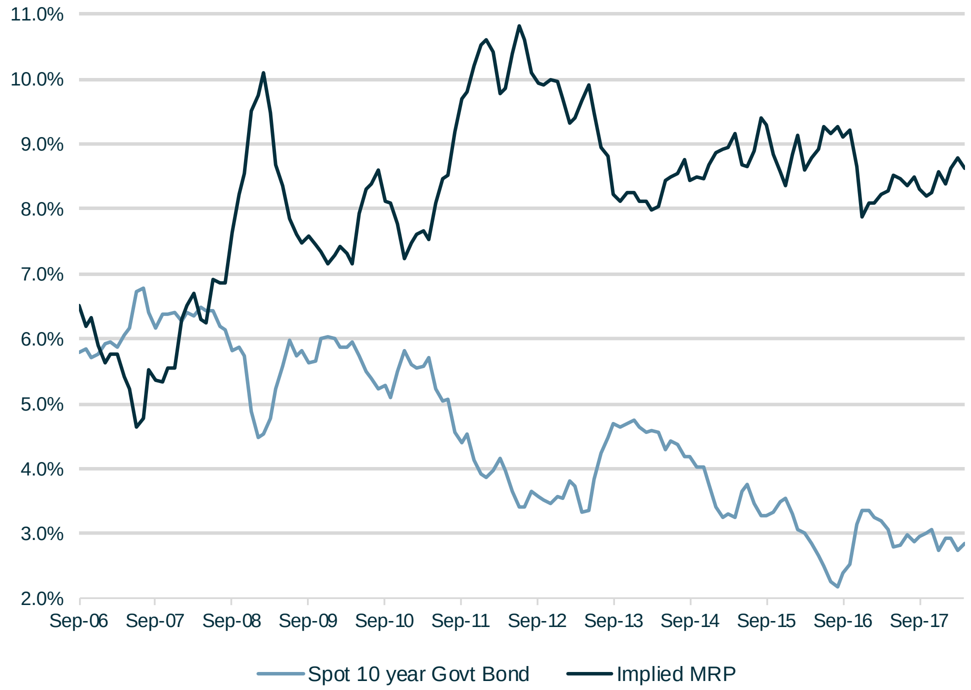
FNZC

Auckland International Airport
WACC input methodology

Inverse relationship between Risk Free Rate & Market Risk Premium

Our analysis presents evidence of an inverse relationship between the risk-free rate (Rf) and the implied market risk premium (MRP). In figure 1 we calculate an implied MRP for New Zealand equities while assuming the New Zealand 10-year Government Bond spot rate that existed at month end as the Rf across the September 2006 to April 2018 historical period. A negative correlation (-0.80) between a Rf that is derived from the spot 10-year bond rate and MRP can be observed. A full explanation of the methodology that we apply in the analysis below can be found in our December 2016 report 'Nothing free about the risk premium' that we attach with this email.

Figure 1: Spot Risk-Free Rate vs Implied MRP



Source: Company data, FNZC estimates

A key conclusion from our analysis is that both the observable spot Rf and the implied MRP are variable inputs and, in our opinion, it is generally incorrect to apply a spot Rf and a static MRP that approximates a mid-cycle estimate. We calculate an implied MRP of around 8.62% when applying a Rf set at the 10-year Government Bond spot rate of 2.86% as at April 2018 month-end. Therefore, even at the current point in the investment cycle where we believe that equities are broadly trading at a premium to fundamental value, we calculate an above mid-cycle implied MRP (8.62% vs 7.40%) when applying a below mid-cycle observed Rf (2.86% vs 4.60%).

With regard to AIA specifically, we calculate that the share price of $6.70 implies a risk premium of 8.25% and a WACC of 7.16% when applying parameters that are otherwise consistent with the

Commerce Commission's input methodology and our current free cash flow forecast assumptions.

Based on our analysis, we believe that in combination with a R_f of 2.76%, the Commerce Commission's estimate of a tax adjusted MRP of 7.0% materially understates market risk.

Gearing impact on AIA's risk profile

We summarise our forecasts for EBITDA and capex by regulated asset base (RAB) and non-RAB segments as well as Group net debt in figure 2. The skew in forecast Group capex to RAB projects is material in the PSE3 period and is the primary driver of the lift in Group net debt and net debt / EBITDA gearing ratio between FY18 and FY22.

Figure 2: **FNZC forecasts – AIA capex, EBITDA and net debt**

			PSE3			
Year end 30 June (NZ$mn)	**FY18**	**FY19**	**FY20**	**FY21**	**FY22**	**Total**
RAB projects						
New Domestic Terminal	35.9	135.7	139.2	177.8	141.6	630.2
New taxiways, stands, aprons	25.5	88.9	90.9	157.2	121.6	484.1
International terminal expansion	161.3	117.3	92.2	36.4	125.6	532.8
Other projects	71.6	96.5	80.6	81.8	105.3	435.8
Capex excl. Nthn runway	**294.2**	**438.4**	**402.8**	**453.2**	**494.2**	**2082.9**
Northern runway	11.3	18.4	57.4	86.3	96.4	269.7
Total RAB capex	**305.5**	**456.8**	**460.2**	**539.5**	**590.7**	**2352.6**
Commissioned RAB capex	209.1	417.2	340.9	240.6	267.6	1475.5
RAB	**1388.2**	**1743.8**	**2005.8**	**2155.6**	**2323.3**	
Non RAB capex	150	130	130	30	30	470.0
Group Capex	**455.5**	**586.8**	**590.2**	**569.5**	**620.7**	**2822.6**
EBITDA						
Regulated	214.5	216.1	229.0	243.6	260.1	
Non-Regulated	291.0	334.2	361.1	405.8	423.8	
Group EBITDA	**505.5**	**550.3**	**590.1**	**649.4**	**683.9**	
Net Debt - Group	**2026.4**	**2455.3**	**2875.2**	**3234.4**	**3626.7**	
Net Debt / EBITDA (x)	4.01	4.46	4.87	4.98	5.30	

Source: Company data, FNZC estimates

Figure 3 outlines our forecast gearing for AIA across the PSE3 period. We flag that for our calculation of enterprise value we have assumed that AIA continues to trade at a PE multiple across the PSE3 period that is consistent with a current level of 30.4x FY18 NPAT.

Figure 3: **FNZC estimate of AIA leverage ratio**

Year end June	FY18	FY19	FY20	FY21	FY22
Net Debt	2026.4	2455.3	2875.2	3234.4	3626.7
Enterprise Value	9977.4	10652.9	11135.7	12162.5	12865.7
Debt / Enterprise Value	**20.3%**	**23.0%**	**25.8%**	**26.6%**	**28.2%**
Debt / Equity	25.5%	30.0%	34.8%	36.2%	39.3%

Source: FNZC estimates

With capex and the build in net debt materially skewed to RAB projects and therefore RAB cost of capital, we point out that the impact of a higher leverage ratio on AIA's regulated WACC specifically would be more significant than what we observe at a Group level in figure 3.

Depreciation uplift drives increase in operational leverage for regulated business

We outline the change in operating leverage that we forecast for AIA's regulated aeronautical segment in figure 4. We observe that the operating leverage ratio (calculated as (Revenue – Variable costs) / EBIT) increases from 1.76x in FY18 to 2.13x by the end of the PSE3 period in FY22. The primary driver of this outcome is the high level of forecast regulated project capex that, once commissioned and transferred to the RAB, leads to a significant increase in depreciation expense relative to contribution margin. We note that forecast operating leverage does not capture the impact of depreciation expense related to $877mn of capex project investment (the difference between total RAB capex and commissioned RAB capex in figure 2) that is yet to transfer to the RAB as at PSE3 close.

Figure 4: **FNZC forecast – AIA regulated segment operating leverage**

Regulated segment (NZ$mn)	FY18	FY19	FY20	FY21	FY22
Revenue	**328.2**	**338.6**	**356.3**	**375.7**	**397.5**
Variable costs	-42.3	-45.6	-47.8	-49.8	-51.7
Fixed Costs	-71.4	-76.9	-79.5	-82.3	-85.7
EBITDA	**214.5**	**216.1**	**229.0**	**243.6**	**260.1**
Depreciation	-52.3	-60.7	-79.1	-91.5	-97.7
EBIT	**162.2**	**155.4**	**149.9**	**152.1**	**162.4**
Operating leverage ratio (x)	1.76	1.89	2.06	2.14	2.13

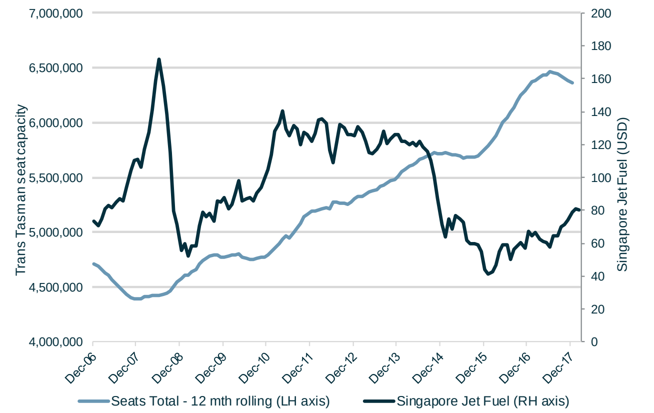
Source: FNZC estimates

The forecast increase in operating leverage indicates that the systematic risk, and therefore asset beta, of AIA's regulated business increases across the PSE3 period.

Oil price volatility an important consideration

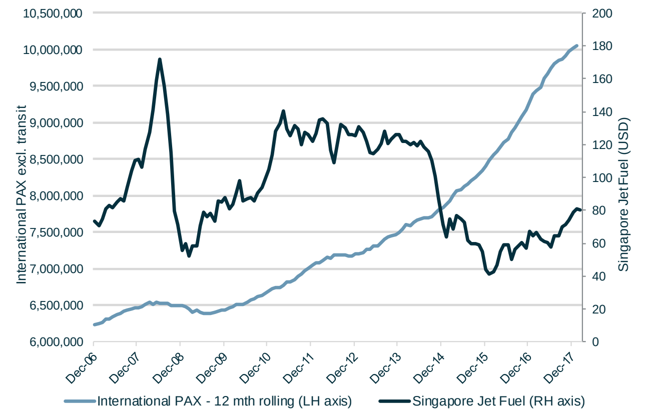
While we believe that the recent step change uplift in AIA passenger volume has at least partly been influenced by factors including proximity to a maturing Asian middle class and technological advancement of aircraft efficiency, we view a structurally lower oil price as a key driver of strong recent seat capacity deployment and passenger growth. We believe that airlines have effectively funded increased connectivity and lower yields from lower jet fuel pricing, with this in turn stimulating strong passenger growth in the period from late 1H16. We compare the growth in AIA's Trans-Tasman seat capacity and total international passenger volume against the Singapore jet fuel price in figures 5 and 6.

Figure 5: AIA Trans-Tasman seat capacity



Source: BITRE, Bloomberg

Figure 6: AIA total international PAX excl. transit



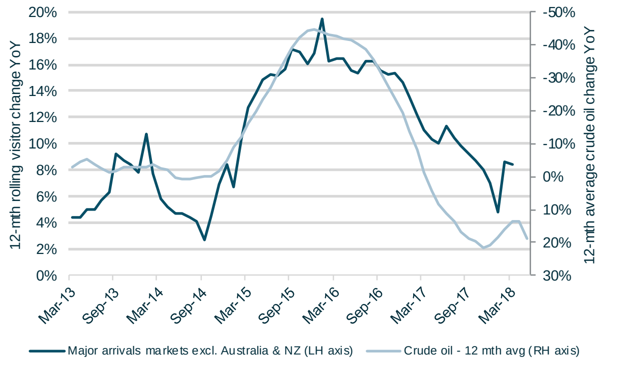
Source: Company data, FNZC estimates

Between October 2015 and October 2017, when seat capacity on routes between Auckland and Australia increased at an above trend compound rate of +6.0% p.a., the major alliance partnership airlines Air New Zealand and Virgin along with Qantas, Emirates and Jetstar increased volume by a combined 350k seats (12-month rolling) which equated to a compound growth rate of +3.3% p.a. We note that this only modestly exceeded the longer-term total capacity growth rate of +2.8% observed on Auckland's Trans-Tasman network since December 2006. In contrast, secondary airlines that represented only 7.2% seat share in the 12-months to October 2015, increased seat capacity by a combined 358k seats (12-month rolling) across the following 2-year period, with this equating to a compound growth rate of +36.9% p.a. Despite a 12-month lag between the steep decline in the jet fuel price and the onset of stronger trend seat capacity growth on the highly competitive Trans-Tasman network, we see the two trends as being directly linked. We believe that capacity such as AirAsia's 275k seat Auckland – Gold Coast service would not be operating if not for lower jet fuel prices that materially improved the economics of the long-haul leg of the 5th freedom operation.

With regard to AIA's total international passenger trends, we note that volume growth of +2.8% p.a. between October 2006 and October 2014 was achieved during a period where the Singapore jet fuel price averaged US$107.60. Since October 2014 jet fuel has averaged US$63.10 while AIA's international passenger volume has increased at a compound rate of +8.3% p.a. Focusing specifically on AIA's non-Trans-Tasman international routes, we highlight that between FY14 and FY17, seat capacity has increased +41.8% at a compound rate of +12.4% p.a. We believe that the positive impact of lower fuel costs on the economics of flying long-haul routes has been a major driver of this growth in capacity.

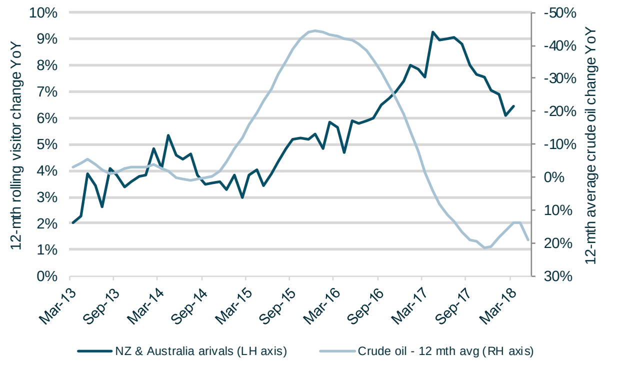
We compare the relationship between the oil price and major market long-haul passenger arrivals growth (China, UK, USA, Japan) in figure 7, while in figure 8 we compare the relationship between oil and predominantly short-haul New Zealand and Australia arrivals.

Figure 7: Major mkt long haul PAX growth vs oil price



Source: Company data, Reuters

Figure 8: NZ & Australia PAX growth vs oil price



Source: Company data, Reuters

We observe a correlation of -0.80 between major market long-haul passenger arrivals and the Brent crude oil price over the most recent 5-year period. In contrast, the inverse relationship between oil price and passenger growth completely breaks down when analysing the New Zealand and Australia arrivals markets, with a correlation of +0.20 across the same 5-year historic period. In our opinion this is likely to at least partly reflect the fact that jet fuel represents a smaller percentage of total operating costs on shorter-haul routes and therefore the impact of a change in oil price on airline capacity deployment and ticket prices will be less significant.

In summary we believe that the split of aeronautical revenue between short and long-haul passenger arrivals should be considered when determining an appropriate asset beta for an airport. In our opinion, the impact of oil price volatility will typically be more acute for long-haul route profitability and therefore seat deployment and passenger demand. With regard to oil price volatility, a higher skew to long-haul passenger revenue should in our opinion equate to a higher aeronautical asset beta. Other key considerations in forming a view around airport specific beta should include passenger vs aircraft linked charge, regulatory framework and earnings splits between aeronautical, retail and property segments.

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