market.
- Did not challenge the EE's assumption that the hypothetical new airport being full from the first day of operation or that it would not be appropriate to build-in an element of increased quality to reflect increasing passenger expectations.
- Did not challenge EE's low capital investment cost assumptions used in the modelling. GAL also noted that these estimates were substantially lower than its previous estimates and more recent estimates (£5 billion–£9 billion) submitted to the Airports Commission.[7]
- Used an inappropriately low cost of capital.

4 In the Consultation, the CAA stated that the LRAIC estimate would be around £9.99.

5 The concerns that the CAA raised with respect to the potential use of such an approach were outlined in paragraphs 4.26 to 4.27 and 4.37 to 4.38 of the Consultation.

6 GAL, CAA's Gatwick Market Power Assessment: Response from Gatwick Airport Limited, Ref Q5-050-LGW60, pages 9 to 10.

7 GAL indicated that the £5 billion to £9 billion costs were informed by (but were not based on) benchmarking costs of Terminal 5 at Heathrow and a second runway at Stansted. GAL also noted that the estimate of the range was also informed by other sources, including its internal cost analysis. Source: GAL, [✂].

H11 GAL also considered that any estimate of LRAIC should be considered a lower bound estimate of the competitive price as the price in a competitive market also reflects non-cost elements such as location, brand and scarcity.[8]

CAA views

H12 There are a number of concerns associated with using a LRAIC approach to proxy the competitive price:

- As LRAIC is a long-term forward-looking measure, there is a risk of over and under recovery in a particular period. This means LRAIC may not be well-suited as a benchmark to indicate whether a particular price is proximate to the competitive price at any given time. Charging a flat LRAIC price over time also raises similar issues as any other 'smoothing' effect, which is that existing passengers may resist being asked to pay for future improvements where they may not benefit.
- A LRAIC approach is data intensive and requires regulatory judgement to define the increment (although this might be less for a replacement cost approach). This can lead to significant uncertainty over future price profiles and it may be possible to generate large price increases or decreases depending on the assumptions used, limiting the protection to users and introducing variability owing to regulatory judgements.
- It has been argued that it is not an effective proxy for competitive airport prices where investments are very lumpy.[9] Indeed, the Guidelines[10] state that when considering prices it is important to take account of the effects of the capital-intensive nature of airports and of the ‘lumpiness’ of capacity increments.[11]

8 GAL, CAA's Gatwick Market Power Assessment: Response from Gatwick Airport Limited, Ref Q5-050-LGW60, pages 9 to 11.

9 CAA, Review of price regulation at Heathrow, Gatwick and Stansted airports, (Q6) Policy update, May 2012.

10 See paragraph 3.17 of the Guidelines.

11 In principle, short-run prices in a well-functioning airport market would be expected to fluctuate around a long-term average, depending on the level of spare capacity available in the market: when capacity tightens, prices could be expected to increase with the resulting high prices triggering the development of new capacity by competing airports and subsequent fall in prices. Under such circumstances, pricing above the competitive price for a period of time might be considered a normal feature of a well functioning market.

H13 More fundamentally, the relevance of a LRAIC-based price, given the level of Government involvement in planning of airport capacity particularly in the south east of England is substantially reduced.[12]

H14 With respect to GAL's specific concerns with EE's methodology, the Consultation examined the majority of these issues. In particular, the Consultation outlined that:[13]

- The dismissal of Increment 2 was based on a concern about the relationship between the incremental cost of additional capacity and assessing the competitive price level for an airport as a whole.[14]
- EE's approach did not include quality uplift as part of any new build as a hypothetical entrant would offer exactly the same experience as the exiting airport and its inclusion would not be appropriate.
- EE's LRAIC calculations were based on a 'brownfield site', which assumes that the land is already set up for an airport, including all planning permission, land acquisition and connection utilities – an approach consistent with the approach adopted by GAL's consultant (FTI Consulting LLP (FTI)).
- The costs associated with transport links are already included in the accounts of GAL, upon which the airport replacement costs are based (and only where the airport operator incurs these costs can they be reimbursed via the Regulatory Asset Base (RAB)); and
- The index that GAL proposed to increase land values by was quite high and was not appropriate. Furthermore, EE indicated that a more appropriate index may be lower than the one that it used in its modelling (but which it had retained in the revised version of its model).

H15 Importantly, the assumption that a replacement airport would be full from day one was based on the premise that this airport would replace Gatwick (or in other words Gatwick would close), with all existing traffic migrating to the new airport. This assumption is not unreasonable and a similar

12 EE, Advice on the application of long run incremental cost estimates for Gatwick and Stansted.

13 EE, Advice on the application of long run incremental cost estimates for Gatwick and Stansted; Response to comments by Gatwick Airport Limited, pages 1 to 18.

14 It also noted that its LRAIC estimate for Increment 2 of £17 was the upper estimate and that this should be lower as the construction of the runway would most proberly be phased over more time in line with demand. Source: EE, 'Advice on the application of long run incremental cost estimates for Gatwick and Stansted; Response to comments by Gatwick Airport Limited', page 6.

assumption was used by FTI in its estimation of a replacement cost airport for GAL.[15]

H16 EE's study also highlighted that LRAIC estimates using additions to capacity could be used in certain circumstances, such as a comparison of the costs of additional capacity at different airports, but that using the costs of a replacement cost airport speaks directly to the cost of providing these services.[16]

H17 The CAA does not, therefore, agree that EE has softened its position with respect to the appropriate increment. Rather, EE has indicated that the use of a non-replacement increment could be useful in specific circumstances, circumstances that do not currently include the one that the CAA is currently facing.

H18 On GAL's concern with the cost of capital assumption, the CAA does not consider that this is too low. A range of factors were carefully considered in determining this assumption and these factors were outlined in detail in Economic Regulation at Gatwick from April 2014: Initial Proposals (the Initial Proposals).[17]

H19 On GAL's concern with the low capital investment cost assumption, EE based its estimates on the 'minimum cost option' devised by ASA consultants for the Competition Commission (CC) for the SG2 Plan at Stansted. This decision was made in agreement with the CAA, and is justified as ASA was in a better position than BAA (or GAL) to provide a third party independent assessment of likely costs.[18]

H20 GAL has also suggested that '*the high costs associated with the building of an airport in the south east is also evident from the various cost estimates emanating through the Airports Commission process, including [its] own submissions on the costs of additional capacity*.'[19] In addition, GAL has '*estimated that the costs for a second runway and associated*

[15] FTI Consulting, 'LRAIC for Gatwick Airport: Presentation to CAA workshop', 7 December 2011.

[16] EE, 'Advice on the application of long run incremental cost estimates for Gatwick and Stansted; Response to comments by Gatwick Airport Limited', page 7.

[17] This document is available on the CAA's website: http://www.caa.co.uk/docs/33/CAP%201027%20Economic%20regulation%20at%20Heathrow%20from%20April%202014%20initial%20proposals.pdf

[18] EE, 'Advice on the application of long run incremental cost estimates for Gatwick and Stansted; Response to comments by Gatwick Airport Limited', page 18.

[19] Source: GAL, [✂].

facilities at Gatwick are likely to range between £5 billion and £9 billion (in 2013 prices), depending on the option selected.'[20]

H21 The CAA considers that in the current circumstances GAL is not best placed to provide an independent assessment of the likely costs associated with airport replacement. In addition, GAL has indicated that the estimates that it provided to the Airports Commission carry a large contingency:

At this stage Gatwick has produced a series of estimates at a facility level, which is consistent with a class 5 – conceptual estimate and relevant for strategic planning. This type of estimate therefore carries a risk/contingency level of 20% or greater. [21]

H22 Given the above, the CAA considers that GAL's estimates have to be treated with the appropriate level of caution and are not suitable for use in estimating a LRAIC, which already has a number of concerns associated with it.

H23 Options associated with Gatwick expansion were also appraised as part of the SERAS study. In this study, the £1.8 billion (in 2000 prices) for the narrow spaced option increases to £2.8 billion once adjusted for construction price inflation (2012 prices). This is slightly above the costs used by EE (£2.3 billion) but is broadly reflective of the costs that have been used.

H24 GAL also considers that any estimate of LRAIC should be considered a lower bound estimate of the competitive price as it does not consider factors such as location, brand and scarcity. The CAA does not agree with this view and considers that the evidence suggests that any LRAIC should instead be the higher bound estimate. This view was outlined by EE, who noted that, taking increment 2, the increment that generated the highest LRAIC estimate for GAL, that:

[T]he figure calculated by our model for Increment 2 (£17.00) is already an overestimate as the model does not take into account the phasing of capital expenditure. Our model assumes that the full capital costs of the second runway at Gatwick would be incurred upfront, with demand growing slowly over time. In reality, the construction of the runway would most likely be phased over time more in line with demand. Thus, the

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20 GAL, Airports Commission: Proposals for providing Additional Runway Capacity in the Longer Term, Gatwick Airport Limited response, July 2013, page 37.

21 GAL, Response to long term option, proposal clarification questions – Commercial submission by Gatwick Airport Limited, August 2013, page 4.

present value of capital costs should be lower, and the LRIC estimate for Increment 2 would be below £17.00.[22]

H25 With respect to GAL's concerns with respect to location, brand and scarcity the CAA considers that these issues have also been addressed and does not consider that EE's model should be changed:

- EE considered '*certain factors beyond resource costs may add value to services, but in a competitive market it does not necessarily follow that higher prices can be charged. Particularly where an operator has market power, regulators should not be concerned with what can be charged for a service, but with what it costs to provide the service.*'[23]
- Scarcity may mean that the market clearing price is likely to be significantly above the competitive price. However, the competitive price should be the price that would hold under conditions of competition in which operators are able to vary capacity in response to excess demand.
- While the value of non-price factors may be able to be passed through (ultimately to consumers), this will depend on the level of available capacity at Gatwick and at other airports (see appendix E), the level of competition in downstream markets and how sensitive passengers are to price changes. As Gatwick is not operating in a perfectly competitive market, and it is not currently full, these non-price factors may be more appropriately captured through other mechanisms such as the value of slots or the value of the airport (when exchanged).
- Assuming that these factors have not been captured and the CAA considered it appropriate to do so, estimating these factors would introduce a level of subjectivity which could lead to significant uncertainty and therefore large price increases or decreases depending on the assumptions used, limiting the protection to users and introducing greater variability.

Conclusion on LRAIC

H26 The primary conceptual benefit of using a LRAIC approach to set price caps is that it proxies the price that might emerge from a competitive market over the long run.[24] However, the CAA continues to consider that

22 EE, Advice on the application of long run incremental cost estimates for Gatwick and Stansted; Response to comments by Gatwick Airport Limited, page 18.

23 EE, Advice on the application of long run incremental cost estimates for Gatwick and Stansted; Response to comments by Gatwick Airport Limited, page 18.

24 CAA, Review of Price Regulation at Heathrow, Gatwick and Stansted airports ("Q6"), Policy update, page 56 and Europe Economics,

there are a number of concerns associated with using LRAIC for airport operators.

H27 In addition, while different (reasonable) models could be used to try and estimate the competitive price, the CAA considers, notwithstanding the limitations associated with using LRAIC, that the methodology adopted by EE is reasonable.

H28 In particular, EE has sought to illustrate the LRAIC per passenger of different capacity increments for Gatwick. The increments chosen relate to a complete airport replacement as well as various capacity expansions. Various assumptions used were also based on information available from GAL. Sensitivity analysis has also been undertaken to illustrate how the LRAIC may change with movement in various inputs.

H29 In addition, the CAA considers that the estimate that was produced was, if anything, at the higher end of the possible LRAIC spectrum.

Price benchmarking

Consultation view

H30 In the Consultation, the CAA indicated that an alternative way to estimate the competitive price was to consider evidence on pricing at comparable airports and that it had commissioned Leigh Fisher (LF) to undertake work on benchmarking airport charges at Gatwick against suitable comparator airports, which where possible, were operating in a competitive market;

H31 The Consultation also outlined:

- That LF's evidence suggested that GAL's aeronautical charges were broadly competitive compared to comparator airport operators, notwithstanding there being a margin of error in the analysis that made it difficult to be definitive on this.

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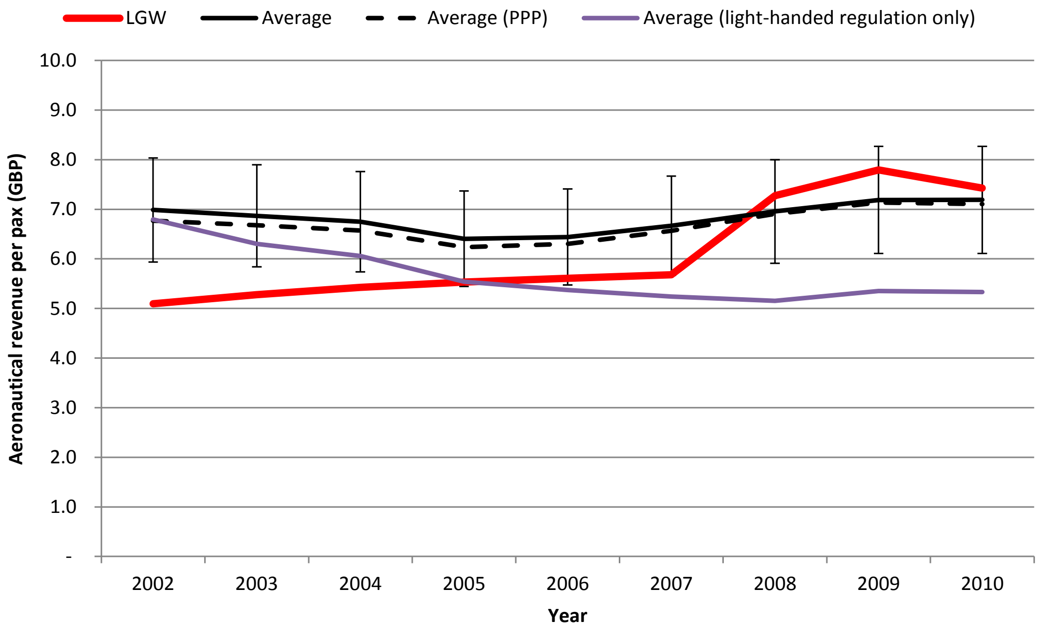
http://www.caa.co.uk/docs/1350/Europe%20Economics,%20Advice%20on%20the%20application%20of%20long%20run%20incremental%20cost%20estimates%20for%20Gatwick%20and%20Stansted%20-%20nonconfidential%20version.pdf, page 7.

- While the aeronautical revenue per passenger at Gatwick was marginally above the average of comparable airports it was about £2 above the subset of airport operators that are subject to lighter regulation (see Figure H.1 below).[25] LF undertook an initial benchmarking exercise and taking into account stakeholder comments, including comments received from GAL, later revised its analysis. This revised study sought to address a number of issues identified by stakeholders (a number of which are examined in more detail below), including the method used to derive weighting criteria for the selection of comparator airports and inconsistencies/errors in input data.[26]

Figure H.1: Aeronautical revenue per passenger compared to the basket average (2002 – 2010)



Source: Leigh Fisher

Note: An error bar of 15 per cent is attached to the average value to reflect the uncertainties associated with the statistical techniques applied and the range that might be expected if different averaging techniques were used.

Stakeholders' views

H32 GAL, in its response to the Consultation, identified a number of concerns with LF's analysis and considered that the CAA could not rely on this study to inform its view on charges. Specific concerns identified included:[27]

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25 The Consultation also indicated that the analysis showed that GAL's aeronautical revenue per passenger was below the average of comparable airports over the period 2002 to 2008.

26 LF, Comparing and capping airport charges at regulated airports, 19 April 2013, page 4.

27 GAL, CAA's Gatwick Market Power Assessment: Response from Gatwick Airport Limited, Ref Q5-

- The objectives of the LF report did not include the estimation of the competitive price, thus the applicability of the report was limited.
- LF benchmarked GAL's revenue against a number of other airports which the CAA did not consider to be in competition with Gatwick.
- Various technical and methodological concerns, such as:[28]
  - The values used for some of the explanatory variables.
  - Shortcomings in the selection and use of variables used in the study. In particular, concerns were expressed with respect to service quality, variations in underlying cost and the impact of regional subsidies.
  - Potential bias in the derivation of the weighting factors.
  - The calculation and use of the uncertainty band.
  - The potential use of multivariate regression to resolve most of the issues that it raised
- LF's focus on:
  - Aeronautical revenues rather than total revenue.
  - Revenues rather than charges.

CAA views

H33 The CAA recognises that different approaches to a benchmarking exercise can yield different outcomes and that the use of one approach, relative to another, might generate different results. That said, the benchmarking approach used by LF, which took into account a number of stakeholders concerns, is reasonable.

H34 However, conscious of the criticisms that had been levelled against the benchmarking exercise, including from GAL, the CAA re-engaged LF to consider the concerns that had been raised. Some of the key findings from this study are outlined below. [29]

050-LGW60, pages 10 to 11.

28 LF, Addendum Note, Comparing and Capping charges at Regulated Airports, 9 August 2013, pages 6 to 8.

29 This report is available on the CAA's website.

LF additional study

H35 LF's additional study noted, among other things, that:[30]

- Benchmarking is based on actual data and that reasonable inferences on competitive price, to inform the CAA's work, could be drawn from the identified ranges for each airport.
- Identification of a price range (including a band of uncertainty) is effective in countering some of the specific concerns or inevitably different views on key variables or relevant comparators.
- There was general consensus during the consultation process that there was value in the potential use of price benchmarking in the regulatory process.

H36 In addition, in terms of some of the specific technical and methodological concerns that GAL raised, LF noted that:[31]

- Different (types of) airlines typically have different service quality demands and so the inclusion of traffic mix in the determination of comparators should reflect different customer demands. Aside from concerns on availability of a consistent data set, level of service does not necessarily equate to charges or to the service levels demanded by the customer, and it considered that its inclusion would introduce a subjective element.
- The study was intended to benchmark differences in prices across airports, not costs. The inclusion of input costs could risk creating a circular argument whereby inefficient input costs could drive and justify higher prices.
- Regulation appears to elevate price or at least its proxy, revenue per passenger, but that further analysis of this issue is hampered by a lack of consistent data given the many different regulatory regimes in place. As such, LF noted that its study therefore focused on assessing regulation at a high level to draw general conclusions.
- The benchmarking exercise itself attempts to balance out these issues and identify the relative prices at different comparator airports based on their core attributes rather than explore and explain the many different reasons that may lie behind each of the differences.

30 LF, Addendum Note, Comparing and Capping charges at Regulated Airports, 9 August 2013, pages 3 to 8.

31 LF, Addendum Note, Comparing and Capping charges at Regulated Airports, 9 August 2013, pages 3 to 8.

H37 In addition, LF noted that its analysis had:[32]

- Followed a data-driven approach that reveals that some of the factors which GAL might consider relevant are less important in reality.
- Normalised the data using well established techniques which it has used in publications for years.

H38 Furthermore, LF noted that:[33]

- A lack of time series data influenced its approach and that a time series allows the overall analysis to show the impact of different stages of investment cycle, regulatory settlements and economic conditions and provides valuable context.
- It tested a multivariate regression approach to establish benchmarks, and while this showed some potential, a lack of data meant that it was not possible to consider more than a single year. However, it also noted that there were potential concerns with such an approach, including collinearity, reliability of inputs and a wide margin of error.
- It used an unweighted average to calculate the uncertainty band because other weightings have systematic effects on the indices calculated which may be hard to justify, given that their application is essentially a subjective matter.
- It used the results from analysis of the impact of different weightings to determine the potential range of +/- 15 per cent uncertainty from the unweighted average and that it considered that the unweighted average was the most appropriate.

H39 Since the publication of the Consultation, LF has updated its benchmarking analysis with an additional year's worth of data (see Figure H.2 below).[34] Using this additional data, LF found there is a slight shift upwards in the overall unweighted average, although it is comfortably within the +/-15 per cent error range identified in its report.[35]

32 LF, Addendum Note, Comparing and Capping charges at Regulated Airports, 9 August 2013, pages 3 to 8.

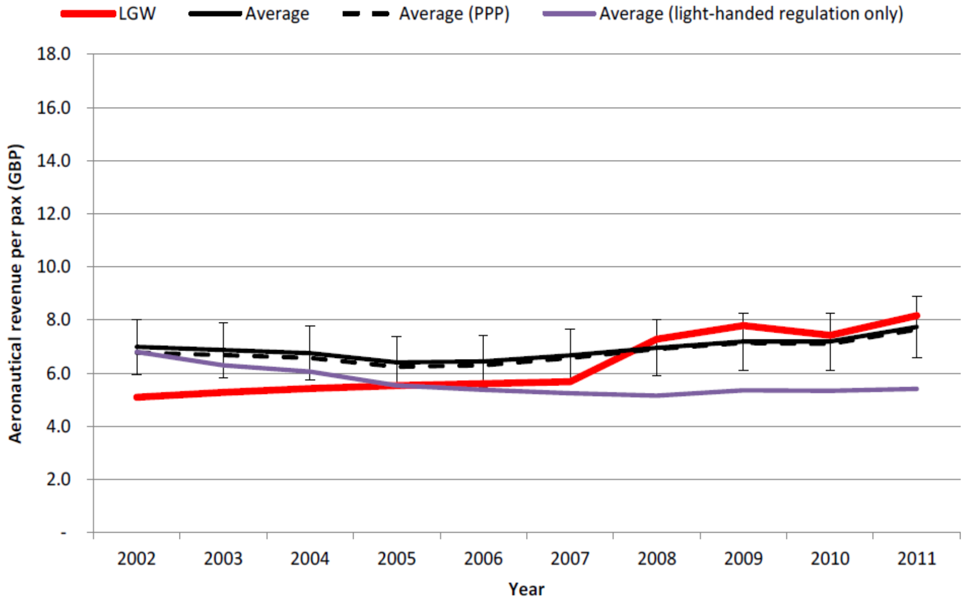
33 LF, Addendum Note, Comparing and Capping charges at Regulated Airports, 9 August 2013, pages 3 to 8.

34 This 2011 data is preliminary and may be subject to change.

35 LF, Addendum Note, Comparing and Capping charges at Regulated Airports, 9 August 2013, page 16.

H40 LF also undertook comparisons of total revenues and aeronautical tariffs. Based on that analysis, tariffs do not appear to be very informative of the competitive price of airports. This is due to the widespread discounts available to published tariffs, particularly for airport operators that compete with GAL.

Figure H.2: Aeronautical revenue per passenger compared to the basket average (2002-2011)



Source: Leigh Fisher

Note: An error bar of 15 per cent is attached to the average value to reflect the uncertainties associated with the statistical techniques applied and the range that might be expected if different averaging techniques were used.

Additional GAL response to the LF analysis

H41 Following the submission of its response to the Consultation, GAL commissioned FTI to review and comment on the LF study. In a number of areas, the points raised by FTI repeat earlier points made by GAL and which have been considered above.

H42 FTI state that the use of the LF report to inform the CAA's view on whether the regulated price is significantly different to the competitive price is inappropriate because:

- The report has been used by the CAA for a purpose to which it was not intended.
- The exercise the CAA wishes to undertake is conceptually flawed and is not capable of providing sufficiently robust evidence on the competitive price.

- Even if the exercise was capable of indentifying a benchmark competitive price the conclusions of the LF report and the inferences draw by the CAA fail to recognise the considerable uncertainty surrounding the analysis.

Each of these issues is discussed in turn below.

The purpose of the LF analysis

H43 FTI state that the CAA should not have used the LF analysis to inform its view of the competitive price as:

- The LF analysis aimed to identify whether it was possible to benchmark prices at comparable airports rather than identify the actual benchmark price for setting a price control or determine the competitive price.
- The LF analysis was a 'prototype analysis'.

H44 The above essentially repeats earlier points made by GAL and other parties. The terms of reference are clear in that they require the consultant to identify a historic profile for a basket (or benchmark) of comparator airports. LF's objective was to identify suitable comparator airports for each of the regulated airports that would provide an indication of airport charges at Heathrow, Gatwick and Stansted compared to airports in reasonably similar environments. LF are also clear that 'reasonable inferences on competitive prices to inform the CAA's work can be drawn from the identified ranges for each airport', although further work would be required 'to provide a precise point estimate of the competitive price'. The CAA continues to consider that it has not used the analysis for a purpose to which it was not intended.

The robustness of the exercise undertaken by LF

H45 FTI state the LF exercise is conceptually flawed as:

- The airports identified would need to be in the same market as GAL (or at least in a similar market).

- To provide a robust measure of the competitive price at GAL, FTI consider that it would be necessary to understand whether the prices charges at other airports reflected a competitive price for those airports. FTI state that prices at unregulated airports could reflect many factors and may not reflect the competitive price and prices at regulated airports would only reflect the competitive market price if it was the regulators intention to set prices on that basis and was successful. FTI cite European Commission (EC) guidance in support of its conclusions on the difficulty in making comparisons.[36]

H46 The CAA has reviewed the guidance provided by the EC on the use of airport benchmarks to assess the presence of aid to airlines. The EC states that it may be possible for a benchmark of relevant market prices to be identified on the basis of comparable airports operating under normal market conditions. However, the EC did not consider that at the present time, an appropriate benchmark could be developed as:

- A large majority of EU airports benefit from public funding to cover investment and operating costs.
- Publicly owned airports can set prices based on social or regional rather than market considerations.
- Even if some airports are privately owned the charges levied by these airports might be strongly influenced by publicly funded and subsidised airports.

H47 The EC did not however rule out using comparator airport benchmarks to identify market prices in the future and suggested that such a comparison should be based on comparator airports whose managers behave as market economy operators. The draft guidelines also set out a number of indicators to identify airport comparators: traffic volume, type of traffic, proximity of the airport to a large city, catchment area, prosperity and different geographical areas for which passengers could be attracted.

H48 Neither the draft EC guidance nor LF stated that the comparator airports needed to be in the same market as airport being benchmarked. In addition, using airports in the same market may circumvent the purpose of the comparator airport benchmarking, which was to obtain a view of the competitive price where there are concerns over the operation of the market that the airport is operating in.

H49 In many ways, the benchmarking undertaken by LF builds on rather than is inconsistent with the concerns raised in the draft guidelines. The criteria

36 EC, 2013, Draft EU guidelines on state aid to airports and airlines.

used by LF are similar, although not the same as those proposed by the EC, with LF including a number of additional criteria that it considered important. LF increased the accuracy of the benchmarking by weighting the criteria in relation to their relative importance in determining the benchmark.

H50 LF also estimated benchmarks both including all airports and including only those airports that are subject to light handed regulation, which tends to align with those that are subject to normal market incentives (as suggested by the draft guidance). The CAA notes that of the European airports included in the GAL benchmark by LF, Vienna airport is privately owned (although the nearby Bratislava is state owned) but AENA is state owned (although there is an intention to part-privatise the company next year.[37]

The interpretation of the LF analysis

H51 FTI state that the CAA's reliance on the LF report is inappropriate because:

- The range of estimates provided by LF does not reflect the uncertainty of estimating a benchmark price and the specific methodology used by LF.
- The uncertainty around LF's analysis is not appropriately taken into account by the CAA.
- The CAA places too much weight on LF's analysis of average aeronautical revenues per passenger to the exclusion of alternative measures of revenues and charges.

Uncertainty in the LF estimates

H52 FTI cite a number of sources of uncertainty in the LF analysis. This essentially repeats earlier comments made by GAL and others, to which LF responded that the identified range reasonably reflected the potential uncertainty and that reasonable inferences around the competitive price could be drawn from the range estimated.

H53 FTI raised a number of issues around the uncertainty in the LF analysis. In general these issues have been raised by other stakeholders and addressed by LF previously. The main points raised by FTI and LF's response are shown below:

[37] Financial Times, http://www.ft.com/cms/s/0/d9434d48-3fec-11e3-a890-00144feabdc0.html#axzz2kWKTyrQE

- Potential to exclude appropriate comparators. LF identified a long list of more than 50 potential comparator airports. This list, which followed input from stakeholders, reflected data availability, encompassed 20 out of 23 of the airports that GAL stated it used to benchmark itself and many of the main bases used by BA, easyJet and Ryanair which are the main airlines to use the three regulated London airports. Given the approach and the large number of potential comparators identified it would be odd if LF had excluded significant potential comparators.

- Potential for the process for selecting comparators to be subjective due to the judgements made in the definition of bandings and cut off range for comparators. LF stated that while it considered it had developed an objective and transparent approach to the identification of benchmarks, the approach had necessarily had to involve judgements in some cases. LF stated that the bandings were based on identifying a similar number of airports in each band and the cut-off range was based on feedback from stakeholders and was set to ensure a reasonable number of comparators but to ensure that airports that were widely different were excluded. Sense checks were also completed on the resulting set of comparators.

- The use of assumptions and estimates in the calculation of aeronautical revenues. LF adjusted aeronautical revenue to ensure the comparability of across all airports. LF acknowledged some assumptions had to be made in the adjustments due to limits on data availability.

- The assumptions made on exchange rates and inflation in the calculation of tariffs for each airport. LF examined different approaches to the treatment of exchange rates and inflation but decided that their chosen approach, correcting using 2011 exchange rates and own country inflation was preferable to avoid the results being affected changes in exchange rates over time. LF has also provided results using Purchasing Power Parity exchange rates which reflect the relative affordability in each country.

- LF used an unweighted average of charges across the selected comparators. LF stated that it had used a simple average as it considered this was the most appropriate as other weightings were subjective and had systematic effects which may be hard to justify. LF did not consider that a weighting by airport size would be appropriate as it would not reflect the competitive dynamic.

- LF accepted that their results were not sufficiently robust to draw inferences on the spot charge estimates or to use as the basis for pegging charges at regulated airports. LF considered that the range identified reflected the uncertainty in the estimation of the benchmarks and reasonable inferences could be drawn from identified ranges for each airport.

The CAA's interpretation of the LF analysis

H54 When interpreting the results of the LF analysis the CAA has taken into account the uncertainty in the analysis and has only made inferences on the competitive price from the ranges estimated by LF and has not used the LF study to identify the competitive price for Gatwick. The LF analysis also only forms part of the CAA’s analysis on what could reasonable reflect the competitive price.

H55 The CAA has sense checked the set of comparator airports selected for each airport, for example against other bases used by the main airlines at the airport. By examining the airports used by the main airlines, the CAA has focused on the expectations of the passengers of the main airlines, rather than the set of comparators that Gatwick might aspire to.

H56 The CAA also notes that the identification and approach to the selection of comparator airports was subject to a workshop and consultation with individual stakeholders. In addition, GAL, as part of its business plan, has proposed a series of improvements over the next two control periods to reach similar levels of service quality to some of the airports in GAL's self selected comparator set.

H57 FTI raise a number of factors that it considers the CAA should have taken into account when interpreting the results of the benchmarking: differences in airport pricing strategies, the impact of spare capacity, the impact on non aeronautical revenue, the way in which airports operate and the differences in the cost base.

H58 The CAA’s analysis has taken into account the way airports are regulated and whether they are likely to be following normal commercial strategies (which would involve maximising profits from both aero and non aeronautical revenues) and the degree to which individual airports in the comparator benchmark are most like the airport in question (and the impact it might have on the benchmark if certain airports were excluded). LF has taken into account the degree of capacity constraint when selecting potential comparators. The CAA notes that the comparator benchmarks appear reasonable stable over time and so if operators are following different strategies at different points in time, as FTI appear to imply, then this does not appear to have a significant impact on the benchmark. The CAA has not taken into account the differences in cost base of the different airports (beyond a consideration of the benchmark in PPP exchange rates), as the purpose of the benchmarking exercise was to benchmark charges and not costs. LF also state that the inclusion of costs could create a circular argument where inefficient costs could lead to higher charges. FTI are also not clear on how the way in which an airport operates would impact on its pricing strategy beyond the impact of regulation.

The weight placed on the benchmarks of aeronautical revenue

H59 FTI state that the CAA should have had regard to other measures of charges and revenues rather than focusing exclusively on aeronautical revenue. FTI rightly states that, in a competitive environment, an airport operator would seek to maximise its total profit on both aero and non aeronautical activities. This is, in part, the rationale for the use of single till regulation where non aeronautical revenue is taken into account when setting caps on airport charges. The CAA does not, however, set caps on total revenues. Consequently, it is the level of airport charges that is being benchmarked as part of this process rather than total revenues and hence the CAA has focused on the benchmark of aeronautical revenues (which for the most part are made up of airport charges).

H60 FTI state that the CAA should have placed weight on the benchmarks of published charges. FTI also state that published charges do not reflect the discounts which can be provided to individual airlines by airports operating commercially and may only be paid by the minority of users. The CAA is interested in the interests of all users and is therefore interested in the average charge paid by users whether the airline they are travelling is receiving a discount or not. The CAA has therefore placed weight on the benchmarks of aeronautical revenues rather than published charges.

The appropriateness of the methodology used by LF

H61 GAL raise four points on the appropriateness of the methodology used by LF:

- The criteria used to select comparator airports.
- The robustness of the econometrics employed.
- The robustness of other aspects of the analysis.
- The types of price comparison made.

The criteria used to select comparator airports

H62 FTI state that LF should have taken into account the quality of service, input costs and investment cycles when deciding on the comparator sample. These points have all been previously raised and are addressed by LF in the addendum report. None of these criteria were suggested in the draft EC guidelines and that the CAA has only used the LF benchmarking analysis as one element of its analysis.

The robustness of the econometrics employed

H63 FTI raise two conceptual points on the use of regression analysis to identify the relative importance of different factors in determining the appropriateness of comparators.

- Firstly, that the prices at individual airports may not reflect the competitive price. This issue was discussed above (paragraphs H44 to H48).
- Secondly that the analysis should have taken into account the differences in services offered by airports. All airports tend to offer the same basic package of services for the landing and processing of airlines and their passengers and baggage with additional services charged on an incremental basis.

H64 Consequently, this appears to be repeating the earlier point made by FTI on service quality, which are discussed in paragraph H59. FTI also suggests that using a hedonic price approach to overcome these problems but do not provide details on how the difficulties of this approach, for example in terms of data availability and robustness, would be overcome.

H65 FTI also raise a number of potential issues with the regression. These issues appear to be a list of common issues which could arise out of any regression and FTI do not provide any evidence that these are problems in this case. In particular, the CAA notes that:

- If the model did suffer from multicollinearity then the confidence intervals for the p values would increase.
- There appears to be no evidence of omitted variables and LF have gone through a systematic approach to selecting potential criteria which was subject to consultation with stakeholders.
- LF has drawn on data from a large number of airports and it is unlikely that the sample size could be expanded significantly due to issues around data availability, comparability and confidentiality.

- The functional form of the model was chosen to get relative weightings rather than as an ideal model for example that the regression could be very little detail on how the difficulties of data availability would be.

H66 As LF stated, the purpose of the regression was to inform the selection of variables which might be used to weight the indicators. LF stated that it considered the model derived was suitable for this purpose. Furthermore, LF stated that concern with the robustness of the regression analysis was one of the reasons why it had not used regression analysis as the only method to derive the comparator benchmark.

Issues with the price comparisons LF made

H67 FTI state that a dynamic process should have been used to derive the set of comparators as the basket of comparators was likely to change over time. LF used the most recent year to weights derived from the most recent year to identify the comparator set. The time series analysis was presented to demonstrate the robustness of the comparator benchmark over time. LF also undertook analysis on emerging data from 2011, which indicated that the comparator benchmark was not outside the +/-15 per cent range identified.

H68 FTI also stated that there were reasons to place more weight on the analysis of published tariffs and total revenues. This is point is dealt with in paragraphs H57 and H58.

Conclusion on price benchmarking

H69 Based on the analysis of the stakeholders' responses including the further comments submitted by GAL based on FTI's analysis[38], the CAA considers that the approach that LF has adopted to undertake this benchmarking study is reasonable. In particular, the CAA considers that there is merit in using a data-driven approach to compare airports. LF's approach also ensured that airport operators were involved in developing the model that was used. The CAA therefore considers that the analysis undertaken by LF can be used to make reasonable inferences on price, particularly where other analyses suggests broadly similar outcomes.

H70 LF's analysis suggests that the aeronautical revenue per passenger at Gatwick is marginally above the average of comparable airports and about £2 above the subset of airport operators that are subject to lighter regulation.

H71 In coming to this view the CAA recognises that there is a margin of error in the analysis but that GAL's results continue to fit within the calculated

38 FTI, The CAA's Use of the Leigh Fischer Report, Report for Gatwick Airport Limited, October 2013.

error bands. The CAA also considers that the use of the error bands is effective in countering some of the specific concerns or inevitably different views on key variables or relevant comparators.