Draft AER Rate of Return Instrument Network sector views

AER Second Stakeholder Forum

7 September 2022



Context: the investment need during the 2022 RoRI

- » Unprecedented investment task over the effective nine year period of the Instrument
- » Networks recognise current economic events adding to cost of living pressures for customers and investment risks
- » Uncertainty is high
 - 2022 RORI needs to be able to weather multiple potential futures, and not leveraged to one anticipated future in December 2022
 - Example: Interest rate expectations have moved substantially downwards since June draft RORI
 - Not clear that the same challenges anticipated now will be the ones actually faced by the Instrument when applied

There is a high investment need over the period of the RORI, but these investments will minimise final costs to customers. Cost of living issues need to be view in that context.

Per cent									
	Year-ended								
	Jun 2022	Dec 2022	Jun 2023	Dec 2023	Jun 2024	Dec 2024			
GDP growth	31/2	31⁄4	21⁄4	13⁄4	13⁄4	13/4			
(previous)	(31⁄2)	(41/4)	(3)	(2)	(2)	(n/a)			
Unemployment rate ^(b)	3.8	31⁄4	31/2	31⁄2	3¾	4			
(previous)		(3¾)	(3½)	(3½)	(3½)	(n/a)			
CPI inflation	6.1	73⁄4	61⁄4	41⁄4	31/2	3			
(previous)		(6)	(41⁄4)	(31/4)	(3)	(n/a)			
Trimmed mean inflation	4.9	6	5	3¾	31⁄4	3			
(previous)		(4¾)	(31/2)	(31/4)	(3)	(n/a)			
			Year-avera	ige					
	2021/22	2022	2022/23	2023	2023/24	2024			
GDP growth	3¾	4	31/2	21⁄4	13⁄4	13⁄4			
(previous)	(33/4)	(41/5)	(41/5)	(23/4)	(2)	(n/a)			

Table 5 1: Output Growth and Inflation Forecasts^(a)

(a) Forecasts finalised on 3 August. The forecasts are conditioned on a path for the cash rate broadly in line with expectations derived from surveys of professional economists and financial market pricing. Other forecast assurptions (assumptions as of May Statement in parenthesis): TWI at 63 (63); AS at US\$0.69 (US\$0.71); Brent crude oil price at US\$94bbl (US\$101bbl). The assumed rate of population growth is broadly in line with the profile set out in the Australian Government Budget 2022–23. Forecasts are rounded to the nearest quarter point. Shading indicates historical data, shown to the first decimal point.

(b) Average rate in the quarter.

Sources: ABS; RBA



CGS 10-year forward rates

Context: Rate of return and investment checks and balances

- » AER should be evaluating the 'whole of system' impacts of efficient investment signals on the bill \rightarrow \$1 on network investment \neq \$1 on bill
- » Many other checks and balances apply to minimise final network costs to customers
- » The framework contains checks and balances to ensure investment only occurs when benefits to customers exceed costs
- » Only role of the rate of return is to attract financing at efficient rates



 Rate of return is set to promote an efficient level of investment.

 [1st line of defence against inefficient investment]

 Review of regulatory proposals by AER [2nd line of defence]

 Ex post reviews of out-turn capex.
 [3rd line of defence]

 Regulatory Investment Tests (RIT-D & RIT-T)
 [4th line of defence]

 Guaranteed Service Level (GSL) Payment schemes [5th line of defence]

 Better Resets Handbook sets regulator's expectations [6th line of defence]

 Demand side: DMIS, RPPs+TSS = promote efficient use of... [7th line of defence]

 Outcome safeguards: Network Performance Reporting, STPIS

A range of checks and balances ensure investment proceeds only where benefits to customers are present. Rate of return does not need to 'solve' overinvestment risk



Context: getting the right signals for energy transition

- » Customers expect networks, and the entire energy chain, to make the energy transition happen
 - Continue to prioritise a safe, secure and reliable energy system, which is increasingly resilient to challenges ahead
 - Desire and expect to be able maximise the value of energy investment they have made
- » Draft proposals would reduce allowed returns, relative to 2018 Instrument, taking AER decisions further below international comparators
 - Reducing the incentives to make enabling investments
 - Potentially incurring high cost delays for customers
- » What outcomes would we expect this to produce at a time of energy transition?

The return on equity consistent with the proposed method in the AER's draft 2022 RORI is lower than most of the recent decisions of international regulators we have reviewed....Simply put, other regulators have higher betas or higher risk-free rates or higher MRPs, whereas the AER is among the lowest on all three, leading to a materially lower authorised return on equity than other regulators.

Brattle, International Rate of Return Methods – Recent Developments, September 2022, p.iv



Figure 2 Total impact on residential consumer bill due to transmission delay (real 2022 AUD, inc GST)

Reducing allowed returns in the face of higher investment needs is the wrong signal for the energy transition



The mathematical framework developed by Professor Richard Schmalensee

- » Richard Schmalensee is Emeritus Professor of Economics at the Massachusetts Institute of Technology (MIT).
- » He is a renowned regulatory economist. His papers have been cited over 30,000 times. His credentials and expertise are beyond question.
- » His famous 1989 paper is said to be the basis of Dr Lally's mathematical analysis.
- » Dr Lally says that:

Schmalensee (1989) shows that satisfying this principle [NPV=0] requires that, at the commencement of each regulatory cycle (when the allowed cost of capital is set), the term to which the allowed cost of capital relates matches the term of the regulatory cycle. [Emphasis added]

» and that he has:

merely extended Schmalensee's analysis.

Lally, M., 2022, The appropriate term for the allowed cost of equity, pp. 4, 25.

The basis of Dr Lally's advice to the AER is that work by Professor Schmalensee 'shows' the term must match the regulatory cycle – and his work merely extends an established finding



Professor Schmalensee's report

- Professor Schmalensee concludes that Dr Lally and the AER have got the maths wrong.
- They have not shown that NPV=0 requires term matching, they have assumed it.
- Professor Schmalensee describes key steps in Dr Lally's mathematical analysis as:

an amazing bit of sleight of hand

and his characterisation of his foundational work as

almost exactly backwards.

• Professor Schmalensee sets out the two assumptions that underpin the AER's analysis and states in relation to the first that:

I have no idea how this assumption can be defended.

and in relation to the second that:

I have no idea how this assumption can be defended either.



Statement of Richard Schmalensee, Ph.D. To the Australian Energy Regulator July 29, 2022

Introduction

I am Howard W. Johnson Professor of Management, Emeritus and Professor of Economics, Emeritus at the Massachusetts Institute of Technology (MIT). I served as Dean of the MIT Sloan School of Management from 1998 through 2007 and as a Member of the U.S. President's Council of Economic Advisers from 1989 through 1991.

My various books and articles have been cited more than 38,000 times in the academi

literature.¹ I am a Fellow of the Econometric Society, a Member of the American Academy of Arts and Sciences, and the 2012 Distinguished Fellow of the Industrial Organization Society.

have served on the Executive Committee of the American Economic Association and serve or

the Executive Committee of the Board of the National Bureau of Economic Research. A copy of

my Curriculum Vitae is an appendix to this statement

I have been asked by ENA to evaluate Dr. Martin Lally's (2021) characterization of

Schmalensee (1989) and its implications. Specifically, I have been asked to answer two

 Do you agree with the characterization of Schmalensee (1989) that appears in Lally (2021)2

 If an economic regulator seeks to reach "an unbiased estimate of the expected efficient return, consistent with the relevant risks involved in providing regulated network servicer" to be applied over a defined regulatory period, does Schmalensee (1989) have any implications for the way that return should be estimated?

¹ Google Scholar, visited 7/22/2022. Schmalensee (1989), which is the focus of this Statement, contributed 78 of those citations; to my knowledge none of them have been critical.

Schmalensee, R., 2022, *Statement of Richard Schmalensee PhD to the Australian Energy Regulator*.



Professor Schmalensee's report casts critical doubts on the core rationale advanced for term-matching

The problem with Dr Lally's mathematical analysis

The equations on pp. 103-104 of the Explanatory Statement

- The AER sets out an equation that establishes that NPV=0 is achieved if the allowed return matches the return that investors require.
- There are two ways to achieve that equality:
 - Assume that investors require (or should require) a return that is equal to whatever the AER allows; or
 - For the regulator to set an allowed return equal to the return that real-world market investors actually do require.
- Professor Schmalensee concludes that the way in which Dr Lally adopts the first of these approaches is "an amazing bit of sleight of hand."
- He also notes that the AER has adopted the first of these approaches (although only for the return on equity). He concludes that he has "no idea how this assumption can be defended."

There is fundamental circularity in the claimed 'proof' for why term-matching is required





The problem with the AER's mathematical analysis

The equations on pp. 109-110 of the Explanatory Statement

- The AER sets out an equation that purports to show that NPV=0 is violated if the allowed return does not match the term of the regulatory period.
- This analysis considers the case where the investors' required return (i.e. the market cost of capital) changes from one regulatory period to the next.
- The AER updates the allowed return in the numerator of this equation to reflect the change in the market cost of capital, but does not update the discount rate in the denominator.
- Professor Schmalensee concludes that:

The cost of capital as assessed in period 1 is assumed by the AER to discount cash flows during period 2 even though, by hypothesis, it has changed between the two periods. I have no idea how this assumption can be defended either.

Schmalensee, R., 2022, Statement of Richard Schmalensee PhD to the Australian Energy Regulator.

The AER's separate mathematical proof relies on investors never updating their required returns





Term-matching: The AER mathematical analysis



The AER's separate mathematical proof relies on investors never updating their required returns



Two possible approaches to determine the term of the risk-free rate

0

A. Set the allowed return to match the actual return required by real-world network investors

- This is the very definition of NPV=0. The whole point is to create an incentive for efficient investment

 where that incentive applies to real-world investors.
- Every other regulator adopts this approach. See the recent detailed explanation from the ERA.
- Previous iterations of the AER have adopted this approach.
- The AER still adopts this approach for debt.
- Schmalensee (and other experts) advise that this is the correct approach.

Using 10-year term assumption is perfectly consistent with NPV=0, and the regulator's task

B. Disregard the term investors actually require. Set the allowed return to match what the AER thinks investors should require, based on its mathematical analysis

- This would be the wrong approach, even if the AER had the maths right, because it would fail to satisfy NPV=0.
- » It would be an even more serious error to adopt such an approach based on flawed mathematical analysis.
- » Why does the AER follow approach A in relation to debt but propose approach B in relation to equity?

How sure is the AER that:

- Real-world investors are wrong?
- All previous iterations of the AER were wrong?
- All other Australian regulators are wrong?
- Professor Schmalensee and a whole range of other experts are wrong?

Risks of the draft approach – a mis-timed change?

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The 5-year term results in higher customer prices during
 severe financial crises and recessions – when the 5-year
 CGS yield rises above the 10-year yield.



Higher prices during recessions and financial crises in which customer capacity to pay may be most under challenge.



Yield curve inversion tends to occur at the same time as falling consumer confidence measures





By changing now, AER risks exposing customer to higher prices now, contributing to cost of living pressures, and a lottery in the future



Term-matching proposal does not pass any 'bar for change'

- » Past changes in approach have developed from consensus between stakeholders on value and benefits of change
 - e.g. trailing average cost of debt approach proposed by energy user groups, lengthened window for averaging agreed by 2018 CRG and ENA
- » Draft proposes change to a settled foundational element of the return on equity in circumstances where no stakeholder supports the AER's primary rationales for change
- » Major change without strong evidence and consensus presents a sustainability risk for the theory-driven change (a risk realised in case of QCA, IPART, WA ERA)
- » Mathematical basis of, and necessity for the change has been questioned by ENA, CRG representatives, and contested by MIT Professor whose work was claimed to 'show' it was required



There is no stakeholder consensus on basis for this change to a foundational parameter – and the 'high bar for change' has not been met



Reaching a robust and unbiased market risk premium

- » Significant industry effort to develop 'calibrated DGM' approach to address AER's concerns with DGM
- » Key requirement: any DGM approach must produce estimates that are unbiased over time.
- » The AER's proposed 3-stage DGM produces estimates that are materially lower than observed outcomes, on average.
- » This introduces a downward bias into allowed returns of around 100 bp using 1988-2021 data.
- » Cannot understand the basis for reversion to 3-stage model
 - The AER's key criticisms of the calibrated DGM approach apply equally to the AER specification.
 - Same volatility, same negative estimates that were said to invalidate using the calibrated model

Need to avoid a biased estimate, and apply a consistent standard in model assessments



Taking the next steps on beta: the final Instrument and beyond

- » AER's final Instrument must give real weight to international evidence in the final decision to directional continuity
- » This clearly supports a beta value of 0.6 or above
- » Transparent, collaborative analytical work needs to commence in early 2023
 - This should set the framework for a sustainable beta estimation approach which has confidence of all stakeholders in 2026

AER should be giving weight to international beta evidence in the final, and mapping the path of future work to overcome data gaps



Allowed return on debt



ENA agrees that a 10-year trailing average, using data provided by independent third-party sources, provides an appropriate estimate of the benchmark cost of debt.

Networks and consumers both benefit from matching the allowance to efficient costs and from stability over time.



The consultation on EICSI ended with the conclusion that the current approach is within 4 bps of the actual cost.

"...the standard deviation around that 4 basis point outperformance was around the 15 basis point mark, so it was quite, quite large. We'll just have to check that, but yes, we don't have a lot of observations and it may be that the standard deviation is quite large."

- Expert Session 1, p.33



An important example of why proposed changes require a long lead-time for proper consultation.





ENA continues its strong support of the trailing average approach – as a match between the allowed return and the efficient cost.

Provides smoothing benefits for networks and customers – the recent uptick in interest rates will not be matched by an immediate increase in the debt allowance. This puts downwards pressure on prices.



AER should proceed with no change approach on debt, and ignore the Independent Panel's flawed suggestions

Using rate of return cross-checks

- » Role of financeability as an internal consistency on a benchmark basis
- » The Independent Panel report and Frontier's assessment of CEPA show cross-checks still require work to produce robust signals for consideration by AER
- » Under the AER's currently applied threshold (the lowest published) there is a 25 per cent failure rate
 - Is this acceptable?
 - Other thresholds produce even starker outcomes
- » By contrast to other measures, further CEPA RAB decomposition analysis holds out little prospect of establishing anything



Range of FFO/Net Debt Thresholds

There is further work needed to ensure cross-checks provide meaningful signals for AER judgements, in the face of emerging pressures



Thank you

