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By email: TPIWACC@era.wa.gov.au

Dear Russell

SUBMISSION IN RESPONSE TO DRAFT DETERMINATION OF WACC FOR TPI RAILWAY

On 9 January 2009, the Economic Regulation Authority ("ERA") published its draft determination for the 2009 Weighted Average Cost of Capital ("WACC") for the railway of The Pilbara Infrastructure ("TPI").

Please find attached to this letter a copy of a response to the draft determination which TPI asked Synergies Economic Consulting ("Synergies") to prepare. In addition to the response commissioned by TPI, Fortescue Metals Group ("Fortescue") also submits its own response to the draft determination in the remainder of this letter.

Initial Overview

The purpose of determining the WACC for TPI's railway is effectively to establish the rate of return that will be applied to the capital element when determining the appropriate ceiling on charges. In that context it is worth noting that the asset under consideration was not a previously State owned asset that had been subject to privatisation under terms that reflected a knowledge that the assets would be subject to a regulatory regime designed to ensure that the new owner would not exploit its ownership of an essential bottleneck facility and charge monopoly prices for use of the asset. In contrast the rationale behind placement of the TPI railway under the auspices of the *Railways (Access) Act 1998* through the terms of the *Railway and Port (The Pilbara Infrastructure Pty Ltd) Agreement Act 2004* was the notion that the TPI railway would be an open access railway. In other words the access regulation was agreed to for the purpose of preventing Fortescue from using its ownership of TPI to refuse access to competitor third parties (by effectively charging such a high price that it was the equivalent of denying access) rather than for the purpose of ensuring that there was a limit on the price that TPI was able to charge in order to prevent it from exploiting a strategic asset (namely an essential bottleneck facility).

Thus it is important to be mindful that if the final determination of the WACC is lower than TPI believes is appropriate, then that will set the price of access for access seekers at whatever the ceiling price is determined to be, and this will inevitably result in a situation where TPI is placed in the position of having no incentive to provide access to the infrastructure – because as a result of the regulations it is unable to earn an acceptable return from such access seekers. The likelihood of subsequent disputes involving TPI and access seekers would be strong, which may have the effect of undermining the viability of access seekers' projects. In other words, a low ceiling

price will result in a situation where the regulations act to the contrary of facilitating access for third parties. In circumstances where potential access seekers would most likely have been prepared to pay a fee greater than the ceiling for access (but unwilling once the ceiling had been set), a low ceiling price not only makes agreements for access harder to reach, but arbitrarily transfers wealth from the service provider to access seekers (when access is imposed on the service provider) without any justifying welfare gain. In addition an unacceptably low WACC would act as a huge disincentive to future greenfields projects where there was a possibility of a regulatory determination being imposed on the pricing of any associated service.

The WACC calculation is supposed to reflect the risk associated with the capital invested in the infrastructure that provides the service which access seekers are seeking access to. The WACC is the rate of return that compensates the infrastructure owner for bearing the risk. It is made up of the benchmark cost of the debt (given the nature of the operations) that supports the capital invested, plus the expected returns required by equity investors. There is an important difference between these two components:

- The debt component is the benchmark cost of the debt where the benchmark is determined given the nature of the operations. Benchmarks are used to ensure that access seekers do not pay for inefficient funding costs. Benchmark costs are observable where there is a market for similarly rated debt. In the case of TPI its debt comes via its parent, Fortescue a B+ rated entity. It is most probable that TPI would have a similar rating to Fortescue, and therefore the cost of TPI's debt would be similar to the cost of Fortescue's debt. The cost of the debt is known.

- The expected return on the equity invested to support the capital sum cannot be readily observed and is traditionally calculated by using the Capital Asset Pricing Model ("CAPM") – which calculates a reasonable expected return (forward looking) given the risk associated with the investment. A reasonable expected return on equity (pre-tax) is derived from a nominal risk free rate of return, plus a market risk premium derived from the market as a whole (forward looking), which is then adjusted by an equity beta (again forward looking) relevant to the equity that supports the capital investment.

The ERA has inappropriately chosen to determine the cost of debt by adding a benchmark derived 'debt margin' to the risk free cost of capital. In the process the ERA has then made a further three flawed steps, each of which acts to prejudice the interests of TPI:

- Firstly, it has chosen to apply a benchmark gearing ratio which is not appropriate given the risk characteristics of TPI.

- Secondly, it has chosen to calculate the nominal risk free rate of return at a time when the Global Financial Crisis ("GFC") has seen a 'flight to quality' that has compressed the apparent real risk free rate of return to an historical low, and yet no adjustment has been made to compensate for what is undoubtedly an unusual and relatively short term phenomenon.

- And finally, it has calculated a debt margin based on a BBB credit rating, when TPI obtains its debt from Fortescue, and Fortescue has a B+ credit rating which therefore should have been adopted.

Indeed, the ERA seems to rely on wholly inappropriate benchmarks and an almost slavish adoption of regulatory precedent regardless of its initial merits, its relevance to

the case under consideration, or indeed changed circumstances that render the precedent invalid. These matters will be considered in relation to the parameters to which they relate.

Financial Structure and Credit Rating

Gearing

The ERA's view appears to be that because the "*determination for the Westnet freight rail network included a 35 percent gearing… this gearing is an appropriate benchmark for a railway owner.*" – *[para 67].* This approach raises three questions:

- Was the determination of a rate of 35% appropriate for Westnet?
- Is it appropriate to apply the same assumed gearing on TPI as was adopted for Westnet?
- Is it appropriate to impose a rail benchmark gearing ratio on TPI in preference to the ratio closer to the actual ratio for TPI?

The adoption of a 35% gearing ratio for Westnet Rail appears to rely heavily on the work undertaken by Allen Consulting Group ("ACG"). ACG's conclusions were that "*Capital market evidence indicates that the appropriate assumptions for levels of gearing…are for the freight rail system – gearing of 30 to 40 per cent*" and ACG goes on to recommend a gearing of 35% - [Allen Consulting Group (2007) – 'Railways (Access) Code: Weighted Average Cost of Capital; 2008 WACC Determinations' October 2007 - p.23].

It is worth briefly reviewing most of the comparators chosen by ACG (the 'global toll road operators' have not been considered in this analysis, with the exception of Macquarie Infrastructure Group which was inexplicably also included in the 'Australian group' of comparators but with a different claimed gearing ratio from that accorded to it as a global toll road operator; note that CRA also agreed that airports and roads make poor comparators – [CRA International (2009) – WACC for TPI's Iron Ore Railway - p. 12]):

- 'Kansas City Southern Railway' has been in existence for in excess of 120 years and operates in 10 States in America as well as in Mexico and Panama. It is effectively a holding company, owning four different railways, which in total employs around 6,500 employees. In other words, it is a long established regionally diversified company, far larger in scale than Westnet Rail.
- 'Union Pacific Corporation' ("UPC") has been in existence for in excess of 140 years and is the largest railroad operator in the United States. It operates on over 50,000 kilometres of track in most States in America and owns in excess of 8,500 locomotives; it is also the second largest landholder in the United States after the US Government. In other words, it is a long established regionally diversified company, far larger in scale than Westnet Rail.
- 'RailAmerica Inc' owns more than 40 separate rail companies most of which had been long established before being acquired by RailAmerica. In 2007, the company was subject to a leveraged buyout by a private equity consortium. The aggressive gearing ratio of 57% quoted by ACG no doubt reflected this recent leveraged buyout. It consists of a huge number of regionally diversified rail

companies, most of whom have very long operating records, and in aggregate it is considerably larger and more diversified than Westnet Rail.

- 'CSX Corporation' owns more than 33,000 kilometres of track all along the Eastern Seaboard, and inland, and has access to over 70 ports. It moves in excess of 1 million tonnes of freight on a daily basis covering a huge variety of different products, and its annual revenues would be in excess of A$15bn. Once again, it is significantly larger and more diversified than Westnet Rail.

- 'Burlington Northern Santa Fe' ("BNSF") is the second largest railroad operator after UPC, it has 13 divisions which collectively own and operate in excess of 38,000 kilometres of track, and employ more than 40,000 people. Once again, this is a company significantly larger and more diversified than Westnet Rail.

- 'Canadian Pacific Railway Ltd' has been operating for in excess of 120 years and owns railways that span most of the width of Canada; it also operates services into and throughout the United States. The company employs more than 15,000 people and operates in excess of 1,600 locomotives. Once again, it is significantly larger in scale and more diversified than Westnet Rail.

- 'Canadian National Railway Company' is the largest rail company in Canada with operations spanning the entire width of Canada as well as operating through the central United States from the Great Lakes down to the Gulf of Mexico. The company employs more than 22,000 people, owns in excess of 32,000 kilometres of track, and has been operating for in excess of 90 years. It is significantly larger in scale, and more diversified, than Westnet Rail.

- 'Adsteam Marine Limited' is a provider of harbour towage and related marine services with operations in Australian and the United Kingdom – it does not remotely represent an appropriate comparator company.

- 'Macquarie Infrastructure Group' ("MIG") is one of the world's largest developers and operators of private toll roads, with assets in Australia, Canada, France, Germany, the United Kingdom and the United States – it does not remotely represent an appropriate comparator company.

- 'Patrick Corporation Ltd' was an Australian publicly listed company with interests in shipping, rail and aviation before it was taken over by Toll Holdings – although not an ideal comparator, in terms of size and risk profile it is probably closer than any of the previous companies considered. Its gearing ratio, in terms of debt as a percentage of debt plus equity, was, according to ACG analysis, only 6.5%.

- 'Toll Holdings Limited' has been operating for over 120 years and is a leading provider of integrated logistics services based in the Asian region. It operates in 45 countries, and employs over 25,000 people; it has revenues in excess of A$5bn. It is a considerably larger and more diversified business than Westnet Rail.

- 'Auckland International Airport Ltd' is a company which is an operator of an international airport in New Zealand – it does not remotely represent an appropriate comparator company.

- 'Infratil Ltd' is company based in New Zealand with interests in transport; it operates airports (6 - mainly regional airports in Europe) and is also involved in

public transport (bus services) and energy (renewable) – it does not remotely represent an appropriate comparator company.

- 'Port of Tauranga Ltd' is a company that runs the cargo port of Tauranga located in the western 'Bay of Plenty' region of the North Island of New Zealand – it does not remotely represent an appropriate comparator company.

- 'Toll NZ Ltd' is New Zealand's largest trucking company – it does not remotely represent an appropriate comparator company.

The five US companies considered were all extremely large long established rail freight operators with the benefits of regional diversity and a huge range of different freight products from express parcel services through coal and grain transport to substantial containerised transport usually linked to port facilities. Westnet Rail employs only around 220 people and operates on around 5,100 kilometres of track mainly in regional SW Western Australia. The difference in the scale and the diversity both geographic and in relation to the products dealt with by the US rail operators would present a completely different risk profile as compared to Westnet Rail. To use these American comparators would be to grossly overestimate benchmark gearing for Westnet Rail.

The two Canadian companies were also substantially larger and more diversified than Westnet Rail and would similarly overestimate the appropriate benchmark; despite this their average gearing ratio was below 30%. Of the four Australian companies: Two should be dismissed as wholly inappropriate as comparators – Adsteam Marine which is predominantly a tug operator and MIG which is a builder and operator of private toll roads; the remaining two companies would give an average gearing ratio of less than 15%. Finally none of the companies from New Zealand are appropriate as comparators.

The capital market evidence relied on by ACG, when properly screened for genuinely suitable comparators, does not support the notion that a benchmark gearing ratio should be between 30 and 40 percent. The comparison with Canadian operations suggests that 30 percent would be an overestimate and the comparison with Australian operations suggests it should be below 15% and indeed closer to 10% on the basis that the Patrick Corporation was a far better comparator than Toll Holdings.

Even if it were accepted that 35% was an appropriate benchmark gearing ratio for a company like Westnet Rail, clearly for the same reasons that the size and diversity of the US rail companies makes them less risky – so too does Westnet Rail's size, diversity and long track record, represent a lower risk than a newly established, relatively short track operation (approximately 1/20th of the length of track owned by Westnet Rail) going to a single destination and ultimately only suitable for handling a single product (namely iron ore; because there are no other products suitable for transportation from the region of the Pilbara that it traverses). In other words TPI represents a greater risk that Westnet Rail and would be likely to sustain only a lower gearing ratio.

Given that a WACC determination is supposed to capture the benchmark cost of the debt that a company is required to service, together with the earnings it needs to make to meet the reasonable expectations of its equity investors (at the margin), it is not clear exactly why the ERA believes it is appropriate to impose a gearing level derived from some hypothetical benchmark railway network owner with a diversity of customers and services in preference to the actual gearing faced by TPI. The theoretical justification for considering the gearing of a hypothetical benchmark entity

is that access seekers should not be required to pay a premium to compensate equity investors in a company just because the company has chosen to structure itself very inefficiently. In other words, if the returns to equity investors are lowered by the adoption of a sub-optimal gearing ratio, then access seekers should not be required to compensate equity holders for the adoption of an inefficient structure.

When Fortescue was raising the finance for its 'Pilbara Iron Ore and Infrastructure Project', it was made abundantly clear that potential financiers required the mining tenements held by FMG Chichester Pty Ltd as part of the collateral package required to support the investment in the project. At the time the debt was raised, the construction of the TPI railway could not have been financed without the collateral provided by those mining tenements. Moreover, the constraints imposed by the terms of the bond financing precluded the adoption of greater levels of debt. The notion that a higher benchmark gearing ratio should be adopted is only relevant if there are good reasons to suppose that a company's actual gearing level is suboptimal. In Fortescue's case the level of gearing was quite aggressively high, given the circumstances under which the financing was raised – namely that there was a high degree of construction risk involved and indeed even the full gamut of regulatory approvals were not finally in place. Fortescue's inability to subsequently increase the gearing in the company stems from quite normal bond covenants, agreed to at the time the finance was raised.

The use of higher benchmark gearing ratios, derived from other inappropriate companies, is only supportable if the gearing is sub-optimally low. In the case of Fortescue, its gearing is as high as the market would sustain at the time the finance was raised, and all the evidence at that time further suggested that TPI as a stand alone entity would simply have been unable to raise financing at all. Under those circumstances, it is beholden on the ERA to justify why it believes that Fortescue's gearing is sub-optimal, or to accept that Fortescue's actual gearing should be used in the WACC calculation.

The ERA's notion of reliance on regulatory precedent in relation to TPI's gearing ratio is based on the unwarranted assumption that TPI's gearing is sub-optimal; then on the basis of an entirely flawed analysis of supposed comparator firms which overestimated the gearing ratio that should have been applied to Westnet Rail, the error was further compounded by seeking to apply that ratio to an even more risky asset, namely the TPI railway. The ERA should adopt Fortescue's actual gearing ratio in preference to the notion of suitable comparators derived from ACG's flawed analysis.

Nominal risk free rate of return

This matter has been dealt with by Synergies in the report accompanying this letter. Synergies has suggested that the use of a twelve month average would be appropriate giving a risk free rate of 5.73%. In the alternate, Synergies suggested that a bias adjustment of 60 basis points to reflect the change in bias over the last six months could be adopted.

However having identified the existence of a 'bias' based on the 'convenience yield', Fortescue would note that if the full 120 basis point of the identified 'bias' is added to the risk free rate calculated by the ERA the rate derived, being 5.57%, is reasonably close to the twelve month average that we believe should be used. We would suggest an average between these two of 5.65% should be adopted.

Credit Rating

The ERA sought to apply the same flawed logic that it applied to the gearing ratio, of using an inappropriate benchmark rating as opposed to the actual rating (being reflective of benchmark), when it came to assessing an appropriate credit rating to apply to TPI. As has already been alluded to, TPI would have been unable to raise the necessary finance in its own right, and if it had, the bonds would have been accorded 'junk bond' status. The credit rating of Fortescue represents a better credit risk than TPI could sustain, and the notion that somehow, as a stand alone entity, TPI could gain a better credit rating than Fortescue, its only customer, relies on theoretical contractual arrangements that Fortescue did not, and would not have, put in place.

When deciding that that it would impose a benchmark credit rating of BBB on TPI, the ERA relied on a combination of CRA's advice and previous regulatory decisions. It is therefore instructive to consider the nature of the advice given by CRA.

CRA made the observation that "*It should be noted that a large number of potential comparator firms for TPI either did not have significant debt outstanding or did not have any credit rating available for them on either Bloomberg or Capital IQ*" – *[CRA (2009) - p.14].* CRA then goes on to explain that because it was unable to ascertain the credit ratings for a large number of companies, it analysed a smaller subset for which the information was available. The problem with this approach was that the companies dropped from the analysis appear to be companies that would command a far lower credit rating if they were able to obtain one at all, and therefore the subset is an entirely biased sample consisting of larger and more diversified companies, with an inherently better credit rating. The problem of sample bias was then compounded by a methodology that involved weighting the credit rating by the size of the associated debt. In other words, large companies with substantial balance sheets, able to sustain high absolute levels of debt whilst retaining good credit ratings, were given preference over smaller companies, that would be expected to have lower credit ratings. In effect the ERA has relied on an evaluation of an appropriate benchmark credit rating for TPI that was derived from a piece of work that contained two steps, both of which biased the result towards a higher credit rating.

Having established that CRA's advice was based on a biased sample, it is instructive to also consider the previous rail regulatory decisions that the ERA appears to be relying on. The most obvious one to consider is the Final Determination of the *'2008 Weighted Average Cost of Capital for the Freight (Westnet Rail) and Urban (Public Transport Authority) Railway Networks'* – however this determination merely assumes a BBB+ rating for the freight network. To the extent that ACG considered credit ratings in its assessment, its analysis was flawed for precisely the same reasons that its analysis of gearing ratios was flawed (see above).

The BBB+ rating for Westnet Rail may be an entirely reasonable assumption based on a prior determination – made by the 'Office of the Rail Access Regulator' in 2003, which in turn relied on a view expressed by 'Network Economics Consulting Group' ("NECG") that "*NECG expects that WRN and WAGR would have solid credit ratings and be able to raise debt with a credit rating of A*" – but it is not obvious why a mature business that owns a monopoly asset with largely stable revenue streams derived from long term access agreements, with multiple customers and a variety of different products (bulk commodities, grain and intermodal transport), is in any way comparable with a 'greenfields investment', which has a single customer with effectively a single product. In other words, the regulatory precedence that the ERA is relying on is based on the totally naïve assumption, namely that the TPI railway is in some way

comparable with the Westnet Rail railway in terms of the riskiness of debt secured against the asset – it isn't.

Given that Fortescue is both the provider of capital for TPI and is the sole customer providing revenue to TPI, it is difficult to understand why the ERA believes that TPI could theoretically command a higher credit rating than Fortescue. Since TPI sources its capital from Fortescue, the actual cost of its debt is the cost of debt to Fortescue and the default risk would be the same. Given that the debt that Fortescue raised relied on the collateral value of Fortescue's Ore Reserves, there is no reason to believe that TPI in isolation could command a better credit rating. In short, if it were appropriate to consider the credit rating of TPI in isolation, which it is not, the answer would be that its credit rating would be at best B+ and probably lower.

Cost of Debt

The cost of debt in a WACC calculation should be based on the benchmark gearing and benchmark credit rating applicable to TPI. As argued above, actual gearing and credit rating are appropriate proxies for benchmark measures. Therefore, the cost of debt in the WACC calculation should be based on the actual cost of the debt used to support the capital asset under consideration. In the case of the TPI railway that debt was raised by Fortescue predominantly in the form of long dated fixed interest corporate bonds, which at the time of issue, 11 August 2006, carried a blended interest rate of 10.22%. In addition, there were some shorter dated floating notes, and a $100m note issued to Leucadia, which effectively carries a very high interest rate – as of 27 February 2009 the apparent rate of interest on that note is running at a level in excess of 120%.

The issue of the Leucadia note is not straightforward as the effective interest is tied to iron ore prices (net of royalties) and to production volumes produced by FMG Chichester Pty Ltd from within the area covered under Schedule 1 of the *Iron Ore (FMG Chichester Pty Ltd) Agreement Act 2006*. Matters are further complicated by the simultaneous purchase by Leucadia of equity at above prevailing market prices. The difference between the market price, at close of business on the day the note was issued, and the price paid for the shares was approximately US$3.72 per share. If the US$98.2m difference is allocated to the note, the sum becomes $198.2m. Furthermore, if iron ore prices and production volumes had remained at the levels assumed at the time of the bond issue, then the effective yield on the Leucadia note, in 2009, assuming it was valued at $198.2m is expected to be around 29%. Assuming the floating notes could have been fixed at the same rate as the fixed notes, at the time of issue, namely 10.22%, then the blended rate applicable to the entire package of debt raised in August 2006 is currently 11.87%, due to the effect of the very high yield attributed to the Leucadia note.

The cost of debt should be the actual cost of the debt incurred to support the infrastructure which the access seeker is seeking access to. In this case assuming that the access seeker is not required to pay the increased cost of debt that has occurred as a result of increases in iron ore prices, compared to expectations, and increases in volumes of production planned by Fortescue, the current cost of the debt is running at 11.87% and the inclusion of a figure lower than this would, in effect, be requiring Fortescue to subsidise access seekers.

Dividend Imputation - Gamma

The ERA's view appears to be that because there is "*varying and conflicting theory and evidence on the value of franking credits*" and also because "*evidence on the value of the imputation factor (including the impact of changes in taxation law on this value) supports gamma values anywhere in the range of zero to one*", that therefore "*in view of the current state of debate… it is appropriate to continue to apply a gamma value of 0.5*" - *[paras 131 & 133].*

The ERA also states that there are issues that have not been resolved, such as the question of "*whether the value of gamma should be determined by the average value of franking credits to investors or a value to a notional marginal investor*", and "*issues of consistency between empirical studies of the value of franking credits (dividend drop-off studies) and the form of the CAPM employed by Australian regulators*" – *[para 130].*

Starting from an acceptance of the 'Officer methodology' adopted by the ERA - [para 37] - there is necessarily a requirement to calculate an appropriate value for gamma. However, the ERA admits to being confused over whether it should adopt the perspective of the average investor or the marginal investor when calculating gamma – and that confusion appears to extend to its analysis of the existing theory and evidence. A brief review of the situation is therefore in order.

When calculating the WACC appropriate to a company, one should be considering the actual cost of debt (where appropriate) held by the company together with an evaluation of the returns the company needs to generate in order to meet the reasonable expectations of investors, having consideration of the riskiness of the company concerned (the more risky the company - the higher the return an investor can reasonably expect). If the company earns less than expected, some investors will be unhappy and will transfer their investments elsewhere. Since these investors are the marginal investors, it would appear to be the case that gamma should be calculated from the perspective of the marginal investor (note this position is supported by the ERA's adviser CRA - *[CRA (2009): para 5.2.2]*).

A variety of studies have been undertaken to establish a theoretical value for what is termed theta and represents the value of the franking credits to the recipient (this varies depending on their tax circumstances). Most of these studies have examined the behaviour of share prices around the time of the dividend payment (drop-off studies). Leaving aside the econometric problems with such studies (co-linearity – which does not inherently bias the estimates, but it does undermine the significance of the results) – there is a significant further problem in that the value that that 'marginal investors' places on franking credits depends on the tax laws applying over the period under consideration.

There have been a number of changes in the tax laws since the initial studies to determine the vale of theta were undertaken. The most critical has been the introduction of the 45-day rule, a change that was specifically designed to prevent foreign owners of Australian shares extracting some value from the franking credits by selling and then buying back their shares (ex-dividend) – effectively using the market to extract most of the 'value of the franking credits to Australian based investors' (assuming an efficient market and noting that some value will be lost in transaction costs). So, studies that predate the introduction of the 45-day rule are likely to capture the value of franking credits that a foreign investor is able to capture through structuring appropriate transactions around the dividend payment.

However, once the 45-day rule effectively cut-off the ability of foreign investor to get access to some of the value of franking credits, then the value of the franking credits to foreign investors fell to zero. Given that overseas investors receive a return through capital gains and dividend payments, but domestic investors receive the additional benefit of the franking credit – it is clear that if both groups have the same expectations about future earnings, it is the overseas investors that will be the marginal investor, because they receive a lower actual return and therefore would bid a lower price. Since overseas investors are the marginal investors, it necessarily follows that theta is zero (because foreign investors cannot get access to any of the value of the franking credit) and that gamma should therefore be set to zero as well.

Any studies that were undertaken prior to the effective introduction of the 45-day rule (it was introduced in 1999 but backdated to 1997) would be expected to find a positive value for theta to the extent that marginal investors (overseas investors) were able to capture some of the value of the franking credits through sale and repurchase. Indeed, the behaviour of share prices around the date of the dividend payment would closely reflect their activity. However, after the introduction of the 45-day rule, the value to overseas investors fell to zero.

In 2000, the tax laws changed to create an ability for domestic investors, without 'tax liabilities to use the franking credits', to claim a rebate directly from the tax office. Studies undertaken after this period may show a positive value for theta, due to more domestic investors being able to extract the value of the franking credit (through the rebate system) and the absence of foreign investor trading at that time (because of their inability to capture any of that value). But the key point is that the value of the franking credits to the overseas investors remains zero even if domestic investors accord some value by trading around the time of the dividend payment; they are not marginal investors from the point of view of evaluating gamma. If it is the marginal investor that should be considered, and we believe that that is the case, then there are strong theoretical reasons for setting theta and hence gamma at zero; moreover empirical evidence tends to support this position once the changes in tax legislation have been factored into the evaluation.

The ERA observed that the "*ACCC considered that the proposed use by ARTC of a gamma of 0.3 was not reasonable, noting that (given current studies on the value of imputation credits to shareholders) a gamma of 0.3 would result in revenue ceilings that are too high and would over-compensate ARTC for the present value of the tax it would incur if it was operating at its revenue ceiling" – [para 129].* There are two problems with relying on this recent precedent established by the ACCC:

- Firstly, it involved an entirely subjective judgement about what a reasonable ceiling on charges ought to be, which even if it was appropriate to make (which is questionable), has no wider applicability as a precedent, because it was entirely specific to the case being considered.

- Secondly, the view expressed by the ACCC is couched in terms of "*the present value of the tax it would incur*" (with 'it' being ARTC). This raises the issue of whether the distribution rate should be the average for the market or the specific value likely to be appropriate to the company concerned going forward. The ACCC's dissatisfaction with such a low gamma reflected their belief that ARTC would distribute most of its earning via dividend payments. Again this is a matter that was specific to ARTC, and if the correct methodology requires an evaluation of the likely distribution rate of the individual company concerned, rather than a market average, then in the case of TPI this would suggest that a very low distribution rate over the regulatory evaluation period be used, given TPI's current

high levels of debt, which are restrictively structured (preventing high dividend payments), and its requirement to continue investing in the expansion of its infrastructure.

Although we believe that the case for adopting the perspective of a marginal investor is clear, and that both the theory and the empirical evidence, when suitably filtered, support the notion that the value of gamma should therefore be set at zero – it is nevertheless worth briefly considering what value gamma should be set at, either if one were to exclude foreign investors as marginal investors from consideration (though I know of no theoretical or practical reason for so doing in this context), or if instead, one were to adopt the perspective of an average investor (although again this appears to run contrary to what the theory requires and what market evidence supports).

I have already mentioned the problem of co-linearity in drop-off studies, which, whilst not biasing the results, makes the estimates inherently unreliable. The most recently available study undertaken into the value of theta, derived from drop-off analysis, is the work published by 'SFG Consulting (2009)' – 'The value of imputation credits as implied by the methodology of Beggs and Skeels (2006); Report prepared for ENA, APIA, and Grid Australia' February 2009 . This study observed the sensitivity of the previous work undertaken by 'Beggs and Skeels' [Beggs and Skeels (2006) 'Market arbitrage of cash dividends and franking credits; Economic Record, 82 (258), p.239-252'] to influential outliers, and also to noise in the data – which is to be entirely expected if there are co-linearity problems. Their response was to extend the data set, which improves the reliability of the estimates, and then (more contentiously) to exclude 1% of the outliers. The result was an estimate of 0.37 for theta when considering the extended sample; and that figure fell to 0.24 once the outliers were filtered out. Note that a previous estimate undertaken by 'Beggs and Skeels (2005)' which, according to Synergies' earlier submission was the highest value for theta taken from estimates that postdate the introduction of the 45-day rule, was the same estimate as appeared in 'Beggs and Skeels (2006)'. The work undertaken by 'SFG Consulting (2009)' effectively updates this number, with a more reliable estimate (because of the greater size of the sample – the same sample but updated with the new data that had become available) and finds that it should be reduced from 0.57 to at most 0.37 and, if the filtering is accepted as appropriate, more likely to 0.24.

However, to get from estimates of theta to estimates of gamma, we also have to factor in the distribution rate. This rate is widely accepted to be on average 71% (based on an estimate made by 'Hathaway and Officer (2004)' – The Value of Imputation Credits: Update 2004, Unpublished Working Paper, Capital Research Pty Ltd.) - *see also Synergies (2008) [para 9.1] or CRA (2009) [paras 1.1.4 and 5.2.5].* Therefore, since the most recently available and reliable estimate of theta concludes that the value of theta is at most 0.37 and more likely 0.24 then the value of gamma is at most 0.26 and more likely 0.17. Note that a distribution rate of 71% is likely to overstate the level of distribution for TPI given TPI's restrictive debt covenants and its requirement for further investment (as referred to above).

If one were to adopt the perspective of the average investor then one needs to consider not only the distribution rate but also the extent to which the franking credits are actually redeemed. As CRA notes in its analysis *[CRA (2009) - paras 1.1.4 and 5.2.5]*, ATO statistics show that only 32% of distributed franking credits are redeemed. With an average distribution rate of 71% and a redemption rate of 32%, the value of franking credits to the average investor cannot exceed 0.23, even if those actually redeeming franking credits accord them 100% of their value.

It is perhaps worth recapping the analysis so far:

- In the period after the introduction of the 45-day rule, given that the marginal investor is a foreign investor, then the theory suggests that theta is zero and the evidence, from the period after the introduction of the 45-day rule, on balance heavily supports that position.

- To the extent that drop-off studies suggest a positive value for theta they need to be considered in the context of the tax laws prevailing at the time. This effectively means studies that include data prior to 1997 should be discarded. Of those studies that include 'only data from after 1997' – the only study that found a positive value for theta was 'Beggs and Skeels (2005)', which gave an estimated value for theta of 0.57. Given a distribution rate of 71%, this supports a gamma of at most 0.4 and applying an appropriate distribution rate for TPI would only lower that figure. However this study has effectively been superseded by the work undertaken by 'SFG Consulting (2009)', which supports a value of gamma of at most 0.26 and more likely 0.17.

- Finally if the concept of the marginal investor is replaced by an average investor, the empirical evidence, based on ATO statistics, suggests that theta cannot exceed 0.23.

The ERA appears to have placed far too much reliance on mixed empirical data (which can mainly be explained by tax changes) to justify reversion to a wholly inappropriate regulatory preference for setting gamma to 0.5. Whatever the merits of adopting a particular value of gamma back in the 1990s, the relevant justification has been completely eroded by subsequent tax changes. It has further sought to bolster its position by referring to a decision made by the ACCC which was entirely specific to the case under consideration, and should not be used to justify such an application to TPI.

In the discussion undertaken by the ERA's expert adviser on this issue (CRA), there was reference to the various arguments but before the Essential Services Commission of Victoria (ESC) when considering Gas Access Arrangements. In that particular case the ESC, in its draft decision, decided that if theta was to represent the value to the marginal investor then having "*placed most weight on the estimate provided by Beggs and Skeels, namely 0.572*" *[ESC (2007): Gas Access Arrangement Review 2008 - 2012: Draft Decision - p.427]* it could only conclude that "*a value of 0.57 is derived*" *[ESC (2007) - p.433]*. However, the most recent analysis undertaken, which simply extended the data set used by 'Beggs and Skeels' clearly suggests that this value should be reduced to 0.37 and most probably it should be reduced to 0.24. Moreover, the ESC, on the basis that gamma should relate to the tax treatment of the individual company concerned, set the assumed distribution rate at 100%, despite the average distribution rate having been calculated at 71%. Given their belief that theta should equal 0.57, and that a distribution factor of 1.0 should be applied, the decision to adopt a gamma of 0.5 might have seemed entirely reasonable. However, more recent evidence updates the 'Beggs and Skeels' result to a figure of at most 0.37, making the figure of 0.5 unjustifiable even if a distribution rate of 1.0 is also adopted – however as already explained a distribution rate of even as high as 71% would grossly overstate the likely level of distribution by TPI over the regulatory period. In other words nothing justifies a figure for gamma of above 0.37.

In a previous decision made by the ERA (Final Decision on the Proposed Access Arrangement for the Goldfields Gas Pipeline) it acknowledged that "*regulators under the Code have to date generally adopted a γ value of 50 percent, based on the 1999*

study by Hathaway and Officer, which estimates a gamma close to 0.5" and on that basis the ERA imposed a gamma on the Goldfields Gas Pipeline as well. It simply cannot be right that a regulatory precedent based on outdated information is being imposed in preference to **the best theoretical and empirical data which suggests that gamma should be set at zero**.

Market Risk Premium ("MRP")

The ERA stated that its "*view, consistent with regulatory precedent, is that the market risk premium should be determined taking into account a range of sources of information, including evidence on historically realised equity premia and current practice and expectations of Market participants" – [para 59].* However, in the process of retaining CRA, in order to give advice on parameters to be applied when undertaking a WACC calculation, CRA was apparently simply informed that "*the market risk premium should also be the 6% value applied in the Authority's other determinations*" – *[CRA (2009) - para 2.1].*

Once again, the approach adopted by the ERA involves adopting regulatory precedent to the exclusion of other considerations, and in this case not even making an attempt to consider whether changed circumstances merit the adoption of a different forward looking assessment of what the MRP should be.

The impact of the Global Financial Crisis should not be ignored. The overall annual realised stock market return in Australia, for the year 2008, was the lowest ever recorded ('*Officer and Bishop (2009)' - Market Risk Premium: Further Comments [p.4]*), at '-40.4%'. Inclusion of the data point for 2008 by itself reduces the annual average MRP since 1883 by 0.4pts. However the negative returns for 2008 simply highlight two further factors:

- The MRP reflects the difference between a risk free rate and the risk associated with a diversified portfolio of equity holdings. To the extent that extreme market volatility increases the perceived risk associated with a properly diversified portfolio of equity holdings, the forward looking MRP will increase.

- One of the problems associated with estimating a 'forward looking' MRP from historical data is the exact choice of years. There are benefits to choosing as many years as possible, but that runs the risk of biasing the long run number if either the initial year or the terminal year were not representative. An alternative approach is to measure either peak-to-peak or trough-to-trough returns – but that carries other problems including shortening the estimating period. However, in the period following a significant decline (such as occurred in 2008) forward looking returns would be expected to be higher, to the extent that the market could be expected to return to mid-range levels. Or as 'Officer and Bishop (2009)' stated *"There is a likely inverse relationship between a realised MRP and a forward looking MRP". – [p.7]*

In their most recent paper 'Officer and Bishop (2009)' recommended that the MRP should be increased to "*7% if imputation tax benefits were valued at greater than 0.3 when distributed…*" – *[p.5]*; this reference to "when distributed" should be interpreted as a comment on theta rather than gamma.

Whilst consistency in regulatory treatment of a parameter such as MRP might suggest that the ERA should continue to adopt a figure of 6%, it is quite clear that 'Officer and Bishop' based on the latest available data would regard such a figure as too low, at least for values of theta greater than 0.3. If the ERA intends to stick to the regulatory

precedent of using a value of 6% for the MRP, such a precedent would only be acceptable in the context of gamma being reduced to zero. Alternatively if the ERA insists on a value of gamma of say, 0.3, it should accordingly increase the MRP to 7%.

Equity Beta

The purpose of calculating an equity beta is to evaluate the additional returns an equity investor can reasonably expect to earn in future based on the systematic risk associated with a particular equity investment. To the extent that it is equity in Fortescue that supports the capital investment in the infrastructure that asset seekers will require access to, the cost of equity to TPI is the cost of equity to Fortescue. With TPI effectively exposed to the same risk as Fortescue, TPI should be considered to have the same asset beta as Fortescue, namely 2.14 – *see Synergies WACC Draft Determination Response – [p.23]*. This asset beta combined with the average gearing for Fortescue over the past 5 years, namely 30.5% - *see Synergies WACC Draft Determination Response – [p.24]*, would give an equity beta of 3.08.

The ERA expressed the view that "*The systematic risk of an infrastructure owner does not directly equate to the systematic risk of its customers, given it is also dependent on a number of other factors, including the nature of the contractual arrangements between the infrastructure owner and customers. The Authority has consistently rejected the argument that the systematic risk of an infrastructure necessarily reflects the customer base*" – *[para 110]*. It is true that the systematic risk of an infrastructure owner does not directly equate to the systematic risk of its customers, particularly where there are multiple customers transporting a variety of different products (as was the case with Westnet Rail). However in this instance FMG Chichester is the only customer that TPI currently has (ignoring Atlas because that contractual relationship is a temporary arrangement – the permanent arrangement will involve Atlas trucking ore from Pardoo to the PHPA berth at Utah Pt.) and therefore TPI is not able to rely on a range of customers to diversify the risk. Similarly iron ore is the only product likely to be transported so there is no ability to diversify risk through transporting a variety of different products (with different demand cycles). Moreover, whilst there are assertions made by third parties about the large amount of Mineral Resources that represent latent demand for transport services – it is important to distinguish between Mineral Resources, which merely attest to the existence of iron molecules in the ground and Ore Reserves which attest to the commercial viability of extracting the ore from the ground and selling it. So whilst the North West Iron Ore Alliance has identified over 3 billion tonnes of Mineral Resources, within that total there are less than 15m tonnes of Ore Reserves and half of those Ore Reserves will be used to support an operation trucking ore to Utah Pt.

It is also true that the relationship between the systematic risk of an infrastructure owner does not necessarily equate to the systematic risk associated with its customers considered in aggregate (as a single purchasing entity; including the extent to which such aggregation reduces the systematic risk through diversification), because the relationship between the two depends on the extent to which risk is transferred through the contractual relationship. However, since Fortescue determines the contractual relationship between FMG Chichester and TPI, and it has determined that risks are equally apportioned across its businesses then assuming that 'whatever the risks' they are equally shared, is not an unreasonable assumption. Under those circumstances the systematic risk is the same for the customer as for the infrastructure owner. In effect, TPI is assumed to be being paid on a 'profit share' basis by FMG Chichester.

The ERA acknowledged that there were few comparable companies for the nature of the risk faced by TPI's bulk iron ore traffic, and that even those US and Canadian railways that have traditionally been used by regulators when assessing regulated Australian railways may not be appropriate comparators for TPI. The ERA also observed that GWI was "*likely to be the best comparator for a short line railway, not withstanding that GWI has significantly greater diversity than TPI*" – *[p.19];* it went on to imply that part of the reason that GWI had such a high asset beta was because GWI derived around 30% of its revenue from overseas assets which imposed a degree of exchange rate risk on its operations.

GWI was regarded by the ERA as having an asset beta of 1.07. It was acknowledged by the ERA that GWI was likely to be the best comparator albeit that it had greater diversity that TPI – and by implication a lower risk due to that diversity. It was then acknowledged that GWI's exposure to revenue from overseas assets increased its riskiness due to its exposure to currency movements. However, all of Fortescue's customers are based overseas and its revenues are almost totally US Dollar denominated – iron ore is priced in US Dollars. Given that Fortescue and TPI face the same common risk profile it is clear that TPI effectively faces greater exchange rate risk exposure that GWI. It is therefore logically inconsistent for the ERA to assert that an asset beta in the range 0.7 to 1.0 would be reasonable for the TPI railway given that the best comparator (but one with a lower asset risk profile and therefore a lower asset beta) has an asset beta above this range. Although CRA expressed reservations about utilising a single comparator such as GWI, on the basis of the large statistical errors inherent in beta estimation – it is still preferable to use an imprecise but unbiased estimator over a more accurate but inherently biased estimator, which is what happens when additional companies are included that are inherently less risky.

We would continue to maintain that the correct asset beta to be employed should be Fortescue's asset beta. If one were to attempt to adjust for the lower level of risk associated with TPI's operations, in spite of the fact that there has been no contractual apportionment of risk between the two entities, then the bottom of the range being considered should be well above the asset beta calculated for GWI and, given our belief that the correct figure should be the actual asset beta recorded for Fortescue, we would expect the compromise to be far closer to the top of the range than the bottom. On balance we accept that the compromise figure of an asset beta of 1.85 suggested by Synergies represents a reasonable balance.

Conclusion

In its draft WACC determination, the ERA derived a figure of 7.45% as the nominal pre-tax cost of debt. The actual cost of Fortescue's debt is running at an effective rate of 11.87%. To use a lower figure would be to require Fortescue to allocate its capital to access seekers at a rate below the cost to Fortescue itself – in other words it would be forcing Fortescue to subsidise access seekers. That was not the basis under which Fortescue agreed to allowing TPI's rail assets to be put under the regulatory authority of the ERA. The figure of 11.97% should be used for the nominal pre-tax cost of debt.

In its consideration of the cost of the equity component of WACC, the ERA has adopted a variety of assumptions which derive from reliance on regulatory precedence and comparisons with inappropriate comparators – gamma, MRP, assumed gearing ratio and asset beta. We would urge the ERA to reconsider the adoption of MRP of 6% especially when taken in conjunction with a gamma of 0.5 – latest data suggests 7% would be more appropriate.

Most damaging to TPI's interests is the unwarranted assumption of a contractual relationship between FMG Chichester and TPI that transfers risk from TPI to FMG Chichester. Without that assumption TPI's risk profile becomes Fortescue's risk profile and an asset beta of 2.14 becomes clearly warranted. In contrast the ERA has chosen to adopt an asset beta of 1.0 which is below the best comparator (GWI; which is clearly less risky than TPI). The compromise suggested by Synergies, namely an asset beta of 1.85 would be an acceptable compromise although TPI remains of the view that the figure of 2.14 should be used.

Yours sincerely
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