Draft RoRI - initial APGA views

July 27 2022

Points for today – focus on 5 vs 10 year rfr

- Idea of a different regulatory and investor contexts is problematic
  - Not about the numbers, but about the philosophy
  - Question the timing – is it helpful to change regulation in this way now, given electricity transmission investment task
- Notion of locking in rates is unsupported by real-world evidence
  - Regulated energy is not unique in influence of rates on prices, giving rise to a testable proposition of the AER's hypothesis about post reset-risk exposure and its compensation
- Unclear what could have prompted change

AER distinction – regulatory and investor context

Expansion of eqn (1) p 104

$$V_0 = \frac{\sum_{t=1}^{T} r_t RAB_t + \sum_{t=1}^{T} D_t}{(1 + k_t)^t}$$

Controlled by regulator

Determined by investors

Note:
- V_0 is the current market value of the asset
- r_t is the allowed regulatory rate of return
- RAB_t is the opening RAB each year
- D_t is depreciation (sums to RAB_0)
- k_t is the investor cost of capital

- AER posits a different role for the regulator compared to investors (p107)
- But – investors respond based on *their* required return (k_t), so:
  - Cannot meet efficient costs of providing regulated services in a regulated period, because capex will be inefficient (p102) as the cashflows from capex which the AER believes is NPV=0 will be NPV negative for investors.
  - Market value cannot equal RAB (p107) because investors are discounting cashflows at different rate, by construction, MV<RAB from investor perspective.

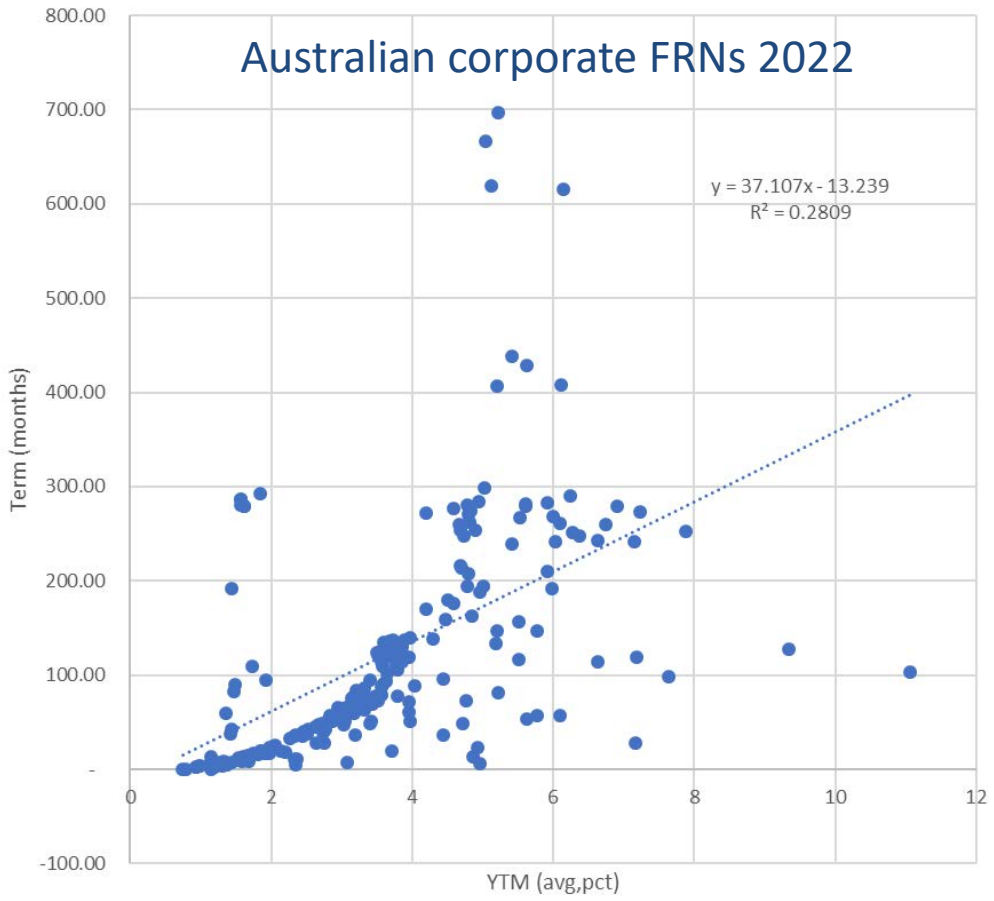
By setting the regulatory context as something different from what investors do, by construction the AER has ensured that $r_t \neq k_t$. Since the AER cannot force investment, this guarantees that investment will be sub-optimal; investors have no reason to accept the AER's regulatory context if returns meeting their expectation are available elsewhere.

Testable proposition – interest rate exposure

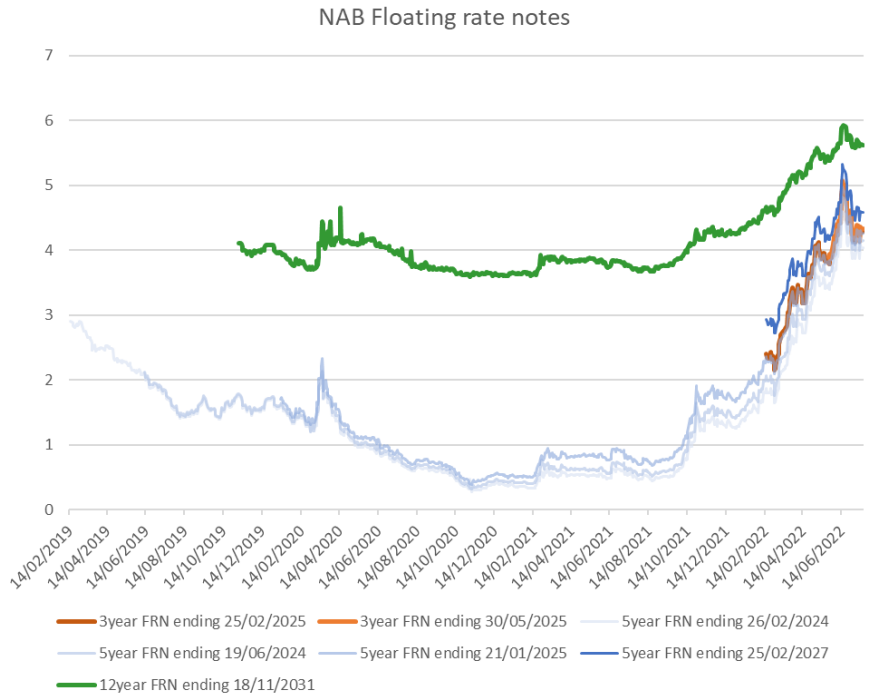
- Networks do not need a long term rate, because interest rates are only “locked in” for 5 years (p100)
- ‘Regulated energy businesses are not the only entities with this issue.
  - Interest rates locked in for a period, and then reset, producing new cashflows’.
- AER logic can be tested in real world – floating rate bonds

Second, 10-year returns may also contain a term premium to compensate for risks of locking in rates for an extra 5 years. These risks include inflation and interest rate risks. In this case, a 10-year return may be higher (lower) than a geometric average of the prevailing and expected future 5-year returns for 2 consecutive regulatory control periods. However, it does not follow that the use of a 10-year, rather than a 5-year, equity term is warranted when the allowed revenues are reset every 5 years. With 5-year resets, investors in regulated assets do not bear the risks associated with locking in the rate of return beyond a 5-year regulatory control period. Therefore, compensation for these risks is not part of the opportunity cost of equity capital and would not be necessary to attract investors.

Some empirical evidence on AER hypothesis



- If AER correct, 2 year bond at same credit rating should have same yield as 20 year bond; but
- Clear upward trend, meaning longer bonds have a term premium
- Longer the asset held past interest rate reset, more compensation required – post-reset matters for risk



Issues with AER consideration of evidence

- Inflation and NPV=0 (pp113-15)
  - AER view on consistency seems to have emerged in last few months and is opposite to it view last year.
  - Requirement for consistency not proven
  - AER says the maths are the same, but which maths?
- New “no-Lally proof” (p109-110)
  - Looks the same as to Lally to us
  - AER conclusions on CRG work (p105) are dismissive – we think the same criticism the CRG levy on Lally applies to the AER’s reasoning.
- Partington – equity term structure follows CGS term structure is a strong assumption (p112)
  - We think AER fix of re-estimating MRP for different terms misses his point

Preliminary Conclusions

- The regulatory context cannot, by construction, lead to efficient costs or deliver an NPV=0 condition for investors.
  - The CAPM, which has no term, leads the regulator to consider investors; there is no place in it for a regulatory context
  - What's next? A regulatory context which sits distinct from a consumer context?
- The reasoning behind the shift to 5 years suggests the AER ignores its own, self-stated, requirements.

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investment with a similar degree of risk as that which applies to a service provider for providing regulated services.[46] As Alfred Kahn stated:

> since the regulated company must go to the open capital market and sell its securities in competition with every other would-be issuer, there is clearly a market price (a rate of interest on borrowed funds, an expected return on equity) that it must be permitted and enabled to pay for the capital it requires.[47]

We consider employing a rate of return that is commensurate with the prevailing market cost of capital (or WACC) is consistent with the NPV=0 investment condition. We also consider economic efficiency more generally is advanced by employing a rate of return that reflects rates in the market for capital finance. Similarly, Partington and Satchell interpret efficient financing costs as the opportunity cost of capital, which is a market rate of return for assets with a given level of risk.[48]

Other parameters

- MRP
  - Maintain view from March 2022 paper, and support ENA
- Beta
  - Maintain support for use of foreign data and consideration of gas and electricity betas as per March 2022 paper
- Cost of debt
  - Accept AER final position and consider good process outcome
- Gearing
  - Accept 60% and AER consideration for market data
- Gamma - see submission
- Cross checks and scenario testing
  - Good first step, but not quite “stress-testing” the RoRI
  - Scenario testing of the weighted average trailing average was better than the formal scenario testing
  - Question conceptually what the AER can learn from RAB multiples when >90% of value comes from cashflows after year 5 if the AER believes these cashflows are irrelevant to its task.