ERA Cost of Debt and Equity Workshop Papers:

DBP Response

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1. INTRODUCTION

1.1. This brief paper provides a response to the to the two Economic Regulation Authority (ERA) papers *Cost of Debt Comparative Analysis* (debt paper) and *A potential Approach to Estimating the Return on Equity* (equity paper).[1] These two documents were prepared by the ERA (and its consultant) to inform a workshop on the cost of debt and equity held on Thursday November 7th 2013, and our response also highlights our consideration of issues raised at that workshop.

1.2. As requested by the ERA, we have restricted our response to issues raised in the two papers and the workshop. We still believe issues in the ERA's approach to determining risk and similarity, and its opinions about cost of equity models,[2] are likely to cause problems for estimation of the cost of equity and debt. We are also of the view that more attention needs to be paid to consumers' views on the long-term interests of consumers, particularly in respect of the effects of debt models on price volatility. More information on our views in respect of risk and similarity can be found in the DBP submissions to the ERA's guidelines process and the Australian Pipeline Industry Association (APIA) submissions to the Australian Energy Regulator's (AER's) guideline process. We look forward to more information about consumer views being reflected in the Final Guidelines.

1.3. Section Two of our response addresses the over-arching issue of the ARORO, and its place in ensuring that the cost of debt and return on equity is properly estimated. We have included this as a separate section because it cuts across both the cost of debt and the cost of equity. Section Three of our response addresses the cost of equity paper, and Section Four addresses the cost of debt paper. In each case, we also address issues raised in respect of each at the workshop.

1.4. Only one week has been allowed from the workshop to the deadline for responses to the two papers (which were released late afternoon on November 5th) and this has necessitated a brief response addressing pertinent issues. The short timeframe ought to be taken into consideration when examining our response; it is not possible, for example, to commission and complete detailed investigations of particular issues in one week. We would be happy to assist the ERA if it requires further clarification of any of the points raised in this submission.

We would like to take this opportunity to commend the ERA on the initiative it took in holding the workshop. Short timeframes for submissions aside, the workshop and accompanying papers provided a valuable insight into the evolving thinking of the ERA on the cost of debt and equity, as well as an opportunity for all stakeholders to engage in debate about that thinking as it evolves. Whilst we do not agree with all of the ERA's conclusions, the ability to engage in debate about regulatory practice as it evolves has been very valuable to us, and we would encourage the ERA to make use of similar processes in future.

[1] We note that the cost of debt paper was prepared by Chairmont Consulting, not the ERA.

[2] On this point, since the Draft Guidelines, the Swedish Royal Academy of Sciences has expressed disagreement with the ERA's viewpoints on the Fama-French Model (see www.nobelprize.org/nobel_prizes/economic-sciences/laureates/2013/advanced-economicsciences2013.pdf, p38-9). Whilst winning a Nobel Prize in economics should not automatically result in the acceptance of a model by economic regulators, we would hope that the ERA has considered this new information, and we look forward to reading its conclusions in the Final Guidelines.

2. THE NEED TO CONSIDER THE ARORO

2.1. In each of our submissions to both the ERA and the AER, we have attempted to put the Allowed Rate of Return Objective (ARORO) at the centre of considerations on the return on equity and debt in a way that we believe neither regulator has done adequately to date. In the workshop, the ERA indicated that it considered its criteria, as outlined in the debt paper to encapsulate the ARORO. We take this to mean that the ERA asserts that, if makes use of these criteria in constructing the methodology for estimating the cost of debt and equity, it will meet the ARORO. This theme also appears in the Draft Guidelines where, in an appendix to the Explanatory Statement, the ERA outlines how it believes each of its criteria can be linked to the ARORO.

2.2. The ERA's approach to the ARORO is an input-based approach; if it ensures that it meets its criteria in considering each element of the rate of return measures, then meeting the ARORO ought to be assured. This kind of logic reflects the WA Gas Networks and DBP Tribunal decisions, which suggested that, if models are well-accepted then it is almost contradictory to say that the model will not produce a reliable output if the inputs are correct.[3]

2.3. However, the AEMC, changed the way the rules are written as a specific response to judgements such as this, noting (AEMC, 2012, p48):

> *"The Commission considered that this conclusion (*in paragraph 2.2 above*) presupposes the ability of a single model, by itself, to achieve all that is required by the objective. The Commission is of the view that any relevant evidence on estimation methods, including that from a range of financial models, should be considered to determine whether the overall rate of return objective is satisfied.*
>
> *The Commission therefore emphasised that a focus on the overall estimate of the rate of return was a key objective of the new rate of return framework. The Commission considered that requiring the regulator to have regard to relevant information on estimation methods, financial models, market data and other evidence, and allowing the regulator more capacity to achieve the overall objective, combined with a strengthened emphasis on achieving this objective, is more likely to achieve the NEO and the NGO than the current approaches"*

2.4. There is consistent reference throughout the relevant chapter (AEMC 2012, p38-71) to the nature of the ARORO as an "overall" measure, intended to assess the output of the calculated rate of return, rather than relying upon getting the inputs of any given model right. For example (AEMC, 2012, p38):

> *"A new common rate of return framework will be implemented that requires the regulator to determine a rate of return (the allowed rate of return) that meets an overall objective focussed on the efficient financing costs a benchmark efficient service provider."*

2.5. The AEMC considered this "overall" approach is necessary to meet the requirements of the National Gas Objective and the Revenue and Pricing Principles (ibid, p43):

> *"It was also highlighted that there is a need to bring the focus of the rate of return estimate in the rules back to the NEO, the NGO and the RPP. The Commission's*

[3] *Application by WA Gas Networks Pty Ltd (No 3)* [2012] ACompT 12, [63]; *Application by DBNGP (WA) Transmission Pty Ltd (No 3)* [2012] ACompT 14, [84]. Note that this judgement was made under the old rules, and the "well-accepted" standard has now been removed.

> *proposed rate of return framework therefore had an overall objective for the allowed rate of return. In order to meet the NEO and the NGO, this objective reflected the need for the rate of return to "correspond to" the efficient financing costs of a benchmark efficient entity, this entity being one with similar circumstances and degree of risk to the service provider."*

2.6. Finally, the AEMC made clear the need for different checks and balances to ensure the ARORO is met (ibid, p69):

> *"The Commission has taken the view that it is preferable not to prescribe in the rules a list of particular models that should be considered or indeed prescribe characteristics that must be met by such a model. The Commission instead is requiring that the regulator have regard to relevant estimation methods, financial models, market data and other evidence and is leaving to the judgement of the regulator the relative weights to be given to methods, models and such information. Implicit in this requirement to consider a range of methods, models and information is that checks of reasonableness will be undertaken."*

2.7. We believe that the AEMC is making it very clear that it intends the ARORO not to be an input-based check of process or of individual parameters, but rather an output-based check of the overall rate of return.

2.8. Stage Four of the ERA's process is where such an output-based test would be implemented, before the final rate of return on equity is determined as part of Stage Five. However, the overall return check currently in the equity paper (see paragraphs 3.11 to 3.13 and 3.23 and 3.24 below) is inadequate for this purpose. It is inadequate because it is missing an output-based measure of the ARORO to use as a benchmark. The ERA clearly understands the notion, because in the workshop discussion, it spoke about "circling back", revisiting weights and information sources if the investigation at Stage Four showed the first three steps had failed to produce the correct results. This is precisely how the ARORO check is supposed to work, but the ERA has yet to indicate how "correct" is defined.[4]

2.9. Although the ARORO is an output-based measure, it clearly cannot be a pre-conceived notion of the "right" tariff or the "right" WACC, with models adjusted until they produce the "right" outcome. What, then, can it be? This has not yet been addressed by regulators, which is why we have raised the ARORO in each submission to both the ERA and (through APIA) the AER; we believe this should have been the first order of business for the guidelines.

2.10. One approach which may be worth considering is to make use of information from other, competitive sectors of the economy which are unregulated. If the methods used to determine the rate of return in a particular regulatory determination are correct, then applying those same methods in another sector of the economy where resources (including capital) are allocated by market forces ought to produce unbiased estimates of the actual rate of return achieved by investors in these markets. The application of the model ought to also have some degree of tolerable variance in the errors; an unbiased model that is hopelessly imprecise is not very useful.

2.11. We note that asset pricing models like the CAPM generally work on expected returns, not actual returns. This is why we do not propose a test which requires the model to match

[4] We acknowledge that the ERA may not have used this exact word; it is the sentiment, not the exact quotation, we are endeavouring to capture.

actual outcomes, instead suggesting that any predictions ought to be unbiased. We note also that other sectors of the economy do not have similar risk levels to the reference service. However, we are not using this data to directly inform the rate of return, only to assess the model used to calculate it. Unless there is an a-priori reason to suspect that a particular asset pricing model works in some sectors of the economy and not others, the kind of model test discussed in the previous paragraph ought not to pose a problem.

2.12. We do not pretend that the suggestion above completely solves the ARORO issue. Nor do we pretend that it is the only solution. However, since the new rules cannot be effectively implemented until the ARORO is properly defined as an output-based measure, as clearly intended by the AEMC, we present this approach to begin the debate about what the ARORO should look like.

3. COST OF EQUITY

3.1. In this section, we provide our comments in respect of the cost of equity paper, and the explanation of how the ERA proposes to deal with the cost of equity, as outlined at the workshop. This is an important distinction to make, as we outline further below.

3.2. We begin with a brief discussion of some key over-arching issues, before providing commentary on specific issues from within the cost of equity paper.

Overarching issues

3.3. In discussing overarching issues, we draw a distinction between the ERA's five-step process as outlined in the equity paper, and the process as discussed in the workshop. In the equity paper case study, the first step dispenses with all models other than the CAPM, the next two steps mechanically estimate the CAPM parameters and derive a point estimate of the return on equity, which is superficially checked (and not against the ARORO), and finally presented in Step Five. Reading the paper, we found little to distinguish the case study from the existing mechanistic practices which the AEMC has ruled do not meet the National Gas Objective.

3.4. The process as described by the ERA in the workshop is altogether different. In particular, Step Four, where estimates are checked, plays a much larger role, and one which is intended to accommodate the ARORO (see discussion in previous chapter; it does not do so yet, in our view). From the workshop, we understand the process is intended by the ERA to proceed as follows:[5]

- Model(s) are chosen; at present, only the CAPM has been deemed to meet the standards of the ERA.
- The parameters of the model(s) are estimated and point estimates for each parameter are used to produce a point estimate of the return on equity for that model. Where multiple models are used, these point estimates are weighted to produce a point estimate of the rate of return.
- The point estimate is then assessed against other relevant information to understand whether it meets the ARORO or not. Unlike the AER's approach, this does not focus primarily on choosing a point in a range. Instead, if the other relevant information shows the range of each model is incorrect, there would be an automatic circling back to understand what other models or new information would be needed to meet the ARORO. This dynamic circling back may take place over several iterations, and the ERA has indicated other models may form part of the relevant information used at Stage Four if it can be shown they contribute towards meeting the ARORO; essentially an empirical test.

3.5. Although we disagree with the ERA about the exclusion of other models at Stage One, and have some concerns about point estimates and weighting (see below), we believe this approach has the potential to meet the ARORO. From this perspective, the equity paper (though not its case study) and workshop represent a significant step forward for regulatory practice in Western Australia. However, in order for the five-stage process outlined briefly above to work as intended, three things are necessary:

- The ARORO must, first and foremost, be clearly defined as an output-based measure. Otherwise, Step Four becomes little more than a check of each of the

[5] We look forward to the process outlined by the ERA at the workshop being clarified in the Final Guidelines

inputs to a given model, as is the case in the case study in the equity paper, with no "overall" check as the AEMC requires.

- "Relevant information" must represent, as the AER (2013, p61) suggests a relatively "low threshold" to ensure useful information is not prevented from informing Stage Four of the process. From this perspective, the ERA's linking in the Draft Guidelines between the term "relevant" and its criteria (ERA, 2013, p113) is unhelpful, as it risks discarding useful information before it can be used. The same is true of the ERA's dismissal of information from overseas. Moreover, it is unnecessary to discard information in this way; the ERA's Draft Guidelines were prepared prior to this robust five-step framework which allows it to assess information on its merits with a clear output-based goal. The ERA does not need to say which information is relevant, but should confirm the kind of threshold it intends to implement in the Final Guidelines, to prevent Stage Four being defined by the information which is removed from consideration.
- The checks that occur at Stage Four need to be robust. If they are not, they will not provide the ERA with the tools it needs to ensure the ARORO is met (even if it is well-defined) and the methodology will collapse to a mechanistic CAPM for want of something to adequately check its outputs. This is something we address in more detail below.

3.6. Before addressing the checks and balances, we turn to a key issue of process; the use of point estimates and weighting at Stages Two and Three of the ERAs process, and the use of a statistical confidence interval test in Stage Four in the case study example in the equity paper.

3.7. We believe the ERA has things the wrong way around. We believe that Stages Two and Three should be primarily statistical in nature; these are the stages where the ERA develops an understanding of what information can be gleaned from the data, and how precise estimates made using just the data can be. Stage Four is then the stage where the ERA uses its informed judgement in a transparent fashion to take the results from the data analysis and derive an estimate of the rate of return (a point estimate) which can be shown to meet the ARORO.

3.8. The practical upshot of this is that, Stage Three implemented with a single model (as the ERA intends at present) would produce a range of outcomes comprising the confidence interval of that model, and these would be carried into Stage Four. Following our suggestion, the ERA would then make use of other information through a transparent (but not statistical) process of using regulatory judgement to understand where in the range the "right" answer which meets the ARORO actually lies. If no point in the range meets this criterion, then the model returns, as the ERA intends, to Step One.

3.9. Where multiple models are accepted at Stage One, rather than weighting them at Stage Three, we believe that the confidence intervals of each model needs to be carried forward into Stage Four. If the confidence intervals intersect, then the intersection range could instead be carried forward into Stage Four.[6] The multiple ranges or the intersection range would then be assessed against the other information as for the single model above.

3.10. The reason for this suggested approach is not mere methodological nicety. The approach outlined by the ERA in the equity paper mixes objective information and judgement in

[6] The intuition is that, if several models agree on some range for the rate of return, it is more likely that the "right" answer will be found in this range. The ERA has indicated a belief that the ranges will not intersect, based upon its own analysis. We look forward to this analysis being made public, along with sufficient information to allow the results to be replicated.

Stages Two and Three; the ERA has the data which informs parameter estimates (which is objective), and then the weightings and the choices of the point estimates, which are subjective. This means that, at Stage Four, if the calculated rate of return does not meet the ARORO, it is difficult to understand whether this is a problem with objective data or subjective assumptions. This, in turn, makes it harder to ascertain what the appropriate solution ought to be.

Other relevant material suggested in Appendix One

3.11. As noted above, one of the key requirements for Stage Four to work as the ERA intends will be for the independent (from the model(s) used in the first three stages) checks to be robust; either in terms of choosing the right point in a range or for rejecting the range entirely. If they are not robust, then it will be hard to reject the evidence from Stage Three, and this may result in a perpetuation of the mechanistic approach that the AEMC has ruled does not meet the National Gas Objective.

3.12. The checks shown at Appendix One are not, to our minds, sufficiently robust. We note that the ERA appears to have similar views; it suggests that asset sales information and share-trading multiples need to be interpreted with caution, that broker estimates may have an upward bias, particularly in periods where returns are currently low and that decisions made by other regulators may be subject to circularity.[7] The ERA does appear to be more positive about the use of the VIX index, though it has yet to outline clearly how this would be used, except as a judge as to whether market impressions of volatility are above or below average. Its discussion on comparisons between debt and equity, the ERA notes (correctly) that these too give only indicative results.[8] The ERA give marginally more support to past regulatory decisions, but we would suggest caution here as well, as it is often hard to understand exactly where the relevant numbers come from,[9] and whether the methods used are still best practice, particularly after a rule change. We can also see concerns in respect to its use of VIX information (see below), particularly given a lack of clear correlation between a VIX level and current or expected market returns.

3.13. This is problematic. We understand that the list of checks provided by the ERA is not intended to be exhaustive, and in the workshop, the ERA indicated it would accept other checks, such as asset pricing models discounted in the Draft Guideline if new evidence is provided which shows how these better meet the ARORO. Although we do not believe the Final Guidelines should prescribe checks which are admissible, it would be useful if at least some of the checks proposed by the ERA could be demonstrated to be robust. At the very least, this would provide confidence amongst investors and other stakeholders that the five-stage process will operate as the ERA outlined at the workshop.

[7] They may also simply be wrong, or based on out-dated information, as we point out in respect of the market risk premium below.

[8] We note the ERA's requirement that the comparison be made on a "consistent basis", and would appreciate greater clarity. In the Western Power decision (ERA, 2012, p393-4), in response to SFG making a comparison between the cost of debt and equity through examining what the cost of equity would be if the relevant entity was 100 percent equity financed (a standard way of doing this analysis), the ERA noted that if an entity was 100 percent equity financed, this would mean there was no corporate debt, and thus the relevant comparison would be with the government bond rate. This implies that the cost of equity can only be found to be incorrect if it is below the risk-free rate, which flies in the face of standard finance theory and practice and renders the test irrelevant. We look forward to clarification of this point in the Final Guidelines.

[9] Note the APIA submission to the AER's beta paper in this respect, which sought to understand exactly where betas in the water industry (proposed by the AER as a check on betas used in energy) come from.

Specific issues in the cost of equity paper

3.14. In this section, we briefly address some specific issues raised in the equity paper which do not fit into our over-arching discussion above.

3.15. In paragraph seven, the ERA notes that the relevant information could be weighted based upon its merits at each determination. Whilst we would not suggest weightings fixed across time, we are concerned at the influence this suggestion could have on predictability for investors, particularly if there is no way of judging how the ERA might consider that a particular piece of information might be "relevant" at one determination versus the next. As we discuss above, we favour not making use of weightings at all in Stages Two and Three, because of the subjectivity they bring to the analysis.

3.16. In paragraph eight, the ERA suggests that its approach is "largely consistent with that proposed by stakeholders". It cites two papers from APIA and the ENA that date back to February. Both the ENA and APIA have developed their respective models significantly since February. We are unclear why the ERA has cited early work, rather than the more recent versions of the relevant models.

3.17. In paragraph 19 (and again in paragraph 43), the ERA notes the evidence it has relied upon to inform its estimate that beta lies between 0.5 and 0.7. Apart from not indicating how it formed this estimate (and likewise for the market risk premium), and what statistical basis this confidence interval was formed, it ignores information provided to it by DBP in its Draft Guidelines submission. Why has this information been ignored? If the ERA has reviewed the information, and disagrees with it, then it ought to provide reasons. We would be concerned at the introduction of bias into an approach if the ERA makes a practice of ignoring evidence without giving reasons.

3.18. We would also like to understand the basis for the choice of beta at 0.7 in paragraph 43, and in a more general sense, we remain of the view that relying solely upon calculated betas gives a true reflection of systematic risk. The various reasons for this have been outlined in our submission to the Draft Guidelines, and in the various APIA submissions to the AER's guidelines process.

3.19. Also in paragraph 19, the ERA refers to work by Handley on the market risk premium. Handley constructs a series of with-dividend market returns that uses a series of dividend yields that are constructed by multiplying a series that Lamberton (1961) provides by an adjustment factor of 0.75. NERA (2013) shows that a constant adjustment factor of 0.75 is not supported by data sourced from original documents. NERA estimates that using data from 1883 to 2012, Handley's adjustment lowers an estimate of the MRP by 36 basis points. An estimate of the MRP relative to the 10-year yield constructed using an adjustment factor indicated by the data is 6.50 per cent per annum. An estimate of the MRP relative to the 5-year yield constructed using an adjustment factor indicated by the data will be higher. This has further relevance in paragraphs 25 and 37, where the same Handley work (also used by other regulators) is used to justify a market risk premium of six percent. This highlights our point above about making critical use of information from previous regulator reports.

3.20. Paragraphs 22 and 24 make reference to the use of the mid-points of the ranges for beta and the market risk premium. Although the ERA notes only that these "could" be used,[10] and subsequently does not use the mid-point of the beta range, we are concerned that no

[10] This is a word that appears very often in the equity paper. We trust that, by the time of the Final Guidelines, the ERA will tell stakeholders what it will do, not what it could do.

discussion is made as to why a particular point estimate in the range is favoured. Under the old rules, the mid-point could be shown to the best (in a statistical sense) estimate. However, the relevant test is now the ARORO, and the ERA needs to show how any estimate made using particular parameter point estimates meets the ARORO.

3.21. Paragraph 45 notes how the ERA proposes to make use of VIX data, suggesting that, because the VIX is in the 25th percentile, this means the market risk premium is likely to be towards its lower end. There are several problems with this conclusion, which highlights the difficulty in transforming VIX information into meaningful conclusions.[11] In the first instance, the ERA's analysis begins in 2008; hardly a typical year for market volatility. Elsewhere, the ERA displays a preference for long-term databases. If a longer-term database is used, is the present still in the lower-quartile of the range?

3.22. Secondly, the ERA has asserted that low current volatility means a low market risk premium in the future, but it provides no empirical basis for this view. The VIX only projects information forward 30 days, not five years. It is easy to believe, particularly since the ERA itself suggests the return on equity is mean reverting, that a period of low volatility in the immediate future (30 days) could be followed by a period of higher volatility and thus, if market returns and volatility are linked in the way the ERA asserts, that immediate-term low market rates would be subject to mean reversion. This is clearly an area where a lot more work is required before VIX data can be translated into implications for the market risk premium, but it may be possible to use the VIX data to foreshadow a turning-point for periods of convergence and divergence from the mean.

3.23. In paragraph 49, the ERA presents its overall return on equity results, noting that, because its estimate falls within a confidence interval for market returns, it is probably correct. There are two issues with this conclusion. The first is that it is a test of the market risk premium, not of the overall rate of return. By setting beta equal to one (to derive 9.45 percent), the ERA is ignoring the beta it has actually calculated, and thus is not testing the overall return on equity. This highlights the importance of developing an appropriate test using the ARORO as an output-based measure.

3.24. The second is that the test is a very loose test; 9.45 percent might be correct, but so too is 14.7 percent. The band is much too wide. Indeed, this is likely to be the case for any final statistical test, given the data the ERA are working with. This is the reason why we suggest using informed, transparent regulatory judgement, not statistics, at this fourth stage of the analysis (see discussion above).

3.25. In Appendix One, paragraph seven the ERA notes that sustained trading multiples below one across an economic cycle could indicate that rates of return are not in line with market expectations. Apart from the implicit assumption that one is the correct level for this indicator (see SFG, 2012 for reasons why this is unlikely to be true), if this is the way the ERA proposes to use this indicator, it can play no useful role in Stage Four of its process. Stage Four is intended to assess whether rates of return are correct before they are imposed; any ex-poste assessment, particularly several years after a rate of return is imposed, is likely to recognise the problem long after investors have done so, and acted accordingly.

3.26. In Appendix One, paragraph 19, the ERA refers to a survey of brokers and how they use the CAPM. If SFG only made use of reports that use the CAPM, this cannot be used as evidence to support a sole reliance on the CAPM.

[11] We note that the ERA does not actually make use of these conclusions.

3.27. In Appendix One, paragraph 23, the ERA notes that it is difficult to understand the time horizons being used by brokers in making their assessments. However, if a 10-year yield is being used it is reasonable to think that the horizon that the experts use is around 10 years.

3.28. In Appendix one paragraphs 24 and 25, the ERA suggests that the upward adjustment brokers apply to CAPM when the risk-free rate is low (we would disagree that this is a "bias" as in Appendix One paragraph 16) may be reflective of the fact that brokers are looking to a long-term horizon, whilst the task of the ERA is to set returns on equity for the next five years. Quite apart from inconsistencies between this short-term focus for equity and the long-term focus the ERA adopts for debt with its NPV=0 condition (see discussion below) and the fact that there is no clarity about how long the focus of brokers actually is, the main issue with this viewpoint is that it is the timeframe over which mean reversion occurs, not the brokers' overall investment time horizon which matters. The ERA believes (see Appendix Two of the equity paper) that the return on the market is mean-reverting, but has drawn no conclusions about the speed of mean reversion. If this happens over a 25-year time horizon, then the ERA's point about long term horizons and regulatory periods (inconsistencies with its perspective on debt notwithstanding) is potentially valid, but if mean reversion happens over a short timeframe like three to five years, then the adjustment made by brokers in times when the risk-free rate is low is very pertinent for regulators. This is a question which can be answered empirically by considering the speed of mean reversion for market returns, and does not require any information (which is hard to obtain) about the overall investment horizon of brokers.

3.29. In Appendix one paragraph 27, the ERA cites a report by CEPA (2013) used to support the six percent market risk premium. However, this report contains a number of errors. Firstly, CEPA neglected to consider that, during 2012, a large number of practitioners applied estimates of the risk-free rate which were above the prevailing yields on 10-year CGS. Secondly, CEPA was not aware that the MRP figures would need to be grossed up for the value of imputation credits, consistent with the AER's practice. Thirdly, CEPA omitted to consider the subsequent adjustments to the discount rate that were made by some practitioners after applying the CAPM.[12] This again highlights problems associated with uncritically accepting prior work by regulators.

3.30. In Appendix One paragraph 32, the ERA makes reference to other regulatory reports providing relevant information. We believe the ERA should only use other regulatory decisions to guide it to other sources of information. It should draw its own conclusions from this information and should not rely on the inferences drawn by other regulators.

3.31. We have not provided detailed comments on Appendix Two, and nor have we sought, in the very short period of time available, to assess its econometric content in much detail. This is primarily because Appendix Two appears to have no real bearing on any aspect of the remainder of the chapter, except to calculate the average market returns (and their confidence intervals) in paragraph 49 (alluded to above).

3.32. However, a brief examination of Appendix Two suggests several issues, which mean it may not be prudent to give its conclusions very much weight. Firstly, the ERA mixes up the hypothesis shown in paragraph eight; it is not the case that a series being non-stationary will mean it has a unit root, but rather that having a unit root will mean that the series is non-stationary. Secondly, the ERA suggests that the reason why the risk free rate is found to be non-stationary is potentially due to structural breaks in the time series,

[12] A comprehensive statistical analysis of the data that has been gathered from independent expert reports is provided in NERA (2013).

but it does not make use of unit root tests (such as Perron, 1989, 1997) which allow one to test for unit roots in data which has structural breaks. This means that its conclusions in respect of the risk free rate need to be interpreted with caution.

3.33. Thirdly, and perhaps most importantly, the ERA points out (paragraph 14) that the sum of a stationary and a non-stationary variable is non-stationary. This means that one will not be able to find a cointegrating relationship between them, because it guarantees that the error vector in the relevant cointegrating regression will be non-stationary. Despite, this, and despite finding that risk free rates are non-stationary and market returns are stationary, the ERA appears to be trying to find a cointegrating relationship between the two. We are unclear why the ERA is doing this, but we nonetheless note with interest, the conclusion of the ERA that "the combination of the theoretical and empirical evidence tends to indicate that there is no statistically reliable relationship between the risk free rate of return and the return on equity" (equity paper, p24). The AER and, in the past, the ERA have assumed that, approximately, the return to equity for the market and the risk-free rate move up and down in lock step, by virtue of assuming a constant MRP which is added to the risk free rate.

4. COST OF DEBT PAPER

4.1. In this chapter, we provide an overview of our considerations in respect of the cost of debt paper, and associated workshop discussions. At the workshop, the ERA indicated that it is interested whether its current preferences for options B and C in the cost of debt paper were appropriate or not. As we have pointed out in previous submissions, our main concern as a business is the degree to which we can pass on risks, by matching our exposure to interest rate movement as closely as we feasibly can to that assumed in the regulatory model. We are concerned at the ERA's deliberate (and to our minds, unnecessary; see below) attempts to make Option B and C impossible to replicate for an incumbent. However, we believe that, in practice, there may be only a small difference between our ability to match Options B or C and a trailing average. As such, as a business, there may be little between these two options for DBP, depending upon the detail of each model. In fact, we retain our viewpoint that neither the ERA nor the AER has demonstrated that its approach is superior to the other, and that the appropriate response is therefore to allow regulated firms choice between either option, with restrictions only on gaming that choice.[13]

4.2. Our main concern with the options in the debt paper is firstly that the trailing average approach has been prematurely discarded, and we explore this in more detail below. However, we would argue that our interest ought not be the main concern of the ERA, who must act, as Chairmont (2013) suggests, in the long term interest of consumers. We do not believe this is an abstract concept, but is rather something that can be established by actually asking consumers themselves. We believe the voice of consumers has not been heard sufficiently in this debate. The ERA's proposed Options B and C will result in substantially more variation in consumer prices compared to either the status quo or the trailing average approach, and the ERA has not yet actively sought out the views of consumers on whether they have a preference for this kind of variation. This needs to occur before a final choice is made.

Overarching issues

4.3. In this section, we discuss some over-arching issues which surround consideration of different cost of debt issues.

Allocative and productive efficiency

4.4. The AER and ERA have adopted different approaches to the cost of debt. This is not a problem in and of itself; competition between regulators in respect of ideas improves the overall regulatory framework. As we have noted in previous submissions, the basic difference between the two regulators is that the AER favours productive efficiency, whilst the ERA favours allocative efficiency. That is, the AER asks what the most cost-effective (or efficient) way to organise finance is, observes that infrastructure firms (and indeed almost all firms with large fixed costs) tend to use some form of staggered debt portfolio to reduce refinancing risk, and thus has shifted regulatory practice to reflect this observed efficient financing practice. It is worth noting that the ERA does not dispute this basic

[13] We are unsure as to the extent that gaming is really a threat. If DBP, for example, decided it could game the system by shifting from an on-the-day to a trailing average approach at the next regulatory reset, given current information about interest rates, it would need to close out all its hedges and loans and arrange new streams of financing. This would take several years, by which time many of the gains may well have been lost.

premise that staggered debt is efficient,[14] but it notes that staggered debt practices mean that firms do not reflect current interest rates in their pricing, which is essentially an allocative efficiency argument, because this would lead to an inappropriate allocation of resources within the economy.

4.5. There is nothing intrinsically better or worse about allocative versus productive efficiency in economics; one is not inherently "better" than another. From this perspective, therefore, one cannot say that the AER is right and the ERA wrong, or vice versa. However, our consideration is that, when one considers firstly the law, and secondly the potential consequences of placing allocative efficiency over productive efficiency, it may be more appropriate to attempt to maximise productive efficiency. This is most particularly because we believe this goal is more achievable.

4.6. APA have noted that there is no reference to productive or allocative efficiency in the rules, and that too much focus on these abstract concepts can result in not meeting the rules. We agree. The rules ought to take precedence. However, we believe that framing the nature of the debate in terms of these abstract economic concepts of productive and allocative efficiency can assist in understanding how to implement the rules. We thus continue to do so.

4.7. Firstly, turning to the law. The Revenue and Pricing Principles, Sections 24(2) and (3) actually state:

> *(2) A service provider should be provided with a reasonable opportunity to recover at least the efficient costs the service provider incurs in-*
> *(a) providing reference services; and*
> *(b) complying with a regulatory obligation or requirement or making a regulatory payment.*
> *(3) A service provider should be provided with effective incentives in order to promote economic efficiency with respect to reference services the service provider provides. The economic efficiency that should be promoted includes-*
> *(a) efficient investment in, or in connection with, a pipeline with which the service provider provides reference services; and*
> *(b) the efficient provision of pipeline services; and*
> *(c) the efficient use of the pipeline.*

4.8. The references are all to the pipeline itself and do not appear to be supporting broader goals of efficiency in the economy as a whole; if legislators had intended the Principles to do this, they would arguably have made this clear in the definition. Further, the ARORO itself appears to focus directly on the asset being regulated:

> *The allowed rate of return objective is that the rate of return for a service provider is to be commensurate with the efficient financing costs of a benchmark efficient entity with a similar degree of risk as that which applies to the service provider in respect of the provision of reference services*

4.9. Secondly, we turn to the practical impacts of following an allocative efficiency approach. In order for the annual updating process to be effective in meeting the allocative efficiency goals the ERA seeks by implementing it, the effects of interest rate changes need to flow through into prices.

[14] See, for example, the objectives listed at page 4 of the debt paper, one of which is "Stagger debt issuances. Operators will apply sound risk management financing techniques, including not issuing all debt at once". Chairmont also refers positively to staggered debt throughout its report.

4.10. Our prices would change on an annual basis based on the ERA's proposed approach. Our major customers who purchase gas directly for their own use are generally export-oriented mineral producers (Alcoa and BHP, for example), facing international markets where interest rates are not necessarily correlated with Australian rates. They may thus need to hedge interest rate effects on their prices.

4.11. Our other group of major customers are the energy utilities, who purchase gas for retail distribution, or for electricity generation and sale. In both cases, there is the potential for political influence over prices to final consumers; if the government of the day does not want the gas prices for retail customers to change with interest rates, it will likely pressure Alinta to hedge these rate changes to offer more stable pricing. In principle, this is no different to the status quo, except that the purchaser of the hedges changes.

4.12. We do not suggest that the ERA ought to make its decisions based upon politics; we strongly support its position as an independent regulator free of political pressure. However, if the practical effect of one of its policies is likely to be rendered moot due to politics acting on prices in parts of the energy supply chain over which it has no jurisdiction, then this ought to be considered before that policy is implemented. For this reason, we would suggest that the ERA discuss its proposed annual updating process with the Minister of Energy prior to the Final Guideline stage, to ascertain whether government is likely to prevent the allocative efficiency signals which the ERA's favoured options would produce from reaching final consumers.

Certainty of cost pass-through and "optimal impossibility"

4.13. The ERA appears to be particularly concerned with the possibility that regulated firms might be able to pass through all of their debt costs with certainty under certain regulatory approaches, arguing that this is impossible in a competitive industry and that it should therefore not be possible in a regulated industry either. This has lead it to attempt to design an annual updating process which is intended to be impossible for an incumbent to replicate.[15]

4.14. There are several problems with this approach. In the first instance, the ERA has asserted, without offering supporting evidence, that deliberately making it impossible to meet the cost of debt benchmark in a given regulatory period will enhance the likelihood that its NPV=0 condition is met in the longer-term, as under and over-recovery balances out. We would like to see evidence of this assertion, and would suggest that the ERA's proposal cannot be imposed in its absence. Related evidence submitted by the Queensland Treasury Corporation (QTC, 2013) suggests that it can take up to 30 years for periods of over and under-recovery to balance.[16] Moreover, we believe that there is likely to be a trade-off; the more impossible the intra-period debt cost constraint, the longer period before balance is achieved. If true, this would suggest a requirement to find an "optimal impossibility" level, which meets the ERA's goals of reducing certainty in cost recovery but does not produce biased returns for too long. We think this notion is as silly as it sounds, and we suspect that the ERA's interpretation of Section 24(3) of the

[15] This is achieved by annually updating the medium-term debt risk premium; something which would be possible for an hypothetical new entrant entering the industry each year, but not for an incumbent.

[16] The QTC is writing about a different context, comparing the status quo (with a "true-up" at the end of the period) with annual updating through a trailing average approach. However, since the DRP regulated firms incur would be that which applies at the start of the period, and regulated firms would face the risk of movements in the DRP during the regulatory period under Options B and C in the same way as they face the risk of movements in the overall debt rate now, we believe it likely that similar effects would emerge. We note, however, that they would be smaller, since the DRP varies less than the swap rate does. We concur that this is an area requiring more empirical investigation.

Revenue and Pricing Principles as meaning that it needs to prevent firms from having the ability to earn at least the efficient cost of their capital in the short term in order to meet this goal in the long term is almost certain to be challenged by the first investor who does not have a 30-year time horizon.

4.15. Secondly, the ERA's characterisation of certain cost pass-through for a trailing average approach is simply not true. It is true that a regulator could tailor the trailing average to the actual debt profile of each regulated firm; this is debt cost pass-through and is commonly employed by North American regulators.[17] Indeed, a regulator who truly believes that "financial markets are some of the closest to fully efficient and fast reacting in the world (sic)" (Chairmont, 2013, p6) might well choose such a tailoring on the assumption that regulators can provide no greater incentive for efficient debt servicing than these efficient financial markets. However, it is not true that any trailing average would be so tailored. Take the AER's proposed seven-year trailing average. DBP (or any other regulated firm) would not simply move all its debt to seven-year tranches, because it is not influenced solely by regulatory requirements; it has to meet the requirements of creditors, rating agencies and the day-to-day cash needs of the business as well. Whilst it is possible to closely replicate the regulatory 'base rate' via hedging with interest rates swaps (as indeed it is under any of the cost of debt approaches), for the reasons mentioned above a regulated firm, in reality will not exactly match the DRP, nor can it hedge the DRP under a trailing average approach that utilises a uniform maturity profile like that of the AER.

4.16. Moreover, even if it did adopt this "equilibrium" at some point in time, it would be unlikely to last long. If the AER approach had been in place prior to the Global Financial Crisis, almost no utility would have been able to borrow for seven years immediately following the crisis when debt, if it was available at all, was only available for short periods and at high prices. The process of rolling over that debt and moving back towards a seven-year "equilibrium" would take several years, and it is likely that some market event would intervene before then.

4.17. Absent of detail on exactly how the annual updating and trailing average processes would work, it is difficult to be definitive. However, we do not perceive significant differences between the level of "impossibility" of the ERA's Options B and C, and the AER's proposed trailing average approach.

4.18. A final, and key point is that, even if we were an entirely unregulated monopolist, we would still not have 100 percent certainty of debt cost recovery. This is because even monopolists face demand risk, and even monopolists go bankrupt.

4.19. In Australia, government-owned railways built railways in the 19th Century based upon demand forecasts that did not eventuate and the debts they incurred almost wrecked Federation, and hamstrung investment in the sector for decades to come.[18] More recently, toll-road developments such as the Clem7 tunnel in Brisbane have imploded into bankruptcy when actual demand transpired to be lower than projected, despite being

[17] It is equally true that a regulator could design an annual-updating process in the same way; annual changing swap rates with a DRP fixed for five years is an annual updating process which we could match exactly, for example.

[18] Some, but by no means all, of these early railways were politically-inspired white elephants, but from the 1880s, the various colonies started employing Railway Commissioners to make more rational investments. In the US, railways were privately developed, and simply went bankrupt, regularly, when demand forecasts proved optimistic. Regulation did not assist, but instead exacerbated financial problems because it prevented line closures, and was only ended when it contributed to the bankruptcy of the Pennsylvania Railroad in the early 1970s.

supported by contracts with government specifically designed to protect their monopoly status. In the energy sector itself, the *Economist* recently reported that European energy utilities (many of them regulated monopolists) have lost some half a trillion Euros in investors' funds because of the impacts of solar and wind power on energy prices in European markets.[19] There are countless other examples of monopolists not paying back their debts with certainty because demand forecasts turn out to be incorrect.

4.20. It is true that a monopolist, by definition, is much less susceptible to other firms entering the market and producing a substitute good or service at a lower cost than they can manage than is the case in a perfectly competitive industry, but it is not the case that their particular level of demand certainty is sufficient to ensure that they will always pay off their debts with certainty. In fact, the degree of certainty with which debts are likely to be paid off is a continuum, not a binary system, with monopolists likely to be closer to one than firms facing more competition. However, being close to one does not mean being at one; if it did, then monopolists would be able to borrow at the risk-free rate. They do not do so, as our evidence from the US provided at the Draft Guideline stage and the ERA's own data on credit ratings clearly shows.

4.21. This raised an important point; certainty in cost recovery is just a different way of expressing the concept of credit risk. Indeed, certainty is a key contributor to the credit risk of a given firm. Given this, it would appear there is an alternative for the ERA which does not involve a convoluted model of "optimal impossibility" that leaves it open to legal challenge; the ERA could simply make the degree of certainty in the recovery of debt costs (credit risk, in other words) a risk factor that it considers in the construction of the Benchmark Efficient Entity (BEE).[20] It could then use the market price of debt (or DRP) for the firms in the comparator set which emerges when developing the BEE to ascertain the correct price for the debt of the regulated firm. This, indeed, is precisely what Section 87(3) of the rules asks the regulator to do.

4.22. There is empirical evidence (see Valta, 2012) which suggests that industry concentration is inversely related to the cost of debt; more certainty means a lower cost of debt. This means that constructing the BEE to reflect the level of certainty faced by a regulated firm in providing the reference services would lead to a relatively low cost of debt (all else being equal). Conversely, deliberately reducing certainty by regulatory fiat to reflect levels faced by a competitive firm would lead to a higher cost of debt (and, potentially, of equity as well), and would expose the ERA to a challenge on the basis that it was deliberately not reflecting the risks associated with the provision of reference services. We believe that transparent use of market data leading to a relatively low allowance for the cost of debt is more robust than attempting to "correct" for market power in some arbitrary adjustment of certainty in debt cost recovery, and further that, given market data on credit risk provides precisely the information the ERA is looking for in its consideration of certainty of cost recovery, that the certainty criterion is not a useful addition to the regulatory toolkit. We hope it is dropped by the time of the Final Guideline.

The "new entrant" paradigm and the need for consistency

4.23. The ERA has made use of a new entrant paradigm in support of its annual updating approach. Essentially, to support its goals of allocative efficiency, it asks what price a new

[19] See www.economist.com/news/briefing/21587782-europes-electricity-providers-face-existential-threat-how-lose-half-trillion-euros.

[20] Various DBP submissions to the ERA's guideline process and APIA submissions to the AER's process outline a framework for making use of risk factors in the BEE. The APIA submission to the AER's draft guidelines is the most recent, and most well-developed for of this framework.

entrant would pay for relevant debt each year during the regulatory period. This then becomes the relevant cost of debt in the annual update.

4.24. The new entrant paradigm is intended to inject a degree of "quasi-competition" into an industry which is a natural monopoly, and such proxies are widely used by regulators to try and understand what the "right" cost is for various items. Here, the ERA is simply extending that concept to the cost of debt.

4.25. The issue is that, if the ERA is to use a new entrant paradigm, it must reflect in the cost of debt each year all of the costs that new entrant would face in raising the relevant debt for its operation, even if these are greater than the costs an incumbent would face in rolling over existing debt.[21] The ERA cannot have some elements of its calculation based upon incumbents and some based on new entrants, in an attempt to obtain the lowest overall cost; if a new entrant would incur a cost that an incumbent would not (and vice versa) then it must be included. Chairmont (2013, p15) notes that several adjustment factors would need to be considered, and we do not believe that they could be accommodated within the 12.5 basis points currently allowed for debt issuance and hedging costs. If the new entrant paradigm remains, this figure will need to be re-calculated for the Final Guidelines.

4.26. A related point is Chairmont's (2013, p13) correct observation that the new entrant paradigm needs to focus on new issue maturities rather than outstanding secondary market debt. In the Draft Guidelines, the ERA argued for a five-year debt term on the basis that this was the average term to maturity for existing debt in the marketplace, and firms roll over their debt to keep the same average. This is an issue that UED Multinet expands upon in its submission, highlighting that the return on a new bond of five years is not the same that paid by an incumbent rolling over its debt. However, if the ERA is using a new entrant paradigm, it cannot use the average term to maturity on existing debt as its proxy, as this would be, as Chairmont points out, inconsistent with the paradigm. In this respect, we note that the ERA's own evidence (ERA 2013 Table 6, p74) suggests that the average term of new debt at issuance for Australian energy firms is around 11 years. Since the ERA has, correctly, suggested that the terms on debt and equity ought to be consistent, correcting this inconsistency would also have ramifications for the cost of equity as well.

Consumers and the bearing of risk

4.27. All of the issues above are important, and require consideration within the context of the methodologies used by the ERA, and making sure they are internally consistent. However, the over-arching issue is what is actually in the long-term interests of consumers. Chairmont (2013, p3) is correct in asserting that these interests take priority in respect of the National Gas Objective and the National Gas Law.

4.28. The annual updating of interest rates makes consumer prices much more volatile. If a pipeline has a billion dollars-worth of debt and interest rates increase from five to six percent, this adds $10 million to consumer bills in that year. By contrast, under the status quo system, there is no increase in price, and under the AER's proposed trailing average approach, prices would rise by around $1.5 million, as it proposes that one-seventh of the overall cost of debt is renewed each year.

[21] This is also economically correct, because the debt-refinancing costs do not reflect the costs associated with market exit which an incumbent would face.

4.29. It is important to note that, in the long run, overall costs to consumers do not change amongst the three different systems.[22] Under the status quo, regulated firms pay to hedge interest rate risk during the five-year regulatory period, and then pass these costs on to consumers. Under the AER's proposed trailing average period, consumers pay the price of interest rate increases and decreases with a lag, so they may face higher prices when interest rates are currently low and lower prices when they are currently high, but the impact of interest rate changes smoothly flow through to consumers over time. Under the ERA's proposed annual updating, consumers pay for (and benefit from) interest rate change essentially as it happens.

4.30. If the overall, long-run cost is essentially the same, the obvious question is what consumers would prefer. This has not yet been asked, and needs to be. If consumers express a desire for smooth price changes, then this suggests a trailing average approach over both the status quo and annual updating. This is because the status quo can produce sharp jumps up and down in just the same way as the annual updating process does,[23] but it just does so less frequently. We look forward to hearing consumer viewpoints on this matter in the Final Guidelines.

Reconsidering the trailing average

4.31. Based on consideration of the above points, we believe that the trailing average approach deserves more consideration. Although it does not meet the ERA's allocative efficiency goals as well as other options (we believe it should earn a "partial" under the ERA's "use of prevailing market rates", because part of the debt cost is updated every year), we question whether these goals will actually be met in practice, because of forces on retailers that are beyond the ERA's control. Moreover, we consider the certainty of cost recovery criteria a chimera, which adds little to the regulatory debate about the cost of debt. By Chairmont's (2013) scoring mechanism, then, the trailing average approach performs at least as well as Options B and C. Discussions with consumers about their preferences for price volatility (presuming it can be passed on) could provide further clarity on the relative degree to which each option meets the long-term interests of consumers.

Specific issues in the cost of debt paper

4.32. In this section, we provide responses to specific issues raised in the debt paper. We understand and appreciate that the debt paper was written over a very short timeframe, and was intended to support the November 7th workshop. For this reason, we have interpreted the various different "scorecards" as preliminary considerations by Chairmont. From the discussions at the workshop, we believe that Chairmont itself sees them in the same way. Our main concern with the debt paper is that it is viewed by either the ERA or any stakeholder as being any more of a final statement than it is, as it is not a sufficient grounding for appropriate policy decision.

4.33. In particular, the debt paper contains no actual evidence. Each element of the scorecards is an opinion from Chairmont (something Chairmont itself does not appear to dispute), and whilst these opinions might be useful to inform the ERA's further considerations, they are not sufficiently robust to inform policy. By way of an example, Chairmont (2013) has delivered opinions about whether different options meet the NPV=0 condition and whether they are biased or not, but there has been no formal assessment of these essentially

[22] Absent of a short, temporary spike which pushes interest rates up or down within a year at a time that happens to coincide with the annual update, and which is unforeseen.
[23] Witness, for example, the spike and then fall in water prices proposed by the ERA in its 2009 versus its most recent determination, which appears to be due largely to changes in the risk-free rate.

empirical issues. We would not necessarily have expected such empirical work in a document intended to elicit debate at a workshop, but we would expect to see it before options become practice. We look forward to seeing evidence supporting ERA positions in the Final Guidelines.

Responses to DBP and other submissions

4.34. Table 1 in the debt paper contains responses from Chairmont (2013) to various comments made by stakeholders to the draft guidelines process on topics associated with the treatment of debt. We understand that the paper is preliminary, and that the responses are brief. However, in respect of comments from DBP (in the most part), there are several misquotes in respect of what we said, and responses which indicate that the intent of our statement was not properly conveyed. In the interests of clarity, we believe it is useful to address these issues briefly, and we do so in Table 1.

4.35. Note that our references refer to the first column of Table 1 in the debt paper.

Table 1: Issues with responses to industry submissions

Reference	Comments
Duet p3	DUET suggests that debt should be long-term, and the proposed treatment is to note that it is possible to incorporate a longer term for debt in the DRP. However, the ERA proposes not to do this. Moreover, despite the consultant suggesting that refinancing risk is best managed by spreading debt rollovers over time, the annual updating approach favoured by the ERA militates against this. It would appear that the long-term nature of the assets is being ignored
DBP p28	In response to DBP's claim that the bond-yield approach is not transparent, Chairmont has merely relied upon the ERA's assertion that it is. It would be useful if this claim by the ERA could be put to an objective test, rather than being accepted by its consultants.
DBP p31	We did not make the statement attributed to us, on this page or any other
DBP p29	We did not say that consumers should receive smoothed prices. We merely commented that the ERA's approach would increase volatility for consumers. The reasoning is also wrong; producing allocative economic efficiency is more closely aligned with floating prices, but producing productive efficiency is not.
DBP p30-36	It is not true that we regard predictability to be important. Indeed, the primary point of our argument is that predictability is unrelated to either productive or allocative efficiency; we called it a "red herring". We also provided statistical evidence which casts doubt on the ERA's claims that the status quo or the annual updating approach provides better predictions than a trailing average approach.
DBP p36	The ERA appears to have ignored its consultant's own advice. Its annual updating model is based on a new entrant paradigm, but it makes use of the term to maturity of existing debt.
DBP p37-38	It is not true that we said the NPV=0 test does not work in a price-cap environment. In fact, we showed the very narrow set of circumstances wherein it would work.
DBP p38	This quote, on page 39 of our submission is taken out of context. We were speaking of the differences between the underlying assumptions of Lally (2007) and Hall (2007).
DBP p39	We do not say this on the page quoted, though it is not a sentiment with which we would disagree. The reasoning shown in this part of the Chairmont Table is simply false; there is not certain pass-through of debt costs for regulated businesses. It follows therefore, that the conclusion that regulated firms do not need a mix of fixed and floating base rates is likewise false; like other regulated firms, DBP makes use of a variety of debt instruments. We note also on page 16, that Chairmont indicates that a bond portfolio consisting only of fixed rate Australian bonds may not be representative of the BEE.
WATC p4	Chairmont suggests that an ability to hedge with certainty is not required by the state objectives. We believe Treasury was actually saying it would not find it possible to hedge debt in the way the ERA imposes at all, due to liquidity constraint. We have covered the issue of certainty of hedging above, and would note here that we believe the ERA has given too little consideration to the State's credit rating, and the practical implications of the theory it wishes to impose upon the State.

The Chairmont assessment of each option

4.36. In this section, we provide brief commentary on Chairmont's (2013) assessment of each option. As noted above, we understand and appreciate that these are opinions from Chairmont, made with its expertise in financial markets but without the benefit of sufficient time to gather evidence in support of a particular issue. Nevertheless, we believe that some of these opinions are wrong, and we outline where we think these mistakes lie in this section.

4.37. Before providing this assessment, we note that we are operating within the framework of the criteria provided by the ERA to Chairmont for assessing each option, and asking whether Chairmont's conclusion in respect of that particular criteria is correct or not. This does not mean we agree with the criteria. Indeed, as we discuss above, we believe the certainty criteria is both wrong and harmful to regulatory practice. Moreover, as we discuss in Chapter Two, we believe that the appropriate assessment is against the ARORO, not against a series of input-based criteria which do not show whether or not the overall cost of debt matches the level required as compensation in the marketplace for a similar level of risk to that incurred in the provision of reference services.

Chairmont Option A

4.38. The option does not achieve the NPV=0 condition, if by this Chairmont means Lally's (2007) paper, because it is applied to a price cap framework, not the rate of return framework in Lally's (2007) paper. Additionally, as UED Multinet point out in its submission, because firms issue ten-year debt, if the ERA imposes a five-year debt rate, this will violate the NPV=0 condition for the cost of capital overall unless it simultaneously raises the cost of equity. This highlights the need to consider the ARORO as an overall measure, as outlined in Chapter Two. For this reason, Option A should also only obtain a "partially" in respect of the use of market rates, because it reflects these only once every five years. It should likewise obtain a "no" for staggered issuances because it prices all debt on a single day, for a fixed term.

4.39. The option should receive a "no" for minimising transaction costs, because it is actually less efficient to have debt in single large lumps than to stagger it, a point which Chairmont itself makes in several places throughout the document.

Chairmont Option B

4.40. The NPV=0 condition is not met in any regulatory period (quite apart from the issues raised previously, which apply throughout) because operators are obtaining a debt risk premium on five year debt every year. We are not clear how Options B and C differ from Option D in this respect. The ERA asserts, but does not provide evidence, that the NPV=0 condition is met in the long run, but in the absence of evidence, the "yes" conclusion is too strong (particularly since it is not met in the short run by design). Staggered debt also receives a "no" because firms are provided with no incentive to stagger debt, Instead, they are incentivised to take out one tranche of five year debt, taking the risk on the changing DRP and hedging the swap rate.

4.41. As noted in the discussion above, we disagree with the certainty criterion, but we not that it is not clear to us that the ERA's Options B and C are any less certain in respect of debt cost recovery than the AER's trailing average approach. Thus, either Options B and C (and D) ought to receive a "partially" under this criterion, or Option E ought to receive a "yes".

Chairmont Option C

Our conclusions in respect of Option C, as they pertain to the criteria chosen by the ERA, are the same as for Option B. We note, however, that Option C is worse in respect of its allocative efficiency effects, because it fixes the swap rate (where most of the variation occurs) for five years; though it does provide regulated firms with slightly lower risks. If the ERA is concerned about allocative efficiency, it ought to prefer Option B to Option C, all else being equal.

Chairmont Option D

4.42. See Option B above.

Chairmont Option E

4.43. We have provided comments on Option E in our main discussion above (see paragraph 4.31).

Chairmont Option F

4.44. We have not really assessed option F in great detail, and it did not feature highly in the workshop (where it was not discussed at all). It is likely to prove unworkable, because of the complex structure of its annual updating process, which we suspect is not present in any actual best-practice efficient firm.

4.45. Our points in respect to Options B, C and D apply here as well, as the same kind of updating occurs, but it just occurs for debt at different tenors, in a much more complex pattern.

4.46. Overall, we agree with Chairmont that significantly more work would need to be undertaken to ascertain whether this solution is viable. We do not believe the work is worthwhile doing.

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