Response to Office of the Rail Regulator

On

NECG's W.A.C.C. Paper

Prepared May 2003

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1. Overview

The objective of the regime is as prescribed in the Act, which is to;

" Establish a rail access regime that encourages the efficient use of, and investment in, railway facilities by facilitating a contestable market for rail operations".

Significantly, the recent review of Part 111A of the Trade Practices Act recognised that initial regulatory practice was aimed at constraining monopoly profits and tended to have a short-term focus. It suggested that there should be a more balanced approach to economic regulation.

The following points must be considered in determining the Weighted Average Cost of Capital (WACC) to apply under this regime;

- The objectives of this process is to create an environment which provides incentives to invest, encourages efficient operations and ensures prices are competitive.
- Regulatory mechanisms are imprecise. For example, it has been difficult for NECG to find suitable companies to use as a comparison to the Railway Infrastructure Owner.
- Reasonable assumptions are capable of generating a wide range of outcomes
- NECG comments in it's report on page 14 that it is better for the Regulator to err on the side of over compensation rather than under-compensation, for the benefit of society.
- Recognition that previous regulatory decisions may not have adequately taken account of all risks and that regulatory decisions must consider the need to attract investment.

The WACC outcome from this process needs to be considered reasonable in its entire commercial context. It must consider;

- The Railway Infrastructure Owner's ability to fund investments
- That there are competing demands for available capital
- The regulatory process is not precise and the Regulator needs to ensure that determinations that are made does not inadvertently facilitate a 'chilling' effect on investment
- That this process should not be used purely as a mechanism to reduce prices
- That the WACC will need to reflect the asymmetric and specific risks that is real and present in the Railway Infrastructure Owner's business. This is not currently the case.
- That the WACC needs to more correctly reflect the systemic risk that is present in the market's that the Railway Infrastructure Owner serves, in particular the intermodal and grain markets.

In summary WestNet Rail believes that the NECG proposed WACC should be increased from the recommended 7.86% to 10.91% and this response provides arguments to support that level.

2. Framework issues

2.1. Real Pre-Tax

WestNet supports the WACC being calculated on a real pre tax basis.

The Access Code specifies that the GRV methodology must be applied, which requires the use of a pre-tax real rate.

There is unlikely to be significant difference between effective and statutory tax rates and therefore to include tax and then have to back it out of the GRV calculation is extremely complicated and impractical as pointed out in the example by NECG in footnote 7 of their report.

WestNet agrees that the measure of inflation is best derived from the bond market rather than from estimates from organisations such as RBA.

2.2. Transformation

The adoption of a real, pre-tax WACC requires transformation which is usually achieved by the "market transformation" method although there has been some decisions that are based on averaging market transformation and the sometimes used alternative method called reverse transformation.

WestNet believes that the market transformation methodology is the most appropriate.

As such the WACC determined out of this process should be based on the market transformation method and applied directly to the Annuity formula as set out in Section 2.6 of WestNet Rail's Costing Principles.

In the limited cases where averaging of the two methods have been used (including Macquarie in 1999) the decision to use averaging has been based on either;

- a view that averaging was the best solution given 2 alternative results; or
- There were significant differences between effective and statutory tax rates.

WestNet believes that the argument for a 'vanilla' WACC are more than outweighed because of the difficulty in calculating tax in the cash flows (costs), which is necessary for transformation

3. WACC Parameters

3.1. Risk Free Rate

WestNet supports the report's view that the ten-year bond rate is the appropriate risk-free rate.

WestNet Rail believes that it is appropriate that averaging is used as it can prevent the influence of a very short-term market fluctuation at financial year-end affecting the outcome.

WestNet Rail suggests an averaging period of 20 days.

3.2. Market Risk Premium

WestNet strongly supports the view expressed by NECG in their report that trends in market risk premium should be viewed over longer time periods rather than short-term experience.

There is a solid body of evidence that the MRP in Australia has historically sat around 7%.

Notwithstanding that, recent regulatory decisions in and around the time of the most recent sharemarket boom were made at 6%.

Also, Section 3.2 of Schedule 6.1 of the National Electricity Code acknowledges that "the Australian market risk premium has averaged around 6.6% p.a. in the period from 1952 to the present", as presented on p.26 of the NECG paper.

The NSW Treasury's submission to IPART's determination on electricity pricing "Pricing for Electricity Network and Retail Supply: NSW Treasury Response" (November 1999) stated that "NSW Treasury has also surveyed a number of investment banks in relation to the market risk premium. Without exception, the financial practitioners surveyed confirmed a market risk premium in the range of 6% to 6.5%".

This survey was undertaken in the late 1990's boom period when arguments were strongest that the MRP had slipped. While the NSW Treasury finally accepted IPART's MRP of 6% it suggested that it was at the bottom of an acceptable range of 6%-7%.

3.3. Gamma

WestNet acknowledges there is a range of views on the appropriate Gamma and notes regulatory practice is to use gammas of between 0.3 and 0.5.

Whilst there are limited arguments to increase it above .5 WestNet Rail believe that the Regulator should err on the side of the decision that best supports investments and therefore apply 0.3.

Taking 0.5 as a compromise is not adequate as it runs the risk of under-compensating or discouraging investors.

3.3.1. Gearing

WestNet believes that the Regulator should adopt observed industry practice for establishing gearing levels.

WestNet Rail accepts the estimate in the report of 50% gearing.

3.4. Cost of Debt

3.4.1. Debt Risk Premium

Some examples of credit ratings for similar companies that WestNet Rail have been able to obtain that are relevant to consider are:

- Enestra Ltd BBB/stable/A-2
- Duke Energy Australia BBB+ (A-2)
- Tranzrail BB+/ watch negative
- Westralian Airports BBB-/stable/A-3
- Auckland International Airport A+ /stable/A-1
- Australian Pacific Airports (Melbourne) A-/stable/A-2
- Brisbane Airport BBB-/stable/A-3
- Christchurch International Airport A/stable/A-1

The evidence quoted in the report (table 3) that only ARTC and QR have A credit ratings and both are government owned departments/corporations.

3.4.2. Debt Issuance Costs

WestNet Rail supports these costs being included in the WACC rather than being included in cash flows.

3.5. Cost of Equity Capital

WestNet supports the report view that the Capital Asset Pricing Model (CAPM) is the accepted approach for estimating cost of equity capital.

WestNet also believes that CAPM is unable nor was it designed to determine the asymmetric or specific risk that is particular to a firm's business.

As such WestNet Rail will be recommending that the WACC have a "asymmetric and specific risk premium" included in its calculation.

WestNet also believes that the cost of Equity for the Railway Infrastructure Owner is understated in the NECG report.

3.5.1. Comparable companies

The companies listed in Table 5 of the NECG report have been done so with the purpose of demonstrating asset and equity betas of companies similar to WestNet Rail.

WestNet Rail contends that none of the companies listed in this table are in the same scope of business as WestNet Rail, as it may not have been possible for NECG to find such companies.

It is important to recognise that these companies do not have the same constraints in place as WestNet Rail such as:

- leasing rather than owning the Railway Infrastructure
- the operational performance standards that have to be maintained
- the obligation to return the leased asset in a state that meets these standards
- not being able to surrender particular lines regardless of their viability

WestNet Rail strongly believes that the average asset and equity betas of these companies cannot be directly compared to, or indeed used as the basis of calculating WestNet Rail's asset and equity betas.

3.5.2. Systematic Risk of the Railway Infrastructure Owner

3.5.2.1. Bulk Traffic

With respect to bulk traffic there are considerable volume volatility risks which are impacted from the end markets such as iron ore.

Volume can also be effected through plant breakdown and maintenance.

WestNet Rail would also challenge the assumption that in high volume low price products access is a low component of total costs.

3.5.2.2. Intermodal Traffic

WestNet Rail supports the view on Intermodal risk, which is heavily dependent on the following;

- domestic market conditions because it carries largely consumer goods
- it is subject to heavy road competition.

However, WestNet believes that in Table 8 of the NECG report that the companies Qantas and Wridgeways should be removed from this list as they are not in the intermodal business. Hence the average asset beta would be 0.62.

Toll and Patrick's joint venture company Pacific National accounts for a significant portion of the access fees for the intermodal sector.

Both of these companies are the best representations of intermodal transport operators in this table, both of whom have asset betas above the table's average.

Based on the above adjustments the revised asset beta of 0.62 should be used in determining the weighted asset beta for WestNet Rail.

3.5.2.3. Grain

We dispute the risk associated with grain traffic;

- The risk related to output volatility especially because of rainfall is not diversifiable for below rail assets because of their long term nature.
- The rail traffic is heavily exposed to road transport competition with extensive road facilities at ports and a highly competitive road transport sector as well as farmers that are increasingly transporting their own product to port and backloading with fertiliser.
- Deregulation of the market structure for grain has introduced strong competition between the marketers, which has lead to diversification in the use of transport services.

As the most volume sensitive part of the WestNet business it should have an asset beta at least equivalent to that of the intermodal business.

An asset beta of at least 0.62 should be used in determining the weighted asset beta for WestNet Rail.

3.6. Recalculated Asset Beta

As a result of the above recommended changes the corrected asset beta for WNR is 0.5022 as demonstrated by the calculations below:

	% of total	asset beta	wtd avg
bulk	0.52	0.4	0.208
intermodal	0.24	**0.62**	0.1488
grain	0.22	**0.62**	0.1364
passenger	0.02	0.45	0.009
			0.5022

3.7. Recalculated Equity Beta

If the corrected asset beta is carried forward into the calculation of the equity beta, the correct equity beta is therefore 1.0 as demonstrated by the calculations below:

	NECG	WNR
Asset beta	0.45	0.5022
Debt Beta		
cost of debt	6.49%	7.165%
tax rate	30%	30%
gamma	50%	30%
debt to equity ratio	50%	50%
equity beta	0.90	**1.00**

WestNet Rail strongly believes that an equity beta of 1.0 is a much better representation of it's investment risk profile in comparison to the market as a whole because an equity beta of 0.9 does not correctly represent the Railway

Infrastructure Owner's investment risk profile in comparison to the market as a whole, by inferring a profile of being less risky than the market as a whole.

4. Compensation for asymmetric and specific risks

WestNet supports the view that there are asymmetric and specific risks that need to be considered in the WACC or cashflows which includes;

1. stranded asset risk
2. exposure to lost revenues through the application of the Overpayment Rules as the timings of under and over payments may not occur within the same 3 years, as required by the rules.
3. the inability to charge up to the ceiling in any one year.
4. High fixed cost base because of regulatory safety obligations and lease obligations.

WestNet also agree that generally these risks cannot be insured against and also agree with NECG that the risks are not accommodated in CAPM.

WestNet believe the only possible way of accommodating asymmetric and specific risk is in the WACC. It cannot be recognised in cash flows as an insurance cost because it is not insurable. It is also neither possible nor practical to recover the risk in pricing.

The 2 key risks that will be discussed in this section in regards to helping determine a suitable “asymmetric and specific risk premium” are risks 1 and 2 from the above list.

WestNet Rail strongly believe that a “asymmetric and specific risk premium” needs to be added to the pre-tax real WACC to compensate the Railway Infrastructure Owner for these risks that are not otherwise dealt with in determining WACC.

4.1. Stranded Assets

The stranded asset risk arises as a consequence of the long-term nature of the investment in rail infrastructure versus the generally shorter-term nature of the projects the infrastructure serves.

While the code allows for the accounting of “economic” rather than “physical” life and can potentially account for higher amortization for specific infrastructure, the economic lives listed in the Costing Principles submission of the 19th of December 2002 reflect “physical life”.

Stranded asset risk could be accounted for by reducing the assumed economic life to reflect a probability weighted life, but Westnet argues that it is more appropriate to adjust the WACC for several reasons.

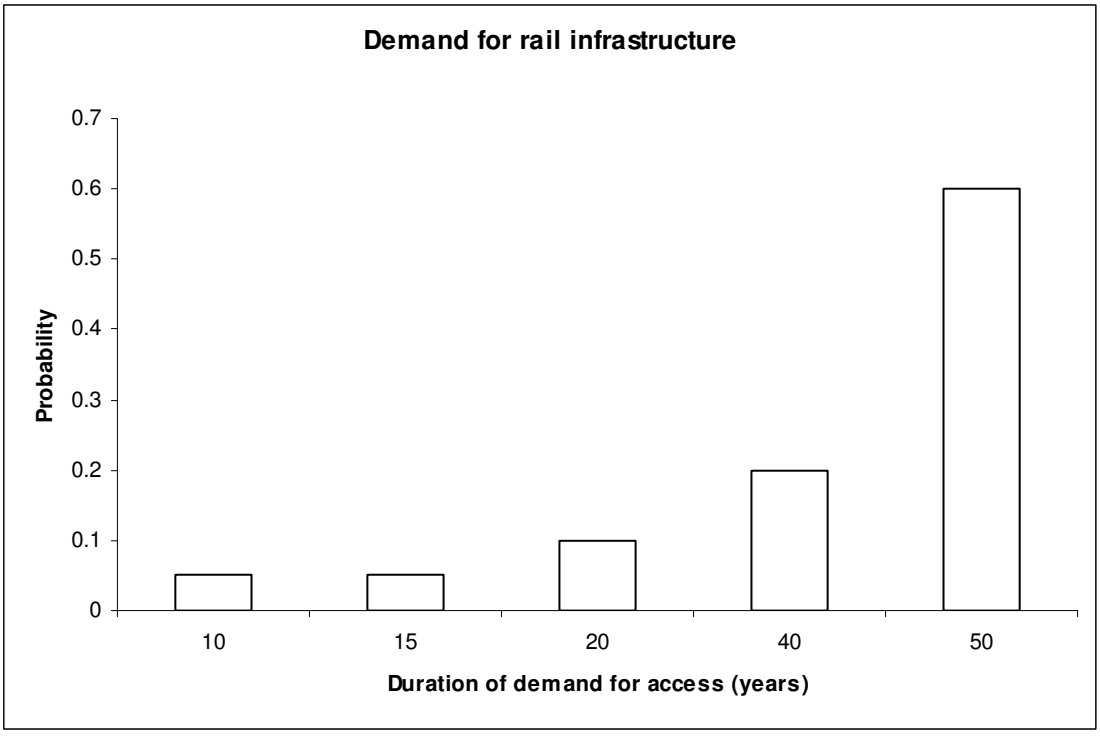
First, the definition of a probability distribution for the duration of demand for a particular rail service is extremely subjective. Even if future economic conditions were known with certainty, there is an incentive for clients to overstate the length of demand for services because of the effect of assumed life on the ceiling and hence access prices. For these reasons, the variation of economic life assumptions to price particular investments may be difficult to implement.

Second, as argued below, the method of calculating an annuity using probability weighted average life can result in biases against the owner because of the non-linear nature of the annuity calculation.

Consider the following example, using useful economic life and GRV for track assets on the Kwinana to Mundijong route section. Various track components have different economic lives, which are determined according to physical life, as set out in the costing principles. The GRV by economic life is shown in the table below.

Useful Life	GRV
9	$139,860
10	$186,617
17	$269,040
20	$32,370
25	$2,039,284
30	$521,083
40	$223,500
50	$6,731,292
70	$2,914,287
100	$6,939,369
	$19,996,700

When investing in track infrastructure, the owner bears the risk that demand for infrastructure may decline before the useful life of the asset is realized. Consider the following probability distribution of demand for the rail asset, where there is some risk that the demand for the asset may be less than 50 years.



The difference between alternative methods of calculating the annuity payment is demonstrated in the table below, which illustrates the bias associated with simple measures such as “useful life” or “weighted economic life”. Three alternative annuity calculations are shown. In column A, the annuity is based on the useful (physical) life of the asset as set out in the costing principles. Column B takes account of potentially reduced demand for services before the end of the assets life, by using weighted average life. Weighted average life was determined by the probability-weighted sum of lives shown in the boxed section of the table “economic life by component”. These figures were calculated as the minimum of the useful physical life and the economic demand period, for each scenario.

		Life	10	15	20	40	50		A	B	C
		Probability	5%	5%	10%	20%	60%				
Useful Life	GRV		*Economic life by component*					Probability weighted Life	Annuity Calculated on Useful Life	Annuity Calculated on Weighted Life	Probability weighted annuity value by component
9	$139,860		9	9	9	9	9	9	$22,221	$22,221	$22,221
10	$186,617		10	10	10	10	10	10	$27,586	$27,586	$27,586
17	$269,040		10	15	17	17	17	16.55	$29,142	$29,533	$29,770
20	$32,370		10	15	20	20	20	19.25	$3,253	$3,308	$3,354
25	$2,039,284		10	15	20	25	25	23.25	$188,109	$192,990	$197,835
30	$521,083		10	15	20	30	30	27.25	$45,503	$46,758	$48,500
40	$223,500		10	15	20	40	40	35.25	$18,382	$18,801	$19,895
50	$6,731,292		10	15	20	40	50	41.25	$538,876	$551,068	$590,336
70	$2,914,287		10	15	20	40	50	41.25	$229,075	$238,583	$255,584
100	$6,939,369		10	15	20	40	50	41.25	$542,950	$568,102	$608,585
	$19,996,700							Total	$1,645,097	$1,698,949	$1,803,667

Column C demonstrates the correct annuity calculation that is based on calculating the annuity for each scenario, then finding the probability weighted sum of these values. This figure is the highest of the 3 measures. The potential bias is demonstrated for the 2 alternative calculations in the table below.

Correct value	match	Rate	Risk Premium
$1,803,667	method A	8.66%	0.84%
	method B	8.11%	0.29%

As long as there is a risk of stranded assets, the annuity method prescribed in the code and the costing principles is biased against the Railway Infrastructure Owner.

Westnet argues that the best method of adjusting for this bias is to adjust the WACC upwards such that the annuity value on Method A equals the annutiy value on Method C, the most correct approach.

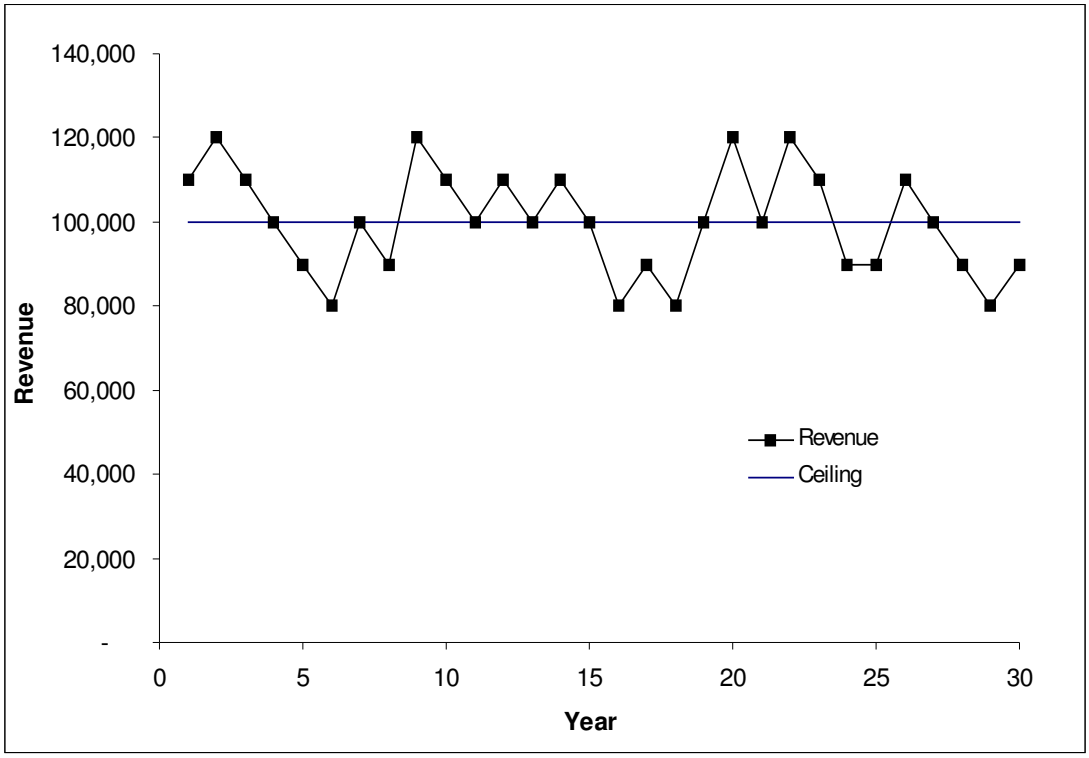
Based on the numbers used in this example, where the value shown in column C was calculated using a WACC of 7.82%, the WACC would have to be increased by 0.84% in order to achieve an unbiased result in the annuity calculation, on the probability distribution proposed.

While these numbers are based on a hypothetical probability distribution, hence do not prescribe the actual adjustment required to reflect stranded asset risk, they serve to demonstrate the importance and materiality of this type of risk.

4.2. Overpayment Rules

Regulation of the ceiling revenue, via the overpayment rules, distorts revenue to the Railway Infrastructure Owner. This arises because the Railway Infrastructure Owner must repay any overpayment that occurs above the ceiling, while it cannot reclaim underpayment. If there is fluctuation in revenue around the ceiling, the effect is to bias average returns to the Railway Infrastructure Owner.

The overpayment rules set out the conditions under which underpayment may enter into the calculation of refunds from the overpayment trust fund. These rules allow the carryover of underpayment as an "accounting balance" for 1 regulatory period (of 3 years); and allow this underpayment to be accounted for when determining net overpayment in the subsequent period. The calculation of returns to the owner is illustrated in the table below, using a hypothetical revenue stream and ceiling from the graph below.



The table below illustrates the operation of the overpayment rules over a consecutive 30 year period, where revenue fluctuates about an average value that is just equal to the ceiling of $100,000. The returns to the Railway Infrastructure Owner in a particular year are equal to revenue less repayments to the operator (anything over 10%) less the amount deposited in the trust fund; plus any redistributed funds (in the case of year 3 of a regulatory period). The average value of the returns is $95,667 in this example, compared to the average revenue of $100,000.

Year	Revenue	Over under	Repay Operator	Deposit Trust	Cum Bal	Interest on Dep	Acc Bal	Carry forward	WNR	Operator	WNR money
1	110,000	10,000		10,000							100,000
2	120,000	20,000	10,000	10,000		500					100,000
3	110,000	10,000		10,000	30,000	1,025	40,000			31,525	100,000
4	100,000										100,000
5	90,000	(10,000)									90,000
6	80,000	(20,000)					(30,000)	(30,000)			80,000
7	100,000										100,000
8	90,000	(10,000)									90,000
9	120,000	20,000	10,000	10,000	10,000	500	(20,000)		10,000	500	110,000
10	110,000	10,000		10,000							100,000
11	100,000					500					100,000
12	110,000	10,000		10,000	20,000	525	20,000			21,025	100,000
13	100,000										100,000
14	110,000	10,000		10,000							100,000
15	100,000				10,000	500	10,000			10,500	100,000
16	80,000	(20,000)									80,000
17	90,000	(10,000)									90,000
18	80,000	(20,000)					(50,000)	(50,000)			80,000
19	100,000										100,000
20	120,000	20,000	10,000	10,000							100,000
21	100,000				10,000	500	(30,000)		10,000	500	110,000
22	120,000	20,000	10,000	10,000							100,000
23	110,000	10,000		10,000		500					100,000
24	90,000	(10,000)			20,000	525	20,000			21,025	90,000
25	90,000	(10,000)									90,000
26	110,000	10,000		10,000							100,000
27	100,000				10,000	500				500	100,000
28	90,000	(10,000)									90,000
29	80,000	(20,000)									80,000
30	90,000	(10,000)					(40,000)	(40,000)			90,000
Avg	100,000	-									95,667

In this example, to remove this regulatory bias and achieve an average return to WNR of $100,000, the ceiling would have to be raised to $117,462, as demonstrated by the table below.

Year	Revenue	Over under	Repay Operator	Deposit Trust	Cum Bal	Interest on Dep	Acc Bal	Carry forward	WNR	Operator	WNR money
1	110,000	(7,462)									110,000
2	120,000	2,538		2,538							117,462
3	110,000	(7,462)			2,538	127	(12,386)	(12,386)	2,538	127	112,538
4	100,000	(17,462)									100,000
5	90,000	(27,462)									90,000
6	80,000	(37,462)					(94,772)	(82,386)			80,000
7	100,000	(17,462)									100,000
8	90,000	(27,462)									90,000
9	120,000	2,538		2,538	2,538	127	(124,772)	(42,386)	2,538	127	120,000
10	110,000	(7,462)									110,000
11	100,000	(17,462)									100,000
12	110,000	(7,462)					(74,772)	(32,386)			110,000
13	100,000	(17,462)									100,000
14	110,000	(7,462)									110,000
15	100,000	(17,462)					(74,772)	(42,386)			100,000
16	80,000	(37,462)									80,000
17	90,000	(27,462)									90,000
18	80,000	(37,462)					(144,772)	(102,386)			80,000
19	100,000	(17,462)									100,000
20	120,000	2,538		2,538							117,462
21	100,000	(17,462)			2,538	127	(134,772)	(32,386)	2,538	127	102,538
22	120,000	2,538		2,538							117,462
23	110,000	(7,462)				127					110,000
24	90,000	(27,462)			2,538	6	(64,772)	(32,386)	2,538	133	92,538
25	90,000	(27,462)									90,000
26	110,000	(7,462)									110,000
27	100,000	(17,462)					(84,772)	(52,386)			100,000
28	90,000	(27,462)									90,000
29	80,000	(37,462)									80,000
30	90,000	(27,462)					(144,772)	(92,386)			90,000
Avg	100,000	(17,462)									100,000

Compensating for the risk in the WACC could do this.

An asset with a GRV of $1,249,140 and a life of 50 years would provide a ceiling of $100,000 if the WACC were 7.82%.

In order to return a ceiling of $117,460 the WACC would need to be lifted by 1.47% to 9.29%.

4.3. Asymmetric and Specific Risk Premium

WestNet Rail seeks the inclusion of an “asymmetric and specific risk premium” to deal with the risks discussed in this section because:

The WACC calculated only with regard to CAPM is inadequate and will lead to a decline in the Railway Infrastructure.

The issue that must be answered is what uplift to WACC is appropriate to balance the interests of the owner, users and public.

WestNet Rail strongly believes that between 1.5% to 2.0% needs to be added to the pre-tax real WACC (market transformation).

WestNet is willing to work with the regulator using historical and current information and models similar to the examples provided in this paper to support the determination of the appropriate value of this parameter.

5. Summary

WestNet Rail believes that a pre-tax real WACC of 7.86% will not attract the level of investment in Railway Infrastructure that is required to encourage the efficient use of, and investment in, railway facilities by facilitating a contestable market for rail operations.

WestNet Rail seeks a determination of 10.91% for pre-tax real WACC, based on the WACC Parameters Recommendation table in Section 6.

6. Recommendation on Parameters

WestNet Rail believe that the real pre-tax WACC should be calculated on the parameters in the column headed WNR, which are the parameters being put forward by WestNet Rail in this report.

WACC/CAPM Parameters	NECG	WNR	Difference	Comment
Risk free rate	5.24%	5.24%		
Debt proportion	50%	50%		
Equity proportion	50%	50%		
Debt risk premium	1.11%	1.80%	-0.69%	Based on a BBB rating
Debt issuance costs	0.125%	0.125%		
Cost of debt	6.485%	7.165%	-0.68%	
Market-risk premium	7%	7%		
Asset beta	0.45	0.50	(0.05)	The asset betas for intermodal and grain traffic are understated.
Debt beta				
Tax rate	30%	30%		
Franking credits – gamma	50%	30%	20.00%	The Regulator should err towards the number that best attracts investment
Equity beta	0.9	1.0	(0.10)	Results primarily from changes to the asset beta
Indexed bond rate	3/185	3/185		
Inflation	2	2		
Nominal post-tax cost of equity	11.52%	12.25%	-0.73%	
Equivalent pre-tax real WACC - market	7.86%	9.16%	-1.30%	
Asymetric and Specific Risk Premium		1.75%	-1.75%	WACC needs to be adjusted for Asymmetric Risk , as it is not dealt with under CAPM
WACC to be applied	7.86%	10.91%	**-3.05%**	