CIAL's Weighted Average Cost of Capital:

Comparison with Commerce Commission's Information Disclosure Requirements

Report to BARNZ

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Contents

Authorship

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1. Introduction

Christchurch International Airport Limited (CIAL) commissioned Jeff Balchin of PwC Australia to prepare a report for it on the weighted average cost of capital (WACC) to be used for aeronautical pricing. CIAL has provided this report to its substantial customers and the Board of Airline Representatives in New Zealand (BARNZ).[1] CIAL is seeking feedback on the report from these parties as part of its consultation about prices for the period from 1 December 2012.

To assist the airlines and itself to respond to the report, BARNZ has asked me to compare the PwC Australia WACC with estimates derived using the approach sanctioned by the Commerce Commission (the Commission) for information disclosure purposes under Part 4 of the Commerce Act 1986. I have been asked to comment on whether there is any valid reason for adopting different inputs than the Commerce Commission inputs when determining the WACC to use to set prices. I have prepared my advice to BARNZ in accordance with the Commerce Commission's requirements for evidence from expert witnesses.

2. Comparison of WACC estimates

2.1   Basis of comparison

In July last year, the Commission released its Determination of the cost of capital for CIAL for information disclosure year 2012, which started on 1 July 2011.[2] This provides a convenient basis for comparison of PwC Australia's estimates of CIAL's WACC parameters with the Commission's, except as regards the interest rate related parameters.

PwC Australia gives no explicit date for its parameter estimates. The WACC derived is intended to be used in the consultations currently underway. On 27 April 2012, the Commission released its Determination of the cost of capital for WIAL for information disclosure year 2013, which started on 1 April 2012.[3] This provides information about the Commission's estimates of the interest rate related parameters for the calculation of CIAL's WACC as at 1 April 2012. The final column in the following table shows the WACC estimates using the Commission's approach but updated for the change in interest rate related parameters to 1 April 2012 using the Commission's more recent estimates for that date.

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[1] Letter from Jeff Balchin, PwC Australia to Neil Cochrane, CIAL, 6 March 2012. Hereinafter "*PwC Australia Report*".

[2] Commerce Commission, *Determination of the Cost of Capital for Information Disclosure year 2012 for … Suppliers of Specified Airport Services (June year-end) Under Part 4 of the Commerce Act 1986, Pursuant to Decisions 709, 711, 712 and 713: Decision 727*, 8 July 2011. (Hereinafter, *Decision 727*).

[3] Commerce Commission, *Cost of Capital Determination for Information Disclosure Year 2013 for Specified Airport Services (March year-end) and Electricity Distribution Services [2012] NZCC 10*, 27 April 2012, (Hereinafter, *NZCC 10*).

2.2 Summary table

	PwC Australia's Parameters	Commerce Commission's Parameters	
		Mid-point 1 July 2011 Decision 727	Mid-point with updated risk free rate 1 April 2012 NZCC 10
Leverage (L)	40%	17%	17%
Debt premium (p)	2.25%	1.64%	1.94%
Debt issuance cost (d)	0.35%	0.35%	0.35%
Risk free rate (r_F) for calculation of cost of debt	4.13%	4.35%	3.61%
Cost of debt (r_D)	6.73%	6.34%	5.90%
Risk free rate (r_F) for calculation of cost of equity	6.00%	4.35%	3.61%
Asset Beta (β_A)	0.70	0.60	0.60
Tax adj. market risk premium (TAMRP)	7.50%	7.00%	7.00%
Tax Rate – Corporate (T_C) and Investor (T_I)	28%	28%	28%
Cost of equity (r_E)	13.07%	8.17%	7.64%
$WACC^V$ (vanilla)	10.53%	7.86%	7.34%
$WACC^{PT}$ (post tax)	9.78%	7.56%	7.06%

2.3 Same model

PwC Australia and the Commission both use the same formulas for calculating two versions of WACC; a vanilla version and a post-tax version.[4] The post-tax version is based on the assumptions that for the marginal investor determining the price of shares, capital gains taxes are zero and that there is perfect application of the tax imputation system. In my opinion, these are reasonable assumptions in the New Zealand context. The use of this model was supported by BARNZ and Air New Zealand at the Commission's Input Methodology workshop relating to cost of capital. Virtually all other participants agreed with this position.

The post-tax and vanilla versions of WACC differ only in that in the post-tax version the cost of debt is adjusted to reflect the tax deductibility at the corporate tax rate of interest expenses whereas, in the vanilla version, there is no adjustment for this factor. The WACC is higher in the vanilla version provided there is some debt, i.e. provided the leverage ratio (L) is not zero.

CIAL, in the financial model from which it derives the prices for its proposal, uses a pre-tax WACC of 13.6%. Using the standard formula for the pre-tax WACC and PwC Australia's preferred parameter values the estimate of the pre-tax WACC is 13.58%, which rounds to 13.6%.

2.4 Differences in parameter estimates

2.4.1 Leverage (L)

Leverage is the ratio of debt to debt plus equity in the capital structure of the firm. The leverage parameter is used in two places in estimating the cost of capital. One use is to adjust the asset beta into an equity beta (and vice versa). The second use is to weight the estimates of the cost of debt and the cost of equity to derive the WACC.

It is well recognised that the preferred model in New Zealand for calculating WACC leads to an implausible relationship between leverage and the cost of capital; as leverage rises the cost of capital rises, or, in other words, the greater the reliance on debt funding the greater the cost of capital. The expected result in the context which most closely reflects New Zealand conditions of no capital gains tax, a comprehensive tax imputation system and equal marginal investor and corporate tax rates is for the cost of capital to not vary with the level of leverage.

At the Commission's Input Methodology workshop relating to the cost of capital, the Major Electricity Users Group (MEUG) argued, on the basis of the implausible relationship, that the leverage rate should be set to zero for regulatory purposes. BARNZ and Air New Zealand accepted that firms typically do use some debt funding and this means it is unrealistic to assume leverage is zero. They argued, however, that the Commission should bear in mind this issue when making its overall assessment and that a high leverage rate would not be appropriate.

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[4] One very slight difference in application is that in its calculation the Commission rounds the equity beta to two decimal places whereas PwC Australia does not.

In my view, basing permitted leverage on the actual leverage of firms would provide an incentive for regulated firms to increase the proportion of debt they employ so as to raise the WACC which they claim is appropriate and argue the Commission should accept. Increasing reliance on debt financing would increase the risk of default and financial distress, which, at some point, would not be in the long term benefit of consumers. The purpose statement of Part 4 of the Commerce Act, under which input methodologies are required to be set, is about promoting the long term benefit of consumers, so using a firm's own leverage ratio would be incompatible with this purpose.

In its final decision, the Commission accepted this argument and decided to set the leverage ratio on the basis of average leverage of a group of airports. This ratio was 0.17 or 17%.

PwC Australia has "used CIAL's target gearing level of 40 per cent."[5] It justifies this on the grounds that "CIAL's target gearing level is the best available approximation for the optimal capital structure."[6] It holds this view despite the median leverage for its preferred sample of international airports over the five years to 2010 being 23% and despite it identifying in its report that actual leverage at Auckland International Airport Limited (AIAL) over this period was only 25%.[7] In dismissing using leverage of 23% or 25% PwC Australia commented "applying this different level of gearing compared to CIAL's own target, but holding all else constant, would reduce the estimated post tax WACC by 0.17 percentage points, which is not material in the context in the general estimation error with respect to the WACC."[8]

In my opinion, the actual or target level of leverage of the firm in question should not be used in the New Zealand context because this will give an incentive for the firm to increase its leverage beyond the optimal level in order to raise its accepted WACC, and this is unlikely to be of long-term benefit to consumers. PwC Australia does not address this risk. In my opinion, there are no specific factors that justify CIAL adopting a different leverage ratio from the Commission's 0.17 or 17%. The sample of its own consultants – PwC Australia - has an average much closer to this figure than the 0.40 leverage ratio adopted.[9]

2.4.2 Debt premium (p)

The debt premium parameter relates to the premium over the risk free rate which the firm can be expected to pay on its own debt. It is added to the risk free rate when estimating the cost of debt.

PwC Australia derives its estimate of the debt premium of 2.25% in two parts. Firstly, it uses Bloomberg data on the fair value yield to maturity of New Zealand corporate bonds with an A credit rating to estimate that the debt premium over government

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[5] *PwC Australia Report*, p.11.

[6] *Loc. cit.*

[7] *Loc. cit.*

[8] *Loc. cit.*

[9] *Loc.cit.*

stock yields for A rated commercial bonds, with a ten-year term to maturity, is 1.70%. Secondly, it compares the debt risk premia for the four existing BBB rated bonds (two bonds from Powerco and two from Contact Energy) relative to the Bloomberg A rated debt premium fair value curve at the same term to maturity, and calculates the differences in each case. It found an average difference of 0.55%. PwC Australia combines its estimates of 1.70% and 0.55% to arrive at a debt premium for CIAL of 2.25% on the grounds that it has a triple BBB credit rating.[10]

The Commission's most recent debt premium estimate for information disclosure purposes for airports is 1.94%, significantly less than PwC Australia's estimate. The Commission's figure is based on the interpolation for a five year maturity of the observed debt premiums over government stock at 1 April 2012 for AIAL bonds, which are publicly traded on the New Zealand market and have a credit rating of A^{-}.[11] In deciding to use the observed debt premium on AIAL's bonds, the Commission took into account that the debt premiums on bonds from a range of other issuers are not inconsistent with the debt premium on AIAL's bonds when consideration is taken of different credit ratings, and terms to maturity.[12] The Commission deliberately chose not to use the debt premium on bonds with the BBB credit rating CIAL enjoys because it considers the leverage ratio and debt premium should reflect those of a typical efficient operator and not necessarily those of CIAL.

According to the Commerce Commission, the debt premium for calculating WACC for airports as at 1 April 2012 was 1.94%. If instead of taking the differential on a single day, 1 April 2012, as the Commission did, monthly average data for March 2012 were used, the estimate of the debt premium would be 1.62%. The significantly lower figure derived using the monthly average reflects that over the month of March 2012 the yield on the notional five-year AIAL bond rose approximately 0.37% whereas the yields on the corresponding government stock rose by only about 0.08%.

When reporting to BARNZ on Uniservices Auckland's estimates of the debt premium for AIAL I stated "the use of a monthly average has the advantage that the estimate will be less susceptible to short-term distortions. Given the thinness of trading on the New Zealand debt market this advantage is material and I support …using monthly averages]." I, therefore, favour using a debt premium of 1.62% for CIAL.

2.4.3 Debt issuance cost (d)

The debt issuance cost parameter relates to annualised costs which the firm can be expected to pay to issue debt. Like the debt premium, it is added to the risk free rate when estimating the cost of debt.

PwC Australia estimate the debt issuance cost to be 0.35% and states this "is in line with prevailing evidence in the New Zealand market."[13]

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[10] *PwC Australia Report,* pp. 12 – 13.

[11] *NZCC 10*, para 44.

[12] *NZCC 10*, paras 45-6.

[13] *PwC Australia Report*, p. 13.

In its Input Methodology decision the Commission allowed 0.35% for debt issuance costs on the basis of data provided to it by suppliers.[14] It described this allowance as generous "as many regulated suppliers make extensive use of bank loans which would generally have an all-up cost below the all-up cost of public bond issues (though bank debt may have more onerous covenants)."[15]

The Commission also reports in its *Reasons Paper* that in 2010 it undertook a survey of issuance costs for publicly traded bonds, the results of which were that issuance costs averaged 0.22% per annum. It concluded "this implies the 0.35% allowance for debt issuance costs in the [Input Methodology Determination] is appropriate, if not generous in favour of suppliers."[16]

As the Commission identifies, the 0.35% figure is generous. BARNZ and the airlines could be justified in arguing that the 0.22% estimate the Commission derived from its 2010 survey would be a more appropriate estimate.

2.4.4 Risk free rate (r_F) for cost of debt

The risk free rate, r_F, is the rate of return on a riskless investment and is usually approximated by the return on government bonds. The risk free rate plus the debt premium plus the debt issuance costs equals the cost of debt in the model used by PwC Australia and the Commission.

PwC Australia adopt as the risk free rate for calculating the cost of debt "the average of the estimated yield on 10 year the [*sic*] New Zealand Government Securities over the 20 days to 20 December 2011."[17] The figure it derived on this basis was 4.13%.

PwC Australia justifies the use of the 10-year bond rate on the grounds that "the dominant practice amongst Australian and New Zealand financial practitioners is to adopt a 10 year term, which is recommended in this report (this is the standard practice in valuation work by both PwC Australia and PwC New Zealand)."[18] They also note that if a very short term interest rate is used an adjustment to the tax adjusted market risk premium is required but that no adjustment is required if the 10-year rate is used.[19]

The Commission, in its July 2011 decision relating to the WACC for airport services, adopted a risk free rate of 4.35%. This "reflects the linearly-interpolated, annualised, bid yield to maturity on New Zealand government bonds with a five year term to maturity."[20] The calculation uses the data of actual yields reported in the month of

[14] Commerce Commission, *Input Methodologies (Airports): Reasons Paper*, December 2010, para. 6.3.37. (Hereinafter, *Reasons Paper*).

[15] *Reasons Paper*, para. 6.3.38.

[16] *Reasons Paper*, para. 6.3.39.

[17] *PwC Australia Report*, p. 13.

[18] *PwC Australia Report*, p. 3.

[19] *Loc. cit.*

[20] *Decision 727*, para. 41.

June 2011 in respect of the April 2015 maturity bonds and the December 2017 maturity bonds.[21]

A key methodological difference between PwC Australia and the Commission is that PwC Australia uses the "10-year" government bond rate whereas the Commission uses the five-year rate. The Commission favours the five-year rate because, in its opinion, "the term of the risk-free rate should match the length of the pricing period because if the term … is longer … and there is a positive yield curve, regulated suppliers will be compensated for risks they do not bear. Conversely, if there is an inverse yield curve, regulated suppliers will be under-compensated if the term of the risk-free rate is longer than the pricing period."[22]

The Commission rejected the submissions of suppliers that a long term rate like 10-years should be used to reflect the long-lived nature of the assets and that some firms borrow for longer than five-years. It did this on the grounds that these arguments do not take account of the ability of regulated suppliers to reset their WACC if the risk free rate should change and the widespread use of interest rate swaps to alter the duration of interest rate risk exposures.[23]

The risk free rate is not a firm specific parameter and in my opinion there is no justification for CIAL adopting an approach different than the Commission's five year rate when deriving the risk free rate. The appropriate rate to use as the risk free rate according to the Commission's methodology is 3.61%. This is the linearly-interpolated, annualised, bid yield to maturity on New Zealand government bonds with a five-year term to maturity over the month of March 2012 calculated using Bloomberg data for the April 2015 and December 2017 series.

2.4.5 Cost of debt (r_D)

The cost of debt is the sum of the risk free rate for calculating the cost of debt, the debt premium and the debt issuance cost.

2.4.6 Risk free rate (r_F) for cost of equity

It is standard practice to use the same risk free rate to calculate both the cost of debt and the cost of equity. PwC Australia, however, argue that long-term bond rates are currently abnormally low and to use the current rates would result in too low a return to equity to be sustainable.[24] They point to various submissions to Australian regulators and the responses of some of them to support, in current circumstances, the use of a higher risk free rate when calculating the cost of equity.[25] For the risk free rate when calculating the cost of equity PwC Australia uses 6.00%. This is approximately the daily historical average yield to maturity on 10-year New Zealand government stock over the 10 years prior to 20 December 2011. This is an uplift of 1.87% from the 4.13% it uses for the risk free rate when calculating the cost of debt.

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[21] *Loc. cit.*

[22] *Reasons Paper*, para. 6.3.6.

[23] *Reasons Paper*, para. 6.3.9.

[24] *PwC Australia Report*, pp. 3 – 5.

[25] *Loc.cit.*

In my opinion, using a different and higher risk free rate when calculating the costs of equity has no justification. The cost of equity used in calculating WACC is derived from the capital asset pricing model (CAPM). This is a model about how investors allocate their assets in order to maximise their wealth and the consequential relative returns they require on different classes of assets depending on how correlated the returns on them are to the returns on all assets, or the market portfolio. What the proponents of using an inflated risk free rate have not explained is why investors will demand and receive a higher absolute premium of returns for holding a portfolio of equities over risk free bonds when interest rates are low than they demand and receive when interest rates are high.

When rates are abnormally low, the attractions of holding bonds are also abnormally low, both because the running yield is very low and because the probability of capital losses should rates rise is elevated. This is just the circumstance in which parties can be expected to particularly favour alternative investments to risk free bonds, such as, a diversified portfolio of equities and be willing to accept lower returns (WACC's) accordingly.

I note that the argument that abnormally low risk free rates should be adjusted was not raised by PwC Australia, or any other party, in submissions to the Commerce Commission, or during its workshops on the cost of capital it held in December 2009. I also note that PwC Australia have not pointed to any established literature or empirical evidence indicating that when risk free rates are abnormally low the absolute premium investors require to hold a market portfolio of equities rises. Furthermore, one of the recurring themes of advisors to airports has been that airport regulated revenue and WACC should be "forward looking". Using an historical average of rates because the current forward looking rate is "too low" is obviously inconsistent with this focus.

At the Commerce Commission workshops on the cost of capital the regulated industries and their advisors were keen to promote the need for real options to be incorporated into WACC calculations. This was rightly rejected by the Commission. The argument that the risk free rate should be adjusted upwards when calculating the cost of equity when market rates are low is another spurious attempt by advisers to justify increased returns for their monopoly clients.

2.4.7 Asset beta ($β_A$)

Beta is a measure of the expected volatility of a firm's returns relative to the market. It reflects the level of systematic risk faced by investors in the firm. Systematic risk is related to the market as a whole and cannot be diversified away; hence investors need to be compensated to bear it. Un-systematic risk is firm specific and can be diversified away by holding a portfolio of investments, so in a competitive market investors cannot expect to be compensated for this risk. The asset beta of a firm is calculated from its equity beta by adjusting for the leverage ratio.

PwC Australia estimates an appropriate point estimate asset beta for CIAL's aero-nautical assets is 0.70.[26] In August 2010 it undertook a review of airport asset betas

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[26] *PwC Australia Report*, p. 10.

for the New Zealand Airports Association. It considers this review was sufficiently recent to still be relevant.[27] On the basis of this review, it concluded that an appropriate asset beta for New Zealand (major) airports in general is 0.65.[28] In relation to CIAL, PwC Australia note that compared with other international airports, more of its business is dependent on the leisure market and this is likely to be more sensitive to economic activity in general than other air travel. It concludes this justifies an uplift in CIAL's asset beta to 0.70.[29]

In its *Reasons Paper,* the Commission uses data from 25 airport companies to calculate both weekly and monthly data and averaged across the two sets to estimate a midpoint asset beta of 0.65. The Commission considered this estimate to be an upper bound of the asset beta for regulated activities on the grounds that the airport companies from which it derived the estimate generally included both regulated and unregulated activities, and the latter was more risky than the former.[30] The Commission gives "primary consideration" to: the most recent beta estimates for overseas airports; the difference in beta estimates for regulated and non-regulated activities at airports in the United Kingdom; and, the extensive unregulated activities at New Zealand airports.[31] As a result, it decided to drop its midpoint estimate of asset beta from 0.65 to 0.60.[32]

In my opinion, since leisure based travel is more sensitive to income movements than business travel the higher percentage of leisure travel through CIAL warrants a slightly higher asset beta for aeronautical assets as CIAL's returns are likely to be more strongly correlated with movements in the overall market. An uplift of 0.05 points may be justifiable. If this is applied to the Commission's 0.60, the result is an asset beta for CIAL to 0.65.

2.4.8 Tax Adjusted Market Risk Premium (TAMRP)

The market risk premium (MRP) represents the additional return, over and above the risk free rate, that investors require to compensate them for the risk of holding the market portfolio, which is the average risk portfolio. Given the Capital Asset Pricing Model (CAPM) favoured in New Zealand, the MRP needs to be adjusted for the tax faced by investors on investments in the risk free rate;[33] hence a Tax Adjusted Market Risk Premium (TAMRP) parameter is used to derive the cost of equity.

The MRP is a forward looking concept and cannot be directly observed in the market. A range of approaches are used in the literature to estimate MRP and hence TAMRP. Some consider historical data and others forward projections.

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[27] *PwC Australia Report*, p. 8.

[28] *Loc. cit.*

[29] *PwC Australia Report*, p. 10.

[30] *Reasons Paper*, Appendix E8.93.

[31] *Reasons Paper*, Appendix E8.96.

[32] *Reasons Paper*, Appendix E8.97.

[33] TAMRP = MRP plus the risk free rate times the investor tax rate.

PwC Australia estimates TAMRP to be 7.5% on the basis of a review of the appropriate estimate to use in conjunction with the Brennan-Lally version of the CAPM in August 2009.[34] It notes that it has consistently recommended the use of 7.5% throughout the last couple of decades.[35]

After considering the wide range of estimates for TAMRP derived by the various means that have been employed, the Commission reached the view that "the best estimate of the likely future long-term TAMRP for the NZ market is 7%."[36] Its reasons are that: 7.0% best reflects the range of evidence available; is considered by the Commission's panel of experts on the cost of capital to be reasonable; and is consistent with the range of TAMRP estimates used by New Zealand market participants, including New Zealand investment banks.[37]

The TAMRP is not a firm specific parameter; it is a market specific parameter and it is one that is likely to be relatively stable in the long run. In my opinion, PwC Australia has not provided sufficient justification for CIAL adopting a different estimate from the Commission. In my view the Commission's 7.0% is an appropriate estimate of TAMRP to use in the New Zealand context.

In this regard, it is noteworthy that the estimate of the MRP relative to bonds for New Zealand in the study by Dimson *et al* to derive its estimate is 5.5% or nearly 0.6% below the average for the 19 countries.[38] If 1.7% is added to 5.5%, the "raw" estimate is 7.2% or close to the Commission's TAMRP estimate of 7.0%.

2.4.9 Tax rate: Corporate (T_C) and Investor (T_I)

When calculating a post-tax WACC, the corporate tax rate is used to adjust the cost of debt to arrive at a post-tax cost of debt and the investor tax rate is used to adjust the risk free rate in the calculation of the cost of equity.

Both the Commission and PwC Australia estimate both parameters to be 28%, the actual corporate tax rate in New Zealand from 1 April 2011. The Commission set the investor tax rate equal to this figure because this also reflects the maximum rate under the Portfolio Investment Entity (PIE) regime.

The Commission recognises that the tax rates faced by individuals as a result of their circumstances are not what should be used for calculating the WACC. The market will not compensate individual investors for bearing more taxation than they need to because they fail to rearrange their affairs to reduce their liability.[39] I agree with PwC Australia and the Commission that the appropriate tax rate to use when calculating WACC is 28%.

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[34] *PwC Australia Report*, p. 7.

[35] *Loc. cit.*

[36] *Reasons Paper*, para. 6.5.15.

[37] *Reasons Paper*, para. 6.5.15.

[38] *Uniservices WACC Report*, p. 23.

[39] *Reasons Paper*, paras 6.5.27-28.

2.4.10 Cost of equity (r_E)

The cost of equity is calculated by combining the estimates of the asset beta, TAMRP and the investor tax rate.

2.4.11 Weighted Average Cost of Capital (WACC)

WACC is a weighted average of the cost of equity and the cost of debt with the weights being the shares of equity and debt in the firm's total funding. To estimate a post-tax WACC, the cost of debt is adjusted downwards to reflect that interest is a deduction from corporate taxation. To estimate a vanilla WACC no adjustment for tax deductibility is made.

3. Conclusions

1.   In deriving its WACC estimates for CIAL, PwC Australia has not followed the Commission's Input Methodology decisions in relation to the estimation of every parameter. It has, however, adopted the same basic model as the Commission uses when deriving its estimates.

2.   As a result of it adopting different parameter estimates, PwC Australia's estimates of CIAL's cost of debt, cost of equity and WACC are all significantly above those that that would be derived using the Commission's methodology amended for the changes I consider appropriate.

3.   In every instance, PwC Australia's parameter estimate is either the same as the Commission's or such that it will yield a higher estimate of CIAL's WACC. The following is a summary of the differences between PwC Australia's preferred parameter estimates and the Commission's, after adjusting the risk free-rate to bring them on to a comparable basis in terms of the date to which the estimates relate:

- Higher leverage ratio (0.40 compared with 0.17);

- Ten-year risk free rate for cost of debt instead of five-year (4.13% compared with 3.61%);

- Historical ten-year risk free rate for cost of equity instead of current five-year (6.00% compared with 3.61%);

- Higher debt premium (2.25% compared with 1.94%)

- Higher asset beta (0.70 compared with 0.60);

- Higher TAMRP (7.5% compared with 7.0%);

4.   The numerically most significant difference is in the cost of equity; 13.07% for PwC Australia compared with 7.64% using the Commission's approach. PwC Australia's higher risk free rate for the cost of equity of 6.00% compared with 3.61%, its higher asset beta of 0.70 compared with the Commission's 0.60 and its higher TAMRP of 7.5% compared with the Commission's 7.0% are the major contributors to this difference in the cost of equity.

5.   Using the Commission's approach, the mid-point estimates for CIAL's WACC is 7.34% for the vanilla variant and 7.06% for the post-tax variant. The Commission is

of the view that the mid-point estimates are the starting point for any assessment of CIAL's profitability.

7.   In my opinion, with three exceptions, there is no justification for CIAL, when it is setting charges, adopting parameter estimates using a different approach from what the Commission has set for CIAL for information disclosure purposes. The exceptions are the use of a slightly higher beta than the other international airports to reflect CIAL's greater dependence on leisure based travel and the use of a lower debt issuance cost and debt premium. I suggest a beta of 0.65 instead of 0.60 as set by the Commission may be warranted. I also suggest that a debt issuance cost of 0.22% could be justified on the basis of the evidence provided by the Commission. I also suggest a lower debt premium of 1.62% compared with 1.94% set by the Commission as I favour the use of a monthly average to estimate the premium rather than use the difference on a single day.

Using this beta and the lower debt issuance cost and debt premium, CIAL's cost of equity would be 8.08%, its vanilla WACC 7.63%, post-tax WACC would be 7.37%, and pre-tax WACC would be 10.24%.

8.   When determining in July 2011 the WACC for CIAL during the information disclosure year 2012 the Commission estimated the standard deviation of CIAL's WACC to be 0.015.[40] It has used the same standard deviation estimate for WIAL for the information disclosure year 2012.[41] If we apply the Commission's formula for calculating the 75th percentiles for WACC,[42] to the Commission's parameters, the 75th percentile estimate of WACC for CIAL is 8.35% for the vanilla variant and 8.07% for the post-tax variant. The 75th percentile estimates using my preferred parameters are 8.64% for vanilla WACC, 8.39% for post-tax WACC and 11.25% for pre-tax WACC.

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[40] *Decision 727*, p.12.

[41] *NZCC 10*, p.10.

[42] Commerce Commission, *Commerce Act (Specified Airport Services Input Methodologies) Determination, December 2010*, p.30.