Submission
to the Economic Regulation Authority
In response to
Issues Paper under
Railways (Access) Code 2000:
Weighted Average Cost of Capital

Executive Summary

1.1 On balance, Flinders Mines Limited (**FMS**) believes that there is no convincing evidence that the parameters and methodologies used in calculating the WACC should be substantially changed.

1.2 However, these submissions do highlight certain areas for improvement.

2. Introduction

2.1 This submission by Flinders Mines Limited (**FMS**) is in response to the Issues Paper dated 7 February 2013 published by the Economic Regulation Authority (**ERA**) in relation to the determination of the Weighted Average Cost of Capital (**WACC**) for the rail facilities operated by The Pilbara Infrastructure Ltd (**TPI**).

2.2 FMS understands that the ERA firstly proposes to determine the WACC values for 30 June 2013 and secondly to institute any appropriate changes to the method for calculating rail WACC values from 30 June 2014. FMS makes this submission in relation to the ERA's review of the methods for calculating the rail WACC values to apply from 30 June 2014. However, FMS also asks the ERA to have regard to this submission when updating the rail WACC values to apply to regulated railway networks as at 30 June 2013.

2.3 This submission does not deal with either the PTA passenger railway or Brookfield Railway, except by way of comparison. The submission focuses upon the considerations relevant to the determination of the WACC for TPI's railway network. As noted in the Issues Paper, the TPI network links Fortescue Metals Group's mines in the Pilbara to TPI's port facilities in Port Hedland.

2.4 These submissions respond to the Issues listed in the ERA's Issues Paper of 7 February 2013 in the same order as they are listed by the ERA.

3. Objective of WACC

(Issue 1)	Is it reasonable to consider criteria when evaluating alternative WACC methodologies?

3.1 Given that WACC is a theoretical calculation for which alternative methods of calculation are available, FMS agrees it is reasonable to consider criteria when evaluating alternative WACC methodologies. However, it is important that the criteria be consistent with the fundamental objective of the *Railways (Access) Act 1998*, which is to establish a rail access regime that encourages the efficient use of, and investment in, railway facilities. Unless such criteria are used, the outcomes achieved under the *Railways (Access) Code 2000 (***Access Regime***)* may be divergent from this key statutory objective.

(Issue 2)	Are the criteria identified consistent with the objectives of the rail regime? Are there other criteria that might be considered?

3.2 The criteria are broadly consistent with the objectives of the Access Regime. However, there are other criteria or objectives that could be considered to encourage access and prevent the acquisition or misuse of market power by a railway owner. These criteria could relate to efficiency considerations and have the effect of stimulating competition by ensuring the WACC:

- includes similar economic risks faced by the regulated business; and
- represents the costs faced by a new entrant

4. Efficient financing costs

(Issue 3)	What constitutes "efficient financing costs", and how should this inform the approach to estimating the WACC?

4.1 In FMS view, efficient financing costs are represented by financing practices that result in the lowest total finance cost over the life of the asset. Only a small proportion of funding originates from the Australian Dollar bond market and a bigger proportion of utilities funding originates from the longer maturities US Dollar market.

4.2 The timing of debt-raising and the maturity of bonds are not linked to the regulatory cycle. Prudent debt management requires long life assets to be funded by long term loans to minimise refinancing risk. This risk was evident from the GFC where withdrawal of support by debt providers and the limited availability of long-term funding exposed borrowers to default.

4.3 Using a 10 year maturity assumption for establishing the cost of debt may be more consistent with efficient funding experience. Locking in the risk-free rate for five years would require the use of interest rate swaps. Repricing debt during a 20 day period consistent with the regulatory period could potentially drive up prices on swaps used to lock in the regulatory rate.

4.4 Liquidity conditions in swap markets have changed since the GFC and given that there is reduced liquidity in the market, increasing the averaging period from 20 to 40 days may be more appropriate.

4.5 Using a 10 year average for the cost of debt, the cost of equity and inflation brings the averaging assumptions in line with each other The regulatory concern with this approach is that it does not reflect the efficient cost of debt at the time of the decision (which may be lower) and may not reflect the cost of debt for a new entrant. However, it does reflect an efficient cost over the life of the asset and is more consistent with actual funding practices.

(Issue 4)	**Are there other methods that provide information on efficient financing costs that need to be taken into account?**

4.6 If long term averages are used this would require the use of fair value curves to determine the debt margin. It would be impractical to use a portfolio of bonds as the composition of the portfolio has to be determined on every single day of the estimate.

4.7 Inflation could be measured by the break-even inflation rate between nominal and indexed Commonwealth Government bond yields.

5. Benchmark efficiency

(Issue 5)	What elements of the evaluation of the WACC should be informed by benchmarking?

5.1 Debt and equity raising costs can vary significantly depending on the capital requirements and overall risk profile of a corporation. Whilst it would seem ideal for correlation purposes that these be benchmarked against stand-alone railway infrastructure providers these are rare in Australia. This would need inclusion of overseas railways and in particular the USA freight railways. Additionally, the inclusion of regulated utilities would be a similar type of benchmark comparator as well as integrated logistics entities.

5.2 Other broader considerations could be covered with regard to ASX transport sector indices.

5.3 Other WACC that the ERA could consider benchmarking are:

- the Market Risk Premium;
- the level of gearing;
- the equity beta; and
- credit ratings.

(Issue 6)	What considerations are relevant when estimating the associated parameters for the benchmark efficient railway owner?

5.4 FMS considers that three parameters can be calculated directly from financial market data namely the risk free rate, the debt margin and inflation. The calculation of these parameters requires methodologies to ensure that the outcome reflects the efficient and representative cost of the specific railway. This is important as each railway regulated by the Access Regime is different and has different purposes.

5.5 FMS considers that other parameters require more complex estimation methods or assumptions:

(a) The Market Risk Premium is a backward calculated parameter and requires some forward looking input.

(b) The degree of systemic risk is influenced by the export iron ore market and yet, despite the GFC and the subsequent fall in iron ore prices, export tonnages have not fallen (except for weather events).

(c) The level of gearing is specific for each railway.

(d) The level of imputation credits is non-existent for foreign investors and gamma should be treated as zero. (Please refer to Issue 45).

(Issue 7)	Should the same sample of benchmark firms be used to inform each parameter?

5.6 Due to the lack of comparable Australian businesses, FMS believes consideration should be given to using different samples to correlate the theoretical outcome to the circumstances of a particular railway.

(Issue 8)	Should benchmark measures be based on an average or median of the sample or from the best practice outcomes?

5.7 Where best practice outcomes can be clearly identified with the parameter to be benchmarked, they should be used. Otherwise, benchmark measures would preferably be based on the median as a biased sample may affect an average.

6. Degree of risk associated with infrastructure projects

(Issue 9)	How should the degree of risk for a railway owner be measured? What does this imply for the estimation methods, models, data sets and other information required to determine the WACC?

6.1 The building blocks of the WACC calculation (for example gearing ratios, market risk premium and equity beta) may be different as between TPI and a common carrier, such as Brookfield Rail because of the common carrier's ability to diversify commercial risk across a range of customers.

6.2 The TPI railway is a single purpose railway and its major customer is its parent company. To that extent, TPI's railway may be distinguished from Brookfield Railway, as it has an ability to diversify commercial risk across a range of different freight customers. While TPI's degree of systematic risk is specific to the iron ore export market and not the general Australian economy, TPI's degree of risk is low because if TPI's parent company were to fail, its volume would be replaced by other third parties. In the event that third parties are granted access, there is no stranding risk as the spur line would be paid for by the third party access seeker (as is the case for all the recent WestNet and Brookfield Rail expansions or extensions). The effect on the main line would be minimal given that any FMG capacity expansion underway would mean the main line would consist of significant sections of duplicated track. In effect the stranding risk is mitigated by the very economic structure of the railway.

(Issue 10)	Should stranding risk be considered a non-systematic risk?

6.3 In principle, the beta should reflect the impact of systematic risk which cannot be diversified; that is, variations in revenues and profitability as a result of variations in general economic parameters such as economic growth, levels of employment and inflation. In the case of TPI's railway, which is regulated by the Access Regime, the stranding risk should be considered a non-systematic risk and not considered.

6.4 To date, the only case of market failure has been the closure of tier 3 grain lines. In this instance, the Government resumed these lines from the lessee and closed the lines down. As a result, the Government absolved Brookfield Rail's responsibility under the lease to maintain the lines.

6.5 The railways of the Pilbara (including TPI's railway) are in heavy demand from their miner owners, as well as from a number of emerging iron ore miners (including FMS) who need access to those railways to transport their iron ore to a coastal port for export. TPI's railway has no stranding risk, as its main line is increasingly utilised by its parent company, FMG, and any spur lines (or other associated rail infrastructure) is likely to be built at the cost of access seekers, therefore avoiding any stranding risk for TPI.

(Issue 11)	Does the CAPM framework accommodate an assessment of stranding risk? If not, why not?

6.6 Modern portfolio theory shows that specific risk can be removed by diversification however; a portfolio of all the shares in the stock market cannot eliminate that risk. The Capital Asset Pricing Model (CAPM) therefore evolved as a way to measure systematic risk. The CAPM beta is the only relevant measure of a stock's risk. It measures a stock's relative volatility –that is, it shows how much the price of a particular stock moves up and down compared with how much the stock market as a whole moves up and down. Beta, compared with the equity risk premium, shows the amount of compensation equity investors need for not taking additional risk. Equity investors therefore would take account of potential stranding risk which results in the volatility assessment of the stock.

6.7 As stated above in Issues 9 and 10, this risk is either non-existent or negligible and can be diversified. Therefore, in the case of TPI's railway, there is no need to accommodate such a risk.

7. Overall Regulatory Framework

(Issue 12)	What form of WACC is considered most appropriate to apply to rail networks?

7.1 FMS believes it is evident from the ERA's own analysis as well as much academic writing on the broad subject area, the use of the Capital Asset Pricing Model (**CAPM**) as a basis for deriving a WACC for regulated entities is fraught with theoretical and practical difficulties.[1] Most, if not all the critical parameters involved are not directly measurable.

[1] "*We continue to teach the CAPM as an introduction to the fundamental concepts of portfolio theory and asset pricing, to be built on by more complicated models like Merton's (1973) ICAPM. But we also warn students that despite its seductive simplicity, the CAPM's empirical problems probably invalidate its use in applications."* The Capital Asset Pricing Model: Theory and Evidence by Eugene F. Fama and Kenneth R. French, January 2004

Proxy data is highly variable and involves the use of backward-looking analysis of parameter data to derive the values of expected parameters. Therefore, there is great uncertainty about the appropriate value of a forward looking WACC, with the CAPM providing essentially a convenient aid to informed, consistent and transparent judgment.

7.2 This strongly suggests there is a need to avoid over emphasising the establishment of individual parameter values. FMS submits that focus should instead be on the overall outcome with reference to the underlying purpose of the regulatory regime. From a policy and practical perspective, this involves reaching a balance between: on the one hand, not discouraging discretionary investment in essential infrastructure by providing a reasonable risk adjusted return on the investment; and, on the other, facilitating the use of that infrastructure to enable essentially cost competitive resources to serve regional/global markets by ensuring a full utilisation of key infrastructure. These judgements need to take into account the totality of the framework applying to the regulated entity. Consideration must be given to the Costing Principles together with the Segregation Arrangements and the Train Path and Train Management Guidelines.

7.3 On this basis, FMS broadly accepts the CAPM framework and its constituent elements as a practical and transparent framework for determining WACC. If any alternative approach were to be used it should only be used as a cross check.

(Issue 13)	What would be the costs and benefits of moving from a pre-tax WACC to a post-tax WACC?

7.4 Applying a post-tax framework requires that revenue determinations include an estimate of corporate income tax, including the effects of imputation credits. As such, the corresponding rate of return is independent of any tax influence.

7.5 FMS notes the majority of Regulators' preference for a post-tax nominal rate of return.

7.6 FMS notes that the majority of Regulators prefer to use a post-tax nominal rate of return. The costs in moving to a post-tax WACC would arise in obtaining accurate data on tax liabilities and the imputation of franking credits. The benefit would be a more accurate estimate of tax liability applying to a specific railway.

(Issue 14)	In particular, would there be any significant costs associated with estimating tax liabilities under a post-tax approach? Would these costs outweigh any benefits, such as through more accurate recompense for tax liabilities?

8. The estimate of corporate income tax requires an estimate of the value of imputation credits (gamma). As discussed under Issue 45, FMS take the view that the value of gamma is zero and as such the estimation of tax liabilities would not be costly and the use of a post-tax WACC would bring the Authority's methodology in to accord with other Regulators and therefore provide a more accurate parameter for the WACC calculation.

9. Components of the WACC

(Issue 15)	What are the key characteristics or the selection criteria for businesses to be included in the benchmark sample?

9.1 FMS considers that the key characteristic for the freight railways benchmark sample are directly comparable freight railways, regulated utilities, private infrastructure businesses in network distribution and transmission, freight and logistics businesses and a broad spectrum of long life asset businesses.

(Issue 16)	Should international railways be included in the sample of benchmark companies used to determine benchmark gearing levels?

9.2 The small sample size of Australian networks to which access regimes apply and given that the ARTC Interstate and Hunter Valley networks are theoretically benchmarked businesses. Therefore, FMS submits that private enterprise international railways should be included in the sample of benchmark companies, in particular freight railways in the USA. These are generally long life, low risk businesses and gearing should be included.

(Issue 17)	What are the appropriate time periods and the methodology for determining the benchmark gearing ratio from available market data?

9.3 A broad principle is that gearing level should be an industry specific gearing level. IPART in its Discussion Paper on the review of WACC, which covers utilities and rail, states that:

> 'Several aspects of our current methodology are outside the scope of this review, as we consider they are relatively settled" and these included "the assumed credit rating of BBB/BBB+".[2]

9.4 The appropriate time periods should be at the regulatory re-set time frame (five years).

(Issue 18)	Is it appropriate to adjust benchmark estimate of gearing levels to reflect differences in the level of risk between benchmark businesses and the regulated railway owners?

9.5 FMS considers that generally, the railway business is a low risk business as evidenced by the support of the Queensland National Freight Rail stock market float, and if the comparators are able to be selected as suggested any adjustment to the benchmark estimate would not be necessary. For example the gearing ratio of Fortescue Metals Group (FMG) as at 30/6/2012 was 90% and at 31/12/2012 was 167%. This gearing ratio is obviously more reflective of the overall FMG mining business than that of the TPI Railway.

10. Nominal Risk Free Rate

(Issue 19)	Are there any viable alternative to the Commonwealth Government Securities as an appropriate proxy for the nominal risk free rate of return for railway networks?

10.1 The IPART WACC Review 2012[3] proposed the use of the Bloomberg 10 year Commonwealth Government bond rate index. The Review noted:

[2] Review of the method of determining WACC, Discussion Paper, IPART December 2012, page 19

[3] IPART's Weighted Average Cost of Capital, Final Decision, April 2010, page 3

"Our discussion papers raised the option of switching our source of the 10-year risk free rate to the 10-year Bloomberg Australian risk free rate index. The submissions we received indicated that stakeholders do not have any issues with this proposal."

10.2 Other alternatives may include Bank bonds or commercial bonds but these would have to be BBB/BBB+ rated and have market depth to be viable alternatives. (Please refer our response to Issue 34)

(Issue 20)	What is the appropriate period for determining the term of the risk free rate?

10.3 FMS takes some issue with a 5 year term of the risk free rate because below rail assets have a far longer term than gas or electricity assets e.g. rail is 50 years and a financing proposal for a greenfield railway would have to be at least 15 years. The risk free rate should consider a longer term, preferably over a 10 year term.

10.4 FMS submits that shortening the term of the risk free rate to 5 years to match the regulatory period is consistent with the principle of "NPV=neutrality" because it matches the investment and risk profile of investors. A 5 year term would expose a railway owner to refinancing risk. Against this, matching the maturity period to the regulatory period would reduce interest rate risk. As the ERA recalculates the risk free rate annually, a longer term would be more appropriate for rail infrastructure.

10.5 While no averaging period can overcome the problem that the WACC is set at a specific point in time, a period of greater than 20 days may eliminate some of the volatility in the data around the time the WACC is set. Therefore, FMS submits that the ERA should consider longer sampling periods (40 days) where volatility is particularly evident in 20-day samples.

(Issue 21)	What is the best proxy for the nominal risk free rate of return for railway networks?

10.6 FMS suggests the ERA consider the option of switching the source of the 10-year risk free rate to the 10-year Bloomberg 10 year Commonwealth Government bond rate index.

11. The Cost of Equity

(Issue 22)	Is it reasonable to rely on a single internally consistent model for determining the return on equity, or should a broader range of models and methods be used? If so, how might internal consistency be maintained for the overall method?

11.1 FMS supports the continued use of the Sharpe-Lintner CAPM model and notes that IPART considered the use of the Fama-French three factor model and rejected it.[4]

[4] IPART's weighted average cost of capital, Final Decision, April 2010, page 13

(Issue 23)	Is the adoption of a domestic form of the CAPM – with foreign investors recognised only to the extent that they invest within Australia – appropriate from a theoretical and practical point of view? If not, what are the alternatives?

11.2 A domestic form of the CAPM whilst having a theoretical underpinning lacks a current and credible data base. As detailed in Issue 16 given the small sample size of Australian railway freight networks to which access applies then international railways, such as freight railways in the USA, should be included.

(Issue 24)	Would it be appropriate, feasible and practical to adopt either a fully segmented (domestic) or a fully integrated (international) version of the CAPM?

11.3 As commented in Issue 23 a domestic version of the CAPM lacks depth to the extent that it could distort the cost of equity. The current equity beta of 1.5 for TPI would imply that a 10% change in the value of the ASX 200 up or down would imply a 15% rise or fall in their market value. This is clearly not the case.

11.4 As rail infrastructure investments are global, as is evidenced by the foreign investor up-take in the Queensland Freight Rail float, a fully integrated (international) version of the CAPM is supported by FMS

(Issue 25)	What other evidence on return on equity might be used as a cross-check to the estimates from financial models?

11.5 Evidence which may be used as a cross-check includes:

(a) External peer reviews from banks, financial institutions and consultants.

(b) Analysis from brokers, financial institutions and other regulators.

(c) Sensitivity analysis.

12. Market Risk Premium (MRP)

(Issue 26)	What is the best method for estimating the MRP?

12.1 Like all key elements of the WACC framework, careful judgment must be exercised to estimate the MRP as the premium is not directly observable. FMS notes that regulators take a consistent approach to MRP and use both historical indices and consideration of information sources regarding current and future expectations. This approach provides a more formed forward look than the use of purely historical data.

(Issue 27)	If the approach of using historical data on equity premium is used to estimate the MRP, what is the best sampling period of historical data to be used?

12.2 The sampling period of historical data should reflect the current regime of raising equity and finance without extreme volatility periods influencing the sample. FMS submits that a period that is too long (for example, in excess of 20 years) would not reflect the changes taking place in the global economy and the expected return on equity.

(Issue 28)	Should the more recent sampling periods, such as financial deregulation (1980) and the introduction of the imputation credit tax system (1988), be used in estimating the MRP as these periods may be more relevant to the current financial environment in Australia?

12.3 Please refer to issue 27 addressed above.

(Issue 29)	Are there any theoretical grounds for considering an inter-relationship between the risk-free rate of return and the MRP over the horizon of five years and longer?

12.4 The only theoretical grounds to consider any inter-relationship between the risk-free rate of return and the MRP would be to test the historic volatility in order to see if any evidence is sufficiently compelling to develop an adjustment factor based on historic experience.

(Issue 30)	When the risk-free rate of return is low/high, should the MRP be revised upwards/downwards? If yes, what is an unbiased mechanism for doing so? What is the threshold of the risk-free rate in which the prevailing risk-free rate can be considered low?

12.5 The MRP is an equity premium above the risk-free rate which, if measured accurately over time, should not be adjusted for movements in the risk free rate. FMS understands that the risk free rate is adjusted annually by the ERA.

13. Equity Beta

(Issue 31)	Results from the econometric evaluation of historical market returns as a means to estimate the equity beta are sensitive to input data. What is the best way to determine the point estimate of the equity beta from the resulting wide range of estimates (e.g. median, average, any relevant quartiles)?

13.1 Given that the ERA is seeking to adopt uniform parameters and methodologies based on the gas sector, FMS submits that the ERA should adopt the method of estimating the equity beta as detailed in paragraph 157 of the Issues Paper. If this method were adopted, then with such a diverse sample such as the ASX 200, use of the median may be more appropriate.

(Issue 32)	Given that there are no comparable rail businesses in Australian for the three regulated railway owners, is it appropriate to select businesses from different industries (such as toll road, truck) and/or rail businesses from overseas?

13.2 Given that the equity beta should relate to the relevant industry the use of businesses from different industries other than rail should only be considered if the overseas rail businesses do not correlate well with the regulated freight businesses.

(Issue 33)	Are there any viable alternative methods to the econometric evaluation of historic market returns, such that the equity beta for regulated businesses might be estimated in a more robust manner?

13.3 FMS is not aware of any viable alternative methods to the econometric evaluation of historic market returns for this purpose.

Cost of debt

14. Credit rating

(Issue 34)	Are there appropriate alternative to the ERA's current method for estimating the credit rating?

14.1 Long-term BBB to BBB+ fair yield curves are already available from Bloomberg and CBASpectrum. Therefore, FMS believes that the ERA should predominantly rely on this information rather than relying on a selected portfolio of corporate bonds that require potentially complex adjustments to extend the term structure based on overseas credit spreads.

(Issue 35)	What are the key characteristics or the selection criteria for companies to be included in the benchmark sample to determine the credit rating for a regulated business in rail?

14.2 Please refer Issues 15 and 16.

(Issue 36)	Among the different types of credit rating for the same company, for example, entity credit rating (i.e. the credit rating for the entire entity) versus instruments credit rating (i.e. the credit rating for a particular debt instrument), which type is more appropriate for determining the credit rating for the purpose of determining the WACC as it is to be used under the Code?

14.3 The two existing freight railways under the Regime clearly have different credit ratings for the parent entity and the railway. Credit ratings for the below railways are not issued separately as there is no individual debt issue paper for their activities. Therefore, as a proxy the credit rating of a particular debt instrument (if available in the re-set period) was available, this should be considered in preference to the credit rating for the entire entity.

14.4 If such data was available then this data should be used to test the universally accepted regulatory credit rating of BBB/BBB+.

(Issue 37)	How recent should the credit ratings for the company and debt instruments be in order to be considered valid as an input to determining credit ratings? How many years in the past can a credit rating be assigned and still be used?

15. FMS considers that the five year assessment period between regulatory re-assessments is adequate.

(Issue 38)	Is the median credit rating of a benchmark sample the best indicator for the credit rating of a railway owner? If not, then what is the best method to determine the credit rating from the benchmark sample?

15.1 As outlined in Issue 8, the median is considered the preferred method to reflect the most suitable proxy.

(Issue 39)	What methods are suitable as a cross-check of the robustness of a determination of a credit rating for a railway owner?

15.2 Methods suitable as a cross-check include:

(a) External peer reviews from banks and financial institutions;

(b) Comparison of the CAPM data base ratings; and

(c) Opinions from rating agencies.

16. Debt risk premium

(Issue 40)	Are there more appropriate alternatives to the bond yield approach for estimating the debt risk premium?

16.1 FMS submits that the benchmark debt margin for utilities should be consistent with:

(a) any directly observable yields on long-dated Australian corporate bonds during and around the time of the relevant measurement period, and in particular bonds issued at around that time;

(b) reasonable views based on market evidence regarding the term structure of Australian corporate bond yields at the benchmarked credit rating of BBB+; and

(c) reasonable views based on market evidence regarding credit spreads (that is, the sensitivity of yields to variations in credit ratings) of non-bank Australian corporate bonds of the same maturity.[4]

(Issue 41)	Are there any considerations associated with the bond yield approach that have not been made by the ERA?

16.2 FMS notes that the WACC is determined with no reference to the cost of fixed debt.

(Issue 42)	Should Moody's credit rating of Australian corporate bonds be included in the selection criteria for the benchmark sample?

16.3 FMS submits that the inclusion of Moody's credit rating would add depth and would outweigh the risk of a significant difference in the credit rating assigned to the same company.

(Issue 43)	If the bond yield approach is adopted, should the current scenario based weighting approach continue to be used, or should a joint weighting approach or some other averaging be adopted?

16.4 FMS considers that the current scenario based weighting approach is preferred.

17. Debt Raising Costs

(Issue 44)	What data source is best to gather evidence of debt raising costs incurred by businesses when they use debt financing to finance their capital programs?

17.1 FMS suggests that the ERA survey an appropriate group of financial institutions.

(Issue 45)	Are there more appropriate alternatives to the Allen Consulting Group method for estimating the debt raising costs?

17.2 As the Allen Consulting Group method is no longer able to be updated, FMS refers to its suggestion at Issue 43 that the ERA conducts a survey to test that the assumption of 12.5 basis points is still applicable.

18. Gamma

(Issue 46)	What are the best methods and/or studies of estimating the value of gamma that should be considered by the ERA?

18.1 In FMS view, the value of gamma is zero. FMS recognises that since the introduction of the 45-day rule, franking credits are now worthless to the marginal foreign investor. Assuming that the domestic market is fully segmented (therefore ignoring the presence of foreign investors) a gamma other than zero is not considered realistic and would have implications for the estimation of other market-determined parameters. There is evidence in recent reputable studies which rejects the hypothesis that gamma has a value other than zero.

18.2 While franking credits may have had some value prior to the change to taxation law (which may be reflected in estimates from studies that have spanned this decision), FMS submits, this is no longer the case. The early regulatory decisions which adopted a value of 0.5 (which became a precedent) were also made prior to the introduction of the 45-day rule. FMS view is that there is sufficient evidence to now review the fundamental basis of this assumption.

(Issue 47)	What are the main considerations for estimating gamma via the estimates of the payout ratio and theta? Is it possible to estimate gamma directly from available market data?

18.3 FMS has no comment. Please refer to our response to Issue 45.

(Issue 48)	Are there methods – other than dividend drop off studies – that could be used to better estimate the value of implication credits?

18.4 FMS has no comment. Please refer to our response to Issue 45.