



Auckland UniServices Limited

**Submission to the Commerce Commission on their draft  
report dated 3 July 2001: Price Control Study of Airfield  
Activities at Auckland, Wellington and Christchurch  
International Airports**

<b>Prepared for:</b> Auckland International Airport Limited	<b>Prepared by:</b> Alastair Marsden
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## **Executive summary**

This submission to the Commerce Commission in respect of their Draft Report into price control of Airfield Activities at Auckland, Wellington and Christchurch airports concludes:

1. The Commission has under-estimated the asset beta for AIAL's Airfield Activities and hence the cost of capital. The under-estimation of the cost of capital has the potential to be highly detrimental to the long run viability of an international airport at Auckland and will have significant adverse and long-term implications for the national economy;
2. The Commission should apply an asset beta for AIAL at least equal, if not greater, than the asset beta applied to CIAL. A high proportion of CIAL's domestic passengers are likely to be non New Zealand resident travellers flying on domestic routes. AIAL also has a greater exposure to New Zealand residents travelling offshore;
3. The Commission is unable to determine based on its analysis of AIAL's historical financial performance that AIAL have exploited their monopoly power in a sustained fashion. The time period of any historical analysis is too short to make meaningful conclusions. AIAL also underwent significant structural change with both corporatisation and privatisation over the period 1989-2000; and
4. The approach adopted by the Commission with respect to future investment in land and capitalisation of financing and holding costs will not allow AIAL to recover a fair rate of return on its capital employed.

The main difference in the parameter measures between the Commission's and AIAL's determination of WACC lies in the estimate of the asset beta. AIAL's asset beta should be close to the asset beta for UK electricity firms of 0.56 and not at a midpoint between US and UK electricity firms. The Commission notes that AIAL's beta may be higher than that for electricity comparators; as airports are likely to experience greater demand shocks. By making no adjustment due to perceived

*“difficulties in estimating accurately how much to adjust beta by”*, there is a ***clear downward bias*** in the Commission’s estimate of AIAL’s asset beta.

Using a risk free rate of 6.92%, an asset beta of 0.45 to 0.55, a debt premium of 1%, a debt to equity ratio of 40:60 and a PTMRP of 8%, the post-tax nominal WACC for AIAL’s Airfield Activities lies within the range 8.5% to 9.3%.

Alastair Marsden

August 2001

**Submission to the Commerce Commission on their draft report dated 3 July 2001: Price Control Study of Airfield Activities at Auckland, Wellington and Christchurch International Airports. Prepared by Alastair Marsden, August 2001.**

**1. Introduction**

1.1 This submission to the Commerce Commission (“Commission”) in relation to their draft report titled “Price control study on airfield activities at Auckland, Wellington and Christchurch International Airports” comments on:

- The Commission’s draft assessment of the nominal tax-adjusted weighted average cost of capital (“WACC”) for Auckland International Airport Limited (“AIAL”);
- AIAL’s asset beta compared to the asset beta for Christchurch International Airport Ltd (“CIAL”);
- BARNZ’s response to the Commission’s Critical Issues paper on AIAL’s WACC;
- The Commission’s analysis in Appendix 8 of its draft report analysing the historical performance of AIAL’s Airfield Activities; and
- The Commission’s view with respect to capitalisation of financing costs and holding costs of land.

**2. Weighted average cost of capital (“WACC”)**

2.1 The Commission’s draft estimate<sup>1</sup> of the WACC for AIAL’s Airfield Activities is between 8.0% and 8.80% (midpoint 8.4%). In AIAL’s submission<sup>2</sup> to the

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<sup>1</sup> Paragraph 8.83 and Table 38 of the Commission’s Draft Report.

Commission dated 27 April 2001, AIAL argued its appropriate WACC is higher and in the range of 8.5% to 9.3% (midpoint 8.9%).

2.2 In my view the Commission has under-estimated AIAL's cost of capital.

Airports are highly capital-intensive industries and require significant up-front investment in specialised infrastructure assets. *The consequences of under-estimating the cost of capital for an Airport's Airfield Activities are potentially serious.* The charges imposed by Airports are relatively small compared to the overall cost of air traffic. While a lower cost of capital will lower prices and provide immediate benefits to customers, it will result in strong disincentives to invest in future capacity. It will inhibit AIAL's ability to raise new capital, act as a deterrent to undertake large new capital expenditure projects and impede potential competitive entry and new innovations. This will be highly detrimental to the long run viability of the New Zealand transport and tourist industries and to the Auckland and New Zealand national economies.

### ***Commission's draft estimate of WACC***

2.3 Table 1 below summarises the parameter measures adopted by the Commission in its draft determination of the WACC for AIAL's Airfield Activities. AIAL's parameter measures in its submission dated 27 April 2001 to the Commission are also provided.

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<sup>2</sup> Attachment 5, AIAL Submission to the New Zealand Commerce Commission Airfield Price Control Inquiry dated 27 April 2001.

**Table 1**

<b>Parameter measures using the same variable terms as in Table 38 (paragraph 8.83) of the Commission's draft report</b>	<b>Commission's measure of WACC for AIAL's Airfield Activities</b>	<b>AIAL's measure of appropriate WACC for its Airfield Activities</b>
$R_f$	6.92%	6.92%
$t_c$	33%	33%
$t_{int}$	33%	33%
$t_{div}$	0%	0%
$t_{divm}$	0%	N/a
Div	N/a	N/a
Div <sub>m</sub>	N/a	N/a
PTMRP	8%	8%
Debt Premium	1%	1%
$\beta_d$	0%	0%
$R_d$	7.92%	7.92%
$W_d$	25%	40%
$W_e$	75%	60%
$\beta_a$	0.4 to 0.5	0.45 to 0.55
$\beta_e$	0.53 to 0.67	0.75 to 0.92
$R_e$	8.90 to 9.97%	10.64 to 11.97%
Nominal Tax-Adjusted WACC (post-corporate tax)	8.0 to 8.80%	8.5 to 9.30%
<b>Midpoint</b>	<b>8.40%</b>	<b>8.90%</b>

2.4 The parameter measures used by the Commission and AIAL to determine the WACC for AIAL's Airfield Assets differ with respect to the asset beta ( $\beta_a$ ) and target capital structure ( $W_d$  and  $W_e$ ). AIAL and the Commission adopt the same measures for the personal tax parameters  $t_{div}$ ,  $t_{int}$ , the risk-free rate ( $R_f$ ), the corporate tax rate ( $t_c$ ), debt beta ( $\beta_d$ ), the post-tax market risk premium (PTMRP) and the debt premium.

2.5 I generally agree with the parameter measures used by the Commission to calculate the WACC for AIAL's Airfield Activities, apart from the measure of the asset beta and the capital structure weights.

## ***Asset Beta***

2.6 The Commission in its draft report has adopted an asset beta of 0.40 to 0.50. The Commission considers the risks and asset beta for AIAL's Airfield Activities to fall between the bounds of regulated US and UK electricity firms (0.36 to 0.56 respectively after adjusting for New Zealand market leverage). This suggests an average asset beta of around 0.45 (the midpoint) and a range of 0.40 to 0.50.<sup>3</sup>

2.7 AIAL argued in its submission for an asset beta of 0.45 to 0.55.<sup>4</sup> In my view the asset beta for its Airfield Activities should be closer to the asset beta of regulated UK electricity firms. I support AIAL's estimate of the asset beta for its Airfield Activities for the reasons set out below.<sup>5</sup> These reasons are in addition to those provided in Attachment 5 of AIAL's recent submission to the Commission dated 27 April 2001:

- a) The Commission notes that AIAL's beta may be higher than that for electricity comparators; as airports are likely to experience greater demand shocks (paragraph 8.65 of the Commission's draft report). The demand for business and personal travel will be much more sensitive to economic shocks compared to changes in the demand for the distribution of electricity. In this case the more logical conclusion would be for the Commission to adopt a beta for AIAL at least equal to the average asset beta for UK electricity firms of 0.56. By making no adjustment due to perceived "*difficulties in estimating accurately how much to adjust beta by*" (paragraph 8.65 of the Commission's

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<sup>3</sup> Paragraph 8.63 of the Commission's draft report.

<sup>4</sup> Similar to the Commission, AIAL's asset beta measure assumes a zero debt beta. I adopt this same assumption.

<sup>5</sup> In my initial report to AIAL dated 25 September 1999 I took the view that the asset beta for AIAL's Airfield Activities was in the range 0.375 to 0.45. However, in this report I also noted in the next sentence that "*.. estimation of beta is complex and may warrant further research*". Since September 1999, the ACCC in Australia has released several decisions for Australian Airports, all of which argue for a higher asset beta. Similarly in my report dated September 1999, I also assumed the post tax market risk premium was 9%. Following the publication of the PriceWaterhouseCoopers paper in March 1998 on the post tax market risk premium and evidence of a possible reduction in the market risk premium, I regard a measure of 8% as reasonable.

draft report), there is a *clear downward bias* in the Commission's estimate of AIAL's asset beta.<sup>6</sup>

- b) The US-style regulation is regarded as enshrined in case law and essentially cost-plus whereas the UK regime is still relatively new and subject to change (including political influences)<sup>7</sup>. The UK regulation is also bounded by a "horizon date" being the end of a regulatory cycle or in the case of politicians an election cycle. The reason is that at the end of a regulatory or political cycle the regulator or a politician cannot bind its successor.

The type of regulation or the potential for regulation faced by AIAL appears much closer to UK type regulation. At each price review date AIAL faces the possibility or threat that prices may be controlled under the Commerce Act on the recommendation of the Minister. This "regulatory risk" and the potential impact on AIAL's activities from future regulator and/or political discretion will act to increase its cost of capital. This may come about in a number of ways.

- First, AIAL's Airfield assets have long lives relative to the time period (three years) to the next price review date and to future price reset dates. The risks to AIAL's investors will depend on their expectations of the future intentions, and the type of any regulation or price control that may be imposed under the Commerce Act. The risks here may be systematic and related to the outcome of political elections and state of the economy. For instance, in an economic downturn governments may vary their stance on regulation or price control in favour of the consumer to increase their popularity.
- Second, determinations of and control of future prices by regulators beyond the current price reset period may be non-compensatory. Regulators may attempt to claw-back any perceived excess profits

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<sup>6</sup> The Commission notes (paragraph 8.64 of its draft report) that CIAL's beta may in fact be higher than AIAL's beta. This issue is addressed later in this report.

<sup>7</sup> See Alexander, Mayer and Weeds, 1996, Regulatory structure and risk: An international comparison, Prepared for PSD/PP1, World Bank.

made in prior periods if the actual outcome exceeds expectations (but at the same time providing no compensation if the actual outcome is less than expectations).<sup>8</sup> This type of risk cannot be ignored.

- c) It is not the intention of AIAL “*to potentially recoup the effects of past demand shocks when they reset prices*” (paragraph 8.59 of the Commission’s draft report).<sup>9</sup> The current regulatory approach and threat of price control in New Zealand seeks to prevent discriminatory pricing by Airports. In its consultations with the Airlines, I understand AIAL has consistently focussed on future revenue and cost expectations only. Historical or ex-post returns were not considered relevant by AIAL in setting new prices for the next review period. Moreover, as noted in AIAL’s submission to the Commission,<sup>10</sup> AIAL’s pricing policy is:

*“to fix prices for a period of years, with no review for unexpected changes in inflation rates, interest rates, exchange rates, the market risk premium that impact on the discount rate. The intention is to reset charges to recover any unexpected costs or loss in revenues associated with specific risks such as costs imposed by stricter noise controls or increased costs from customs or security clearance”.*

Specific risks such as costs associated with stricter noise controls and increased customs costs should be modelled into the expected cash flows and not impact on the beta or discount rate.

- d) The Commission acknowledges that airports have a high proportion of fixed costs and common costs (paragraph 6.28 of the Commission’s draft report). This limits the ability of AIAL to respond to changes in demand conditions and implies profits will be quite variable in response to changes in economic conditions. AIAL’s high operating leverage has not been adequately factored into the Commission’s assessment of its asset beta.

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<sup>8</sup> This latter type of risk should be more correctly reflected in the expected cash flows. If not, then as a practical manner the risk must be reflected in the discount rate. It should not be simply ignored.

<sup>9</sup> Lally, 2001, at page 380 notes “... *the airports have not exercised that power in the past, and this is the best indicator for the future*”. See Lally, M., June 2001, “The cost of capital for the Airfield Activities of New Zealand’s International Airports” attached to the Commission’s draft report.

<sup>10</sup> Attachment 5, page 5 of AIAL’s submission to the Commission date 27April 2001.

- e) Investors in AIAL face inflationary risk between price reviews (unlike UK regulated firms and Australian Airports where inflation risk may be borne by the customers). While in recent times inflation has been relatively low, future inflation expectations are now less certain. Historically the Reserve Bank in New Zealand has sought to control inflation by raising interest rates. Inflation risk should not be under-estimated. Investors in AIAL also incur the risk of shocks to the discount rate from interest rate changes.
  
- f) AIAL has a relatively high proportion of New Zealand resident “international” passengers compared to other airports. These passengers are mainly leisure passengers and leisure travel is highly sensitive to changes in economic conditions. This point is discussed in more detail when commenting on AIAL’s asset beta compared to the asset beta for CIAL.

### *Capital Structure Weights*

- 2.8 The Commission has adopted a debt to equity ratio of 0.25 to 0.75 in its calculation of WACC. AIAL in its submission used a debt to equity ratio of 0.40 to 0.60.
  
- 2.9 The Commission’s assessment of a 25:75 debt to equity ratio is based on taking the book value of debt as at mid-2000 as a proxy for the market value of debt and the share price multiplied by the number of shares outstanding as a proxy for the market value of equity.
  
- 2.10 I consider a debt to equity ratio of 0.25:0.75 to be conservative for the funding of infrastructure assets. Almost all regulatory decisions in Australia and by other overseas regulatory bodies adopt a higher long run target debt to equity ratio in determining the cost of capital for electricity, gas, airport and other infrastructure assets. A debt to equity ratio of 0.25:0.75 will not reflect AIAL’s long-run target

debt to equity ratio if AIAL's Board and management were to preferentially finance large new capital investment projects using debt rather than equity capital in the capital structure.

**3. Should CIAL's asset beta be greater than AIAL's, given the different exposure to domestic demand.**

3.1 The Commission considers (paragraph 8.64 of its draft report) that:

*“CIAL's beta may in fact be higher than AIAL's, but it has been unable to accurately estimate to what extent. CIAL's beta may be higher as its high proportion of domestic traffic (relative to Auckland) means that it is likely to experience greater shocks to changes in the domestic economy (given that a domestic CAPM is used)”.*

3.2 However, the opposite may equally be true. That is, AIAL's asset beta may be greater than the asset beta of CIAL.

3.3 In paragraphs 4.15 and 4.57 of the Commission's draft report passenger numbers (“Domestic” and “International”) are provided for AIAL and CIAL respectively. “International Passengers” are both foreign tourists and New Zealand residents.<sup>11</sup> The percentages of “International Passengers” that are actually New Zealand residents are 42% for AIAL and 30% for CIAL.<sup>12</sup>

3.4 Table 2 below analyses the relative split of “domestic” and “international” passengers for AIAL and CIAL.

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<sup>11</sup> Commission's draft report, paragraph 5.84.

<sup>12</sup> Commission's draft report, paragraph 5.84 and footnote 72.

**Table 2**

	<b>Passenger Numbers</b>	
	<b>AIAL Year Ended 30 June 2000 <sup>a</sup></b>	<b>CIAL Year Ended 30 June 2000 <sup>b</sup></b>
Domestic	3,206,806	3,017,888
International	4,799,236	1,066,495
Split <sup>c</sup> – Non New Zealand Residents	<i>2,783,557</i>	<i>746,547</i>
– New Zealand Resident	<i>2,015,679</i>	<i>319,948</i>
Total Passenger Numbers	8,006,042	4,084,383
% Domestic /Total Passenger Numbers	40.1%	73.9%
% Domestic and international New Zealand Residents/Total Passenger Numbers	65.2%	81.7%
International New Zealand Resident/Total International Passengers	42%	30%
International New Zealand Resident Passengers/Total Passengers	25.2%	7.8%

- a. Passenger numbers taken from paragraph 4.15 of the Commission’s draft report.  
b. Passenger numbers taken from paragraph 4.57 of the Commissions’ draft report.  
c. See paragraph 5.84 and footnote 72 of the Commission’s draft report. The percentage of international passengers that are New Zealand residents arriving in New Zealand (the majority returning after short-term holidays overseas) are 42% for AIAL and 30% for CIAL.

3.5 Table 2 above shows:

- CIAL would appear to have higher proportion of domestic traffic measured as a percentage of “domestic” passengers to total passenger numbers (73.9% for CIAL compared to 40.1% for AIAL). However, the difference in relativities is substantially less based on the percentage domestic and international New

Zealand residents / total passenger numbers (81.7% for CIAL and 65.2% for AIAL);

- The percentage of international New Zealand resident passengers to total international passengers is higher for AIAL (42%) compared to CIAL (30%); and
- The percentage of international New Zealand resident passengers to total passengers is higher for AIAL (25.2%) compared to CIAL (7.8%).

3.6 Total “Domestic” passenger numbers are 3.2 million for AIAL and 3.0 million for CIAL. However, according to 1996 census data the population for Auckland and Christchurch was circa 1.07 million and 0.31 million people respectively. Based on the large difference in the population between Auckland and Christchurch but only a small difference in the number of “Domestic” passengers, the data in Table 2 suggests that a large number of CIAL’s “Domestic” passengers are in reality non New Zealand resident travellers flying internally on domestic flights. This would even further narrow any differences between AIAL and CIAL in relativities based on the percentage domestic and international New Zealand residents / total passenger numbers. The percentage of international New Zealand resident passengers to total passengers will still be higher for AIAL compared to CIAL.

3.7 The Commission notes (paragraph 5.66 of its draft report) and I agree with the Commission’s statement:

*“It is likely that the elasticity of demand for international air travel will be higher than for domestic air travel. This is because much more international travel is leisure related, which is more discretionary and income sensitive, and because of the availability of substitute destinations. In addition, international travel is typically more costly than domestic travel, implying that a given percentage rise in price would have a relatively larger “income effect”. There may be other factors, such as exchange rate risks related to “spending money”, which may make international travellers more sensitive to changes in the price of air travel.”*

3.8 AIAL has a higher proportion of New Zealand resident “international travellers” since;

- The percentage of international New Zealand resident passengers to total international passengers; and
- The percentage of international New Zealand resident passengers to total passengers;

are higher for AIAL than CIAL.

3.9 In respect of international air travel AIAL is more reliant on New Zealand resident passengers than CIAL. Most New Zealand resident travellers who travel internationally are leisure travellers (i.e., going or returning from short-term holidays).<sup>13</sup> As noted by the Commission leisure travel is both discretionary and income sensitive.

3.10 The number of New Zealand resident travellers taking international holidays (mainly for holiday purposes) is likely to be strongly influenced by the national economy. This high demand sensitivity of New Zealand resident travellers taking international holidays to GNP and other domestic economic shocks raises the asset beta of AIAL. Also, domestic travel is likely to be a lower-cost substitute for international travel for New Zealand residents. AIAL, with a much higher proportion of New Zealand resident international passengers, will be more adversely affected than CIAL during economic downturns in New Zealand.

3.11 In summary, one cannot conclude based on the evidence presented in the Commission’s draft report that (paragraph 8.64):

*“CIAL’s beta may be higher as its higher proportion of domestic traffic (relative to Auckland) means it is likely to experience greater shocks to changes in the domestic economy”.*

The evidence suggests that AIAL, with its higher proportion of New Zealand resident international travellers, should have a higher asset beta than CIAL.

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<sup>13</sup> Paragraph 5.84 of the Commission’s draft report.

3.12 There are also a number of other reasons why AIAL's asset beta and cost of capital should be higher than CIAL's. These are:

- Activity at AIAL, being the major hub airport in New Zealand, is likely to have greater sensitivity to the national economy than CIAL, where activity might be more correlated to the regional South Island economy. This would increase the beta of AIAL relative to CIAL; and
- The Commission notes (paragraph 8.61) that CIAL has signalled that should the fleet mix or the relative number of each type of aircraft change, then it will look to change the allocation of total revenue and landing charges. Moreover, the Commission notes (unlike the case for AIAL) that CIAL stands to benefit if aircraft movements prove optimistic. This minimises CIAL's risk compared to the risk faced by AIAL. If this is correct, then the asset beta for AIAL should exceed CIAL's asset beta.
- CIAL is actively promoting itself as the entry point to the South Island, and presumably targeting travellers mainly from overseas (paragraph 5.85 of the Commission's report). Thus CIAL may be expected to have a greater number of international (non New Zealand resident) foreign passengers relative to domestic passenger numbers in the future.

#### **4. Comments on the BARNZ response to the Commission's Critical Issues Paper on AIAL's WACC**

4.1 I comment on BARNZ's response dated 26 April 2001 to the Commission's Critical Issues Paper as follows:

##### ***Asset beta***

4.2 BARNZ considers the asset beta for AIAL is between 0.1 and 0.3. In my view AIAL's Airfield Activities have non-trivial systematic risk, with an asset beta

much higher than 0.3. AIAL does not price mechanistically. The expected returns from AIAL's Airfield Activities are not certain or close to the risk free rate of return. The reasons are set out both in AIAL's submission dated 27 April 2001 to the Commission and in the discussion on AIAL's asset beta in section 2 of this submission.

- 4.3 Moreover, the *empirical* evidence suggests that the average asset betas for electric utilities (0.36 for US companies and 0.56 for UK companies as detailed in the Commission's draft report<sup>14</sup>) are substantially in excess of the asset beta range proposed by BARNZ. As noted by the Commission, the demand for electricity will be less sensitive to economic shocks than the demand for air travel. The empirical evidence does not support an asset beta for AIAL's Airfield Activities in the range of 0.1 to 0.3 as suggested by BARNZ.

#### ***Tax Parameter Measures - $t_{int}$ and $t_{div}$***

- 4.4 Both AIAL and the Commission use the simplified Brennan-Lally capital asset pricing model ("CAPM") to determine the cost of equity capital.<sup>15</sup> BARNZ in its response to the Commission also adopt this same model.

- 4.5 The model (using the same terminology as detailed in paragraphs 8.18 and 8.19 of the Commission's draft report) is;

$$R_e = t_{div} \text{Div} + R_f (1 - t_{int}) + \beta_e (\text{PTMRP})$$

- 4.6 I support the use of the Brennan-Lally CAPM as the appropriate version of the capital asset pricing model under New Zealand's dividend imputation system.<sup>16</sup>

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<sup>14</sup> This is after adjustment for differences in market leverage across firms.

<sup>15</sup> Paragraph 8.19 of the Commission's Draft Report.

<sup>16</sup> Lally and van Zijl, 2001, show the alternative CAPM model commonly used under a dividend imputation regime based on the work by Officer can result in significant mis-estimation of the cost of equity capital. See Lally, M. and T. van Zijl, 2001, Capital gains and the capital asset pricing model, Working paper, Victoria University of Auckland.

4.7 AIAL and the Commission measure the personal tax parameters  $t_{int}$  and  $t_{div}$  in the Brennan-Lally CAPM to equal 33% and 0% respectively. BARNZ advocates a rate for  $t_{int}$  equal to 39% (the top marginal personal tax rate on interest income in New Zealand).<sup>17</sup>

4.8 The definition of  $t_{int}$  and  $t_{div}$  under the simplified Brennan-Lally model is:

$t_{div}$  = a weighted average of investors of  $(t_{divi}^* - t_{gi}) / (1 - t_{gi})$ , where  $t_{divi}^*$  is investor  $i$ 's tax rate on cash dividends from the company and  $t_{gi}$  is investor  $i$ 's tax rate on capital gains.

$t_{int}$  = a weighted average of investors of  $(t_{inti}^* - t_{gi}) / (1 - t_{gi})$ , where  $t_{inti}^*$  is investor  $i$ 's tax rate on interest income and  $t_{gi}$  is investor  $i$ 's tax rate on capital gains.

4.9 Estimation of  $t_{div}$  and  $t_{int}$  requires determination of the investor set, investors' risk aversion and relative weights in the market and investor tax rates on interest and dividend income, and capital gains.

4.10 A value of  $t_{int}$  equal to 33% (adopted by the Commission and AIAL) is at the upper end of any plausible range of values. First, a significant portion by weight of investors in New Zealand pay tax on interest income at the rate of 33%. These include superannuation funds, with many funds also liable to capital gains tax on realised profits. Second, even if all investors are taxed at 39% (the top marginal personal tax in New Zealand on interest income) the term  $t_{int}$  in the Brennan-Lally model will still be less than 39% where some investors face capital gains taxes.

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<sup>17</sup> Paragraph 53.2 the BARNZ response dated 26 April 2001 to the Commission's Critical Issues Paper.

4.11 For the sake of simplicity<sup>18</sup>, assume the tax rate on ordinary interest income for all investors is 36% (the midpoint between the rate of 33% for superannuation funds and the top marginal personal rate of 39%). Then if 50% by weight of investors are taxed on capital gains but the opportunity to defer capital gains reduces the effective tax rate by 50%,<sup>19</sup> the term  $t_{gi}$  is 0.09. This suggests a value for  $t_{int}$  equal to 0.30.<sup>20</sup>

4.12 The simplified Brennan-Lally CAPM model (often referred to as “The Treasury model”) implicitly assumes  $t_{int}$  equals 33%. Any dividends paid also have maximum imputation credits attached with imputation credits fully valued by investors. Under these assumptions the term  $t_{div}$  equals 0%.<sup>21</sup> This enables the Brennan-Lally model to be collapsed to its simplified form.

## **5. Historical Performance Analysis of AIAL’s Airfield Activities**

5.1 The Commission’s analysis in Chapter 10 and Appendix 8 of its draft report (and in particular scenario 8 where the Commission calculates the average assessed annual historical return to AIAL’s Airfield Activities to be 13.47% compared to the average target return of 9.76%<sup>22</sup>) *cannot* be interpreted as clear evidence that AIAL has engaged in monopoly pricing.

5.2 My comments that follow are of a conceptual nature only. I understand AIAL in its submission to the Commission’s draft report will comment in detail on the specific financial assumptions and the accuracy of the financial data contained in the Commission’s analysis.

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<sup>18</sup> The actual formula to calculate  $t_{div}$  is relatively complex. As noted it requires an estimate of investor market weights, risk aversion and tax parameters for each investor group. However, unless one assumes all investors are subject to tax on interest income at 39% and there is no capital gains tax, a rate of 39% is difficult to justify.

<sup>19</sup> This recognises capital gains are taxed less onerously in New Zealand compared to interest income.

<sup>20</sup> PriceWaterhouseCoopers estimate  $t_{int}$  to be 28%. See Attachment 5, footnote 18 of AIAL’s submission to the Commission date 27April 2001.

<sup>21</sup> See Attachment 5, paragraph 17 of AIAL’s submission to the Commission dated 27April 2001.

<sup>22</sup> Paragraph 10.16 of the Commission’s draft report.

### ***Price reset dates and period between price reviews***

- 5.3 The Commission’s calculation of an average return of 13.47% over the period 1989-2000 for AIAL’s Airfield Activities (based on the ARP formula) implicitly assumes prices are reset annually. The resetting of prices each year on an annual basis is inconsistent with the time periods between the historical price review dates of AIAL’s charges.
- 5.4 I understand prices were historically reviewed by AIAL in 1989, 1990, 1992, 1996 and September 2000. In undertaking any analysis to compare actual returns to target returns or expectations, the relevant benchmark should be the expectation of returns set at the start of each price review period. This same “expected” or target rate of return should apply each year until the next price review date. That is, in determining whether ex-post or historical actual returns exceeded ex-ante target returns, the analysis should not be undertaken on an “annual basis” but over the period between each price review dates. Based on the analysis over the period 1989-2000 and the historical price reset dates of 1989, 1990, 1992, 1996 and 2000, only four “valid” observations<sup>23</sup> can be made to compare ex-post or the actual outcome to the target returns. With four observations only it is not possible to conclude historical prices charged by AIAL have systematically been too high.

### ***Actual outcome versus expectations***

- 5.5 The Commission notes (paragraph 10.6 of its draft report)

*“An actual return in excess of an appropriate target WACC would suggest that the entity was earning an excessive or monopoly return, unless those returns reflected superior performance.”*

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<sup>23</sup> I understand there were two price reviews in 1990 (March and August). Given the short time period between these reviews, I consider this to be “one” price review only.

- 5.6 However, the actual outcome will almost invariably not equal the ex-ante expectations. This may result from unanticipated deviations from forecast expectations and /or abnormal performance.
- 5.7 Over the period 1989-2000 actual returns to AIAL may have historically exceeded target returns due to:
- Growth in air travel exceeding expectations;
  - Greater than anticipated operating and cost efficiencies introduced by AIAL's management subsequent to corporatisation in 1988 and privatisation in 1998; and/or
  - Unexpected changes to the discount rate.
- 5.8 The fact that actual or historical returns over the period 1989-2000 to AIAL may then have been higher than expectations is not evidence that AIAL practices "monopoly pricing" or is setting prices too high.
- 5.9 First, the tourism industry has experienced substantial growth in the last decade, with a corresponding large increase in the demand for air travel. The substantial growth in demand for air travel may also reflect a decrease in the real cost of travel and a rise in discretionary consumer incomes. Over the period 1989 to 2000, forecast expectations for growth in air travel may have consistently *underestimated* the actual demand for air travel and aircraft landings. For instance, AIAL noted in its 1999 annual report that its financial results were better than expected due to a number of factors. The key reasons for the better than expected financial performance was greater than expected passenger numbers and significantly lower than anticipated interest rates.
- 5.10 Second, AIAL was corporated on 1 April 1998. Over the period 1984 to 1990 major structural changes were introduced by the Labour Government as part of a radical programme of economic reform. The overriding objective of these

reforms was to improve operating efficiency and the profitability of public sector organisations. Improvements in performance as a result of corporatisation may result from greater accountability and monitoring of management and Directors, reduction in agency costs and more strongly aligning the interests of managers and shareholders. Further efficiencies may have been implemented following the privatisation and floatation of AIAL's shares on the New Zealand Stock Exchange in 1998.<sup>24</sup>

5.11 Empirical evidence suggests that following corporatisation and change in the form of ownership structure, corporate entities report substantial improvements in rates of return, levels of profitability and output per employee.<sup>25</sup> In a study of the corporatisation and transformation of five state owned New Zealand enterprises ("SOEs"), Spicer, Emanuel and Powell (1996)<sup>26</sup> state (page 203):

*"The process of establishing SOEs represented a major change in the governance structure of government business activities. Our study of the experiences of ECNZ, CoalCorp, GCS, WORKS and TVNZ suggest that the corporatisation experiment in New Zealand was **extremely successful** in turning ..... organisations with mixed and confusing objectives into well-focused and commercially orientated and profitable companies. A review of the annual reports of other SOEs, other accounts of change, anecdotal evidence and some media reports suggest that the successful transformations of these five government owned enterprises were not isolated cases" (emphasis added)*

5.12 *Greater than expected improvements* in AIAL's cost structure and operating efficiencies, together with "superior performance" since both corporatisation (1988) and privatisation (1998) will explain why historical actual returns have been greater than target returns. Again this is not evidence of any monopoly pricing by AIAL.

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<sup>24</sup> Boardman and Vining, 1989, argue private sector companies tend to outperform their public sector counterparts. Boardman, A., and A. Vining, 1989, Ownership and performance measurement in competitive environments: A comparison of the performance of private, mixed and state-owned enterprises, *Journal of Law and Economics* 32, 1-32.

<sup>25</sup> For example, a study by Spicer, Bowman, Emanuel and Hunt found in the case of Electricity Corporation of New Zealand Limited, its financial performance was much superior compared to the old New Zealand Electricity Division. Spicer, B., Bowman, R., Emanuel, D. and A. Hunt, 1991, *The power to manage: Restructuring the New Zealand Electricity Department as a State-Owned Enterprise – The Electricorp Experience*, Oxford University Press.

<sup>26</sup> Spicer, B., Emanuel, D. and M. Powell, 1996, *Transforming Government Enterprises: Managing Radical Organisational Change in Deregulated Environments*, The Centre for Independent Studies Limited.

### ***Commission's cost of capital estimate in the period 1989-2000***

5.13 The Commission in calculating the cost of capital for AIAL over the period 1989 to 2000 has used a constant PTMRP of 8.0%. However, it was only with the release of the March 2000 position paper published by PriceWaterhouseCoopers, which advocated a fall from 9.0% to 8.0% that the market has tended to adopt the lower figure. Prior to that date most market practitioners and academics used 9% as an estimate of the PTMRP (e.g., Lally<sup>27</sup>, The Treasury<sup>28</sup>, Transpower<sup>29</sup> and Airways Corporation<sup>30</sup>). The Commission should use a PTMRP equal to 9% in any historical analysis over the period 1989-2000 (in addition to increasing AIAL's asset beta).

5.14 It is also unclear if the Commission has applied the correct cost of capital for each period and how the Commission has determined the risk free rate measures used to determine the cost of capital for each of the years 1989-2000. For instance, the Commission in Chapter 8 of its draft report estimates AIAL's cost of capital for the three-year period post September 2000 to be between 8.0% and 8.8%. The Commission then uses this same cost of capital in its Appendix 8 to measure "excess returns" for the period ending 30 June 2000. However, the target return for the period ending 30 June 2000 should be based on the cost of capital parameter measures at the last price reset date (and as noted above assume the PTMRP is 9%).

5.15 In summary, based on the Commission's analysis in Chapter 10 of its draft report, it is *not* possible to conclude AIAL has exploited its market power by raising prices above the competitive level in a fairly sustained fashion. This is

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<sup>27</sup> Lally, M., 2000, The cost of equity capital and its estimation, Vol 3, MCGraw-Hill Series in Advanced Finance, The McGraw- Hill Companies, Inc. See page 13.

<sup>28</sup> Handbook of October, 1997.

<sup>29</sup> For the year ending 30 June 1999 Transpower assumed a PTMRP of 9% (page 68 of Notes to Economic Value Added Statements, 1998/99 Annual Report). Transpower also assumed a PTMRP of 9% in its cost of capital assumptions for 2000 to 2002 (see its Statement of Corporate Intent, page 3).

<sup>30</sup> For the year ending 30 June 1999, Airways Corporation used a PTMRP of 9% (page 29 of Notes to Financial Statements, 1999 Annual Report).

contrary to the Commission's preliminary conclusion in paragraph 10.20 of its report.

## 6. Returns on work in progress

6.1 The Commission states (paragraphs 7.66 and 7.71 of its draft report):

*“The Commission’s preliminary view is that as a broad principle only “used and useful” assets should be included in the asset base. Although, the cost of new investment in land that is eventually included in the asset base should include the capitalised costs of financing construction and any holding costs of land (less any revenue that may have been derived from the former use of land) up to a cap of opportunity cost.”*

6.2 If the Commission were to adopt this principle there will be significant adverse consequences to AIAL and long-term negative flow-on impacts to the national economy resulting from the reduced incentive to invest. These adverse consequences include:

- An increase in AIAL's cost of capital as providers of debt finance increase the cost of their debt in recognition of the increased risks associated with holding land and other assets for future development over long periods of negative or zero cash flow. AIAL may also face considerable losses if the project does not actually proceed. If the Commission were to adopt this principle and include only used assets in the asset base, then AIAL should be entitled to earn a “*developers margin*” on projects where the assets ultimately become “*used and useful*”. AIAL should over time *expect* to recover losses on potentially viable projects that subsequently fail from expected profits on projects that actually succeed;
- If interest costs only can be capitalised (rather than holding costs capitalised at WACC), then AIAL will receive no return on equity funds employed during the holding and construction period to build any new asset and for its investment in land. This is both inequitable and will act as a significant disincentive for AIAL to invest in large new capital projects with a long lead time to construct and where significant risks exist that the project may not

actually become “*used and useful*”. An example of this type of new investment project is the second runway. AIAL must first hold or purchase the land, then obtain resource consents<sup>31</sup> before the project can commence and finally construct the runway over a period of time. As noted above, if only “*used and useful*” assets are subsequently included in the asset base, the WACC to capitalise holding costs should not be an “Airfield WACC” but some greater WACC to reflect the development risks that AIAL incurs and the possibility that the project may not proceed (e.g. if unable to obtain resource consents),<sup>32</sup>

- The requirement that capitalised costs of holding land be capped at the opportunity cost of the land will mean AIAL will not earn a fair rate of return where “capitalised” costs capped at the opportunity cost are less than costs capitalised at an appropriate WACC.<sup>33</sup> Moreover, in respect of valuing the land simply at its opportunity cost, it fails to recognise the risks and costs incurred by AIAL in developing and constructing the project, including the costs associated with obtaining resource and other project consents to enable the investment to proceed.

## 7. Conclusion

### 7.1 I conclude:

- The Commission has under-estimated the asset beta for AIAL’s Airfield Activities and hence the cost of capital. The under-estimation of the cost of capital has the potential to be highly detrimental to the long run viability of an international airport at Auckland and will have significant adverse and long-term implications for the airline and tourist industries and the national economy;

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<sup>31</sup> AIAL faces the risk of considerable delays in the process of obtaining resource consents.

<sup>32</sup> Conceptually the project might be divided into a number of discrete phases with different risks and expected returns attached to each stage.

<sup>33</sup> As noted above, this should be greater than an Airfield Asset WACC during the initial phase of the project.

- The Commission should apply an asset beta for AIAL at least equal, if not greater, than the asset beta applied to CIAL. A high proportion of CIAL's domestic passengers are likely to be non New Zealand resident travellers flying on domestic routes. AIAL also has a greater exposure to New Zealand residents travelling offshore;
- The Commission is unable to determine based on its analysis of AIAL's historical financial performance that AIAL have exploited their monopoly power in a sustained fashion. The time period of any historical analysis is too short to make meaningful conclusions. AIAL also underwent significant structural change with both corporatisation and privatisation over the period 1989-2000; and
- The approach adopted by the Commission with respect to future investment in land and capitalisation of financing and holding costs will not allow AIAL to recover a fair rate of return on its capital employed and recover losses if new investment projects may not actually proceed.

7.2 The main difference in the parameter measures between the Commission's and AIAL's determination of WACC lies in the estimate of the asset beta. Airports are likely to experience greater demand shocks than electricity companies. AIAL's asset beta should be close to the asset beta for UK electricity firms of 0.56.

7.3 In summary, using a risk free rate of 6.92%, an asset beta of 0.45 to 0.55, a debt premium of 1%, corporate tax rate of 33%, a debt to equity ratio of 40:60 and a PTMRP of 8%, I estimate the post-tax nominal WACC for AIAL's Airfield Activities to lie within the range 8.5% to 9.3%. The Commission should adopt a cost of capital at least equal to 8.9% (midpoint of 8.5% and 9.3%) in determining a fair nominal post-corporate tax WACC for AIAL's Airfield Activities.