

Transitional Arrangements for the Cost of Debt, Dr Martin Lally, Capital Financial Consultants Ltd November 2014

Appendix 9.11

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Response to the ERA's Draft Decision on required
amendments to the Access Arrangement for the Mid-
West and South-West Gas Distribution System



TRANSITIONAL ARRANGEMENTS FOR THE COST OF DEBT

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EXECUTIVE SUMMARY

In its recent Rate of Return Guidelines, the AER proposed switching from setting the cost of debt at the prevailing rate at the beginning of the regulatory cycle to setting it in accordance with an annually revised trailing average. In addition the AER proposed the 'QTC method' for transitioning from the old to the new regime. In response, a number of regulated entities have argued that there should be no transitional period. Consequently, the AER has raised a number of questions with me, and my conclusions are as follows.

Firstly, in relation to the question of whether transitional arrangements are necessary or desirable, this question imposes a dichotomy upon an issue that is one of degree. Given the regime change that has occurred from mid 2014, transitional arrangements relating to the DRP are capable of mitigating the significant windfall DRP gains to businesses arising from the combined effect of the GFC-induced shock to the DRP and the regime change. In addition, transitional arrangements relating to the risk-free rate component of the cost of debt are also capable of mitigating the mis-match between the risk-free rate component of the costs allowed and those incurred after the regime change. Accordingly, I strongly favour such arrangements. Furthermore, if the combined effect of the GFC-induced shock to the DRP and the regime change had been to inflict losses rather than gains on to the businesses and if transitional arrangements relating to the DRP had been able to significantly mitigate these losses, I would have also favoured such transitional arrangements.

Secondly, in relation to the question of whether they should be applied to either or both of the risk-free rate or the DRP, I think that they should be applied to both components for the reasons just given.

Thirdly, in relation to the question of whether I agree with the AER's proposed transitional process, application of this process to the DRP has several advantages: it avoids the need to collect historical DRP data; it mitigates the windfall gain that businesses on average experience (at the expense of their consumers) due to the GFC-induced DRP shock coupled with the switch to a trailing average regime from mid 2014 (and this point can be equivalently expressed as producing results that better conform to the NPV = 0 principle); and it produces results for individual businesses that are almost identical to those that would have prevailed had there been no regime change. Furthermore, it does not constitute a claw-

back and it will not undercut existing incentives for businesses to reduce their costs. In respect of the risk-free rate component, the AER's proposed transitional regime will mitigate the mis-match between the costs allowed and those incurred over the ten year period following adoption of the new regime. A complete avoidance of the mis-match could be achieved through use of an alternative transitional regime, but using different transitional processes for the two components of the cost of debt introduces undesirable complexity at very little gain in terms of eliminating the mis-match referred to. I therefore favour application of the AER's proposed transitional regime to both components of the cost of debt, and therefore to the entire cost of debt. It is also desirable to smooth the path from the current output price to that prevailing under the new regime, but this would require a different transitional regime applied to the entire cost of debt. Thus, a choice must be made. I consider the advantages from the AER's proposed transitional regime to be much more important than smoothing the output price path for consumers, and even consumers are likely to share that view because adoption of the AER's proposed transitional regime would minimize a significant and unwarranted wealth transfer from consumers to suppliers. Furthermore, the adoption of this transitional process is consistent with the requirement under clause 6.5.2 of the NER to have regard to the impact on a benchmark efficient entity of a change in methodology.

Finally, in relation to the question of whether the transitional regime should be applied uniformly across sectors, owners, firm sizes, the timing of regulatory decisions, and firms' debt management practices, two possible arguments for differential treatment exist. The first of these arguments involves differential treatment according to whether firms did or did not hedge the interest rate risk arising from five-yearly resetting of the risk-free rate component of the cost of debt. I do not support such differential treatment because all firms either did hedge, or could and should have hedged, this risk in approximately the way assumed by the AER, because firms should bear the consequences of failing to hedge, and because differential treatment would establish a very undesirable precedent.

The second argument against uniformity arises from the fact that businesses are subject to different regulatory cycles, and would therefore experience different gains or losses arising from the DRP spike induced by the GFC. Again, I do not support such differential treatment because the appropriate treatment for each business is far from clear, because doing so would establish an undesirable precedent, and because the corporate groups to which regulated

businesses belong are typically involved in a range of different regulated activities with different cycle commencement dates and this would push all businesses towards the average outcome of about 1.3% of debt value in present value terms.

1. Introduction

In its recent Rate of Return Guidelines (AER, 2013a), the AER proposed switching from setting the cost of debt at the prevailing rate at the beginning of the regulatory cycle to setting it in accordance with an annually revised trailing average. In addition the AER proposed the ‘QTC method’ for transitioning from the old to the new regime. In response, a number of regulated entities have argued that there should be no transitional period. Consequently, the AER has raised the following questions with me:

- Is the application of transitional arrangements necessary or desirable in moving from the ‘on the day’ approach to the ‘trailing average portfolio’ approach?
- If yes, should the transition be applied to the risk free rate, debt risk premium, or both components?
- If yes, do you agree with the particular transitional approach adopted by the AER in the final guideline?
- If yes, should the transition be applied uniformly across all energy network service providers irrespective of
 - (a) sector - electricity transmission, electricity distribution, gas transmission or gas distribution
 - (b) ownership – government or private
 - (c) size – ‘large’ or ‘small’ asset base
 - (d) the timing of its previous regulatory determination, or
 - (e) the actual debt management practices adopted by the service provider under the previous regulatory regime?

This paper seeks to address these questions, starting with an assessment of the AER’s arguments.

2. AER Arguments in Support of Transitional Arrangements

2.1 *The Mismatch Between the Allowed and Incurred Cost of Debt*

The AER (2013a, section 7.3.6) has proposed a transitional arrangement and has presented a number of arguments in support of it, as follows. Firstly, the AER argues that the benchmark efficient firm under the previous regulatory regime is likely to have engaged in staggered borrowing coupled with hedging arrangements to align the risk-free rate component of its

cost of debt with the five-year regulatory cycle,¹ this would leave them with hedging arrangements still in force at the transition date, and the proposed transitional regime would address the mismatch between the cost of debt incurred by the benchmark efficient firm and that allowed.

However, in respect of the DRP component of the cost of debt, there is no mismatch between the cost incurred by the benchmark firm and that allowed by a trailing average after the regime change, and therefore no transitional method would seem to be warranted. Thus, if one were used, it would introduce a mismatch that would not otherwise arise. In respect of the risk-free rate component of the cost of debt, there is a mismatch between the cost incurred and that allowed under a trailing average, but the proposed transitional method does not address it. To demonstrate this, suppose that all borrowing-related events occur at year beginning and end and that the benchmark firm borrows for ten years. Thus, at the end of the most recent regulatory cycle (at which the new regime commences), the benchmark firm will be in the following situation:

Borrowing 10 years ago (10% of total):	Has just matured
Borrowing 9 years ago (10% of total):	Will mature in 1 year
....
Borrowing 2 years ago (10% of total):	Will mature in 8 years
Borrowing 1 year ago (10% of total):	Will mature in 9 years

Each of these borrowings would have been converted to floating rate debt at the time of issuance (or the borrowing was undertaken at a floating rate) and the firm would also have swapped floating to five-year fixed at the beginning of each regulatory cycle for all of its debt. So, at the end of the most recent regulatory cycle, a swap of floating to five-year fixed for all of the firm's debt would just have matured (in line with the end of the regulatory cycle). If the previous regime had been maintained, the firm would then have entered a new swap of floating to five-year fixed for all of its debt. However, upon the introduction of a trailing average regulatory regime, the rationale for these swap contracts would disappear and the firms could be expected to desist from them at that point. Nevertheless, in respect of the

¹ These hedging arrangements involve floating rate debt (or fixed rate debt coupled with swapping into floating rate debt) and floating-to-five-year-fixed interest rate swaps to align the debt with the regulatory cycle. I examine arguments about the desirability and feasibility of these hedging arrangements in section 4 and conclude that businesses could and should have hedged their exposure, consistent with the AER's position.

risk-free rate component of its debt, the existing debt has already been converted to floating rate debt and these swaps have residual lives of up to nine years (arising from ten-year debt that was issued one year ago). Thus, during the first year of the new regime, the firm's cost of debt will be 90% of the floating rate during that year and 10% of the ten-year rate set at the beginning of the year, with gradual transition to a ten-year trailing average of the ten-year rate. Assuming for simplicity that the floating rate is the one-year rate and that this is equal to the one-year risk-free rate, and letting $R_{f,tT}$ denote the risk-free rate set at time t until time T , the risk-free rate components of the cost of debt incurred by the firm over the next nine years will be as follows:

$$\text{Year 1: } .1R_{f0,10} + .9R_{f0,1} \tag{1}$$

$$\text{Year 2: } .1R_{f0,10} + .1R_{f1,11} + .8R_{f1,2} \tag{1}$$

$$\text{.....} \tag{1}$$

$$\text{Year 9: } .1R_{f0,10} + .1R_{f1,11} + .1R_{f2,12} + \text{.....} + .1R_{f8,18} + .1R_{f8,9} \tag{1}$$

$$\text{Year 10: } .1R_{f0,10} + .1R_{f1,11} + .1R_{f2,12} + \text{.....} + .1R_{f8,18} + .1R_{f9,19} \tag{1}$$

Thus, it is not until year ten that the firm will be paying a ten-year trailing average of the ten-year rate. By contrast, the proposed transitional regime (drawn from the QTC, 2012, page 2) places 100% weight on the current ten-year rate in the first year, and gradually reduces this weight in favour of successive ten-year rates, as follows:

$$\text{Year 1: } R_{f0,10} \tag{2}$$

$$\text{Year 2: } .9R_{f0,10} + .1R_{f1,11} \tag{2}$$

$$\text{.....} \tag{2}$$

$$\text{Year 9: } .2R_{f0,10} + .1R_{f1,11} + .1R_{f2,12} + \text{.....} + .1R_{f8,18} \tag{2}$$

$$\text{Year 10: } .1R_{f0,10} + .1R_{f1,11} + .1R_{f2,12} + \text{.....} + .1R_{f8,18} + .1R_{f9,19} \tag{2}$$

Until year 10, the proposed transitional scheme does not correspond to the actual costs incurred by the benchmark entity, and the differences (incurred – allowed) over the first nine years, being equation (1) less equation (2), are as follows:²

$$\text{Year 1: } .9(R_{f0,1} - R_{f0,10}) \quad (3)$$

$$\text{Year 2: } .8(R_{f1,2} - R_{f0,10}) \quad (3)$$

$$\dots\dots\dots \quad (3)$$

$$\text{Year 9: } .1(R_{f8,9} - R_{f0,10}) \quad (3)$$

So, in the first year, the allowance will be greater than that incurred (because the term structure is currently upward sloping) whilst the outcome in the following eight years is as yet unknown because the one-year rates in this eight year period are unknown (but the net effect could easily be adverse because current risk-free rates are unusually low and therefore future rates are likely to be higher). These discrepancies could be avoided if the AER instead used a transitional scheme of the type shown in equations (1).

Notwithstanding this point, the discrepancy is unlikely to be large. Since the new regime takes effect from mid 2014, $R_{f0,10}$ would be the June 2014 average of the ten-year rate (3.70%) and $R_{f0,1}$ would be the June 2014 average of the one-year rate (2.56%, interpolated from the cash rate of 2.5% and the two-year rate of 2.62%).³ These rates are all unusually low. So, one extreme possibility would be to assume that these rates do not change over the next nine years. In this case, the aggregate over equations (3) would be -5.13%, which averages -0.6% per year (over recovery). Another extreme possibility would be to assume that the one-year rate quickly reverts to its pre GFC level of about 5.50% (interpolated from the average cash rate of 5.55% and the average two-year rate of 5.51%, each over the period 1.1.2000 to 30.9.2008). Assuming reversion over a three-year period, the aggregate of equations (3) would be 3.20% as follows:

$$.9(.0256 - .037) + .8(.036 - .037) + .7(.045 - .037) + .6(.055 - .037) + \dots + .1(.055 - .037) = .032$$

² Had the entire analysis been done using swap rates rather than risk-free rates, consistent with the institutional process, all figures in equations (3) would have been raised with minimal net effect on the result.

³ The data are drawn from Table F1 and Table F2 on the Reserve Bank's website (www.rba.gov.au).

Over the nine-year period, this averages 0.40% per year (under recovery). So, the mismatch between the risk-free rate component of the costs actually incurred by a benchmark firm and those allowed under the AER's proposed transitional regime would be between an over recovery averaging 0.6% per year and an under recovery averaging 0.4% per year over the transitional period. This suggests that the actual outcome will not differ much from zero.

This analysis presumes (plausibly) that, upon the introduction of the trailing average regime with the proposed transitional regime, firms will desist from entering into the floating to five-year fixed rate swap contracts that they would have entered into under the previous regime. However, it is possible that firms might enter into alternative arrangements in an attempt to reduce or eliminate the exposure shown in equations (3). The best such option would involve the regulated businesses entering into a series of swap contracts upon the commencement of the new regime, to swap each of their prevailing floating-rate exposures into a fixed rate for the remainder of the borrowing. Thus, the debt with one year to maturity would be swapped into one-year fixed-rate debt, the debt with two years to maturity would be swapped into two-year fixed-rate debt, etc. Consequently, instead of the incurred costs being as described in equations (1), they would then be as follows:

$$\text{Year 1: } .1R_{f0,10} + .1R_{f0,1} + .1R_{f0,2} + \dots + R_{f0,8} + R_{f0,9} \quad (4)$$

$$\text{Year 2: } .1R_{f0,10} + .1R_{f1,11} + .1R_{f0,2} + \dots + R_{f0,8} + R_{f0,9} \quad (4)$$

$$\dots \quad (4)$$

$$\text{Year 9: } .1R_{f0,10} + .1R_{f1,11} + .1R_{f2,12} + \dots + .1R_{f8,18} + .1R_{f0,9} \quad (4)$$

$$\text{Year 10: } .1R_{f0,10} + .1R_{f1,11} + .1R_{f2,12} + \dots + .1R_{f8,18} + .1R_{f9,19} \quad (4)$$

The differences between these incurred costs and those allowed over the first nine years, being equations (4) less equations (2), would then be as follows:

$$\text{Year 1: } .1R_{f0,1} + .1R_{f0,2} + \dots + .1R_{f0,9} - .9R_{f0,10} \quad (5)$$

$$\text{Year 2: } .1R_{f0,2} + \dots + .1R_{f0,9} - .8R_{f0,10} \quad (5)$$

$$\dots \quad (5)$$

$$\text{Year 9: } .1R_{f0,9} - .1R_{f0,10} \quad (5)$$

All of these rates are known at the regime switch point (mid 2014). Averaging over the June 2014 rates (of 2.56% for one year, 2.62% for two years, 2.80% for three years, 3.12% for five years, 3.70% for ten years, and interpolation of the remaining rates), the aggregate over equations (5) is -2.03%, averaging -0.23% per year, i.e., an over recovery averaging 0.23% per year. For some firms, this might be judged superior to the results from equations (3). However, at mid 2014, firms could not be sure that these proposed transitional arrangements would be adopted by the AER. In view of this uncertainty and the small gain from the new hedging arrangements, the previous conclusion stands: if the proposed transitional arrangements are adopted, the actual outcome for firms will not differ much from zero.

By contrast, without a transitional process, the allowed risk-free rate component of the cost of debt would be a ten-year trailing average as follows:

$$\begin{aligned} \text{Year 1: } & .1R_{f-9,1} + .1R_{f-8,2} + \dots + .1R_{f0,10} & (6) \\ \text{Year 2: } & .1R_{f-8,2} + .1R_{f-7,3} + \dots + .1R_{f1,11} & (6) \\ & \dots & (6) \\ \text{Year 9: } & .1R_{f-1,9} + .1R_{f0,10} + \dots + .1R_{f8,18} & (6) \\ \text{Year 10: } & .1R_{f0,10} + .1R_{f1,11} + \dots + .1R_{f9,19} & (6) \end{aligned}$$

Relative to the costs incurred, as shown in equations (1), the differences (incurred - allowed) over the first nine years, being equations (1) less equations (6), would be as follows:

$$\begin{aligned} \text{Year 1: } & .9R_{f0,1} - (.1R_{f-9,1} + .1R_{f-8,2} + \dots + .1R_{f-1,9}) & (7) \\ \text{Year 2: } & .8R_{f1,2} - (.1R_{f-8,2} + .1R_{f-7,3} + \dots + .1R_{f-1,9}) & (7) \\ & \dots & (7) \\ \text{Year 9: } & .1R_{f8,9} - .1R_{f-1,9} & (7) \end{aligned}$$

For the first year, the result is determinable (-2.32%) because the interest rates in this equation are all observable (the June 2014 one-year rate of 2.56%, as discussed above, and the ten year rates averaged over June 2005...2013, of 5.14%, 5.74%, 6.20%, 6.59%, 5.56%, 5.33%, 5.16%, 3.00%, and 3.54% respectively). The results for the later years depend upon

the one-year rates prevailing at the beginning of those years. As above, the extreme possibilities are that the one-year rate remains unchanged at 2.56% and that it reverts to its pre GFC level of about 5.50% over a three-year period. If the one-year rate does not change, the results from equations (7) average -1.07% per year over the next nine years (over recovery). If the one-year rate reverts to its pre-GFC level over three years, the results from equations (7) would average -0.16% per year (over recovery). The corresponding figures under the proposed transitional regime are an average over recovery of 0.6% per year and an average under recovery of 0.4% per year respectively. So, regardless of future interest rates, the proposed transitional arrangements would mitigate the over recovery occurring in the absence of the proposed transitional regime.

The transitional process examined here is transitional in the sense of gradually moving from the old regime to the new regime, i.e., the rate allowed for the first year is that which would have been allowed under the old regime, the rate allowed in the tenth year is that allowed under the new regime, and the intermediary rates constitute a smooth transition. Furthermore, the allowance given for the debt that is rolled-over (10% in the first year, another 10% in the second, etc) accords with the new regime ($R_{f0,10}$ for that rolled over in the first year, $R_{f1,11}$ for that rolled-over in the second year, etc). Consistent with this, one might expect that the remaining weight in each year would attach to the cost of debt that would have arisen under the old regime. For the first five years of the transition, this is the ten-year rate $R_{f0,10}$ and this rate is used in the AER's transitional regime. However, for the last five years, the rate that would have arisen under the old regime is the ten-year rate prevailing in five years' time $R_{f5,15}$ whereas the AER's transitional regime continues to use $R_{f0,10}$. If this substitution is made, the excess of the rate incurred over that allowed is still given by equations (3) except that $R_{f5,15}$ substitutes for $R_{f0,10}$ in the last five years. Across the range of possible scenarios for future interest rates examined earlier, the aggregate of such differences now range from an average of -0.6% per year to zero (over recovery of up to 0.6% per year).⁴ From a regulator's perspective, this is less satisfactory than the -0.6% to 0.4% per year under the AER's proposed transitional regime. So, despite the fact that this alternative transitional regime has greater conceptual appeal, its results are less satisfactory, and therefore the AER's proposed transitional regime is superior.

⁴ In performing such calculations, it is necessary to estimate the ten-year risk free rate prevailing in five years if it reverts to its pre-GFC level. As before, this is estimated from the average ten-year rate over the period 1.1.2000 to 30.9.2008, and this is 5.75%.

In summary, in respect of the DRP, there is no mismatch between the cost incurred by the benchmark firm and that allowed by a trailing average after the regime change, and therefore no transitional regime would seem to be warranted for the DRP. In respect of the risk-free rate component of the cost of debt, in the absence of a transitional process the allowed risk-free rate component of the cost of debt will exceed the incurred cost by 0.2% to 1.1% per year, the AER's proposed transitional regime would significantly mitigate this problem, and a different transitional regime with costs allowed corresponding to those shown in equation (1) would eliminate the mis-match. Furthermore the adoption of such transitional processes is consistent with the requirement under clause 6.5.2 of the NER to have regard to the impact on a benchmark efficient entity of a change in methodology. This analysis of the risk-free rate component assumes that regulated businesses do hedge or should have hedged it in the way suggested by the AER, and evidence in support of this will be presented in section 4. This analysis of the risk-free rate component also assumes that, upon the termination of the previous regime, the regulated businesses will not enter any new hedging arrangements and therefore their incurred costs are as shown in equations (1). Since the proposed transitional process will produce an allowance for the risk-free rate component of the cost of debt that closely approximates this cost incurred, this assumption is reasonable.

2.2 The Avoidance of Disruption

The second argument raised by the AER in support of its proposed transitional regime is that unexpected regime changes are disruptive to businesses and consumers, and this can be resolved through gradual change of the type implicit in the AER's proposed transitional regime. To assess this argument, consider the costs of debt that would have been allowed under the old regime, those allowed under the proposed transitional regime, and those that would have been allowed with immediate adoption of the new regime. Letting k_{dt} denote the ten-year cost of debt set at time t , $k_d(TA: t, T)$ a ten-year trailing average of the ten-year costs of debt set at times t through to T , and $-t$ denote t years ago, these costs of debt in each of the next ten years would be as shown in Table 1 below.

As shown in Table 1, the AER's proposed transitional regime gradually shifts from the rate that would have been allowed under the old regime to the new regime. In fact, in the first year of transition, it would allow exactly the same rate that would have been allowed under the old regime. In the second year, the allowed rate is almost identical to that which would

have been allowed under the old regime, and so on until in the tenth year it is identical to the ten-year trailing average of the ten-year rates that is allowed under the new regime. However, this would not be of concern to firms; their concern would be with how the rate allowed under the transitional regime compared with their incurred costs within the ten-year transitional period, and this issue has already been addressed.

Table 1: Allowed Costs of Debt Under Various Regimes

Year	New Regime	Transitional Regime	Old Regime
Year 1:	$k_d(TA: -9,0)$	k_{d0}	k_{d0}
Year 2:	$k_d(TA: -8,1)$	$.9k_{d0} + .1k_{d1}$	k_{d0}
....			
Year 5:	$k_d(TA: -5,4)$	$.5k_{d0} + .1k_{d1} + .1k_{d2} + .1k_{d3} + .1k_{d4}$	k_{d0}
Year 6:	$k_d(TA: -4,5)$	$.4k_{d0} + .1k_{d1} + .1k_{d2} + .1k_{d3} + .1k_{d4} + .1k_{d5}$	k_{d5}
....			
Year 10:	$k_d(TA: 0,9)$	$k_d(TA: 0,9)$	k_{d5}

In respect of consumers, I would expect low volatility in prices to be desired and therefore a desire for a gradual transition to the new policy from the prices *currently* prevailing rather than those that would prevail had the old regime been maintained. For example, if the output price is currently \$10, it would have become \$12 at the reset if the old regime were maintained, and it would be \$11.50 if the new regime applied immediately, it is the jump from \$10 to \$11.50 that would concern consumers rather than that from \$12 to \$11.50. So, a gradual transition from \$10 to \$11.50 would be more satisfactory to consumers than a jump to \$12 at the reset point followed by a gradual transition to \$11.50. It might be argued that consumers would have been expecting the old regime to have been maintained prior to the announcement of the change, and therefore to have planned on that basis; accordingly, the true shock is not from \$10 to \$11.50 but from \$12 to \$11.50. However, the \$12 figure could not have been fully anticipated prior to it arising and therefore, even for consumers who did plan for continuance of the old regime, there is still some element of surprise in the jump from \$10 to \$12. It might also be argued that consumers are not concerned with volatility in

the individual prices that they face but in their income net of committed expenditure. Accordingly, the issue of concern would not be volatility in these prices per se but the extent to which they aggravated (or mitigated) volatility in a consumer's net income. Similarly, the important feature of a stock's risk in a portfolio context is beta rather than variance. This is true but it is difficult to offer definitive statements in the present case; the most that can be said is that such considerations undercut the importance of this issue.

In conclusion, I do not agree with the AER's second argument in respect of either firms or consumers. It should also be noted that consumers care about the average level of prices as well as volatility (however defined). If the AER's proposed transitional process will generate lower DRP allowances to firms than immediate adoption of the new regime, and therefore lower output prices than otherwise, this would mitigate consumers' concerns about higher volatility in prices.

2.3 The Avoidance of the Need for Historical Data

The third argument raised by the AER in support of its proposed transitional regime is that immediate adoption of a trailing average would require historical data that might not be available and the proposed transitional regime avoids the need for historical data. The data availability issue does not apply to the risk-free rate (which is available from the Reserve Bank for several decades) but it does apply to the DRP. In particular, there is no index available at the present time with a ten year history because the RBA index only goes back to January 2005 and the BFV index ceased in May 2014; so, a combination of indexes would be required. Furthermore, there has been considerable variation in the results from four such indexes since early 2007, most particularly in early 2009 when the estimates of the RBA, CBA Spectrum, and BFV indexes were 9.5%, 5.0% and 3.5% respectively (CEG, 2014, Figure 1); this variation complicates the process of choosing estimates for that historical period. So, in respect of the DRP, I agree with the AER's third argument.

2.4 Discouraging Opportunistic Behaviour

The fourth argument raised by the AER in support of its proposed transitional arrangements is that transitional processes discourage firms from seeking a change in regulatory regime so as to maximize their revenues, i.e., the transitional process erodes the gains that would be available if a proposed method yielded higher future revenues than the existing method. Such an argument has some merit as a general rule, and on both sides: discouraging firms

from opportunistic behavior and discouraging regulators from acting in response to ‘political pressure’. However, it would also have the disadvantage of blunting the impact of changes that do merit immediate adoption, whether proposed by firms or regulators; so, it dilutes the good and bad equally. In any event, since such a general rule has not (yet) been adopted by the AER, the relevant issue here is whether a transitional regime should be applied in the current situation and this rests upon other arguments examined here.

2.5 Overall Assessment

In respect of the AER’s proposed transitional regime, the AER argues that this will avoid a mismatch between the costs of debt incurred by a firm and those allowed by a regulator after the regime change. However, this argument applies only to the risk-free rate component and even here it only mitigates rather than completely eliminates the mis-match. The AER also argues that its proposed transitional regime will smooth the output price path from that which would otherwise have applied to that arising from the new regime. However, this would not be desirable to either consumers (who would desire low volatility in prices and therefore gradual transition to the new regime from the current prices under the old regime rather than from those that would have prevailed had the old regime been maintained) or to firms (whose concern would be with mismatch between the rate allowed and that incurred). The AER also argues that its proposed transitional regime would avoid the need to collect historical data, and therefore avoid any difficulties in doing so. This argument is true but only for the DRP component. Finally, the AER argues that general application of transitional arrangements would discourage firms from seeking regime changes purely to improve their revenues. Such an argument has some merit as a general rule, and would also discourage regulators from acting in response to ‘political pressure’. However, it would also have the disadvantage of blunting the impact of changes that do merit immediate adoption, whether proposed by firms or regulators; so, it dilutes the good and bad equally. In any event, since such a general rule has not (yet) been adopted by the AER, the relevant issue here is whether a transitional regime should be applied in the current situation and this rests upon other arguments examined here.

There are conflicting conclusions here. In respect of the DRP, the mis-match issue supports not using any transitional regime whilst problems with the availability of historical data support the AER’s proposed transitional regime. In respect of the risk-free rate component, the proposed transitional regime mitigates the mismatch between costs incurred by the

benchmark firm and those allowed by the regulator but elimination of the mismatch requires a quite different transitional regime to that proposed by the AER. Finally, minimization of price shock to consumers would support yet a different transitional regime and applied to the entire cost of debt, but this might be offset by any impact on the average level of prices. I now consider other arguments.

3. Other Arguments in Support of Transitional Arrangements

3.1 The Mitigation of Windfall Gains Arising from the GFC

In the face of economic crises, DRPs rise sharply and generally take several years to subside to their original level. So, if the DRP were set by a regulator at the beginning of the regulatory cycle (typically five yearly) as was the case under the old regime, there will be mismatches between the DRP allowed and the trailing average that is paid by a firm, and these will take several years to dissipate. In particular, when the DRP suddenly rises during a regulatory cycle, the allowed DRP will remain fixed for the remainder of that regulatory cycle whilst the trailing average rate that is paid will rise over that period, leading to a cash flow shortfall. However, once the DRP is reset at the end of that cycle at the higher prevailing rate, it will exceed the trailing average because the latter rises more slowly than the prevailing rate. Furthermore, as the DRP reverts to its earlier level, the allowed DRP will at some point fall below the trailing average, producing another period in which there is a cash flow shortfall.⁵ Finally, the trailing average will converge on the prevailing rate, after which there is neither shortfall nor excess. So, the DRP spike will first induce a DRP shortfall, then an excess, another shortfall, and finally stabilize at zero. Consequently, there may be a period during which the accumulated effect of the mis-match is positive. So, during this favorable window for the firm, if the regulator switches immediately to a trailing average (from which point the DRP allowed will match that incurred), this accumulated benefit will be retained by the firm rather than gradually eroded away and this ‘windfall’ benefit to the firm comes at the expense of its customers. This problem could be avoided by deferring any switch to a trailing average until the current DRP spike has fully subsided. An alternative approach would be to use a transitional process because it proxies for deferral of the switch.

⁵ Under the on-the-day approach previously adopted by the AER the issue does not arise in respect of the risk free rate component of the cost of debt because the risk-free rate allowed under that regime is that prevailing at the beginning of the regulatory cycle and the same rate is effectively paid by businesses due to using (or being able to use) interest rate swap contracts to effectively align their borrowing terms to the regulatory cycle (as discussed in section 4).

These issues are of particular significance at the present time because the DRP (for BBB bonds) rose significantly as a result of the crisis beginning in 2007 (GFC), it appears to be reverting to its pre-GFC level, and the AER switched regimes in mid 2014. Thus, if the AER were to immediately adopt a trailing average DRP (in the sense of switching at the end of the current cycle in which mid 2014 lies), it is possible that significant accumulated gains (that would otherwise have dissipated as the DRP declines) will be locked-in. To investigate this issue, I have averaged across the four DRP series presented in CEG (2014, Figure 1), which are the CBA, BFV, RBA, and BVAL series, and the results for the middle of each year are shown in Table 2 below.⁶ Collectively this data indicates that the DRP was stable at about 1.3% until the middle of 2007, rose to 4.1% in mid 2009, and subsided to 1.9% in mid 2014. Consistent with the downward trend, I have assumed reversion to the earlier level of 1.3% by mid 2016. In addition, and consistent with recent evidence concerning Australian utilities (CEG, 2013, pp. 9-10; PwC, 2013, pp. 10-11), I assume that the average debt term is 10 years. Assuming (consistent with the empirical evidence) that firms use a staggered approach to borrowing, the DRP paid in each year would then be the ten-year trailing average, as shown in the third column of Table 2. Finally, and consistent with the typical situation, I suppose that the regulatory cycle is five years.

I commence by assuming that the switch from the current regime to a trailing average (which must occur at the beginning of a regulatory cycle) does not involve any transitional process and therefore requires DRP data from the ten years preceding the switch point. I also commence by looking at regulated businesses for which mid 2007 is the beginning of a regulatory cycle. In this case the DRP allowed under the old regime is shown in the fourth column of Table 2, i.e., 1.3% prior to mid 2007 followed by 1.3% for 2007-2012 (because this was the prevailing rate in mid 2007), followed by 3.6% for 2012-2017 (because this was the prevailing rate in mid 2012), followed by 1.3% for 2017-2022 (because this is the rate assumed to be prevailing in mid 2017), and finally 1.3% for 2022-2027 (because this is the rate assumed to be prevailing in mid 2022). The over recovery ('profit') from the old regime (the rate allowed by the regulator less the rate paid by the regulated entity) is then shown in the fifth column of Table 2, and the accumulated profit is shown in the last column. The pattern conforms to that described earlier: an initial shortfall, followed by an excess, and then a shortfall again before stabilizing at zero, with a favourable accumulated position for several

⁶ CEG's Figure 1 stops in early 2014 and therefore the results for mid 2014 (for the BVAL and RBA series) are taken from Lally (2014b, section 7).

years in the middle (2013-2018). If there were no regime shift, these businesses would experience accumulated under recoveries ('losses') from the DRP shock of 1.8%, as shown in the last row of the last column of Table 2. Across the other four possible cycle commencement dates in mid year, the accumulated gains range from 4.7% to -4.3% with an average of zero.

Table 2: The Effects of Switching with no Transitional Process

Year Beg	Prevailing	Paid	Allowed	Profit (Allowed – Paid)	Accumulated Profit
2006	1.3	1.30	1.3	0	0
2007	1.3	1.30	1.3	0	0
2008	3.2	1.49	1.3	-0.19	-0.19
2009	4.1	1.77	1.3	-0.47	-0.66
2010	3.2	1.96	1.3	-0.66	-1.32
2011	3.1	2.14	1.3	-0.84	-2.16
2012	3.6	2.37	3.6	1.23	-0.93
2013	3.0	2.54	3.6	1.06	0.13
2014	1.9	2.60	3.6	1.00	1.13
2015	1.6	2.63	3.6	0.97	2.10
2016	1.3	2.63	3.6	0.97	3.07
2017	1.3	2.63	1.3	-1.33	1.74
2018	1.3	2.44	1.3	-1.14	0.60
2019	1.3	2.16	1.3	-0.86	-0.26
2020	1.3	1.97	1.3	-0.67	-0.93
2021	1.3	1.79	1.3	-0.49	-1.42
2022	1.3	1.56	1.3	-0.26	-1.68
2023	1.3	1.39	1.3	-0.09	-1.77
2024	1.3	1.33	1.3	-0.03	-1.80
2025	1.3	1.30	1.3	0	-1.80

I now turn to the consequences of the regime shift from mid 2014, without a transitional regime. For businesses with cycle commencement dates of mid 2007, mid 2012, etc, mid

2014 is part way through a cycle and therefore the regime shift for these businesses would occur in mid 2017. In the absence of a transitional process, the DRP allowed would match that paid from mid 2017 and therefore the accumulated profits up to mid 2017 (3.07%, as shown in the last column of Table 2) would not subsequently change, i.e., they would be locked-in. Across all possible cycle commencement dates in mid year, these locked-in profits are shown in the central (2014) column of Table 3, and they range from 1.90% to 9.53% of debt value with an average of 5.29%.⁷

It is also interesting to examine how significant the mid 2014 date for the regime switch is, by examining the consequences of regime switches at various other points in time. For example, if the switch had commenced in mid 2011, it would have been applied in mid 2012 to businesses with cycle commencement dates of mid 2007, 2012 etc, at which point the accumulated profits would have been -2.16% (see last column of Table 2). Table 3 shows these results for a range of points at which the regime shift might have been initiated, from 2009 till 2020. Remarkably, the AER’s decision to initiate the regime switch from mid 2014 would lead to the maximum average windfall gain to businesses (at the expense of their consumers) if no transitional process is adopted, of 5.29% of their debt levels.

Table 3: Accumulated Profits for Various Switching Times

Cycle	2009	2011	2013	2014	2015	2017	2020	2014(T)
2007-2012	-2.16	-2.16	3.07	3.07	3.07	3.07	-1.42	-1.80
2008-2013	6.27	6.27	6.27	8.24	8.24	8.24	4.82	4.70
2009-2014	-0.19	9.53	9.53	9.53	6.10	6.10	3.73	4.30
2010-2015	-0.66	3.73	3.73	3.73	3.73	-0.76	-0.76	-2.15
2011-2016	-1.32	-1.32	1.90	1.90	1.90	-3.43	-3.43	-4.30
<i>Average</i>	0.39	3.21	4.90	5.29	4.61	2.64	0.59	0.15

I now consider the consequences of adopting the transitional process proposed by the AER, from the switch commencement date of mid 2014. I therefore reconstruct the results in the

⁷ About 80% (by aggregate asset value) of the energy network businesses regulated by the AER have cycle commencement dates on 1 July, including the seven largest such businesses (AER, 2013c, Tables 2.1, 2.2, 4.1 and 4.2). Accordingly, the analysis carried out here assumes all businesses have such a date.

mid 2014 column of Table 3 but instead assume that the transitional regime operates once the switch is made. The situation is now quite different because switching does not immediately give rise to an allowed DRP equal to the ten-year trailing average and therefore the accumulated profits may continue to change (usually erode) rather than being frozen at the switching point. For example, consider businesses with regulatory cycles that commence in 2007, 2012, 2017, etc, for whom the switch will occur in mid 2017. Since the DRP is assumed to revert to 1.3% by mid 2016 and remain at that level from that point, the allowed DRP results from a regime shift in mid 2017 coupled with the AER's proposed transitional regime are exactly the same as those shown in Table 2 under the old regime and therefore the accumulated profit is the same, i.e., -1.8%. The results across all five regulatory cases are shown in the last column of Table 3, and they average only 0.15% of the debt level. Thus, if the AER's proposed transitional regime is adopted, the accumulated profits from the DRP shock coupled with the regime change from 2014 will be close to zero (on average over the possible regulatory cycle commencement dates).

The aggregate asset value of the businesses that are regulated by the AER is about \$74b (AER, 2013c, Tables 2.1, 2.2, 4.1 and 4.2). Assuming leverage of 60%, the aggregate debt level would be about \$44b. Consequently, if the AER switched to a trailing average from the end of 2014 (without a transitional regime), the cumulative profits of the businesses resulting from the GFC spike in the DRP would be about 5.29% of their aggregate debt level (see Table 3) of \$44b, which is \$2.3b. This is a substantial sum of money, and it is received at the expense of their consumers. By contrast, if the AER's proposed transitional regime were adopted in respect of the DRP, then the accumulated profits from the GFC would be trivial: 0.15% of \$44b (\$66m). This supports use of the AER's proposed transitional regime for the DRP.

It might be argued that the transitional process would involve 'clawing back' past gains. I think that 'clawing back' relates to a situation in which gains have arisen from a past event, that past event will not give rise to future consequences that will naturally erode those gains, and the transitional process does erode the gains. However, in the present situation, the gains have arisen from a DRP spike and the natural reversion in the DRP back to its earlier level would erode these gains back to zero. Switching to a trailing average in mid-stream without a transitional regime locks in the accumulated gains up to that point. So, the use of a transitional regime to prevent this does not constitute a claw back. It instead constitutes a

process that mimics the erosion in the gains for the businesses that would have occurred naturally under the earlier regime.

In summary, under the old (on the day) regulatory regime, the DRP spike arising from the GFC boosted the allowed revenues of regulated businesses relative to the costs actually incurred by them and this effect would have been gradually reversed had the old regime remained in place. However, if the AER switches to a trailing average regime for the DRP without a transitional process, these businesses will no longer experience the profit erosion, this would constitute a windfall benefit to the businesses, and it will come at the expense of their customers. By contrast, if the AER's proposed transitional process is adopted, then this windfall gain will be significantly mitigated and this will not constitute a claw-back. This supports use of the AER's proposed transitional regime for the DRP. Furthermore, doing so is consistent with the requirement under clause 6.5.2 of the NER to have regard to the impact on a benchmark efficient entity of a change in methodology. Unsurprisingly, the businesses have favoured immediate adoption of a trailing average regime. However, had the position been the reverse, with the businesses suffering a disadvantage from the regime shift without a transitional process, I expect that they would have favoured a transitional regime for precisely this reason. Consistent with my views in the present circumstances, I would also have supported transitional arrangements in this alternative scenario.

3.2 The NPV Principle

An important consideration in choosing any regulatory policy is the NPV = 0 principle: the revenues resulting from regulatory policy, net of opex and taxes, should have a present value equal to the initial investment in the regulated assets (unless management is more or less efficient than the benchmark firm). In respect of the DRP component of the cost of debt, this principle was violated by the AER's previous policy of setting the allowed DRP every five years at the prevailing rate whilst businesses paid the ten-year trailing average and could not hedge the difference. Consequently, as discussed in the previous section, any event that induces a DRP spike will first induce a shortfall in the business's revenues relative to its costs, followed by an excess, another shortfall, and finally stabilize at zero. Depending upon when the DRP shock occurs relative to the beginning of the cycle, the overall effect of this may be positive or negative. For example, for regulatory cycles beginning in 2007, 2012, etc, the aggregate (adverse) effect was -1.8% of the debt level as shown in Table 2. However, the gains largely precede the losses and therefore the present value effect (as of the beginning of

2007) is much smaller; using a discount rate of 8%, the present value (as at mid 2007) of the effects shown in the penultimate column of Table 2 is only -0.5%. Across the other regulatory cycle commencement years (2008, 2009, 2010 and 2011), the present values are all positive, as shown in the second column of Table 4, and the average present value impact over all five cases is 1.3%. So, because the AER's previous policy did not fully satisfy the $NPV = 0$ principle, the consequence of the GFC-induced DRP shock coupled with continued use of that previous policy would be to slightly raise the present value of a regulated business's net cash flows (by 1.3% of its debt value, averaged over different possible regulatory cycle commencement years).

By contrast, as a result of switching to a trailing average regime from mid 2014, the situation is different. Without a transitional regime, the net cash flow impact would disappear once the regime switch occurs (because the DRP allowed matches that paid from that point) and therefore the present valuing of the impact need be done only up until the regime switch. So, for regulatory cycles commencing in 2007, 2012, etc, the switch would occur in mid 2017 and the present value as at mid 2007 of the net cash flow effects up till mid 2017 would be 1.3%. Across the other regulatory cycle commencement years (2008, 2009, 2010 and 2011), the present values are all also positive as shown in the third column of Table 4 and the average over all five cases is 3.4%. So, without a transitional process, the effect of switching regimes from mid 2014 coupled with the GFC-induced DRP shock would raise the present value of a regulated business's net cash flows from 1.3% to 3.4% of its debt level (averaged over different possible regulatory cycle commencement years).

Alternatively, if the AER changes regimes from mid 2014 but uses the proposed transitional regime, these gains from the regime change are significantly mitigated. For cycles commencing in 2007, 2012, etc, the switch would occur in mid 2017, at which point the prevailing DRP is assumed to have reverted to its pre GFC level. Consequently, the results are the same as those without the regime change. In fact, the only cycles for which there is a difference are those commencing in 2009, 2014, etc, and here the difference is minor. The results are shown in the last column of Table 4. These closely approximate the results from the old regime. So, given that there is a regime change from mid 2014, the AER's proposed transitional regime produces results that accord much better with the $NPV = 0$ principle than if there were no transitional regime (1.3% variation versus 3.4%). It also produces results for

every firm that are in present value terms almost identical to those that it would have experienced in the absence of a regime change.⁸

Table 4: Present Value of Cash Flow Effects from GFC Induced DRP Shock

Cycle	Old Regime	New: No Trans	New: Trans
2007-2012	-0.5%	1.3%	-0.5%
2008-2013	4.5%	5.8%	4.5%
2009-2014	4.2%	6.6%	4.3%
2010-2015	-0.1%	2.3%	-0.1%
2011-2016	-1.5%	0.9%	-1.5%
<i>Average</i>	1.3%	3.4%	1.3%

It might be argued that the DRP shock induced by the GFC is merely one of a large set of possible shocks, some of which have a favourable effect on net cash flows and others adverse, and therefore it is unnecessary to adopt a transitional regime so as to mitigate the favourable effect of this particular regime change at the present time. The premise is clearly true but it does not justify desisting from the use of a transitional regime. Whatever the full set of possible shocks is, there is no reason to suppose that the overall effect of them is zero. So, if a regime change occurs in circumstances in which it significantly aggravates a violation of the NPV = 0 principle and it is possible to significantly mitigate that problem through a transitional process, that transitional process is warranted. This should be viewed as an alternative way of expressing the problem of windfall gains that has been discussed in section 3.1.

In summary, there are now three arguments supporting the AER's proposed transitional regime for the DRP. Firstly, it avoids problems with the availability of historical DRP data. Secondly, it mitigates the windfall gain that businesses on average experience at the expense of their consumers, arising from the GFC-induced DRP shock coupled with the switch to a trailing average regime from mid 2014, and this can be equivalently expressed as producing results that better conform to the NPV = 0 principle. Thirdly, it produces results for

⁸ Since the transition commences from mid 2014 and the DRP is assumed to stabilize again at 1.3% from mid 2016, the alternative transitional regime considered in section 2.1 would produce the same results.

individual businesses that are almost identical to those that would have prevailed had there been no regime change. However, in respect of the DRP and as noted in section 2.1, desisting from a transitional process has the apparent advantage of eliminating any mis-match between the allowed and incurred costs after the regime change. Thus, it is important to assess the relative merits of these competing arguments. The windfall gain and mis-match issues here are closely related. Without a transitional regime, there would be no mis-match after the regime change but there would be a windfall gain to businesses up to the time of the regime change. By contrast, the proposed transitional process mitigates the windfall gains but necessarily leads to a mis-match between the allowed and incurred costs after the regime change. The windfall gain issue is the more important one because it takes account of the entire consequences of the regime change and the GFC-induced shock to the DRP rather than only the consequences after the regime change. So, in respect of the DRP, there are now three supporting arguments for the proposed transitional regime and no contrary ones. Furthermore, adoption of this transitional regime is consistent with the requirement under clause 6.5.2 of the NER to have regard to the impact on a benchmark efficient entity of a change in methodology. In addition, it should be emphasized that this mitigation of the windfall gains that businesses would otherwise have received at the expense of their customers does not constitute a claw-back and it would not undercut the existing incentives for businesses to reduce their costs. Finally, if the combined effect of the GFC-induced shock to the DRP and the regime change had been to inflict losses rather than gains on to the businesses and if transitional arrangements relating to the DRP had been able to significantly mitigate these losses, I would have also favoured such transitional arrangements.

4. Uniform Application of Transitional Arrangements

I turn now to the issue of whether the transitional regime that is favoured should be applied uniformly across sectors, owners, firm sizes, the timing of regulatory decisions, and firms' debt management practices. The analysis presented in the previous section supports use of the AER's proposed transitional regime in respect of the DRP. In respect of the risk-free rate component, the mis-match issue supports a quite different transitional regime to that proposed. Finally, minimization of price shock to consumers would support yet a different transitional regime. Nothing in this analysis suggests that sector has any relevance. However, amongst the other considerations raised by the AER, there are two potential arguments against uniformity.

The first of these arguments relates to the debt management practices of firms. In respect of the risk-free rate component of the cost of debt, the analysis so far is premised upon the benchmark firm hedging its exposure to regulatory resetting of the risk-free rate component of the cost of debt at the beginning of the cycle (under the previous regime). In particular, this premise leads to the conclusion that the risk-free rate costs incurred by the benchmark firm in the first ten years of the new regime are as shown in equations (1), and this is relevant to the decision concerning the transitional scheme for such costs. However, if the benchmark firm doesn't hedge this risk, no transitional scheme would be required and the allowed rate under the new regime should simply be the ten-year trailing average of the ten-year risk-free rate. Consistent with this, Ausgrid (2014, page 73) and TransGrid (2014, pp. 182-183) claim that the swaps market lacks the depth to accommodate transactions on the scale required by them within the risk-free rate averaging period of 10-40 business days allowed by the AER (2009, page 172). SFG (2012, page 25) makes the same point concerning large NSPs in general. The QTC (2013, page 8) also argues that the swap contracts would have to be entered into over the same short period used by regulators in setting the risk-free rate at the beginning of the regulatory cycle (in order to fully hedge the risk) and doing so would expose the regulated entity to "opportunistic pricing by other market participants". By contrast, Citipower et al (2013, page 7) indicate that they do hedge in the way assumed by the AER, and do not express any concerns about the depth of the swaps market or opportunistic pricing. In addition, and in summarizing submissions from private-sector entities, the AER (2009, pp. 152-154) reveals that the standard practice amongst private-sector firms has been to hedge in the way assumed by them, and there were no concerns amongst these firms about the depth of the swaps market or opportunistic pricing. Consistent with this, SFG (2012, page 24) and NERA (2014, page 22) also claim that it is standard practice amongst small to medium sized businesses to hedge in this way whilst Jemena (2013, page 19) claims that it is standard practice amongst NSPs in general.

All of this suggests that a hedging window of 10-40 business days is too short for the largest regulated businesses, which are all government owned.⁹ However, these firms could simply have increased the window over which the swap contracts were entered into; Westpac (2014)

⁹ The seven largest businesses (by RAB) that are regulated by the AER are owned by the Queensland or NSW governments (AER, 2013c, Tables 2.1, 2.2, 4.1 and 4.2).

suggests a period of four months for all regulated entities with cycles commencing on 1 July 2014 (Transgrid, Ausgrid, Endeavour, and Essential Energy) whilst the NSW DNSP (2013, page 11) suggests a period of three months for the last three firms. Since the AER allows the firms to choose an averaging period for the risk-free rate of up to 40 business days (two months), the increase in the hedging period (an extra one to two months) is not dramatic. Furthermore, it would have been efficient for these firms to have done so because it would have largely hedged their exposure to the risk-free rate component of the cost of debt resets and also reduced their costs from the ten-year swap rate embedded in their borrowing to the (usually) cheaper five-year swap rate, even after allowing for the transactions costs of the swaps.¹⁰ Jemena (2013, page 27) makes the same point about the cost savings from these transactions and, as a participant in such transactions, would be particularly well placed to comment on the matter. Chairmont (2013, page 19) adds that the transactions costs of the swaps are “negligible compared to the risk position”, and that there would be “no reason for companies not to hedge the base rate apart from a deliberate decision to take the risk of the fixed rate falling from the level applicable at the benchmark fixing time” (ibid, page 24).

By contrast, the NSW DNSP (2013) claim that they could not obtain a “competitive rate” even if the transactions were spread over three months (ibid, page 11), and that the transactions costs of the swaps would be “prohibitively high” in their case (ibid, page 16). However, the claim is drawn from a UBS (2013) submission on behalf of these same firms (Ausgrid, Endeavour and Essential Energy) and this submission contains nothing that contradicts the conclusion reached in the previous paragraph, i.e., the hedging arrangements yield an expected cost saving as well as a risk reduction. The NSW DNSP (2013, pp. 11-12) also claim that spreading the transactions over three months whilst the regulator sets the allowed rate over a shorter window would expose the firms to considerable risk and this is “not consistent with efficient debt management practices.” However, the incremental period is only one month (three months for the swaps transactions versus a maximum averaging

¹⁰ Jemena (2013, page 22) estimated the total cost at 0.09% based upon quotes from its banks. Chairmont (2013, page 19) provides the even lower estimate of 0.05%. By contrast, the average differential between the five and ten year swap rates has been 0.28% from 1.1.1988 to 31.8.2014, 0.25% from 1.1.2000 to 31.8.2014, and 0.46% from 1.1.2010 to 31.8.2014 (using Bloomberg data). So, net of the transactions costs of the swaps, the swap transactions would have yielded expected benefits of at least 0.15% as well as reducing risk. Using the 2008-2013 period, Jemena (2013, page 27) estimated the net gain at about 0.25%. It should also be noted that even hedging arrangements of this type consummated in the 10-40 business day window matching the risk-free rate averaging period allowed by the AER would be imperfect because the firms would have been paying the five-year risk free rate (after swapping the ten-year rate for the five-year rate) prevailing at the beginning of the regulatory cycle whilst the AER would have been allowing the ten-year rate observed at the same time.

period of two months for the risk-free rate allowed by the AER). Furthermore, it would be even less satisfactory to not hedge the risk at all and it is normal practice for firms to undertake hedging arrangements that are imperfect; the entire futures market is predicated upon participants entering into imperfect hedging arrangements (because they can't tailor them to their precise circumstances) because futures markets have a liquidity advantage over the alternatives.¹¹ In addition, the AFMA (2013, pp. 2-3) claims that transactions of this kind do not reduce costs, due to "recent international regulatory developments", but they neither elaborate upon this comment nor provide any evidence on the empirical effect. Furthermore, the claim that these transactions do not reduce costs is contradicted by the evidence presented in footnote 10.

Thus, even for the largest regulated businesses and under the previous on-the-day regulatory regime, these hedging arrangements were highly efficient. To illustrate the risk exposure from failing to undertake them, consider the situation facing a firm with regulatory resets on 1.7.2007 and 1.7.2012 (such as Powerlink). Assuming that the reset was based upon the average risk-free rate in the month immediately preceding the reset, the 2007 reset would have used a risk-free rate of 6.20% whilst that in 2012 would have used a rate of 3.0%. In addition, without the swap contracts, the firm would have been paying a ten-year trailing average risk-free rate component of their cost of debt in mid 2007 of 5.53% (July 2002 to June 2007 average) and a ten-year trailing average risk-free rate in mid 2012 of 5.20% (July 2007 to June 2012 average). Thus, the firm's allowed rate would have plummeted in mid 2012 by 3.20% of its debt level whilst its cost would have fallen over the previous five years by only 0.33%. This leaves the interesting question of why some firms (government-owned entities) did not undertake these hedging arrangements. This might be because they are not subject to normal market signals and incentives, because they face low bankruptcy and refinancing risk, and possibly also because they borrow via another government entity (such as the QTC or the NSW Treasury Corp) and are thereby partially shielded from market signals. Alternatively, it might be because they have historically been less aware of the full potential of the swaps market. For example, in a submission to the AER relating to the AER's proposed change from a ten to a seven year cost of debt benchmark allowance, the NSW Treasury Corporation (2013) argued that this change would induce regulated firms to reduce their average debt term to seven years, and therefore raise their refinancing risk, but

¹¹ The fact that the larger businesses require a three month hedging period suggests that regulators should adopt such a window when using the on-the-day regime. Obviously, the AER is no longer in this position.

fails to make any mention whatsoever of the possibility of using interest rate swap contracts (or even to explain why they would not use them). Alternatively, the behavior of these government entities might be because they are each part of a large portfolio held by their (state government) owners and consider that there are natural hedges within the portfolio. However, since the AER (2013b, page 7) defines the benchmark efficient entity to be a “pure play”, such natural hedges are irrelevant to the debt policy of the benchmark efficient firm.

In summary, firms either did hedge in approximately the fashion assumed by the AER, or could and should have hedged, or could have but did not do so because they were shielded from risk as a result of government ownership. Consequently the fact that some firms did not hedge (which may spring from size or ownership) does not provide a basis for applying a different transitional process to them. Furthermore, in respect of the firms that did not hedge, any adverse impact on them from the AER’s transitional regime would not in principle be any different to an adverse impact that they might have suffered in the absence of any change in regulatory regime; firms that do not hedge risks arising from regulatory policy are making a conscious choice to bear risk, there are many such risks, and one such risk is that arising from transitional processes that are premised on these risks being hedged. Finally, in respect of firms that did not hedge this interest rate risk in the fashion assumed by the AER, the act of treating them differently in the present situation would establish a very undesirable precedent. Consequently, the actual debt management practices of firms do not provide grounds for differential transitional arrangements across them.

The second argument against uniformity arises from the fact that businesses are subject to different regulatory cycles. So, if the AER switches to a trailing average regime along with its proposed transitional regime and the first switch occurs in mid 2014, then firms with regulatory cycles commencing in 2011, 2016, etc will experience a loss in present value terms from the entire GFC related spike in the DRP of 1.5% of their debt level whilst those with regulatory cycles commencing in 2008, 2013, etc will experience a gain of 4.50% (see the last column of Table 4). This suggests that different transitional regimes should be applied depending upon the regulatory cycle that a firm is subject to. However, doing so would establish a very undesirable precedent. Furthermore, the optimal transitional regime for each possible regulatory cycle is not obvious and therefore considerable debate would be provoked once the principle of uniform treatment was abandoned. Furthermore, the corporate groups to which regulated businesses belong are typically involved in a range of

different regulated activities with different cycle commencement dates and this would push businesses towards the typical outcome of about 1.3% of debt value, i.e., it would reduce the cross-sectional variation in outcomes across businesses and therefore undercut the merit from differential treatment across individual businesses. In view of these points, I do not favour differential treatment of firms according to the timing of their regulatory cycles.

5. Review of Submissions

NERA (2014, section 4.4.1) argues that one possible definition of a benchmark efficient entity is that of a similar firm in a competitive (unregulated) market, that such firms would engage in staggered borrowing for ten year terms without swap contracts, that this implies that their costs at any point would be the ten-year trailing average of the ten-year cost of debt, that this corresponds to the allowance provided by the AER (sans transitional allowances), and therefore no transitional allowance is required. However, for the purposes of assessing the merits of a transitional regime, one should instead consider how an efficient firm subject to the type of regulation previously employed by the AER would have behaved and it would have behaved differently to an unregulated firm. In particular, and as discussed in the previous section, the AER's previous use of the on-the-day method would have prompted an efficient firm to hedge the risk-free rate component of the cost of debt. Furthermore, NERA's belief that an efficient unregulated firm would not have used interest rate swap contracts is contradicted by the very widespread use of such contracts amongst unregulated firms, and one such use is to enable a firm to shorten the average duration of its debt (and therefore lower the average cost) without exposing itself to greater refinancing risk.¹²

NERA (2014, section 4.4.2) argues that another possible definition of the benchmark efficient entity is that of an efficient firm subject to the previous regulatory regime (the on-the-day method), that such a firm with the size of TransGrid could not have economically hedged the risk arising from the risk-free rate component, that it would not therefore have done so, that this implies that its costs at any point would be the ten-year trailing average of the ten-year cost of debt, that this corresponds to the allowance provided by the AER (sans transitional allowances), and therefore no transitional allowance is required. In support of the claim that

¹² For example, if a firm swaps ten-year debt into five-year debt, it lowers its expected costs because five-year debt is generally cheaper. However, unlike a regulated firm, it thereby increases its risk because five year rates are more volatile than ten year rates and its output price is unlikely to provide a natural hedge against this. So, there is a trade-off here.

TransGrid could not have economically hedged the risk arising from the risk-free rate component, NERA argues that the debt portfolio of TransGrid along with that of other Australian businesses regulated by the AER and with a reset on 1 July 2014 was \$22b, that the maximum that could be transacted per day was \$300m (Westpac, 2014), and therefore that this \$22b could not have been swapped during the 10-40 business day window matching the risk-free rate averaging period allowed by the AER. However, these figures imply that it could have been swapped over a 73 day period and Westpac (2014) makes the same point. As argued in the previous section, and despite the inability to achieve a perfect hedge, it would still have been efficient of them to do so. Thus, the AER's assumption about the efficient hedging practices of firms under the previous regime is appropriate.

NERA (2014, section 4.4.2) also argues that the AER has not to date provided any allowance for the transactions costs of such swaps and this contradicts its belief that the efficient financing practice for firms under the previous regulatory regime was to hedge this risk. However, it is also true that the AER used the ten-year risk free rate at these five-yearly resets rather than the five-year risk free rate, the latter should have been used, and the benefit to the firms from this (ten-year rates are generally higher) outweighs the transactions costs of the swaps (as explained in the previous section). Furthermore, the relevant issue is what firms did or should have done under the circumstances rather than what the AER at the time thought they should have done. Private sector firms did hedge despite the lack of compensation (AER, 2009, pp. 152-154; SFG, 2012, page 24; Citipower et al, 2013, page 7; Jemena, 2013, page 19; NERA, 2014, page 22). In addition, and as discussed in the previous section, the merits of hedging under the previous regime are clear even in the absence of compensation; doing so would largely eliminate the risk arising from the five-yearly resets of the risk-free rate component, convert the ten-year cost of debt incurred by the firms into five-year debt (which is cheaper on average by at least 0.25%), whilst incurring transactions costs on the swaps of no more than 0.10%. So, doing this would have reduced risk and had an expected payoff of at least 0.15%. Thus, even in the absence of compensation for the transactions costs of the swaps, undertaking these swap contracts would be efficient behavior. Receipt of compensation for the swap costs would be mere 'icing on the cake'. Furthermore, even when such swapping lacks the risk reduction referred to here (as is the case with unregulated firms), it is common practice for such swaps to be undertaken because the expected reduction in costs compensates for the increased risk.

NERA (2014, section 4.4.2) also argues that the AER's failure to provide compensation for the transactions costs of the swaps would have further discouraged firms from undertaking these swaps. In particular, they argue that the transactions costs of the swaps would outweigh the reduction in risk. However, as explained in the previous paragraph, swapping also reduces the expected interest costs of firms, this outweighs the transactions costs of the swaps, and therefore the merits of hedging under the previous regime are clear even in the absence of compensation. NERA's error is to fail to recognize that swapping reduces the expected interest costs of firms because the five-year swap rate is generally cheaper than the ten-year swap rate.

NERA (2014, section 4.4.2) also argues that the AER's transitional regime would undercompensate firms for the costs that they will incur using the efficient policy (a ten-year trailing average without hedging), of about 1% of their debt level in the first few years and tailing away to zero within seven years. However, as argued above, it was efficient for firms to have hedged under the previous regime. Consequently, NERA's calculations should have been limited to the DRP component and the picture here is quite different. For example, in the first year of the new regime, NERA states that the allowed cost of debt under the proposed transitional regime (the current ten-year rate) would be 6.98% whilst the ten-year trailing average cost of debt is 7.72%, and hence the shortfall in the first year is 0.74% (NERA, 2014, Table 4.5). Since NERA's report is dated May 2014, I assume that the risk-free rate underlying their cost of debt of 6.98% is the April 2014 average (4.03%), which implies a DRP of 2.95%. In addition, the trailing average of the ten-year risk-free rate over the ten years up to 30 April 2014 is 5.02%, which implies that the trailing average DRP within NERA's trailing average cost of debt is 2.70%.¹³ So, the first year's DRP allowance under the AER's proposed transitional regime would be 2.95% whilst the DRP incurred under the ten-year trailing average would be 2.70%, and hence there would be an excess of 0.25%. Thus, once NERA's analysis is limited to the DRP, the alleged shortfall becomes a slight excess. Furthermore, as discussed in section 3, one should consider the difference between the DRP allowed and that incurred over the full GFC-induced spike in the DRP rather than just the ten-year transitional period to the new regime, and consideration of this longer period supports use of the AER's proposed transitional regime.

¹³ The risk-free rate data is drawn from Table F2 on the Reserve Bank's website.

NERA (2014, section 4.4.4) also argues that different transitional arrangements should apply to large and small NSPs, presumably in recognition of NERA's view that the large ones did not hedge the interest rate risk (and therefore do not warrant a transitional regime) whilst the small ones did hedge it (and therefore warrant a transitional regime). However, as discussed in the previous section, hedging was efficient for all firms. Furthermore, even if this were not the case, NERA offers no advice on where the dividing line between large and small NSPs is nor is the dividing line clear; amongst the 20 electricity transmission and distribution business regulated by the AER, the RABs range from \$105m to \$9075m with a median of \$2230m and with several firms clustered around this median (AER, 2013c, Table 2.1, Table 2.2). So, any attempt to classify the firms in the way proposed by NERA would be highly subjective and likely give rise to prolonged litigation.

CEG (2014, section 4.4.1) argues that there was no viable financing strategy that could have matched the previous regulatory regime, that in response businesses would have adopted a variety of debt policies (including callable debt and simply ignoring the interest rate risk), and therefore the AER's premise that they would have undertaken interest rate swap contracts matched to the regulatory cycle is unjustified. Accordingly, the transitional process proposed by the AER is unwarranted. However, as discussed in section 4, private-sector firms did hedge in the way assumed by the AER and it would have been efficient for the others to have done likewise (even if the hedging process would have to have been spread over four months).

CEG (2014, section 6) argues that customers desire predictability in outcomes rather than process, and therefore would desire an immediate rather than a gradual transition to the new (trailing average) regime. As discussed in section 2 above, I do not agree with this point; the minimization of price shock to consumers argues for a gradual transition from prices currently paid under the old regime to those prevailing under the new regime. For example, if the current output price is \$10 (and highly volatile at five-yearly resets) and the output price under the new regime is \$12 (with low volatility), the minimization of volatility would imply a gradual transition from \$10 to \$12 rather than an immediate transition. Interestingly, CEG presents an example of this kind (CEG, 2014, paras 90-99) but, rather than accepting that immediate adoption of the new regime would impose a price shock on to consumers, reverts to considering what policy would best reflect the costs faced by firms.

CEG (2014, section 6.2) argues that historical trailing averages are less prone to estimation error than use of the current value due to averaging over uncorrelated errors. Clearly, there is no cause for concern with the risk-free but there is considerable cause for concern over the DRP, even when the latter is estimated using a third-party source (as will be the case here). In particular, and as revealed by CEG (2014, Figure 1), there is considerable variation in the results from four such sources since early 2007, most particularly in early 2009 when the estimates of the RBA, CBA Spectrum, and BFV were 9.5%, 5% and 3.5% respectively. Errors that are random in nature will tend to offset over time, as argued by CEG, but the risk of error seems most pronounced in 2009 and the tendency to offset will not resolve as severe as this seems to be. Furthermore, even though this period would contribute no more than a 10% weight to the trailing average, the potential error is sufficiently large that it could still materially affect the trailing average and it would continue to do so for five years (until it drops out). This is a disadvantage from using historical data at the present time.

Furthermore, other types of errors are not ameliorated by using a trailing average. For example, the BFV curves include callable and subordinated bonds. Callable bonds have higher DRPs than otherwise identical non-callable bonds because the firm's call right is disadvantageous to lenders and the higher DRP is compensation to them, but the call feature presumably does not affect the credit rating. Thus, recourse to callable bonds to estimate the DRP on a non-callable bond of the same credit rating would lead to overestimation of the DRP on the latter bond. In respect of subordinated bonds, these have higher expected default losses than senior bonds over the same company. So long as credit ratings fully reflect all information relevant to bond pricing, then the DRP of a subordinated bond of a company that has a credit rating at the benchmark level (say BBB+) would be comparable with the DRP of a senior bond of another company with the same BBB+ credit rating. However, credit ratings do not reflect the expected recovery rate on bonds in the event of default (Chairmont Consulting, 2012, page 10) but DRPs do and subordinated bonds have unusually low recovery rates by virtue of being subordinated. In addition, subordinated bonds are relatively illiquid (Chairmont Consulting, 2012, pp. 12-13), which raises their DRP but does not lower their credit rating. Thus, subordinated bonds with a BBB+ credit rating could be expected to have unusually high DRPs for that rating category and therefore their DRPs would overestimate the overall DRP of a firm with a BBB+ credit rating. So, regardless of whether one uses the current DRP index value or a trailing average, the problem is the same.

CEG (2014, section A.1) argues that transitional arrangements should be tailored to the debt financing strategy of each firm. This is a formula for endless litigation, and sets a highly undesirable precedent. Furthermore, as argued in section 4, the debt management strategy under the previous regulatory regime that has been assumed by the AER was used by most private-sector firms and was the efficient strategy for all firms. Consequently, the fact or possibility that some firms acted differently (whether due to size or ownership) does not provide a basis for applying a different transitional process to some firms.

Ausgrid (2014, page 73) argues that the use of interest rate swaps was not feasible for it and, in support of this claim, alleges that swap contracts on the scale required by it in mid 2009 (when they would have had to undertake such swap contracts if they did hedge in the way assumed by the AER) may not have been possible due to “dislocation in financial markets”. However, the transactions to which Ausgrid refers are the floating-to-five year fixed and such transactions would not have been undertaken in isolation but to complement ten year fixed-to-floating swaps undertaken earlier at the time the debt was issued. Since Ausgrid clearly implies that they never undertook the earlier transactions, there would have been no rationale to the 2009 transactions. Thus, Ausgrid’s claims about the infeasibility of such 2009 transactions do not come from an entity that sought to undertake them and was unable to but from a mere observer of the market. Furthermore, in stating that it is “unclear” that such transactions would have been possible, Ausgrid reveals that its claims about the state of the market at that time are mere speculation and from a party that did not use the market and could not otherwise claim any expertise in the matter. So far as I am aware, no entity who did undertake such swap contracts (of which there were many) or could be viewed as an expert on the market claims that the market was not functioning in mid 2009.

Ausgrid (2014, page 74) also argues that the use of these swap contracts by firms was inefficient and, in support of this claim, refers to the AER now having decided to use a trailing average (which undercuts the merits of firms hedging). However, whatever the merits of the trailing average regulatory regime relative to the on-the-day regime, it was efficient for firms that were subject to the on-the-day regulatory regime to hedge (as argued in section 4).

Ausgrid (2014, page 77) also argues that the AER’s transitional regime would undercompensate them for the costs that they do incur under the efficient policy (a ten-year

trailing average without hedging), of about 1% of their debt level in the first few years. However, as argued above, it was highly efficient to hedge under the previous regime. Consequently, Ausgrid's calculations should have been limited to the DRP component and the picture here is quite different. For example, in the first year of the new regime, Ausgrid states that the allowed cost of debt under the proposed transitional regime (the current ten-year rate) would be 6.93% (April 2014) whilst the ten-year trailing average cost of debt is 7.98% (2004-2013), and hence the shortfall in the first year is 1.05% (Ausgrid, 2014, Table 46). The risk-free rate underlying their prevailing cost of debt of 6.93% is the April 2014 average (4.03%), which implies a DRP of 2.90%. In addition, the trailing average of the ten-year risk-free rate over the ten years up to 31.12.2013 is 5.07%, which implies that the trailing average DRP embedded in Ausgrid's trailing average cost of debt is 2.91%.¹⁴ So, the DRP allowance in the first year under the AER's proposed transitional regime would be 2.90% whilst the DRP incurred (the ten-year trailing average) would be 2.91%, and hence an inconsequential shortfall of 0.01%.¹⁵ Thus, once Ausgrid's analysis is limited to the DRP, the alleged shortfall evaporates. Furthermore, as discussed in section 3, one should consider the difference between the DRP allowed and that incurred over the full GFC-induced spike in the DRP rather than just the ten-year transitional period to the new regime, and consideration of this longer period supports use of the AER's proposed transitional regime.

Directlink (2014, Attachment 6.1) argues that the efficient debt management practice under the old regime was staggered ten-year debt (consistent with the AER's view), which implies that a benchmark efficient firm would be incurring a ten-year trailing average cost of debt, and therefore the AER should immediately adopt that allowance rather than engage in a transitional process. However, the debt practice under the old regime that the AER considers to be efficient also involves swap contracts that convert the risk-free rate component of the cost of debt into five-year debt aligned with the regulatory cycle (AER, 2013a, section 7.3.6). Thus, Directlink's argument is only valid at most for the DRP. However, as discussed in

¹⁴ The risk-free rate data is drawn from Table F2 on the Reserve Bank's website. Ausgrid's trailing average should have been over the ten years ending in April 2014, and therefore the ten-year trailing average risk-free rate should have been over the same period, but the result is only marginally different (5.02% rather than 5.07%).

¹⁵ Ausgrid also presents calculations for future years based upon the assumption that the current cost of debt does not change. Such forecasting is unnecessary because future rates equally affect both the trailing average and the rate arising under the AER's proposed transitional regime. Calculations that recognize this fact were performed by NERA (2014, section 4.4.2) and discussed above. They reveal that the difference between the trailing average and the rate allowed under the AER's proposed transitional arrangements tails away to zero, and the same would apply here.

section 3, I do not favour this primarily because it locks in accumulated profits from the GFC-induced spike in the DRP.

Directlink (2014, Attachment 6.1) also argues that that the AER's transitional regime would undercompensate them for the costs that they do incur under the efficient policy (a ten-year trailing average without hedging), of about 1% of their debt level in the first year. The same argument has been presented by NERA and Ausgrid, and addressed above.

ActewAGL (2014, pp. 280-283) argues that, since it has no debt, it should be deemed to already have adopted the benchmark efficient debt strategy (ten-year staggered debt without swap contracts) and therefore no transitional process is required. However, since it has no debt, it should instead be deemed to be acting in accordance with the benchmark strategy under the previous regime, which is ten-year staggered debt with swap contracts. Thus the previous discussion would also apply to it.

6. Conclusions

In response to the questions posed by the AER, my conclusions are as follows. Firstly, in relation to the question of whether transitional arrangements are necessary or desirable, this question imposes a dichotomy upon an issue that is one of degree. Given the regime change that has occurred from mid 2014, transitional arrangements relating to the DRP are capable of mitigating the significant windfall DRP gains to businesses arising from the combined effect of the GFC-induced shock to the DRP and the regime change. In addition, transitional arrangements relating to the risk-free rate component of the cost of debt are also capable of mitigating the mis-match between the risk-free rate component of the costs allowed and those incurred after the regime change. Accordingly, I strongly favour such arrangements. Furthermore, if the combined effect of the GFC-induced shock to the DRP and the regime change had been to inflict losses rather than gains on to the businesses and if transitional arrangements relating to the DRP had been able to significantly mitigate these losses, I would have also favoured such transitional arrangements.

Secondly, in relation to the question of whether they should be applied to either or both of the risk-free rate or the DRP, I think that they should be applied to both components for the reasons just given.

Thirdly, in relation to the question of whether I agree with the AER's proposed transitional process, application of this process to the DRP has several advantages: it avoids the need to collect historical DRP data; it mitigates the windfall gain that businesses on average experience (at the expense of their consumers) due to the GFC-induced DRP shock coupled with the switch to a trailing average regime from mid 2014 (and this point can be equivalently expressed as producing results that better conform to the $NPV = 0$ principle); and it produces results for individual businesses that are almost identical to those that would have prevailed had there been no regime change. Furthermore, it does not constitute a claw-back and it will not undercut existing incentives for businesses to reduce their costs. In respect of the risk-free rate component, the AER's proposed transitional regime will mitigate the mis-match between the costs allowed and those incurred over the ten year period following adoption of the new regime. A complete avoidance of the mis-match could be achieved through use of an alternative transitional regime, but using different transitional processes for the two components of the cost of debt introduces undesirable complexity at very little gain in terms of eliminating the mis-match referred to. I therefore favour application of the AER's proposed transitional regime to both components of the cost of debt, and therefore to the entire cost of debt. It is also desirable to smooth the path from the current output price to that prevailing under the new regime, but this would require a different transitional regime applied to the entire cost of debt. Thus, a choice must be made. I consider the advantages from the AER's proposed transitional regime to be much more important than smoothing the output price path for consumers, and even consumers are likely to share that view because adoption of the AER's proposed transitional regime would minimize a significant and unwarranted wealth transfer from consumers to suppliers. Furthermore, the adoption of this transitional process is consistent with the requirement under clause 6.5.2 of the NER to have regard to the impact on a benchmark efficient entity of a change in methodology.

Finally, in relation to the question of whether the transitional regime should be applied uniformly across sectors, owners, firm sizes, the timing of regulatory decisions, and firms' debt management practices, two possible arguments for differential treatment exist. The first of these arguments involves differential treatment according to whether firms did or did not hedge the interest rate risk arising from five-yearly resetting of the risk-free rate component of the cost of debt. I do not support such differential treatment because all firms either did

hedge, or could and should have hedged, this risk in approximately the way assumed by the AER, because firms should bear the consequences of failing to hedge, and because differential treatment would establish a very undesirable precedent.

The second argument against uniformity arises from the fact that businesses are subject to different regulatory cycles, and would therefore experience different gains or losses arising from the DRP spike induced by the GFC. Again, I do not support such differential treatment because the appropriate treatment for each business is far from clear, because doing so would establish an undesirable precedent, and because the corporate groups to which regulated businesses belong are typically involved in a range of different regulated activities with different cycle commencement dates and this would push all businesses towards the average outcome of about 1.3% of debt value in present value terms.

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