Martin Cave: incentive regulation

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‘ Incentive Regulation in Theory, Price Caps in Practice’

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“In theory, theory and practice are the same; in practice, they are not.” Discuss

- the universality of incentive problems
- price caps as a solution
- information asymmetry and disclosure
- benefit sharing within and across caps
- implications of public ownership
- innovation
- effects
- economics versus administration
- complexity

Distorted incentives: a brief history and some parallels

- Soviet-type economies
- Public management
- Traditional regulation
  - Cost plus
  - Averch Johnson effect
  - etc.

The common problem: end users lack effective power to control the costs and determine the characteristics of what is produced. How can producers' incentives be aligned with end users'.

The beginnings of incentive regulation: eliminating excess costs

- The regulator lacks information on the efficient costs of production
- Inherited cost levels are inflated
- Can an incentive be created for the firm to perform in the desired way and (ideally) to disclose its potential for such performance?

Incentives to perform: the first UK price caps

- Make the price exogenous
- The original proposal in 1983 for a telecoms price cap in the UK, following privatisation, made by Stephen Littlechild:

- 5 years, no renewal
- RPI-X control on prices, not on profits
- main target is dynamic inefficiency
- rudimentary cost calculations - accuracy does not much matter – and significant over-performance

Where do the cost estimates in the price control come from?

- Now often based on detailed cost tabulation of capex and opex inputs
- Increasing use of 'comparative competition' or bench-marking, which has its own problems:
  - need to correct for 'environmental variables
  - concerns about efficiency of the benchmarks
- Getting allocatively efficient prices becomes *relatively* more important as earlier productive inefficiencies are eliminated

Disclosure and menus

- A simple price cap elicits efficiency but risks leaving rents with the firm
- Laffont & Tirole (1993) have shown that a menu of contracts can be designed which allows a firm with 'hidden knowledge' of its capability to select a high-powered incentive contract if it is efficient and a low-powered contract if it is not
- This enables more flexibility in the trade-off between efficiency and rents
- The model can be generalised in various ways (Armstrong & Sappington, Handbook of Ind.Org, 3, 2007)

Implementation of menus in the UK

- This has been tried in the UK by offering firms accepting lower input cost targets the ability to earn higher net income for a given outcome (at the cost of losing even more money if their costs are high)
- The application was initially to capex, where benchmarking is difficult; now broader. The differential in rewards has been quite small. Calibrating the menu is quite tricky for the regulator, and understanding and choosing the options quite taxing for firms.
- Menus are still used in water and energy in the UK, and may be used more widely, but they are not generally regarded as a game changer. They are now accompanied by an incentive to the firm to simplify procedures known as ‘fast-tracking’.

Dealing with in-period over- or under-performance

- The practice of ‘sharing’ (often equally) over- or under-performance has grown in the UK
- Why is a lower powered incentive scheme desirable?
  - in response to regulatory ignorance (this may protect the regulator from criticism, but it reduces incentive to over-perform)?
  - to allow a longer price control period?
  - from concern about disreputable non- investments?
- Such sharing has pros and cons.

The baleful effects of hybrid schemes

- A common outcome is a price control which applies a high powered incentive to opex, but treats capex as a pass through
- Overinvestment can then be aggravated by irrational, discretionary or even fraudulent capex/opex substitution
- The UK solution is to apply the same incentives to both (‘totex’)
- This should se the end of capex bias

Questions of duration and renewal

- The renewal of a price control elicits several dysfunctional behaviours:
  - disruption of investment plans, resulting from uncertainty
  - diminished incentives to increase productivity as the end approaches
- Various ways can be found to remedy both of these, *but they do add complexity*

Maintaining commitment across price control periods

- Regulatory Asset Base/Base d'Actifs Régulée

  provide valuable continuity from one period to the next and can control rampant regulatory opportunism
- This has not precluded signalled valuation changes – eg in UK and French telecoms firms – although they are disruptive
- In the UK, pressures to protecting the RAB in most circumstances have become increasingly strong.

Relative prices within the cap

- In very limited circumstances, individual prices within the cap will converge to a Ramsey-Boiteux structure
- This probably won't happen, and is not generally seen as much of a benefit by regulators
- More probably, firms will use flexibility to discomfort rivals in competitive activities
- Regulators often also impose relative price controls for social or political

Do price caps work differently in the public sector? A UK story

- Principal UK example is the Royal Mail, in full public ownership until 2013
- Royal Mail was initially price-capped by PostComm; productivity targets in controls not met as a result of labour relations difficulties
- The government/share-holder, with divided priorities, bailed the company out
- Partial government ownership without management control may work better.

The innovation problem

- Unregulated monopolies are usually poor innovators; regulation can make it worse
- Within a price control framework this arises because the down side of unsuccessful innovation is imposed on investors, while a low powered incentive mechanism truncates the upside too quickly. As everybody wants to be second adopter, there is no first adopter
- The obvious direct remedy is to extend the upside.
- Alternatives are difficult:

  - subsidise specific innovations, first commercial applications, possibly using tournaments

  - make new investment contestable

  - use tournaments to promote innovation.

Evidence on how price caps work

- The USA at state level is the best laboratory. In telecoms, Sappington (2002) reports that 'incentive regulation appears to increase deployment of modern ..equipment, to spur total factor productivity growth and to foster a modest reduction in prices. There is little evidence that it leads to a significant reduction in operating costs. Some evidence that earnings may be higher under price cap regulation.'
- More informal UK evidence of major impact on opex
- Evidence of excess returns in early years of price caps, declining later.

An outsider's observation on French experience

- The caps in energy and rail seem not dissimilar in structure from those adopted elsewhere (similar duration, differences in the treatment of capex and opex, diverse sharing rules, a developing RAB/BAR based on a variety of valuation method, more varied indexing - mercifully, not RPI, allowed returns possibly higher, quality of service an issue)
- The burden of costing and computation are much less complex than in the UK
- The structuring of the process is significantly different. In ARAF's case, the regulated firm has 'first mover advantages' in devising a proposal, the empirical predicates of which may not be fully disclosed. As a result, problems of information asymmetry may be exacerbated.

Theory and practice

- Has the economics profession shaped incentive-based price controls in utilities?

  - to some degree formally, in respect of analysis and remedies of information asymmetry and revelation, discussion of price structures, asset valuation, comparative competition dynamics and benchmarking (see L/T 1993 & Armstrong/Sappington 2007 *)*

  - informally, through basic economic insights into distorted incentives (do all regulators have these?)

- But many policies stem from millennia-old practical 'administrative' actions: witness parallels with ancient Egypt, with solutions in the Soviet Union (a zone entirely free from economic rationalism), etc.

The future: is complexity inevitable (or cyclical)?

- Such traditional regimes exhibit cycles: i) the principal chooses a simple structure, ii) dysfunctional responses by agents, leading to additional rules, iii) all agree to return to simplicity, iv) etc. etc.
- How to break out of the cycle? Two ideas in the UK debate:

  - return to a focus on incentivising *output*s, leaving *inputs* to regulatees (sounds like back to phase i) above)

  - delegating the control to negotiation between producers and (representative) end users, acting 'in the shadow' of the regulator.