Return on equity
Initial network sector views

AER Public Forum – Draft Working Paper: Equity Omnibus Paper, 11 August 2021

Pathway to 2022 Rate of Return Instrument Consultation

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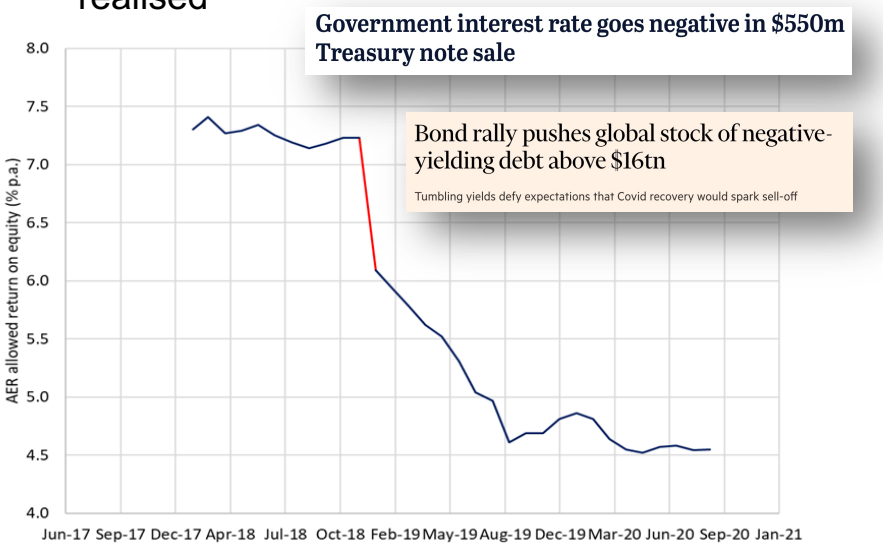
Reaching an ‘anti-fragile’ return on equity estimate

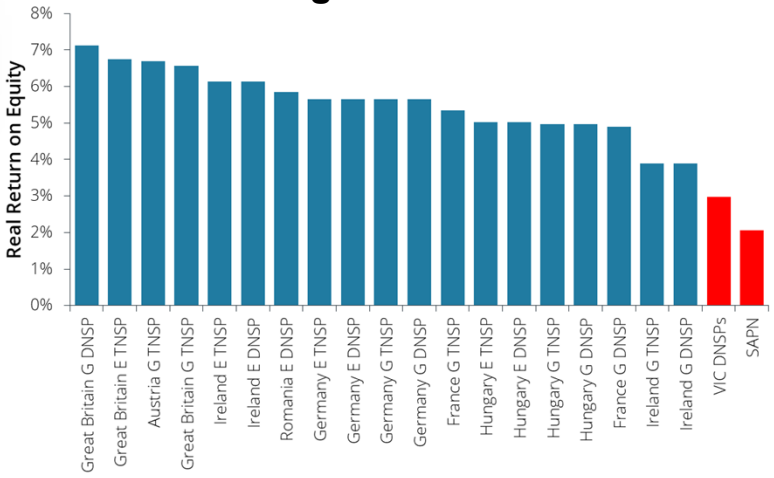
Then | 2018 RoRI has applied amid unprecedented conditions

- 2018 RoRI was determined just prior to **significant set of unanticipated global financial market conditions**
  - Risk-free proxy used has reached **historically low levels**
  - Potential for **negative bond rates** has been realised



Now | 2018 RoRI is delivering unsustainable equity allowances

- These conditions and the 2018 methodology have driven regulated return on equity estimates to levels never contemplated
- AER's commissioned experts highlight that due to a range of alternative approaches applied elsewhere in estimating required return on equity, Australian network equity allowances **consistently fall below other international regulators**



2022 RoRI | Must achieve sustainability and longevity in equity returns

- Backward looking measures focused on effectively a **‘blend’ of 2013 and 2018 AER guidelines** will not reflect urgency or impacts of the equity returns issue
- Opportunity is to improve on 2018 by **building a 2022 framework more resilient to wider range of plausible conditions**

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How can the AER address fragility in the equity estimation approach?

The AER have time to duly consider these return on equity issues

It will require a balanced, evidence-based approach

- **Engaging with expert evidence on these issues**
- **Adopting a robust approach to observed data**
- **Recognising risks of exercising judgment within a wide range**
- **Adopting best practice safeguards**

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Engaging with the expert evidence on key equity issues

Issues	Report	Findings or advice to AER
Beta MRP	Brattle - August 2020 (for the AER) *A Review of International Approaches to Regulated Rates of Return*	• Allowed return on equity under the AER's current 2018 approach is **lower than that adopted by every other regulator for which a comparison could be made** (real, nominal, and equity risk premium) • Areas where AER's approach **'not as effective'** as approach of other regulators include incorporation of forward-looking evidence in cost of equity, use of multiple models for estimating cost of equity, and 'beneficial' use of international beta comparators
MRP	CEPA - June 2021 (for the AER) *Relationship between RFR and MRP*	**"…there is no good evidence that the MRP should be assumed to be independent of the RfR, the current implicit assumption of the AER's approach"** "The international regulators that we examined **do not rely on an estimate of the MRP that is wholly or even substantially based on the historic average of the realised MRP**" • There are practical alternative approaches that can be applied with available data and these: "**may provide a better estimate of the forward looking MRP consistent with the AER's duty**."
Risk free rate proxy	UK Competition Market Authority findings – water appeals, March 2021	Government **bond yields are not the best unbiased estimate of the risk-free rate**, consistent with the underpinnings of the CAPM, for two reasons: • Presence of a substantial measurable convenience yield associated with other valuable features of government bonds • Downward pressure of extraordinary monetary policy interventions and central bank bond purchasing on 'market' price of the risk-free proxy
Risk free rate term CAPM	Dr Lally - April 2021 (for the AER) *The appropriate term for the allowed cost of capital*	• Market risk premium is **not** fixed over time

Clear expert concerns with the outcomes and basis of the 2018 approach

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Engaging with the evidence | CGS and the risk-free rate proxy

- **Market intervention** means RBA is now the major player in government bond markets, with a measurable impact and stated aim of reducing yields
- **Are we measuring the right thing?** Evidence that CGS yield is not just the return for holding a risk-free asset
- **Regulatory practice is evolving** Other regulators:
  - Use approaches which are not impacted by issues to the same degree
  - Or have recognised issues and moved to address them
- **Market practice has never used 'spot' approaches**
  - Investors and analysts compensate for low rates of return (e.g. blended risk-free assumptions)
- The risk-free rate is basic element of the rate of return → **material changes in conditions and practice warrant careful analysis of whether past approaches are sustainable**

CMA has concluded that the government bond yield is a downwardly biased estimate of the risk-free rate

The UK Competition & Markets Authority (CMA) (17 March 2021):

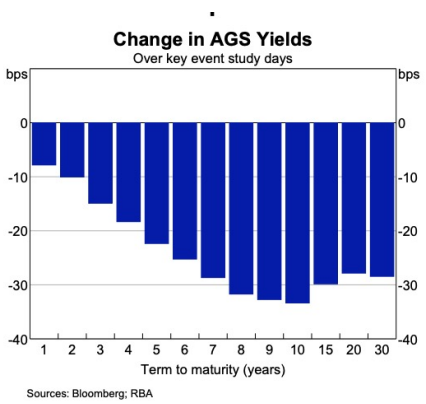
- *a CAPM based on the ILG [long-term government bond yield] rate alone may **understate the return required by investors** on equities, if it underestimates the return associated with a 'zero-beta' asset.* [9.106]
- ***..the 'true' rate of RFR in the market is likely to be above this level.*** [9.158]
- *we consider the yield on **AAA-rated non-government bonds** to be a suitable input into our estimate of the RFR.* [9.162]

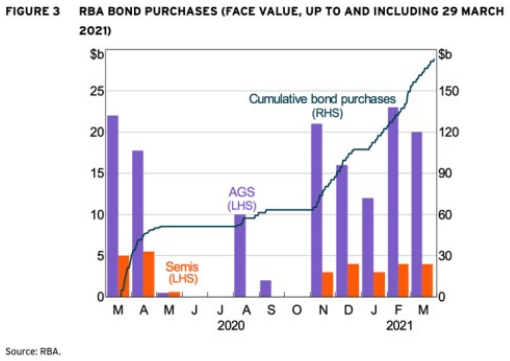
https://assets.publishing.service.gov.uk/media/60702370e90e076f5589bb8f/Final_Report_---_web_version_-_CMA.pdf.

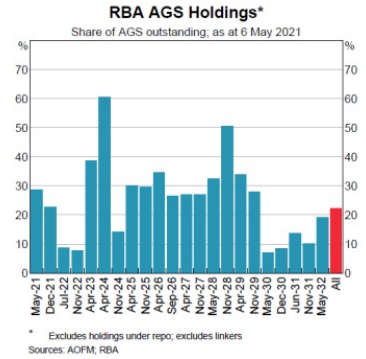
Why is the government bond yield a biased proxy?

- CMA identifies a "convenience yield." Government bond yields are low because (i) they are risk-free and (ii) they can be used to fulfill capital adequacy requirements, they have more value as collateral, they can be purchased with higher leverage, and they have superior liquidity. Only (i) is relevant to the CAPM risk-free rate. CMA Final Decision, 9.81.
- Van Binsbergen et al (2021) quantify a convenience yield in US government bonds and note that the effect is greater in shorter-dated bonds, and in the presence of quantitative easing.

Jules H. van Binsbergen, William F. Diamond, Marco Grotteria, Risk-Free Interest Rates, *Journal of Financial Economics* (2021).







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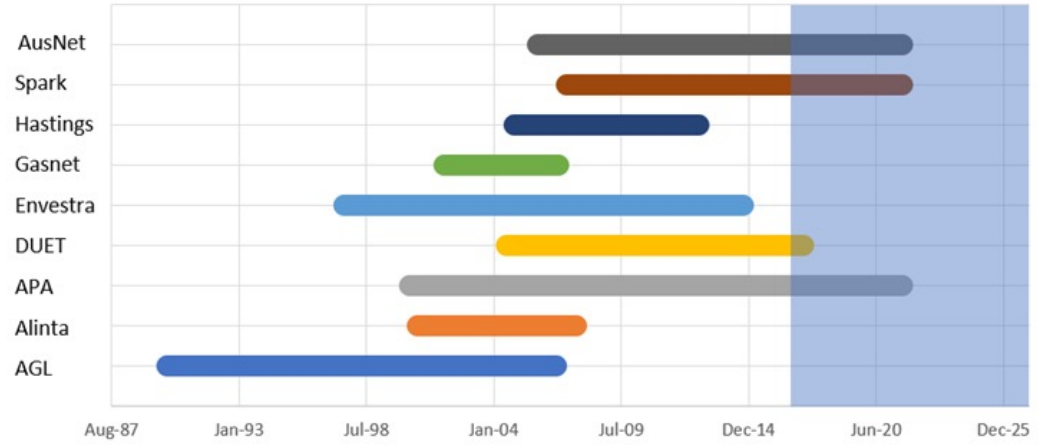
Equity beta | Estimation issues and the inevitability of change

Now | 2018 RoRI approach is fragile

- Relies upon the world being static, which it isn't (see pictures)
- At some point in time, change is inevitable.
- Other regulators use different approaches, with less fragility
- AER's own consultant suggests the AER should do the same

Next | 2022 RoRI approach needs to consider longevity and robustness of data

- Consider the longevity of its current approach
  - Dead firms and their relevance
  - Increased unreliability with small number of existing firms
- Consider a wider range of evidence
  - International data
  - Views and approaches of other regulators
  - Issues with the CAPM
- Consider a pathway to a new and more flexible approach
  - We will discuss further in a forthcoming technical workshop



Inter-national regulator	Original equity beta	Gearing	Adjusted equity beta
ACM	0.74	50%	0.79
FERC	0.84	60%	0.84
STB	1.11	16.92%	1.52
ARERA	0.71	44%	0.78
NZCC	0.60	42%	0.68
NZCC*	0.65	42%	0.74
Ofgem	0.76	55%	0.78
Ofgem*	0.71	55%	0.74
Ofwat	0.71	54.2%	0.74
Ofwat (CMA)	0.76	54.2%	0.79

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Market Risk Premium | Is the 2018 approach adequate?

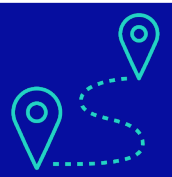
2018 RoRI fixed MRP based solely on historical averages added to a shifting risk-free rate

Brattle has advised that the 2018 RoRI:

- Produces an allowed equity risk premium lower than any comparable regulator
- Is "not as effective as the approach of other regulators."
- "Relies on backward-looking information"
- Would benefit from "incorporating forward-looking evidence into the cost of equity"

CEPA has advised the AER that:

- "The historical data is a measure of the realised MRP and does not measure forward looking expectations."
- "There is no good evidence" for the 2018 RoRI approach
- There is "as strong a theoretical basis for the [TMR approach] as there is for the [HER approach]."
- The MRP estimate would be improved by having real regard to:
  - both the TMR and HER approaches when assessing historical data
  - Forward-looking DGM evidence



AER has responded and is reconsidering aspects of the MRP.
We are committed to working with the AER to develop improvements.

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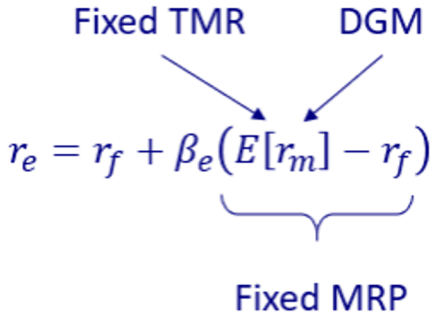
Our views on how to get the right answer at the outset

» Getting the right answer in each RORI period is key to unbiased answers
  – Dr Lally's views in recent papers is supportive of this

» Brattle, CEPA and regulatory and commercial practice identify three main approaches to developing unbiased answers:
  – **Fixed MRP**: Estimate MRP as mean of excess returns over a long historical period.
  – **Fixed Total Market Return (TMR)**: Estimate E[rm] as average real return plus expected inflation.
  – **DGM**: Estimate E[rm] directly from DGM.



ENA proposes regard should be given to all three methods
DGM has faced historical debate about its application, which we have worked on.

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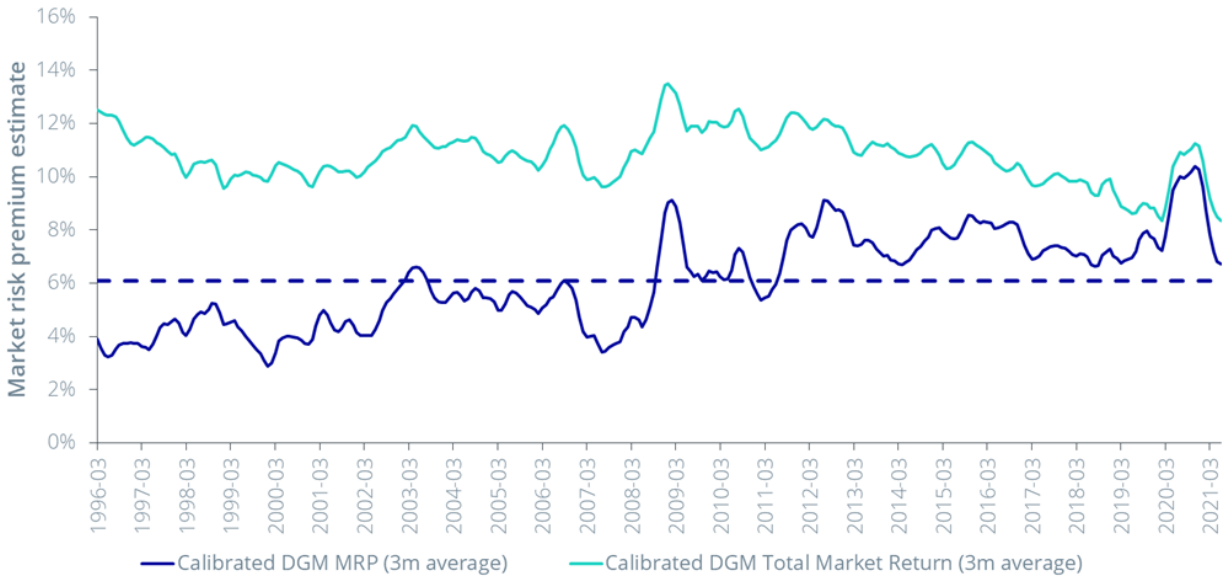
A 'calibrated' DGM | Responding to issues from the past

- The 2018 AER identified a number of concerns with the implementation of the DGM.
- ENA has sought to address these concerns via a 'calibrated' DGM:
  - Uses the AER's preferred 2-stage and 3-stage specifications, and the AER's preferred data sources.
  - Solves for a long-run growth figure to ensure that the long-run average estimate is consistent with the 2018 approach (e.g., 6.1%).
- We will discuss this model further in a future technical session.



ENA as worked to address DGM concerns and will seek feedback on this ‘calibrated DGM’ approach ahead of our submission

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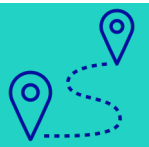
Considering change after the starting point

Solving MRP estimation within the 2022 RoRI will necessarily be path dependent

- The binding guideline framework requires any changes during the RoRI period to be “automatic”.
- The simplest approach would be to mechanically adjust the MRP in relation to changes in the risk-free rate:
  - For example, for every X% rise in the risk-free rate (since the RoRI), the MRP would be reduced by Y%.
- However, any adjustment during the RoRI period must be consistent with the 'starting point' . For example:
  - It would make no sense to set the RoRI MRP to 6.1% (as per 2018 approach assuming no relationship between MRP and rfr), but then to adjust the MRP during the RORI period on the basis that there *is* such a relationship.

We must recognise this path dependence and solve iteratively

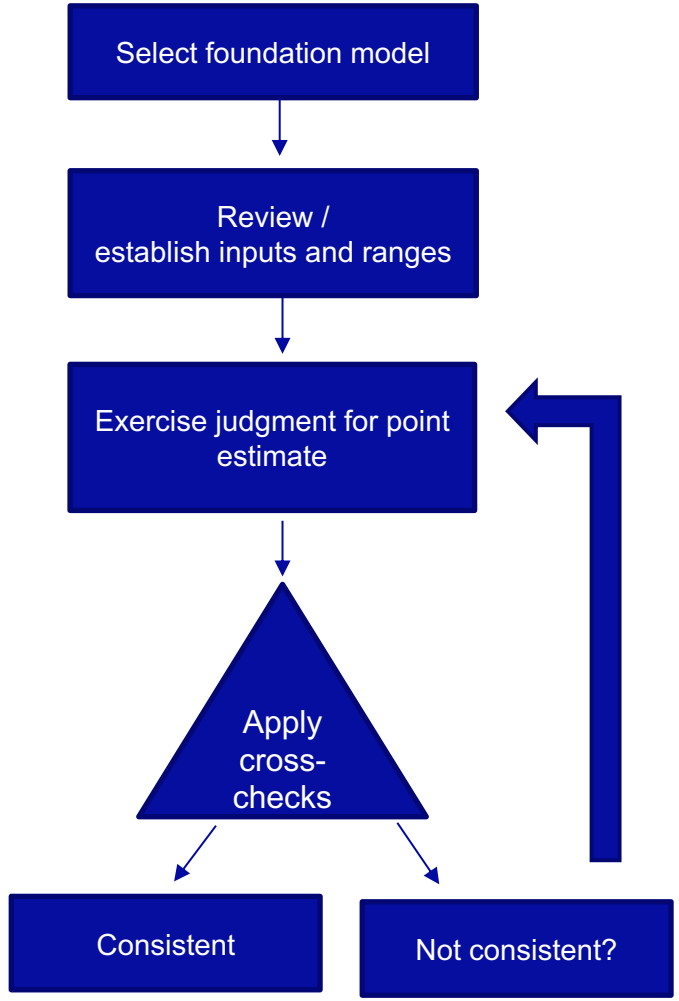


- Key process points:
  - First task is to determine the approach to setting the 2022 RoRI MRP.
  - Any adjustment mechanism must be consistent with the approach to setting that 'starting point' MRP.
- Encourage the AER to set out its thinking on the MRP starting point in its Information Paper, to inform further discussions about potential adjustment mechanisms during the RORI.

Adopting best practice safeguards in cost of equity estimation

The case for applying cross-checks to help inform regulatory discretion is clear
It's the 'belt and braces' part of ensuring a balanced outcome

- **Valuable role to play** in informing the exercise of regulatory discretion, particularly for equity
- All asset pricing models require complex discretionary judgements to parameterize and apply
- Cross-checks help ensure the **outcomes of estimation uncertainty (wide ranges) and discretionary judgements on point estimates combine to produce a workable outcome for all stakeholders, including customers**
- At no stage in their application are the cross-checks 'displacing' or overriding the foundation model → indeed, they are assisting its application
- Brattle identified cross-checks as a feature used in this way in several regulatory regimes



ENA keen to continue discussions with the CRG and stakeholders, to provide specific equity cross-check suggestions in our submission, and show how they can be used

- Key distinction between backward-looking and forward-looking cross-checks. Forward-looking will be important for the 2022 RoRI, and we should not adjust 2022 RoRI because of an outcome from 2018
- ENA keen to work with the CRG in the future on how to parameterize a *forward-looking* consumer-based cross-checks

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