



Draft RoRI – APGA submission

September 7 2022



Summary of submission



- Five year vs 10 year equity term
 - Gateways to error
 - Consequences of error
 - Note: concerns are NOT about numbers
- Views on MRP
- Views on beta
- Limited concerns with debt, gamma and gearing

5 vs 10 years – gateways to error



- Gateway 1 – Assumption that interest rate risk is influenced by price resets
 - It is not rates (p100), but invested capital which is “locked in”.
 - Interest rate risk is exposure of unrecovered capital to long-term interest rate change
- Gateway 2 – Assumption that opportunity cost of capital can be ignored
 - Idea of “regulatory context” and “investor context”
 - Must, by design, produce $NPV < 0$ for investors (unless investors all change to AER view)

Consequence #1 – No such thing as long-term interest rate risk

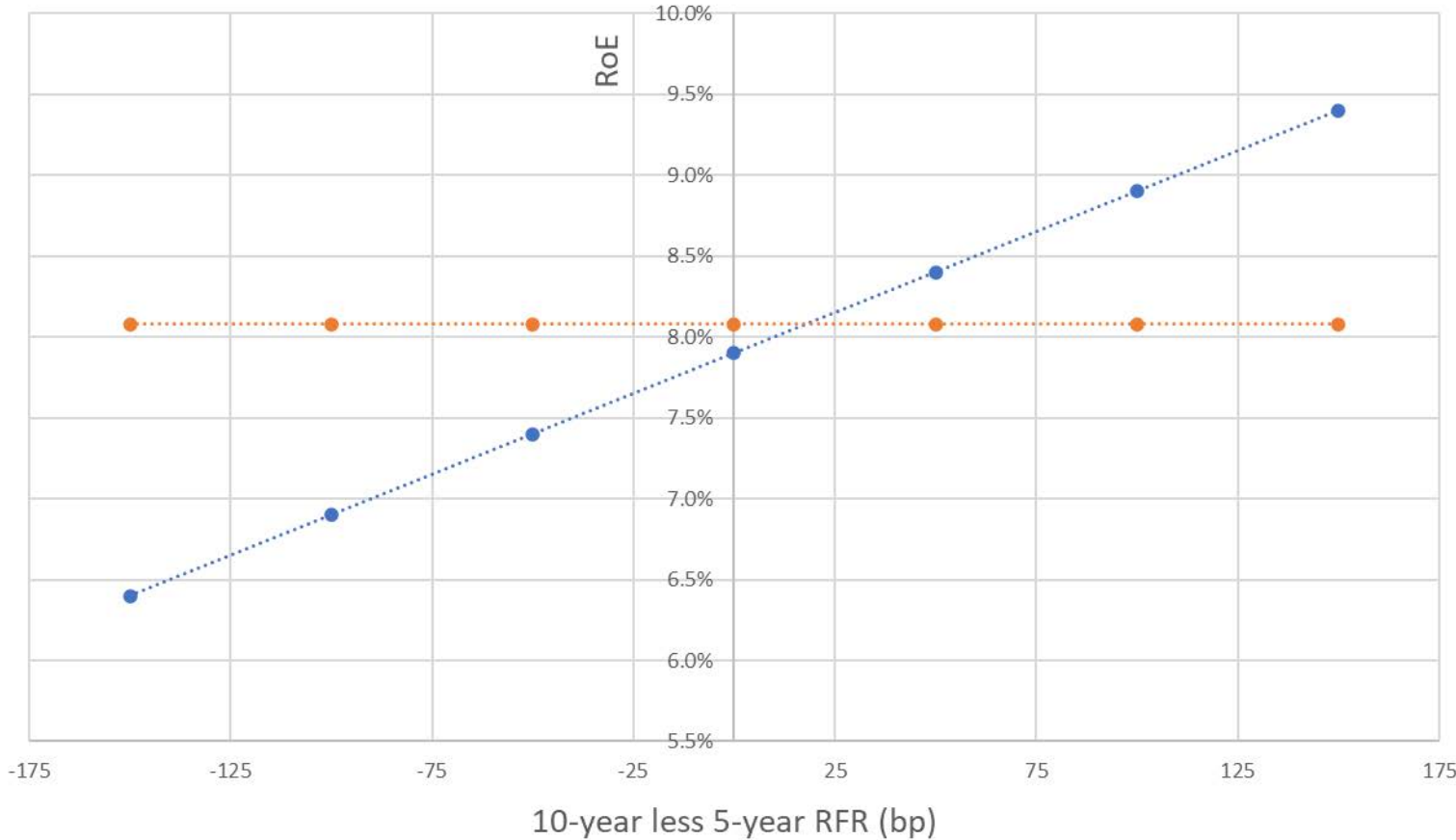


- Unregulated firms
 - Change prices more frequently = lower interest rate risk = lower cost of capital
 - Is this feasible
- Governments
 - Issue resetting coupon bonds instead of long-term bonds
 - Pay interest rates equal to short-term rate on long-term debt
 - Is this feasible? (see QTC)

Consequence # 2 – Adopting a 2-factor model



AER posits a 2-factor model – beta + “reset tenor” (term at which cashflow recalibrates)



This chart shows how the AER RoE varies for two firms as the slope of the yield curve varies. For the purpose of the illustration, the 5-year RFR is held constant at 4.0% (such that the slope varies around that fixed point).

The two firms have:

1. beta of 0.6; and
2. “reset tenors” of 5 and 10 years;
3. MRP of 6.8% and 6.5% respectively.

● "reset tenor"=10, "MRP"=6.5%, beta=0.6 ● "reset tenor"=5, "MRP"=6.8%, beta=0.6

Consequence # 2 – Adopting a 2-factor model



- Nothing in the AER logic is restricted to regulated firms.
 - Other things equal, unregulated firms with long-term contracts will have longer “reset tenor” than unregulated firms without long-term contracts.
- The AER’s 2-factor model implies:
 - Firms with the same beta but different “reset tenor” will have different RoE;
 - Low beta firms with long/short “reset tenor” will often have higher RoE than high beta firms with the opposite “reset tenor”; and
 - All firms will try and lock-in long term contracts when the yield curve is downward sloping (and the opposite when the yield curve is upward sloping).

Consequence # 2 – Adopting a 2-factor model



- If the AER were correct, we would expect to see a evidence of “reset tenor” as a focus for:
 - The empirical literature - academics would sort firms by their “reset tenor” and test for impact of this on observed returns.
 - CFOs (e.g., reluctant to sign long-term contracts when yield curves slope upward).
 - All valuers include an estimate of “reset tenor” as a critical input to their valuation.
 - The AER estimating the Market Portfolio’s “reset tenor” so that the observed HER can be adjusted to 5-years.
 - If the Market Portfolio has an average “reset tenor” of 1-year then the AER’s current 5-year HER is estimated as the return on a 1-year asset less the average 5-year risk free rate.
 - Seems to be a critical input to the HER analysis to determine the Market Portfolio average “reset tenor”.
- We don’t see any of these implications. Not even the AER applies a 2-factor model consistently

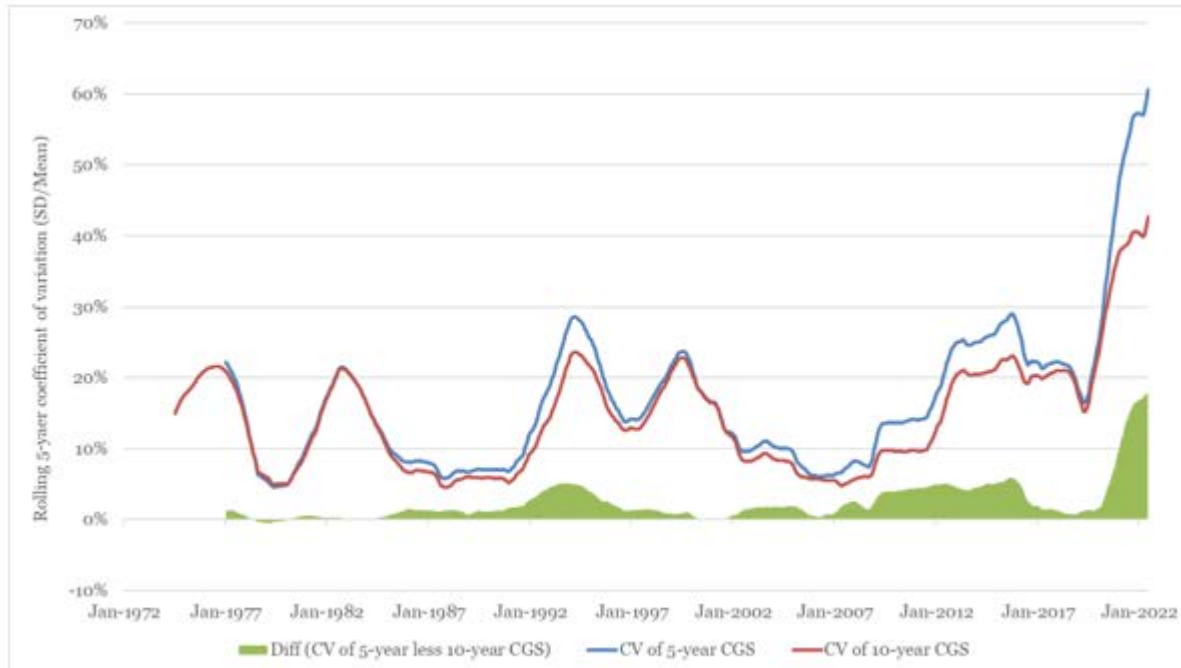
Consequence # 3 – Update beta and debt



Higher volatility

Rolling coefficient of variation* for 5 and 10-year RFR

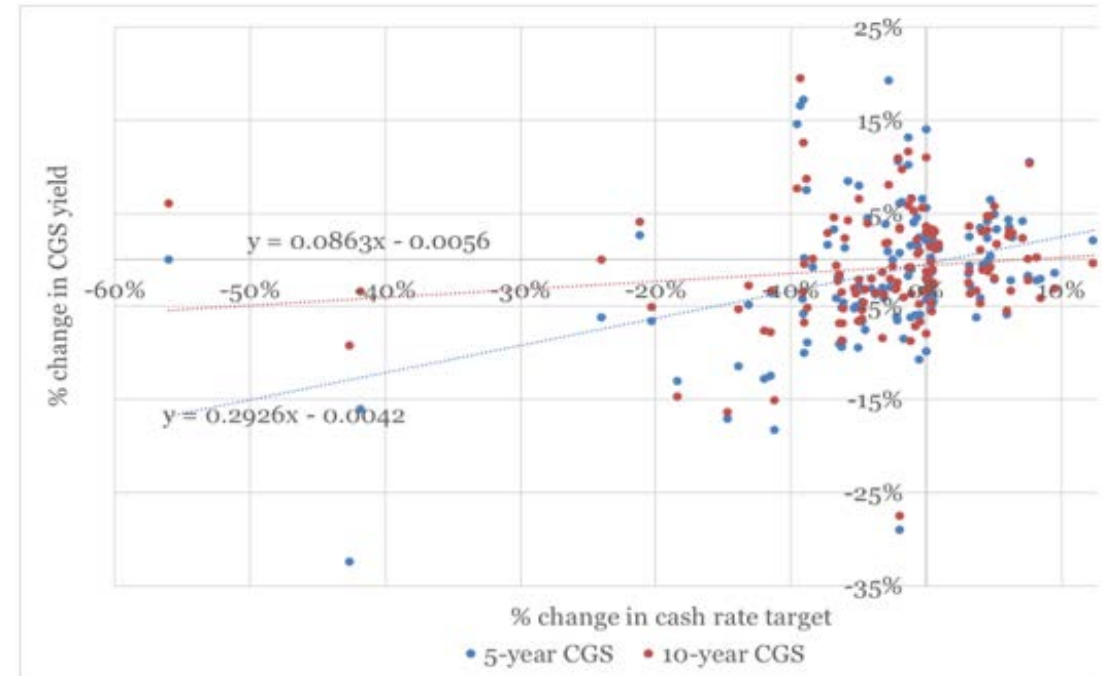
*Standard deviation divided by mean



Source: RBA, CEG analysis

More pro-cyclical

Sensitivity of 5 and 10-year RFR to the RBA policy rate



Source: RBA, CEG analysis

Consequence # 3 – Update beta and debt



- The AER proposal links regulated returns to the more volatile, and more procyclical, 5-year risk-free rate.
- Not only does this make prices faced by customers more volatile, but it must make the equity returns received by investors:
 - More volatile; and
 - More procyclical.
- In turn, this must raise the beta risk attached to these equity returns;
- Similarly, higher volatility and lower average levels of equity returns must raise the expected default risk associated with lending to NSPs
 - The equity return is the buffer protecting lenders against default.
- The AER has not considered or allowed compensation for these heightened risks.

Consequence # 4 – More capex and higher RABs



- The AER believes that investors' cost of equity resets to the 5-year RFR at the beginning of every regulatory period.
- If true, how should an NSP develop expenditure plans?
 - NSPs need to assess capex heavy investments that last 40+ years and which generate smaller annual expenditure savings spread out over those 40+ years.
- Is the NSP to develop expenditure plans using the prevailing 5-year RoE?
 - If so, this has the potential to materially skew decision making towards capex intensive solutions.
 - Why use a 5-year horizon to assess economic costs borne by customers over 40yrs?
- If NSPs are supposed to use a long-term cost of equity for expenditure planning then:
 - How is this reconciled to the AER compensating for a (generally) lower cost of equity?
 - Why would markets fund this; it will deliver $NPV < 0$ for them by design?

MRP and beta – consistent views



- MRP – Use DGM and update
 - Experts agree that both the conditional and unconditional means are important
 - Must use Frontier DGM as it is the only one consistent with the HER
- Beta – consider data from international firms
 - Sample set of one is just too small
 - Stale data do not reflect a very different future energy market

Note – we disagree with the Independent Panel that the AER has been inconsistent in treatment of beta and MRP