Aviation Demand Forecasting

Forget the Forecasts

The key paragraph in Discussion Paper 01 is 5.1 : "Whatever forecasting approach is used to estimate future patterns of demand for air travel, the results will inevitably be subject to significant uncertainty. An understanding of how this uncertainty could affect any decisions is therefore about as important as the forecast itself". Similarly, paragraph 1.4 emphasises "the need for any forecasting approach to be able to deal effectively with uncertainty". The fundamental problem is that when seeking to forecast something as complex as air travel demand at specific airports over a 20/30 year period or more, there is simply no way to deal with the inevitable uncertainty. The margins of error are such as to make the resulting forecasts of only limited use for planning purposes. There is little point in debating whether the number of UK terminal passengers will be some 350m or 650m in 2050 (see Figure 3.4), as indicated in the Department for Transport's latest forecasts. Such wide margins can give no useful guide at all to what airport capacity might be needed.

The problem is not just the time horizon which has to be adopted in order to ensure the provision of adequate airport capacity, although that is certainly important. Table 3.1 lists the nine sources of inputs for UK National Forecasts. Each one of these sources is difficult to predict with any precision over a period of many years, and therefore is subject to its own significant margins of error. The price of oil is particularly important to air traffic forecasts, yet no-one would seriously claim to be able to predict what it will be in 2030 let alone 2050. The truth is that no matter how sophisticated the forecasting model used, the result will be a guess, and one person's guess is probably as good as anyone else's.

This is why, of course, the single most striking characteristic of long-term aviation forecasts has been the fact that they have turned out to be substantially wrong. That is not a criticism of those engaged in the process. It is simply that the task is impossible, or at least only achievable with a great deal of luck, which is hardly a sound basis for multi-billion pound investments. Yet the construction or expansion of major airports

are long-term projects. It is not unreasonable to expect some degree of certainty about future demand before launching large-scale investments, whether publicly or privately financed. Hence the conundrum.

The answer may lie in ignoring the forecasts, at least in the initial stages of the Commission's work. The normal process is to forecast future demand, then consider how that demand can be met. However, if one assumes that the Commission will come to the conclusion that the UK requires/can support only a single principal hub airport, which appears to be the emerging consensus view among those not opposed to any airport expansion, traffic forecasts become far less critical. We already know that demand far exceeds supply at the current main hub airport, Heathrow. There are then two key questions. Firstly, where should the hub be located, whether at Heathrow or at a new site, which the Commission will in any case be addressing? Secondly, how large should the hub be?

We know the hub has to have a minimum of three runways because Heathrow's current two runways are demonstrably insufficient. But should it have three, four, five or more runways, and how many terminals, of what type, would it require? The answer is: no-one knows because the traffic forecasts for the next 20 years or so inevitably lack sufficient precision. No private company would invest billions of pounds on that basis. The recent West Coast rail franchise bidding has highlighted the financial risks in trying to design business plans for a far shorter period than airport planners are being asked to deal with. A flexible approach has to be the answer, adding capacity gradually when, and if, demand increases and uncertainties decline. As already stated, it is easy to forecast now that a third hub runway is required. When that runway is built, it should be much less difficult to predict whether a fourth runway is needed, and so forth.

Transfer Traffic

Discussion Paper 01 also highlights the shortcomings in the current DfT approach to air traffic forecasting, in particular its only partial coverage of international transfer passengers connecting via a UK hub and its complete omission of international transfer passengers connecting via overseas hubs. Clearly these are significant shortcomings if

the aim is to estimate the unconstrained demand for UK hub capacity. Intuitively one would expect an unconstrained London hub to be highly competitive with Continental European hubs, not least because of its higher level of base demand from point-to-point passengers. This should give London an advantage in developing an extensive route network, in terms of both destinations served and frequencies operated, which helps in attracting transfer passengers. The problem again is estimating the size of the international/international transfer market with any precision.

It is a fact that when physical or regulatory constraints on a market are removed, that market often develops in ways which were wholly unpredicted. The internal EU air transport market is a good example. Despite the precedent set by the US domestic aviation market following deregulation, no-one predicted the rapid growth of the new Low Cost Carriers such as easyJet and Ryanair and the impact they would have on the so-called legacy airlines. Providing sufficient capacity for London's largest airport to develop as a true hub might mean that it will follow the examples of Frankfurt and Amsterdam, with similar proportions of transfer traffic. Equally, however, it could develop in a quite different way, unforeseen in current circumstances, as a result of entrepreneurial initiatives.

Again the only sensible approach would seem to be to plan for gradual, evolutionary growth, rather than aim from the beginning at a particular outcome. This is especially important when dealing with airport terminal infrastructure, whose design and size can differ markedly depending on the demands of different types of air services. (The terminal at Stansted, for example, was planned for legacy-type operations and has proved less than perfect for the LCC services which now dominate the airport). Thus, achieving accurate traffic forecasts from the outset becomes less critical.

Conclusion

In summary, it is understandable why the Commission should want to start its work by determining the demand for UK airport capacity over the next few decades. Unfortunately, forecasting air traffic over such a period has been repeatedly shown to be impossible within acceptable margins of error. Nothing definitive can be concluded

from the DfT's recent reduction in its air traffic forecasts. Attention should instead be focused on the other elements of the Commission's work. In particular, any proposals need to include sufficient flexibility to meet whatever demand eventually emerges.

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March 2013

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