sapere research group

Memorandum

1 October 2015

To: Craig Shrive
From: Kieran Murray
Re: MVAU, opportunity cost, and zoning

This note responds to your request for comment on whether, in establishing the opportunity cost of land used for an airport, an estimate of the time and costs involved in re-zoning the land from airport use to an alternative use should be deducted from the valuation of the land in that alternative use.

Outcomes consistent with workably competitive markets

The Commission's approach

For most businesses, the value of an asset depends on its expected profitability. Regulatory asset values must instead be based on alternative approaches to valuation. Rather than reflecting the profits that an airport expects to earn, the regulatory asset value helps determine the base line against which profitability can be assessed for the purposes of information disclosure. As explained in its Input Methodologies (Airport Services) Reasons Paper, the Commission determined that the valuation approach for land "that is most clearly consistent with promoting outcomes consistent with outcomes produced in workably competitive markets is the opportunity cost concept."[1]

Economic concept of opportunity cost

One of the basic themes of economics is that resources available to decision-makers are always limited. With limited resources, a decision to have more of something is simultaneously a decision to have less of something else. Hence, the opportunity cost of any decision is the forgone value of the next best alternative that is not chosen. Opportunity cost is the true sacrifice the economy must incur to provide the good or service.

Value of land and opportunity cost

In workably competitive markets, investors earn a return on land at least equal to its value in an alternative use – otherwise the land would have been used for the alternative use. The Commerce Commission observed:[2]

> *This process of redeployment will tend to harmonise the values of similar assets employed in different activities through the economy. As a result, the expected profitability of an asset with multiple potential uses – i.e. a non-specialised asset – will generally reflect its profitability in an alternative use which in turn will reflect its value in an alternative use.*

[1] Commerce Commission, *Input Methodologies (Airport Services) Reasons Paper*, 22 December 2010, paragraph 4.3.2.
[2] Commerce Commission, *Input Methodologies (Airport Services) Reasons Paper*, 22 December 2010, paragraph 4.2.18.

The Commission summed up this relationship: "*Put another way, the net cash flow derivable in each use would be similar*".[3]

Having reached the view that the value and net cashflows of non-specialised assets would be similar, the Commission concluded that:[4]

> *"In a workably competitive market, the value of land is likely to broadly reflect its MVAU. The Part 4 Purpose therefore provides useful guidance in relation to the value of land."*

MVAU and zoning costs

Any deduction, from an estimate of the value of the land in an alternative use, for costs of re-zoning land from airport use would not approximate the social opportunity cost of using land as an airport. A deduction would mean that the resulting value would not be consistent with outcomes produced in workably competitive markets and would not be consistent with airports having appropriate incentives to invest.

This conclusion is readily supported in concept, formally, by considering how the rule would apply to efficient investment, and by the Commission's reasoning for the conceptually similar issue of remediation costs.

Concept

The required 'thought experiment' is to establish the value of the land in an alternative use. This exercise involves asking, if the airport did not exist, for what alternatives could the land be used? The starting premise is that the land is vacant and available to be used for a purpose other than the airport. Its value, for use as an airport, can then be assessed as at least equal to its maximum value in this alternative use – its opportunity cost. As the Commission observed, "the value of a non-specialised asset will be similar to the cost of replacing the asset with an equivalent asset that is redeployed from an alternative activity."[5] In this thought experiment, the land in the (hypothetical) alternative use would not be zoned as an airport. Any deduction for the cost and time for rezoning from airport use would produce a value less than its value in an alternative use and hence not be consistent with the objective of establishing the social opportunity cost of land used as an airport.[6]

Formalized relationship

The Commission formalized the relationship between the value of land used as an airport and the value of land in its next best use (opportunity cost) as follows: *the net cash flow derivable in each use would be similar.*[7] Deducting any costs for rezoning from the value of land used as an airport would not meet this test as:

Cash flow for airport use		**Cash flow for alternative use**
(MVAU less rezoning costs) x WACC	<	MVAU x WACC

[3] Commerce Commission, *Input Methodologies (Airport Services) Reasons Paper*, 22 December 2010, footnote 165.
[4] Commerce Commission, *Input Methodologies (Airport Services) Reasons Paper*, 22 December 2010, paragraph 4.3.55.
[5] Commerce Commission, *Input Methodologies (Airport Services) Reasons Paper*, 22 December 2010, paragraph 4.2.19.
[6] Whether the land could be zoned for that alternative use, and hence whether the alternative use is a realistic possibility, would be a relevant consideration.
[7] Commerce Commission, *Input Methodologies (Airport Services) Reasons Paper*, 22 December 2010, footnote 165.

Incentives for efficient investment

Deducting rezoning costs from MVAU would not be consistent with airports having incentives to invest efficiently. An airport acquiring land would be required to pay at least the value of that land in its alternative use. If the valuation method for airport land required the cost of rezoning land from use as an airport to be deducted from the MVAU, this newly acquired parcel of land would be taken into the RAB at a lower value than it cost the investor. Such a reduction in value would clearly not be consistent with airports having efficient incentives to invest.

Commission's reasoning on conceptually similar issue

The Commission considered a conceptually similar issue in determining the Input Methodologies. If land being used as an airport is to be converted to another use, then remediation work (as well as rezoning) may be required. The Commission determined that the costs of remediation should not be deducted from an estimate of the MVAU primarily because of the resulting adverse impact on efficient incentives to invest.[8] It would be logically inconsistent, in arriving at an estimate of the value of land consistent with a workably competitive market, to expressly exclude remediation costs but assume rezoning costs should be factored in. Both would result in a write-down of RAB value when airports make investments that would be costly to reverse; the outcome the Commission was determined to avoid.

[8] Commerce Commission, *Input Methodologies (Airport Services) Reasons Paper*, 22 December 2010, paragraph 4.3.72.