



APGA
50 YEARS 1968–2018

AER Draft Rate of Return Guidelines

APGA Presentation



AER Board
4 October 2018

Overarching summary



Problems we see with Draft Guideline – not what we are here to focus on

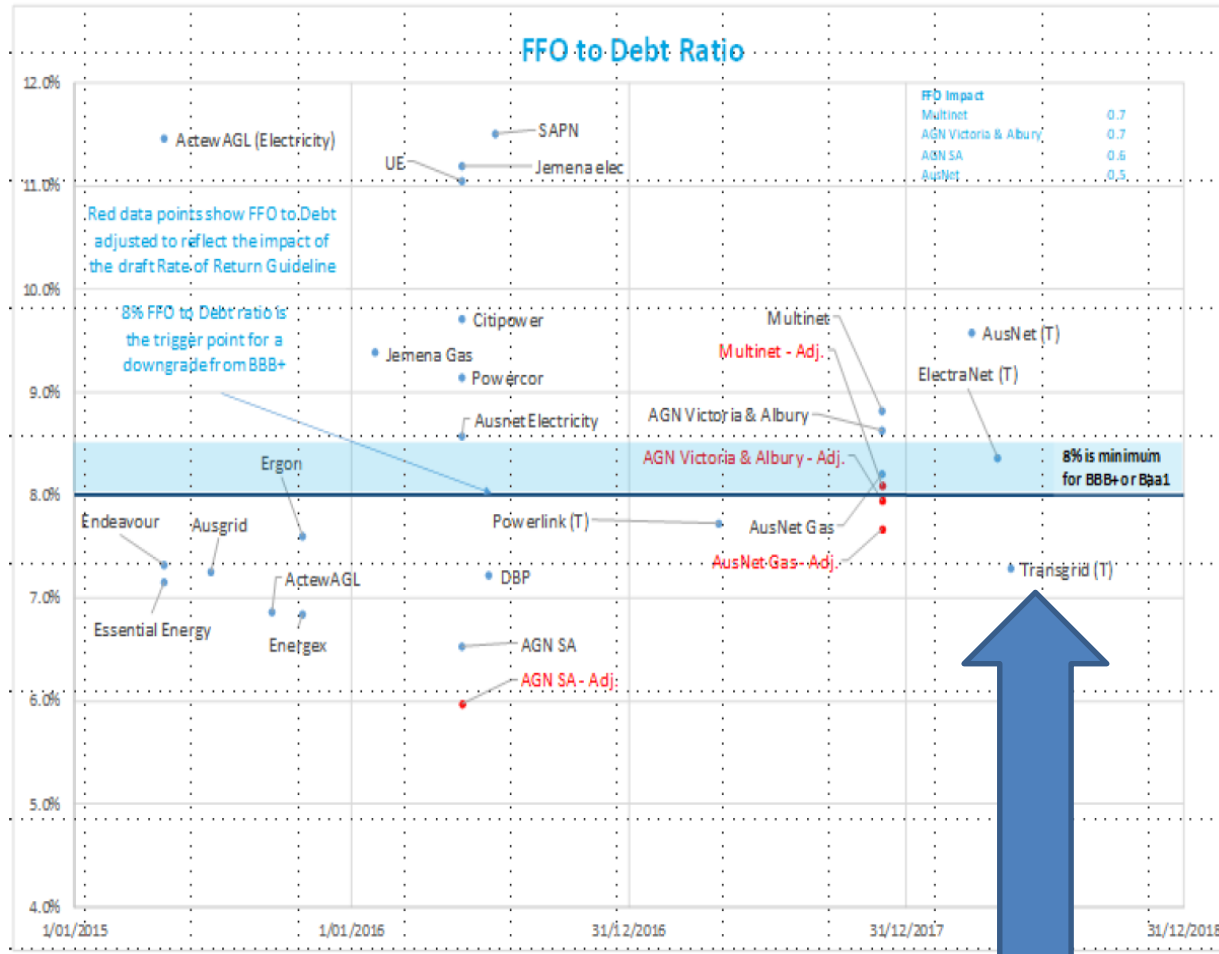
- Inverse correlation between evidence and outcomes
- Opaque reasoning
- Not incremental review
- Treating gas similarly to electricity

Quick word on financeability

Potential improvements - what we'd like to focus on

- Improving beta estimation
- Improving MRP estimation
- Improving cross checks
- Improving gamma

Financeability



- Ratings agencies place significant weight on FFO/debt
- With every equity parameter (& gamma) down, cash flows are down
- Consider whether cash flows which result from new WACC guidelines can support credit ratings

Our first go with PTRM

Improving beta estimation



Table 2 Estimates of equity beta for individual firms and the two weighted portfolios in May 2016 for different estimation methods

	APA	AST	DUE	SKI	Mean Assets	EW	VW	Mean Portfolios	Mean All
Gearing	0.440	0.562	0.627	0.277	0.476	0.476	0.484	0.480	0.477
OLS	0.682	0.671	0.170	0.716	0.560	0.638	0.665	0.652	0.591
LAD	0.662	0.705	0.243	0.724	0.584	0.740	0.778	0.759	0.642
MM	0.665	0.675	0.268	0.776	0.596	0.703	0.715	0.709	0.634
T-S	0.647	0.661	0.263	0.713	0.571	0.669	0.681	0.675	0.606
Mean OLS, LAD, MM, T-S	0.664	0.678	0.236	0.732	0.578	0.687	0.710	0.699	0.618
ARIMAX	0.683	0.636	0.164	0.690	0.543	0.620	0.651	0.636	0.574
GARCH	0.618	0.673	0.254	0.731	0.569	0.677	0.681	0.679	0.606
Mean of all above methods	0.660	0.670	0.227	0.725	0.570	0.675	0.695	0.685	0.609

Here's the answer

Note: range is the lowest and highest confidence interval (different table, with shaded cells)

Note: maybe a few less regression methods....

Low beta bias: part of mix of judgement along with principled perspective, empirical results and small sample set – not always the same or an automatic judgement

- AER: 3 timeframes, 7 portfolios, 66+ regressions; no indication of how much or what matters, no indication of statistical precision, largely arbitrary range, six pages of decision describing why the AER point estimate is correct. We don't understand what you did.
- ERA: 2 portfolios, 1 timeframe, clear rationales for methods and can fit the discussion in paragraph. We understand what they did
- Note – we are not arguing beta with the ERA

Improving MRP estimation



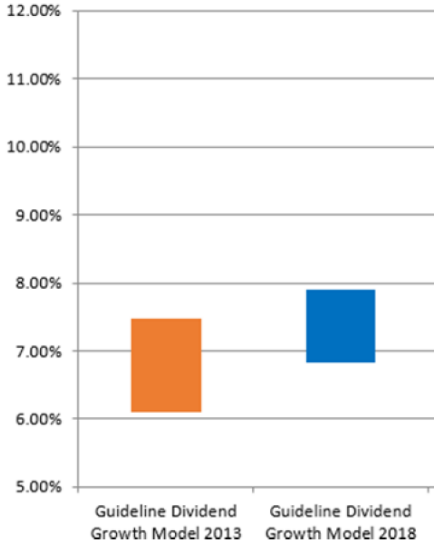
Cristina’s suggestion – start from last time

- Historical data up by 4.5 percent
- DGM lower bound up by 5.4 percent, upper bound by 11.5 percent
- Simple solution – if last time was about right, this time should be a bit higher

Table 2 Historical excess returns

Sampling period	Arithmetic average	Arithmetic average (2013 guideline)	Geometric average	Geometric average (2013 guideline)
1883–2017	6.3	6.3	5.0	4.8
1937–2017	6.0	5.9	4.2	3.9
1958–2017	6.5	6.4	4.2	3.8
1980–2017	6.4	6.3	4.3	3.8
1988–2017	6.0	5.7	4.5	3.6

Figure 4 MRP estimates from c



Improving MRP



Look at what the evidence says right now

- **Step 1:** begin with current estimate of 6.5 per cent.
- **Step 2:** using arithmetic means only, this is 6 to 6.5 per cent (after taking into account the NERA adjustment, which would raise the estimates a little). Choose a mid-point, say 6.25 per cent to be a historical estimate.
- **Step 3:** estimate a feasible range of the DGM estimates; say the estimated range is 6.8 to 7.85 per cent. Choose mid-point of 7.3 per cent in this case as the estimate based on forward looking data.
- **Step 4:** take a weighted average of 6.2 per cent and 7.3 per cent depending on AER's judgement. Assume 70:30 weighting for historical average to DGM estimate – would result in an estimate of 6.5 per cent.
- **Step 5:** AER to consider whether new estimate is significantly different from current estimate of 6.5 per cent. If significantly different then change to new estimate, and if not then continue with existing estimate

Improving cross checks



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- **Problem:** cross check shouldn't supplant primary evidence
- **But:** answer is evidence + judgement
- **Solution:** if cross checks all well above or below answer, reconsider judgement
- **Example:** all cross checks show ERP too low
 - Beta answer includes judgement on weight to give each timeframe
 - MRP answer includes judgement on weight to give geo-means and DGM
 - Revisit judgement in light of cross checks

Improving gamma



Call a truce

- Evidence is thin, and getting thinner
- Evidence keeps changing
- Debate is a major barrier to engagement
- No reasoned model as basis, so subjective



Thank you