Aeronautical Pricing Methodology

ESTINA CONSULTING LIMITED

Review of feedback on Auckland International Airport Limited's pricing proposals, as they relate to peak/off-peak differential charges proposed by airlines.

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May/June 2017

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A. PURPOSE

The purpose of this document is to provide further advice to Auckland Airport, to assist it with interpreting and considering the feedback received on its pricing proposals, where the feedback recommends that Auckland Airport introduce peak/off-peak price differentials.

B. CONSIDERATIONS

BARNZ expresses the view that any charge to signal the impact demand has on the timing of the second runway should be targeted at peak times to deter demand and therefore reduce congestion. There is a good point here that the economic cost varies between peak and off-peak, but going beyond the cost differential might be correctly criticised as a monopoly abuse of power to constrain demand. The benefits of using peak differentials is a complex subject.

a. Peak Pricing Does Not Fit With Signalling Long Run Costs Driven By Demand

Following the commissioning of the second runway there is unlikely to be congestion that warrants peak price differentials.

Estina has consistently proposed that Auckland Airport needs to signal the long run cost of demand, and to see the reaction of demand to such prices, in order to make efficient investment decisions in the second runway and associated projects.

If there is no reason for a peak differential after the second runway is built then this objective is not helped by the introduction of a peak differential now.

The reverse is true, the shape and size of the prices are best to be set close to what the prices would be like after the second runway is built.

b. Should Peak Differentials Be Added To Auckland Airport's Pricing Proposals?

The question remains whether there is merit in a peak differential to be added to long run cost signalling.

Auckland Airport has asked Estina on more than one occasion to comment on whether it should adopt a peak price differential. Estina's advice has on each occasion been to suggest some possibilities that have marginal merit, but to state that there is no compelling case to do this given the rigidity of the pricing consultation process, and it remains of that view. The rest of this section sets out a number of the complex issues that should be considered and why Estina has not recommended peak differentials.

c. Peak Differentials Often Need To Be Dynamically Applied

The application of a peak differential to move demand out of the peak period shifts the peak. It follows that pricing needs to be dynamic in a way that is hard to reconcile with the pricing consultation requirements. As congestion grows the peak period will gradually expand. The shoulders between peak and off-peak pricing can drive perverse behaviour so the need to be able to shift the shoulders dynamically can be important.

It is notable that the introduction of peak differentials at Wellington Airport has been implemented cautiously, and that makes a lot of sense.

d. Peak Differentials Based On Capacity Cost Drivers

If a supplier builds capacity to the level of uncongested peak demand, then there is a good case to consider peak pricing to reflect capacity cost drivers. This is based on the avoidability principle. But note that this does not imply that the only cost driver is peak demand and that all other demand is costless. If the peak in demand is avoided then the capacity investment can be delayed, and therefore only some delay in meeting the cost is avoided.

The avoidability principle enables the cost of the excess demand in peak to be costed, but cross-elastic effects need to be considered – for example, if peak demand is deterred, does this demand disappear, is it just shifted into other time periods shifting the peak, or is some demand in off-peak also lost? Whether the incremental avoidable cost per unit of peak demand exceeds the average total cost of all other demand depends on a range of factors, and so setting the ideal peak differential is a far from simple task.

Setting aside price elasticities and cross-elasticities is dangerous, but if you did then a peak differential is calculable based on cost avoidability. It could then be left to the market to decide whether to continue demand in the peak or not, and this would arguably improve the efficiency of prices. But the next practical problem to overcome is the decision on what parts of the year/month/week/day should be treated as peak, and how often might that decision need to be reviewed based on responses to the peak prices.

Setting a peak differential in this way is also more complex if Auckland Airport is proposing to build only after congestion has forced a material spreading of the peak demand. I understand that the timing of the planned second runway is expected to see significant congestion at peak times and for the demand to spread across a larger portion of the day. Peaks will remain but it follows that the excess demand in peak will be smaller than it is now, and that the impact of the peak demand on investment timing will also be smaller. What makes it even harder is that these congestion factors that will drive the need for a second runway have to be predicted several years in advance.

e. Congestion Charging

The way BARNZ phrased the comment also raises a question about whether Auckland airport should consider a form of congestion pricing (which is a different concept from charging peak demand at the avoidable cost). Using the concept of congestion pricing, the peak differential would be set to reflect how demand at peak causes congestion costs (such as delays, poor customer experience or lack of availability). An example of this is peak road user charges in London.

But in the Auckland Airport case, it seems that the users at peak would suffer nearly all of the congestion costs, and not need to be charged any additional congestion cost signals. Even if there were significant externalities, it is questionable whether Auckland Airport should be charging for congestion externalities it does not itself suffer. For example,

London peak road users already suffer the delays caused by congestion, but the peak charges are designed to reflect externalities such as pollution, effects on inner-city inhabitants and visitors, and a preference for building more public transport rather than more roads.

It is perhaps worth adding that efficient congestion charging in a free market results in higher prices and higher profits for the airport. In a free market, an airport making congestion charges would be accused of monopolistic behaviour, constraining demand to push up price and profit. This is because a profit-maximising unregulated monopoly would let prices rise until the added profit earned from congestion charges is exceeded by the added margin from the added volume gained from building capacity to eliminate the congestion.

f. Some Reality About Peak Differentials

In many cases, peak differentials applied by firms are more accurately described as a form of third degree price discrimination, rather than an attempt to reflect costs. This is not to say that price discrimination is a bad thing as it can drive greater industry efficiency and enable more demand to be satisfied than simplistic pricing. But peak differentials observed in many industries have little to do with seeking to delay investment in a capacity step, or reflecting avoidable cost.

For example:

- When monopoly telephone companies had a single price list applying to both consumers and businesses, they used peak differentials in business hours to charge higher prices to (less price elastic) businesses than to (more price elastic) consumers, even in regions where the peak demand occurred in the evenings.

- Weekday/daytime reduced charges at cinemas is typically used to access the price sensitive student, unemployed and pensioner parts of the demand curve, when the full-time employed are not available.

- Airlines differentiate their prices for similar reasons as the first two examples above and we doubt it is designed to delay growth.

- Peak differentials at some other airports seem to be designed to deter small aircraft in peak periods in order to enable more large aircraft (delivering much higher revenues) to land in peak periods. You can also look at this example from the opposite direction. Off-peak pricing uses price discrimination to encourage small aircraft when there is spare capacity and this price discrimination is removed in peak periods when capacity is in shorter supply.

- Peak differentials are more commonly seen at airports that do not have an obvious expansion option and where secondary airports can take some of the load during peak periods.

C. CONCLUSIONS

There is potentially merit in introducing a peak differential in Auckland Airport's charges, but the practicality of delivering benefits from peak pricing in the current regime are very challenging. The setting of peak differentials to reflect capacity investment timing would require significant work on forecasting demand and costing work. It is not clear that introducing a peak differential would cause a material and beneficial change in behaviour compared to allowing demand to adjust to the congestion costs experienced in the lead-up to the second runway.

Of concern is the need for peak differentials to be dynamically applied to be effective, and this does not fit with the consultation process required for price changes. For this reason any introduction of a peak differential would need to be implemented cautiously.