AER Term of the risk-free rate
Public Forum

APGA Presentation
15 June 2021

Overview

- Views on process
- Focus on our key concern – term on equity
  - Choices are not a simple as the AER suggests
  - A settled issue?
- Views on inflation and debt
  - Significant agreement with AER
- Consumer implications

APGA process concerns

- Brattle suggested AER allowed rates of return very low internationally.
- Next paper after Brattle proposes to revisit a previously settled issue to lower rates still further
- Term paper does not reflect settled views in finance
  - AER’s expert pushing his own approach – concerns of unconscious bias.
  - AER favours approaches that have “passed the test of time”; Lally’s model has failed this test in the literature.
  - Robust regulatory decisions must be supported by well-established theoretical frameworks and empirical evidence
- Would welcome new perspectives on issues in future papers

What does NPV=0 mean for equity?

- AER dialogue on its question 3 suggests a belief that NPV=0 is equivalent to an argument for five year term.
- NPV=0 is a broader concept
- Lally's conclusions depend on his assumptions and model framework being appropriate for regulation.
- Ask first if Lally's model framework and assumptions are appropriate.

The zero NPV investment criterion has two important properties. First, a zero NPV investment means that the ex-ante expectation is that over the life of the investment the expected cash flow from the investment meets all the operating expenditure and corporate taxes, repays the capital invested and there is just enough cash flow left over to cover investors' required return on the capital invested. Second, by definition a zero NPV investment is expected to generate no economic rents. Thus, ex-ante no economic rents are expected to be extracted as a consequence of market power. The incentive for investment is just right, encouraging neither too much investment, nor too little.

AER RoRi ES p 35.
We agree

Lally’s model and the AER Foundation Model

- Lally’s results depend upon term structure
  - With no term structure, 5-year requirement falls away
  - But NPV=0 continues to apply
- The CAPM has no term structure
  - Single-period, static model
- The Foundation Model is based on the CAPM
- You cannot simultaneously accept both the Foundation Model and that five years is the right tenor, based on Lally’s model.
- Logical consistency is vital for robust regulatory decisions

> The implications of using a risk free rate whose term is other than that of the regulatory cycle depends upon the slope of the term structure. In particular, if the term structure is upward sloping, then the use of a risk free rate for a term longer (shorter) than the review cycle produces a present value on the future cash flows that is greater (less) than the initial investment. If the term structure is downward sloping, then the conclusions are reversed.
>
> *Lally 2004, p20*

Logically consistent choices for equity

APGA

Our final decision is to maintain use of a 10 year term for the risk free rate. We consider the use of a 10 year term will lead to an overall rate of return that will better contribute to the achievement of the NEO and NGO. We consider a 10 year term is consistent with the theory of the Sharpe-Lintner CAPM which is a single period equilibrium model, estimating the returns an investor requires over a long-term investment horizon. The 10-year term also reflects the actual investor valuation practices and academic works.

AER 2018 RoRi ES pp 126 & 127.

We use the CAPM to estimate how an investor will value the potential returns from an investment in an infrastructure business with long-lived underlying assets. Equity investors seek out efficient returns for their diversified investment portfolio over long-term investment horizons. Although reinvestments may be more frequently, they are still being made with reference to a long-term equilibrium rate of return. This will reflect the excess return required for bearing the systematic risk of the investment over the return on a long-term riskless asset.

✓ Maintain 2018 logic and position – leads to adoption of 10 year rfr.

Our preference

✗ Adopt ad-hoc approach of grafting a risk-free rate based in one theoretical framework into a model where it is inconsistent.

✓ Consider asset-pricing model that captures term structure; could then use 5 years but:

- Reconsider Foundation Model
- May require different risk factors
- May add significant complexity
- May require new data

Views on inflation and debt

- Inflation:
  - The reason for five years is different (take out what you put back in)
  - Agree with AER on this.
- Debt form and tenor:
  - Trailing average form is efficient and is working well
  - Ten year term matches WATMI results
  - No explicit need to match equity – many regulators set debt different to equity.
  - We are yet to see 10 year trailing average operate fully – businesses have just finished transitioning or are still transitioning.
  - Can see no transition mechanism that does not impose huge costs on consumers.
  - More to say when we get to debt paper.

Thinking about consumers

- Throwing in a 5-year tenor at a time when the difference between five and ten-year rates are at maximum gives the “sugar hit” of a big price drop, but:
  - AER does not interpret the long run interests of consumers as synonymous with a price drop at every opportunity (LTI paper p4)
  - Consumers favour stability and a high bar to change.
    - Has the CRG’s bar been met in this instance?
  - Is always low always in consumers’ long term interests.
    - Past paradigm – consumers are passive users of network, network is overbuilt, investment incentives don’t matter much to consumers so long as the lights stay on.
    - Future paradigm – consumers are active users of network, and the type of network they want is still being built
      - Note that this does not only change consumer stake in rate of return, but consumer voice and responsibility in investment choices.
    - Not “what rate of return do investors need to invest?” but “what rate of return is needed so consumers can do what they want to with the network?” – are we there yet?
  - If low rates now increase risk of negative NPAT, future consumers are cross subsidising present.