

Cost of capital –a contrast in approaches

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Who are we

- National competition, consumer protection & infrastructure regulators
- Energy, telecommunications, ports, rail, postal, water, airports
- Operate under different legislative instruments & regulatory frameworks

Objectives of regulation

- Making markets work for consumers
- Promoting efficient investment in & use of infrastructure

Range of regulatory regimes

- Electricity – monopoly businesses – full economic regulation
- Gas & telcos – monopoly services - access regimes & some revenue/pricing controls
- Ports – vertical integration - competition based access regime
- Postal – monopoly - efficient cost based price assessment
- Rail – commercial negotiations between parties – we arbitrate
- Airports – monitoring service levels

What do investors look for in regulatory regimes?

- Big appetite for infrastructure investment
- Long term investments in a rapidly changing world
- An appropriate rate of return
- Certainty – predictability of process and inputs not outcomes

Case study 1 - electricity

- Full economic regulation
- Incentive based & forward looking
- Our role is to assess efficient costs to derive allowable recoverable revenue
- Cost of capital = around 50% of recoverable revenue

Cost of capital approach

- Nominal vanilla WACC
- General approach is widely accepted
- Updated annually for changes in return on debt – 5 year regulatory period
- Debate is estimating the parameters

RoR framework

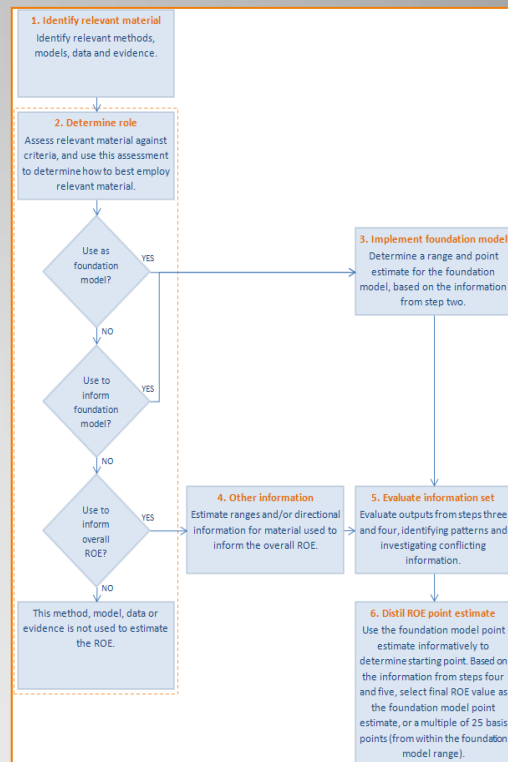
- RoR guideline developed in consultation with industry but isn't binding on them
- RoR must be "commensurate with the efficient financing costs of a benchmark efficient firm with a similar degree of risk as....the service provider"
- Benchmark approach – not individualised
- Incentive based – not actual cost of capital

RoE framework

- Must consider a range of models, methods & other information
- Criteria for use:
 - be well accepted & for purpose
 - be based on sound principles, analysis & robust data
 - not unduly sensitive to errors in input estimation
 - avoids arbitrary filtering or adjustment of data

Return on equity

- Standard CAPM is 'foundation' model but we considered other models - Black & DGM
- Use our foundation model to provide a range and starting point estimate for the return on equity.
- Draw on additional material to determine our final point estimate of the expected return on equity.
- The model requires the estimation of:
 - risk free rate (r_f)
 - equity beta (β)
 - market risk premium (MRP).
- To promote certainty and predictability, our guideline included estimates for the equity beta and MRP



Risk free rate

- Risk free rate calculated as a simple average of daily yields over a short period (20 business days)
- Daily yield estimates derived from prevailing yields on 10 year Commonwealth Government Securities

Equity beta

- We estimate a range for the equity beta and then take a point from within this
- Conceptual analysis suggests that returns to network businesses vary less with economic conditions than returns for the equity market as a whole.
- Empirical analysis of listed Australian energy networks suggested a range of 0.4 -0.7
- Considered other information - the Black CAPM & empirical analysis of overseas energy networks
- This suggested a final point estimate from the top of the empirical range may be reasonable.

Market risk premium

- We use a range of material to inform our estimate of the MRP
- December 2015 estimate - 6.5 per cent, selected from a range of 5.0 to 7.5%
- Greatest consideration to historical excess returns, followed by DGM estimates

Material	Range	Point estimate
Historical excess returns	5.0 – 6.4	6.0
Dividend growth model	6.1 – 7.5	–
Survey evidence	–	6.0

Cost of debt

- Old - focus “on the day” ie implied all debt was rolled over a few days following determination decision
- Considered not reflective of efficient financing practices or reality
- New - focus on efficient financing practices of a benchmark firm
- Continues with BEE being BBB rated; term of debt 10 years
- Staggered debt approach - trailing average over a 10 year period

Case study 1 outcomes

- 5 decisions – AER 6.1-6.7% cf 9% proposed by networks
- 18,000 pages of submissions on CoC; 650 page decision document from AER
- Appeals to the Competition Tribunal - merits review body
- Decision was split – remit on approach to debt
- An appeal against the Tribunal decision is underfoot

Case study 2 - NBN

- National broadband program – wholesale, open access data and internet services – government owned
- Scale of project unprecedented
- 10 year construction, multiple technology types, (€38 billion in capex and opex to 2021)
- Framework had to accommodate significant uncertainty in costs given a lack of similar infrastructure projects

The regulatory framework

- Key concerns - recovery of early year costs & price certainty/stability
- Initial period costs wouldn't be recovered during the period
 - magnitude of outlays and small initial customer base
- Cost reflectivity not possible without significant price shocks
- 30 year undertaking with cost recovery mechanisms and price controls

The CoC challenge

- Uncertainty in construction costs, financing structures, take up/demand for services;
- No historical data; no appropriate comparators;
- Significant unknowns: timing, costs, forecasts – capex, opex, & demand
- Circumstances and regulatory framework relatively unique
- Rate of return is determined according to a very simple formula

The solution

- Nominal Vanilla WACC = RFR + 3.5%
- The 3.5% represents the ROR margin – an estimate of RoE and RoD
- These arrangements apply for the first 10 years of the undertaking (until 2023)
- After 2023, the rate of return is as a nominal vanilla WACC using a full BBM

Key links

- <http://aer.gov.au/>
- <http://aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/rate-of-return-guideline>
- <https://www.aer.gov.au/networks-pipelines/determinations-access-arrangements/actewagl-determination-2014-19>
- <http://www.judgments.fedcourt.gov.au/judgments/Judgments/tribunals/acompt/2015/2015acompt0002>
- <http://acc.gov.au/regulated-infrastructure>
- <http://acc.gov.au/regulated-infrastructure/communications/fixed-line-services/fixed-line-services-fad-inquiry-2013>
- <http://acc.gov.au/regulated-infrastructure/communications/national-broadband-network-nbn>