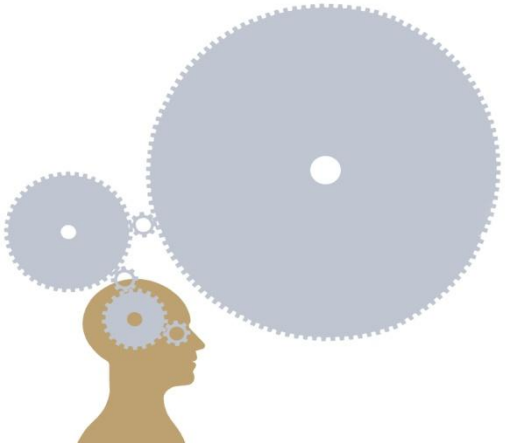
Oxera

Financeability

Ofgem seminar on financeability

Dr Luis Correia da Silva, Managing Director
Professor Julian Franks, Director
Professor Stephen Schaefer, Associate

May 24th 2010



What is the question?

- the financeability problem:

  ‘can I move cash flows into the future in a net present value-neutral way without altering the required rate of return?’

- Ofgem’s ‘strawman’:
  - suggests that this is possible
  - can be viewed as a Modigliani–Miller world of capital markets without frictions
    - short- versus long-term debt
    - equity versus debt

Ofgem (2010), ‘Regulating Energy Networks for the Future: RPI-X@20 : Emerging Thinking – Embedding financeability in a new regulatory framework’, January 20th.

Overview

- the duration of cash flows
  - and the discount rate
  - and debt capacity
  - and regulatory commitment
- financeability as a cross-check on the uncertainty surrounding cost of capital estimates
- investor clientele effects

Duration of cash flows and discount rate

- moving cash flow into the future increases the duration of cash flows
- a change in the duration of cash flows is likely to affect the required rate of return by investors, but in what direction?
- if the cash flows were like a default-free bond, an increase in their duration would increase the term premium
- what do we expect for a risk-free set of cash flows?
- the capital asset pricing model (CAPM), as a one-factor, one-period model, cannot answer the question of how the discount rate will change with duration

One model: Brennan and Xia (2003)

Brennan and Xia (2003) argue that, for risky cash flows, two factors determine the discount rate:

1. the sensitivity of the asset to interest rate risk, which increases in line with duration of cash flows
2. the sensitivity of the asset to the market price of risk (ie, the Sharpe ratio). Once we have normalised for the number of years, this component of the discount rate declines with the duration of the cash flows

The conclusions rely heavily on a particular set of assumptions:

- the net effect on the discount rate depends on the relative size of these two factors
- if the default-free component is large relative to the risky component of the cash flows, the discount rate increases with duration and vice versa
- where does a utility fit into this? If it has relatively low sensitivity to market returns, **the discount rate will rise with duration**

Source: Brennan, M. and Xia, Y. (2006), 'Risk and Valuation under an Intertemporal Capital Asset Pricing Model', *Journal of Business*, **79:**1.

Duration of cash flows and debt capacity

- if increased duration increases the discount rate, a reduction in debt capacity might also be expected
- weaker cash-flow metrics in the short run could put pressure on credit ratings
- a potential unintended consequence of the strawman is therefore that the *notional* company may have to operate with a lower leverage and use more equity
  - tax impact
  - the regulatory commitment problem

Duration of cash flows and regulatory commitment

- are we moving cash flows *within* or *between* control periods?
- the time-inconsistency problem is exacerbated when:
  - CAPEX requirements are large and uneven over time
  - increased duration increases the risk of asset-stranding
- how can regulators commit to sustain the value of capital employed over long periods?
  - what measures could a regulator take to address the lack of regulatory commitment?

Uncertainty around WACC estimation

- asymmetric consequences of estimation error
  - the cost of error increases when CAPEX is high
- lack of market information on equity prices
  - beta estimation
  - other pricing signals
- alternative cash-flow-based methods provide a valuable cross-check on the WACC

Identity of investors

- if extended duration of cash flows results in a change in the long-run capital structure, there may be restructuring costs

- how large is the pool of investors?

Oxera

www.oxera.com

Contact:

Luis Correia da Silva

+44 (0) 1865 253 018
Luis.correia@oxera.com