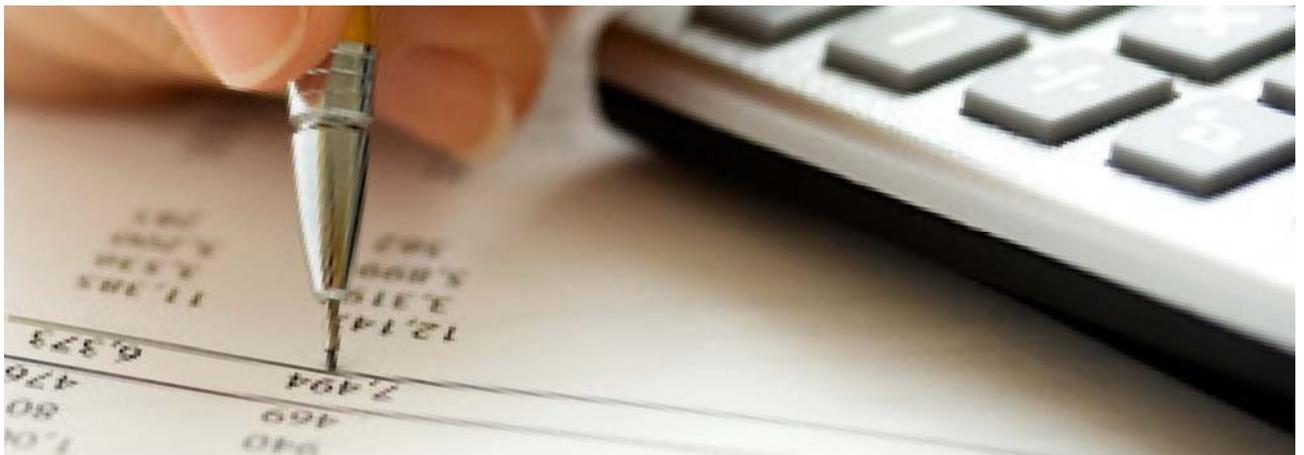

Report prepared for the New Zealand Airports Association

Zoning changes in MVAU valuation of airport land - comments on BARNZ presentation

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1. Introduction

A key point of discussion at the Commerce Commission airport land valuation methodology workshop on Friday 2 October 2015 concerned how potential zoning changes should be reflected in Market Value Alternative Use (MVAU) valuations under Schedule A of the Input Methodologies. During the discussion, the Board of Airline Representatives New Zealand Inc (BARNZ) spoke to a pack of PowerPoint slides.¹ This report comments, from the perspective of economics, on the views presented by BARNZ.

1.1 The issue

Schedule A of the Commerce Act (Specified Airport Services Input Methodologies) Determination 2010 requires airport land to be valued as if the land were put to its highest and best alternative use. This valuation approach is termed MVAU.² Schedule A 2 says:

MVAU means the value of land in its highest and best alternative use, which is equal to the likely market price paid for the land by a developer or investor and is determined in accordance with the formula-

Gross realisations or estimated value of the land – allowance for applicable development costs

Development costs are defined to:

Include all relevant construction costs, holding costs and the developer's or investor's profit and risk; and

Exclude –

- (i) The value of costs required to convert the land for the supply of specified airport services; and*
- (ii) Any allowance for remediation expenditure.*

BARNZ, with reference to explanatory note A9(4) and clause A 10(c), say that the development costs deducted from the estimated value of land should include any direct and indirect costs related to rezoning the land from airport use to an assumed alternative use.

The Airports say that the valuer should begin with the proposition that the airport, and therefore airport zoning, does not exist. The starting point for the valuer should be the likely zoning that would be in place in the event that the airport did not exist. In determining the highest and best alternative use, the valuer would consider the likely cost of any zoning

¹ Discussion of How Zoning Changes Should be Reflected in MVAU Schedule A Valuation, CC Valuation Workshop, 2 October 2015, BARNZ.

² Commerce Act (Specified Airport Services Input Methodologies) Determination 2010, Schedule A [Schedule A], A 1.

changes, as well as any other development costs, required for the land to be developed, from its state absent the airport, to the chosen highest and best alternative use.³

In the following section, I review the economic analysis and reasoning undertaken by the Commission in developing its Input Methodologies. I then apply this analysis and reasoning to assess whether deducting - from the estimated value of land in its alternative use - an estimate of direct and indirect costs related to rezoning the land from airport use would be consistent with the Commission's interpretation of the Part 4 Purpose statement and the reasons published by the Commission in support of its Input Methodologies.

³ See for example, Auckland Airport, letter to the Commerce Commission, 'Re: response to Darroch land valuation methodology review – zoning,' 13 June 2013, page 2.

2. The Commission's approach

2.1 Objective benchmark for regulatory valuations

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, regulatory asset values help determine the base line against which profitability can be assessed for the purposes of information disclosure.

In arriving at its approach for valuing land, the Commission recognised two features of land:

- land is potentially economically mobile between markets and is therefore generally a non-specialised asset⁴
- unlike specialised assets, land tends to appreciate in value over time.⁵

As changes in the value of land in an alternative use can be observed, the Commission concluded that “changes in the MVAU of land would provide a reasonable approximation for an appropriate measure of economic depreciation/appreciation.”⁶ The following section summarises the key insights and principles articulated by the Commission in support of its MVAU methodology.

2.2 Part 4 purpose statement

2.2.1 Promote outcomes consistent with workably competitive markets

The starting point, for considering how any costs of rezoning land from airport use should be treated in a MVAU valuation for information disclosure, is the Commission's interpretation of the Part 4 purpose statement and how it reflected that interpretation in its Input Methodologies.

The Commission concluded that the central purpose is to be achieved by promoting outcomes consistent with those produced in workably competitive markets. It designed the Input Methodologies “to promote, in the regulated markets, outcomes consistent with those in workably competitive markets such that the objectives set out in s 52A(1)(a)-(d) of the Act

⁴ Commerce Commission, *Input Methodologies (Airport Services) Reasons Paper*, 22 December 2010, paragraph 4.2.3.

⁵ Commerce Commission, *Input Methodologies (Airport Services) Reasons Paper*, 22 December 2010, paragraph C.2.4.

⁶ Commerce Commission, *Input Methodologies (Airport Services) Reasons Paper*, 22 December 2010, paragraph C.2.4.

are achieved.”⁷ The objectives of (a) to (d) require suppliers to have incentives to invest and innovate, have incentives to improve efficiency and provide services at a quality required by consumers, share the benefits of efficiency gains with consumers, and limit excessive profits.

The Commission found that not all of the objectives were equally relevant across all of the Input Methodologies.⁸ In setting asset valuation methodologies, the objectives for suppliers to have incentives to invest and innovate and for suppliers to be limited in their ability to extract excessive profits, will be especially relevant.

Where practical constraints exist on the design of Input Methodologies, the Commission would favour the option likely to move outcomes closer towards (rather than further away from) outcomes consistent with workably competitive markets.⁹

2.2.2 Land values in workably competitive markets

Value as a non-specialised asset

The Commission generally characterises land as a non-specialised asset, as land has many potential uses.¹⁰

In considering outcomes from workably competitive markets, the Commission concluded that investors earn a return on a non-specialised asset which reflects its value in an alternative use. Returns equate in this way as owners can boost potential returns by employing their non-specialised assets elsewhere if this is more profitable.¹¹ The Commission observed:¹²

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.

The Commission summed up this relationship: “Put another way, the net cash flow derivable in each use would be similar”.¹³

⁷ Commerce Commission, *Input Methodologies (Airport Services) Reasons Paper*, 22 December 2010, paragraph 2.4.4.

⁸ Commerce Commission, *Input Methodologies (Airport Services) Reasons Paper*, 22 December 2010, paragraph 2.4.17.

⁹ Commerce Commission, *Input Methodologies (Airport Services) Reasons Paper*, 22 December 2010, paragraph 2.4.18.

¹⁰ Commerce Commission, *Input Methodologies (Airport Services) Reasons Paper*, 22 December 2010, paragraph 4.2.3.

¹¹ Commerce Commission, *Input Methodologies (Airport Services) Reasons Paper*, 22 December 2010, paragraph 2.4.18.

¹² Commerce Commission, *Input Methodologies (Airport Services) Reasons Paper*, 22 December 2010, paragraph 4.2.18.

¹³ Commerce Commission, *Input Methodologies (Airport Services) Reasons Paper*, 22 December 2010, footnote 165.

Specialised aspects of land used as an airport

While land is a non-specialised asset the Commission recognised, that once used as an airport, an interdependency would exist between the value of the land and specialised investments closely tied to the land. A specialised asset is an asset with little or no value in an alternative use. In the case of land, the Commission viewed investments that do not contribute to the value of land in an alternative use as specialised.¹⁴

Where an aspect of an asset is specialised, ‘the minimum payment necessary to keep an asset in its current employment’ may diverge from the amount ‘paid by the user’ for the asset.¹⁵ Specialised investments closely tied to land create impediments, or frictions, to the transfer of land; that is, the specialised investment creates barriers to entry and exit to the supply of services in the relevant market. The presence of these barriers to entry and exit mean the value of assets in one market may not be a good proxy for its value in another market.¹⁶

The Commission therefore distinguished, and dealt with separately, the specialised aspects of investment in airport services so as to establish land values consistent with outcomes from workable competition. Examples of the Commission separating the specialised effects from the land for the purposes of valuation include:

- land conversion costs which did not contribute to the value of the land in an alternative use are taken into the regulatory asset base as a separate, specialised asset, and amortized¹⁷
- costs that would be incurred in remediating that land so that it could be used for the alternative purpose are excluded from the valuation¹⁸
- the Commission rejected an argument that, because airport land could not be sold without loss of profit associated with specialised assets, there should be a downward adjustment to land values.¹⁹

The effect of these decisions is that “when undertaking an MVAU valuation, the airport land must therefore be assumed to be vacant and unencumbered by any airport related

¹⁴ The Commission for example generally ignored past land conversion costs such as levelling on the basis that the levelled land is typically more valuable than unlevelled land, see Commerce Commission, *Input Methodologies (Airport Services) Reasons Paper*, 22 December 2010, paragraph 4.2.62.

¹⁵ In its Airport Inquiry Report, the Commission referred to the amount paid by the user of an asset not differing much from the minimum amount needed to keep the asset employed in its current use, but consistent with the advice of its experts did not make this assumption in its Reasons Paper, see *Final Report: Part IV Inquiry into Airfield Activities at Auckland, Wellington, and Christchurch International Airports*, 1 August 2002, paragraphs 5.12 and 5.13

¹⁶ Commerce Commission, *Input Methodologies (Airport Services) Reasons Paper*, 22 December 2010, paragraph 4.3.1.

¹⁷ Commerce Commission, *Input Methodologies (Airport Services) Reasons Paper*, 22 December 2010, paragraph 4.3.66.

¹⁸ Commerce Commission, *Input Methodologies (Airport Services) Reasons Paper*, 22 December 2010, paragraph 4.3.72

¹⁹ Commerce Commission, *Input Methodologies (Airport Services) Reasons Paper*, 22 December 2010, footnote 203.

improvements.²⁰ The value of this vacant land, unencumbered by airport related improvements, would, in a workably competitive market, broadly reflect its MVAU.²¹

The Commission had, through considering outcomes consistent with workably competitive markets, arrived at a valuation method which recognised that land:

- unencumbered by airport specific investments would be economically mobile and hence the MVAU of that land would provide an outcome consistent with valuation outcomes of workably competitive markets
- would tend to appreciate in value over time and this change in value would be reflected in the changing MVAU of that unencumbered land.

2.3 Economic principles for interpreting Schedule A

The discussion above of the Commission's reasons for its chosen Inputs Methodologies can be distilled to several principles for evaluating the correct approach to MVAU valuations under Schedule A. The preferred interpretation should result in a valuation method that:

- promotes outcomes consistent with those in workably competitive markets such that the objectives of s 52A(1)(a)-(d) are achieved;
- means the outcomes promoted should, in particular, provide suppliers with incentives to invest and innovate and are limited in their ability to extract excessive profits
- in relation to land valuation, these objectives will be promoted where:
 - investors earn a return on land used for a regulatory purpose at least equal to its value in an alternative use; that is, the net cash flow derivable in each use would be similar
 - when assessing the returns earned on airport land, the land is valued unencumbered by specialised airport investments.

The following section assesses against these principles the valuation approaches that would result from the interpretations of Schedule A preferred by BARNZ and that preferred by the airports. The section cross-checks this analysis by comparison with the Commission's approach to conceptually similar issues.

²⁰ Commerce Commission, *Input Methodologies (Airport Services) Reasons Paper*, 22 December 2010, paragraph 4.3.73.

²¹ Commerce Commission, *Input Methodologies (Airport Services) Reasons Paper*, 22 December 2010, paragraph 4.3.55.

3. Assessment against principles in Commission's Reasons paper

3.1 Consistent with workably competitive outcomes

3.1.1 Airport zoning is a specialised investment

A central tenet of the valuation approach adopted by the Commission for non-specialised assets is that, in workably competitive markets, investors earn a return on a non-specialised asset at least equal to its value in an alternative use.²² To establish the value of land, as a non-specialised asset and hence potentially economically mobile between markets, the land must be valued as vacant and unencumbered by airport specific improvements.

The zoning required for land to be used for an airport is a specialised investment; the zoning is necessary for the airport to be used to provide airport services but has no value in an alternative use. The zoning is an economic barrier to entry and exit. A valuation method which adjusts downward the value of the land for the costs of removing this specialised investment would attempt to account for an outcome of this barrier to exit; the adjustment would move outcomes further away from, rather than closer towards, outcomes consistent with those in workably competitive markets.

3.1.2 Valuation where surrounding use reflects highest and best alternative use

Conceptually, the correct economic treatment of rezoning costs is simplest to work through where the existing use of land surrounding the airport would be the highest and best use of the land absent the airport. To illustrate, assume an airport purchased additional land for aeronautical activities for \$100 million; this price reflects its value in its highest and best non-aeronautical use. The airport spends \$20 million to have the land zoned as an airport. For this example, assume that this cost of \$20 million also represents the best estimate of the costs in time and money that would be incurred if the land was rezoned from airport use so that it could be used for an alternative use.

The airports' application of Schedule A would recognise two assets which would equal the \$120 million cash paid:

- the cash cost of the land at \$100 million
- the cash cost of \$20 million for airport zoning, which would be amortised.

²² The Commission, and most expert submissions, recognised that land may earn a premium in its best use (Richardian rents) but that there was no objective basis for determining this premium.

Applying BARNZ’s interpretation would result in assets totalling only \$100 million being recognised:

- the land at \$80 million (the cash cost of the land less the estimated cost to rezone the land for best alternative use)
- the cash cost of \$20 million incurred to zone the land as an airport.

The calculations are shown in table 1 below:

Table 1: Illustrative example of investment in land for airport use

	Application of Airports’ view	Application of BARNZ’s view
Cash paid for land	\$100 million	\$100 million
Estimated cost to rezone land for best alternative use		(\$20 million)
Initial value of land in Information Disclosure	\$100 million	\$80 million
Cash paid to zone land for airport use (amortised over useful life)	\$20 million	\$20 million
Total asset value in airport use	\$120 million	\$100 million

As this simple example illustrates, reducing the MVAU valuation for the costs that would be incurred to rezone the airport – that is to unencumber the land from its use as an airport – would result in a lower valuation of the land when used as an airport from the value of the land in its surrounding use. This downward adjustment would be made simply because the land was being used for a specialised purpose.

This downward adjustment would be contrary to the objectives the Commission set for the valuation and would not reflect an outcome consistent with outcomes in workably competitive markets.

3.1.3 Valuation where highest and best alternative use is different from surrounding use

One of the strengths of the MVAU recognised by the Commission is that the approach accepts that the highest and best use of the land may change over time. To illustrate, assume that initially the surrounding land of an airport is used for pastoral farming and this use forms the likely highest and best alternative use. The value of the land may change over time with the prospects for commodity prices and may at times be predominantly be used for sheep or for beef without rezoning costs being an issue for the valuation.

However, if over time the demand increases for land for other uses, such as commercial and residential, the highest and best use of the land absent the airport may be less obvious.

Economic analysis may conclude that the highest and best alternative use of the land is no longer the surrounding uses (in this example pastoral farming), but another use (in this example, mixed commercial and residential). In assessing which of these alternative uses – pastoral farming or mixed commercial and residential – is the highest and best alternative use, the valuer would consider the costs of developing the unencumbered land to meet the emerging demand for mixed commercial and residential demand. If rezoning from agricultural use to mixed commercial and residential would be required, then this cost, along with other development costs, would be relevant to assessing whether mixed commercial and residential use would be the likely highest and best alternative use.²³ In this way, the MVAU allows for the dynamics of workably competitive markets.

Hence, the required ‘thought experiment’ 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.”²⁴

3.2 Incentives for efficient investment

Deducting, from the MVAU, the costs of rezoning the land from its specialised use as an airport 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 as illustrated in table 1 above. Such a reduction in value would clearly not be consistent with airports having efficient incentives to invest.

3.3 Limiting excessive profits

The Commission concluded that in workably competitive markets, the expected profitability of an asset with multiple potential uses – a non-specialised asset such as land – will generally reflect its profitability in an alternative use. The Commission formalised this relationship between the value of land used as an airport and the value of land in its next best use as follows: *the net cash flow derivable in each use would be similar.*²⁵

Deducting costs for rezoning land from its specialised use as an airport from the value of land used as an airport would not meet this test as:

²³ Again, no deduction should be made for the costs of removing the specialised zoning of the land as an airport.

²⁴ Commerce Commission, *Input Methodologies (Airport Services) Reasons Paper*, 22 December 2010, paragraph 4.2.19.

²⁵ Commerce Commission, *Input Methodologies (Airport Services) Reasons Paper*, 22 December 2010, footnote 165.

Cash flow for airport use**Cash flow for alternative use**

$$(MVAU \text{ less rezoning costs}) \times WACC < MVAU \times WACC$$

The deduction of zoning costs would mean that pricing based on the lower valuation would push returns below what would have been achieved had the land been used for its next best alternative use.

3.4 Cross check against conceptually similar issue of remediation costs

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 from its specialised use) may be required.

The Commission compared two separate options when considering remediation costs in its Reasons paper – it considered recognising remediation costs when they are incurred at the end of the life of the airport, or requiring that expected remediation costs be estimated and deducted from the land value at the time an MVAU valuation is undertaken.²⁶

The Commission recognised that, in theory, the NPV of the disclosed cash flows over the whole period could be the same in both cases. Both approaches would be the same in NPV terms if perfect information existed both as to the expected end date of the airport and the cost of remediation that would be incurred at that future date. If this information were known, then an amount equal to this discounted value could be recognised in the current year, or amortised over the remaining life of the asset.

However, the present value of such costs are highly uncertain, as emphasised by Dr Layton in a submission on behalf of BARNZ:²⁷

They are of imprecise magnitude that may or may not be incurred at some indeterminate point in the future, depending on whether and what events do or do not occur in the future. More specifically, by definition, transformation costs will not be incurred unless and until land currently used for airports services is converted to an alternative use.

Dr Layton concluded that the time to recognise remediation costs would be when such costs become probable (at which time the cost would become a depreciable asset). The Commission concluded against deducting the (discounted) anticipated remediation costs as it would be inconsistent with Airports having the appropriate incentives to invest.²⁸

²⁶ Commerce Commission, *Input Methodologies (Airport Services) Reasons Paper*, 22 December 2010, paragraph 4.3.69.

²⁷ Dr Brent Layton, *Input Methodologies: Response to Selected Issues Raised by the Commerce Commission Post-Emerging Views Workshop*, Report to BARNZ, 8 March 2010, 2.

²⁸ Commerce Commission, *Input Methodologies (Airport Services) Reasons Paper*, 22 December 2010, paragraph 4.3.72.

These same arguments apply equally to the anticipated cost of rezoning land from its use as an airport to an alternative use:

- the timing and amount of the cost is highly uncertain (the approach suggested by BARNZ of deducting current estimates of the cost would not achieve the NPV neutrality, as shown in table 1 and section 3.3 above)
- reducing the RAB value of land to recognise either anticipated remediation or rezoning costs necessary for the land to be used for an alternative use would discourage airports from undertaking airport investments that are too costly to reverse in the future.²⁹

²⁹ Commerce Commission, *Input Methodologies (Airport Services) Reasons Paper*, 22 December 2010, paragraph 4.3.72.

4. Conclusion

Central to the valuation approach adopted by the Commission for non-specialised assets is that, in workably competitive markets, investors earn a return on a non-specialised asset at least equal to its value in an alternative use. To establish the value of land, as a non-specialised asset and hence potentially economically mobile between markets, the land must be valued as vacant and unencumbered by airport specific improvements.

The zoning required for land to be used for an airport is a specialised investment; the zoning is necessary for the airport to be used to provide airport services but has no value in an alternative use. The zoning is an economic barrier to entry and exit. A valuation method which adjusts downward the value of the land for the costs of removing this specialised investment would attempt to account for an outcome of this barrier to entry and exit; the adjustment would move outcomes further away from, rather than closer towards, outcomes consistent with those in workably competitive markets. Such a valuation method would not provide suppliers with incentives for efficient investment, since the value of the acquired land would be taken into the RAB below what it cost the investor. If prices were set based on the reduced valuation, the net cash flow of land in its current use as an airport would be less than its profitability in an alternative use.