

RESPONSE TO OXERA'S NOTE ON 'SCOPE FOR EFFICIENCY GAINS AT GATWICK' – TFP, LEMS AND OUTPUT PRICE INDICES



1.1. Introduction

CEPA have been commissioned by the Civil Aviation Authority (CAA) to provide a note responding to issues raised by Oxera Consulting (Oxera),¹ which were prepared on behalf of Gatwick Airport (Gatwick), in its review of CEPA's April 2013 report.²

The three main issues raised by Oxera in relation to the estimation of Gatwick's frontier efficiency potential (which was calculated using indirect top-down measures such as TFP, LEMS) are:

- CEPA has made no adjustment for the current economic climate (recession).
- The TFP estimates fail to control for possible transaction costs or structural inefficiencies.
- Frontier shift estimates are not towards the bottom end of the regulatory precedents.

We address each of these concerns below.

1.2. Changes in the economic climate

Oxera note that 'business cycle effects can cause problems for productivity measures, as the particular point where a country is in the business cycle will affect the level of productivity.'³ We agree with this analysis; in our report, we acknowledge that productivity is a highly cyclical variable.

We note that regulatory precedent is to either use productivity estimates over a long time period or on the basis of complete business cycles. Oxera, in its 2008 report for ORR noted that "TFP growth comparisons are made over complete business cycles to avoid misrepresenting the impact of recessionary or growth periods."⁴ In this paper, Oxera's estimates are based on relatively long time periods, 1970-2004 and 1990-2004, the latter including at least one full business cycle. We also use average productivity change over a business cycle(s) as this avoids the need to adjust for current economic climate (for which recent productivity data is generally not available) and removes the concern of under/overstating potential productivity improvements. So long as a consistent approach is taken by the regulator over the long run an appropriate efficiency target will be applied.

Our preference is to use a full business cycle as this reduces the risk of overemphasising the impact of either recessionary periods or periods of high growth. Oxera argue that the most recent full business cycle, i.e. 1997-2006, was a period of relatively high growth, and hence will result in estimates of future productivity figures that are unachievable in the current economic

¹ Oxera, *Scope for efficiency gains at Gatwick*, 2013.

² CEPA, *Scope for efficiency gains at Heathrow, Gatwick and Stansted airports*, April 2013.

³ See supra note 1, page 11.

⁴ Oxera, *Network Rail's scope for efficiency gains in CP4 – Prepared for Office for Rail Regulation*, 2008, page 24.

climate. As we set out in our report there is a trade-off between maximising the duration of the data, because generally longer-time series will provide a long run average, and proximity of the data, as more recent data should provide a better indication of future performance and allow for any structural breaks due to technological innovation.

We selected the most recent full business cycle in the UK economy as the base case; this covers the time period: 1997-2006. We also undertook sensitivity analysis covering additional business cycles and while some of these showed slightly different annual average productivity gains we considered that these were not significant enough to move away from our preferred time period. As discussed in Section 1.3 below, our approach is supported by recent regulatory precedent.

Oxera, also note that the break-up of BAA may impact on the scope for Gatwick's productivity. We believe that this consideration falls within the remit of catch-up efficiency rather than ongoing productivity i.e. this is not a frontier shift issue.

1.2.1. Controlling for transaction costs or structural inefficiencies

The two main concerns raised by Oxera on this topic were in regard to the: (i) adjustment for catch-up efficiency and (ii) selection of regulated utilities sectors as comparators.

Adjustment for catch-up efficiency

Oxera posit that not all of the estimated efficiency calculated by CEPA should be attributed to frontier shift, arguing that a proportion will be attributable to catch up. Oxera refer to the academic paper by Fare et al (1994) which they have also used previously to estimate the split between the catch-up and frontier shift components of efficiency.⁵ The paper allocates 25% of the total change to catch-up and the remaining 75% to frontier shift. We also used this estimate in a report for Office of Rail Regulation (ORR).⁶

However, in the report for ORR significant weight was placed on regulated industries in forming the composite indices,⁷ while in the composite indices created for the airports the weight placed on regulated industries is not very large. In addition, within the report we carried out sensitivities showing the impact of the a zero weight being placed on electricity, gas and water supply, this analysis indicated a higher range for frontier shift. The selection of comparators is discussed further below.

We also note that use of Fare et al for the purpose of calculating the frontier shift and catch-up components for industries within the UK has been recently questioned. In its final decision regarding ongoing efficiency for RIIO-T1/GD1 price control, Ofgem have pointed out that the calculation in the paper that 25% of the efficiency can be attributed to catch-up is based on a comparison of the UK industries catch-up to the world frontier for the period 1979-1998.⁸ Ofgem attempted to avoid the use of sectors containing regulated companies when developing its estimates for frontier shift.

⁵ See supra note 4, page 32.

⁶ CEPA, *Update report on the scope for improvements in the efficiency of Network Rail's expenditure over CP5*, June 2013.

⁷ Ibid, page 20.

⁸ Ofgem(2012), *RIIO-T1/GD1: Real price effects and ongoing efficiency appendix*, Final decision, pages 18-19.

We accept that the EU KLEMS data is not perfect as it may suffer from a degree of measurement error and that there may be some structural inefficiencies within firms, but we agree with Ofgem in that “a long-term time-series incorporating a range of comparator sectors is a useful proxy to productivity improvement as we would not expect there to be systematic catch-up, error, change in utilisation etc. over a long time period and covering a range of sectors.”⁹ We consider that there should not be any long term systematic structural inefficiencies among the firms operating within our comparator sectors as such firms would be expected to be priced out due to forces of competition. Short-term inefficiencies on the other hand are expected to be random rather than systematic and therefore, all else being equal, can be assumed to cancel out.

Given the above, particularly the lower weight placed on sectors which include regulated companies, we do not consider that an adjustment is required to remove catch-up efficiency from our estimate range.

Selection of comparators

As discussed in our report, the selection of comparator sectors is based on the comparison of activities under each opex category within the different EU KLEMS sectors with the corresponding activities carried out by the airports, previous efficiency analysis based on EU KLEMS data as well as discussion with CAA and Heathrow. In the early stages of the original project, CAA provided an opportunity to Gatwick to comment on the selection of comparator sectors. Gatwick did not respond to CAA’s request.

The use of regulated sectors as comparators, i.e. electricity, gas and water, postal services, telecommunications and transport, reflects our view that these are the closest comparators in terms of similarity of activities performed. As we noted in our report, only part of each sector is regulated so that the overall productivity arising from a sector which includes regulated companies is only partially influenced by those regulated companies.

Oxera suggest that exclusion of regulated utilities would lead to a significant reduction in TFP estimates. However if we set the weights in the index to zero for electricity, gas and water supply, post and telecommunications, and transport and storage the gross output TFP per annum change for the base time period for Gatwick would increase slightly from 0.7% to 0.8% and the gross output adjusted TFP per annum change would become 1.5% instead of 1.3%. Table 1.1 below shows the detailed results for adjusted TFP measure under our base case weights (as used in CEPA (2013)) and those under the new weights over different time periods.

Table 1.1. Comparison of gross output adjusted TFP growth (% p.a.) for Gatwick

Sample	1997-2006 (base case)	1986-2006	1978-2006	1972-2006
Base case weights	1.3%	0.8%	1.1%	0.9%
Zero weight to electricity, gas and water, post and telecom sectors, and transport and storage	1.5%	0.6%	1.0%	0.8%

⁹ Ibid, page 19.

As can be seen from the table above excluding the utilities as comparators leads to a slightly higher efficiency estimates than those in our base case.

As we noted in our original report, the selection of comparator sectors can have an impact on the overall estimates and hence we conducted sensitivities around the comparators in order to check for the robustness of our results as well as to provide an efficiency range rather than a point estimate.

Oxera queried the use of renting of machinery and equipment and other business activities' as a comparator for rent and rates and intercompany costs. The selection of 'renting of machinery and equipment and other business activities' as a comparator for rent and rates, was made because this includes renting activities as well as other business activities (which require office and industrial space) such as research and development, professional activities etc. Similarly for intercompany costs the selection of this comparator seems appropriate as it encompasses administrative, IT and call centre, other business support services activities. As disaggregated information at the industry level is not available this seems the most appropriate comparator and one that has been used previously for similar studies.¹⁰

1.3. Frontier shift estimates are not towards the bottom end of the regulatory precedents

In reaching its conclusions it appears that Oxera has (i) quoted from an early non-published draft of our report that was shared with the designated airports for comment and (ii) has used the quote out of context. Both these points are discussed below.

Oxera refer to the following quote "slightly towards the bottom end of the range, but consistent with recent regulatory precedents" from page 69 of our report. However, we did not make this statement in our final report. We did make a statement, on page 69, that "[o]ur analysis indicates that a 1.0-1.1% gross frontier shift target (ongoing efficiency) is reasonable for the three airports. This is slightly towards the bottom end of the range if allowing for capital substitution, but towards the top end of the range assuming constant capital." As can be read from this, when discussing the 'bottom end' we are referring to the range calculated via our own analysis rather than regulatory precedent. We made a subsequent statement that "a net frontier shift would be around 0.9-1.0%. This range is consistent with recent regulatory precedent in the UK." In its note, Oxera assumes that we based our frontier shift estimate on the average of our summary of regulatory decisions rather than on our own analysis. This is incorrect; we used recent regulatory precedent as a cross check against our estimates. We consider our statement that this 'range is consistent with recent regulatory precedent in the UK' is valid based on recent regulatory decisions where an explicit frontier shift can be identified.

With regard to Oxera's inclusion of the Postcomm 2005 decision and Water Industry Commission for Scotland (WICS) 2009 decision. We understand that WISCs did not set an ongoing efficiency challenge for Scottish Water in recognition that there was significant upward pressure on opex resulting from the requirement for it to reach upper quartile levels of performance relative to the rest of the UK water and sewerage companies. Postcomm's decision is not as clear. Postcomm appears to consider that in a case with no investment by Royal Mail a

¹⁰ For example, see DAA(2009), *Dublin Airport Operating Costs Forecasts 2010-2014*, Commentary.

zero frontier shift would be appropriate, however in the case of a 'high investment scenario' the efficiency target moves from a range of 1.2-2.6% to 3.1% indicating frontier shift.¹¹

1.4. Conclusion

Indirect measures of efficiency are commonly used by regulators to set ongoing efficiency targets and we consider that using them to set efficiency targets for the designated airports is a valid approach. There is however the need to apply a degree of judgement in their calculation. We have carefully reviewed the points made by Oxera of behalf of GAL and having done so we do not consider that the concerns raised require us to change our estimate for the net frontier shift of 0.9-1.0%. In response to the specific points raised:

- We have adopted a standard practice approach to TFP estimation. We do not consider that an adjustment is required for the current economic climate so long as an ongoing efficiency target is applied in a consistent way across price controls. This approach is consistent with the approach taken by other UK regulators.
- We consider that our choice of comparators is appropriate and we do not consider that an adjustment for catch-up efficiency is required given the small weights assigned to sectors which contain regulated companies.
- In relation to regulatory precedent, Oxera incorrectly quoted our report and misunderstood the point being made. We have been unable to verify where Postcomm and WISCs set a 0% per annum efficiency challenge, but remain of the view that our estimated range is consistent with regulatory practise.

We note that Oxera consider that further analysis of the issues it has raised should be conducted. As we have discussed, and is clearly set out in our report, we conducted sensitivities using different time period and different comparators. This sensitivity analysis showed some variations to the base case, however the base estimates appear to be relatively robust and in line with recent regulatory precedence.

¹¹ Postcomm, *Royal Mail Price and Service Quality review – Final proposals for consultation*, 2005, page 135.