

Incentive- based regulation: An historical perspective and a suggestion for the future

Stephen Littlechild

Florence School of Regulation

Regulatory Policy Workshop Series 2021-2022

Incentive regulation in network industries, 5 November 2021

Outline

- Development of incentive regulation in UK since 1983
- Has been a success in increasing efficiency & innovation
- But a failure in increasing burden of regulation and confrontation
- 2000s search for better alternatives – negotiated settlements in US?
- More customer engagement in UK & elsewhere, generally beneficial
- But regulatory burden and confrontation still a problem in UK
- Need a new process: regulators to step back, not determine price controls
- Instead, regulators should facilitate discussion between companies, customers & other parties to work out and agree an acceptable way ahead

The 1983 problem

- What was the problem in 1983 that led to the proposal and adoption of RPI-X incentive regulation?
- Serious inefficiency of all the UK nationalised industries
 - Also lack of innovation and lack of interest in customers
- The solution was privatisation plus competition
- But parts of some industries were monopolies, perhaps temporary
- Including in British Telecoms (BT), first privatised nationalised industry
 - New competition for long-distance calls but BT had monopoly of local calls
- Hence the need for some sort of protection against monopoly pricing
- How best to do that?

US rate of return regulation?

- US rate of return (ROR) regulation seemed to be how a market economy dealt with monopoly power of this kind
- But economists were pointing to significant problems there
- ROR seemed to discourage efficiency – encouraged companies to invest in capital intensive production methods, no incentive to reduce costs if prices simply reflected cost
- In UK called cost-plus regulation – seemed opposite of what we needed
- Plus burden of regulation - ROR was often time-consuming and overly legalistic. Rate cases and appeals could sometimes drag on for years

An alternative solution

- The Department of Industry staff proposed a variant of rate of return control with an additional maximum profit constraint
- Mrs Thatcher's economic adviser Sir Alan Walters criticised it - no incentive to efficiency ("socialism") and excessively legalistic & costly
- He proposed instead an Output-Related Profits Levy
 - Which had an incentive to increase output, to remedy shortage of telephones
- I was asked to adjudicate - Neither option appealed
- I proposed RPI-X as a means of limiting prices to protect customers, and guaranteeing an annual real price reduction, while preserving the incentive for BT to become more efficient
- Although I had one reservation re reputation

The 1983 problem and solution

- Recap: the main problem was inefficiency and lack of innovation
- Conventional US regulation was considered to do nothing for this
- I claimed RPI-X approach better than any other form of regulation, for
 - Protection against monopoly
 - Promoting efficiency and innovation
 - Minimising the burden of regulation
 - Promoting competition
 - Flotation proceeds and prospects for BT
- & Feasible: variants proposed earlier by BT itself & by MMC (contraceptives)
- What's not to like?
- Government agreed, adopted it for all privatisations with regulation

How did it work out? Experience in GB

- RPI-X acceptable to government, regulators, investors & customers
- Scope for variety of adaptations to meet different conditions
 - Eg revenue cap or mix of price and revenue cap
- 2010 Ofgem introduced RIIO: more significant variations in incentives
 - Revenue = Incentives + Innovation + Outputs
- Regulators have been innovative and companies have responded
- Greater efficiency & innovation, now comparable to rest of economy?
- Success: main aim of privatisation & incentive regulation achieved
- Variants adopted in EU, Australia/NZ, USA (PBR mainly in telecoms)

Burden of regulation?

- I thought it would be easy to set one number X
 - At privatisation, a political decision to balance gains to customers v proceeds
 - Learned later: Government took many months to set initial X at privatisation
- When I reset X in 1993-4 I planned to take about 1 year
 - Need some information about scope for efficiency improvements
 - About a year to collect, analyse and debate data & details of next control
 - How to justify taking up a whole year of top executive time?
 - Saving grace: the company would have 4 years without intervention
- Seemed worthwhile for the efficiency and other benefits that it brought. But more difficult than I expected, in several respects

Dealing with customer expectations

- RPI- X meant customers benefitted from falling prices in real terms
- But customers/media annoyed by increasing profits after privatisation
- Called for price cap to be reopened
 - Oftel investigated BT's profits, found OK. Later increased X from 3 to 4.5 then to 6.25
 - I blamed Govt & resisted reopening electricity, but pressure to deliver big price cuts
- I introduced Po price reductions (instead of beginning price cap from end of last price control) – meant earlier gains to customers (see Diagram)
- But after that only RPI-2. Company share prices kept increasing. Consumer groups protested that X was too low.
- Proposal not viable. I had to reset the price cap - bigger Po cuts, bigger X
- This illustrates pressure on regulators to show being tough on companies

Incentive-based regulation

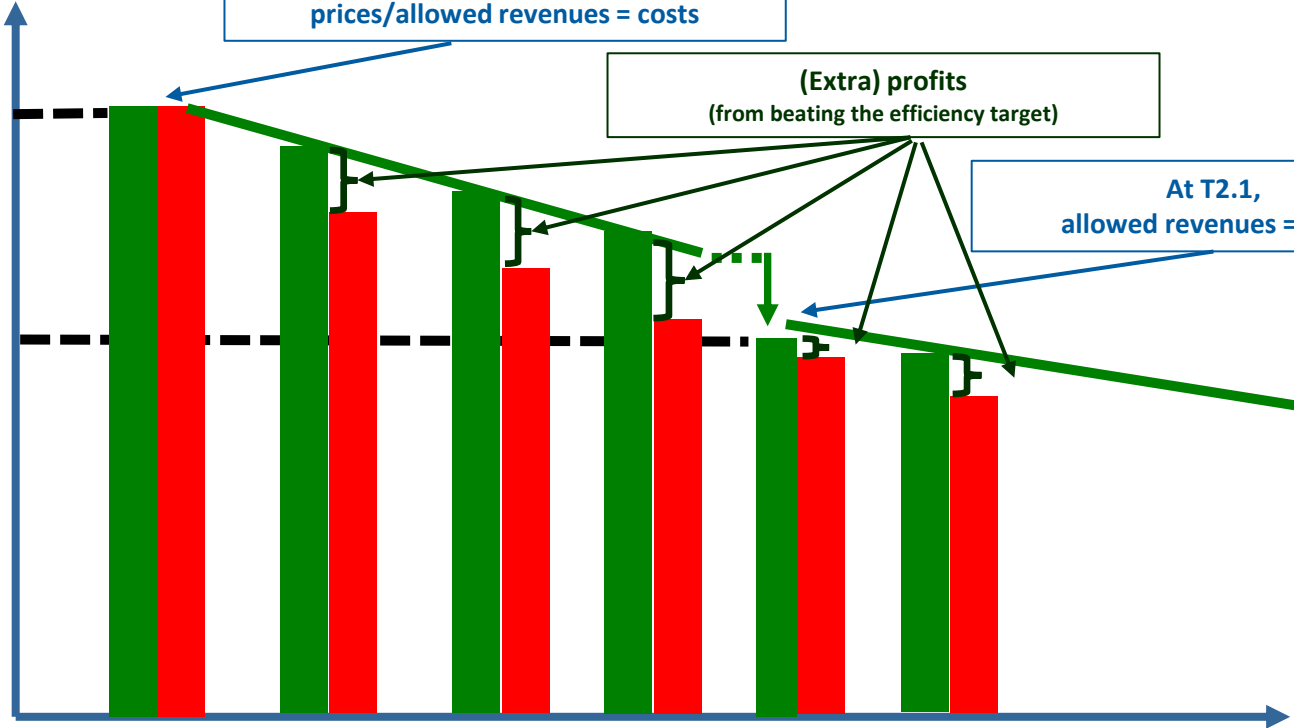
Extra efficiency gains transferred to consumers

Po.1
↓
Po.2

At T1.1, prices/allowed revenues = costs

(Extra) profits (from beating the efficiency target)

At T2.1, allowed revenues = costs



Allowed revenues
Actual costs

T1.1 T1.2 T1.3 T1.4 T2.1 T2.2 Time (years)

Increasing burden of UK regulation

- But this was only the beginning, all regulators were affected
- Gradually the time required by a price control review has increased
 - In energy and water, from 1 to 2 to 3 to 4 to 5 years, including initial discussions and concluding post mortems, and appeals to Competition authority
- Price control reviews now a full-time activity in energy/water sectors
 - The next one might start even before the previous one has concluded
- Burden of UK regulation is now worse than in US
- Process accompanied & driven by strong criticism in media & reviews
 - Increasing hostility & confrontation between customers, companies, regulators
 - Regulators urged to “aim off” their best estimates, assume “outperformance wedge”
 - Not conducive to constructive discussion, cooperation & innovation in each sector
- This burden and confrontation are a serious regulatory failure

Is there a better alternative process?

- 2000s I looked around the world: different/better ways of regulating?
- In several US states, and in Canada, use of negotiated settlements
- Interested parties (mainly customer groups) negotiated with regulated companies. If they came to agreement, regulatory commission would typically be pleased to agree
 - Saved a lot of time, seemed positive and avoided public argument
- Role of regulator to hold the ring & facilitate constructive negotiation
 - I didn't know about this in 1983/1993, would it have been possible in UK then?
 - Constructive Engagement used by CAA for UK airports 2005, few large airlines
- I wrote several papers describing how it worked in various places

Implementation of new approach in UK?

- I introduced various US participants to UK regulators
- 2010s UK regulators responded
- Water Industry Commission of Scotland (WICS) went furthest
 - Created a Customer Forum with remit to negotiate with Scottish Water (SW). If parties reached agreement WICS would be minded to accept
- This has been very successful (but note SW is government owned)
- Ofgem and Ofwat have created various Customer Challenge Groups
 - Their role is to challenge the companies, and advise the regulators. But not to negotiate or reach agreement on the price control as a whole
- They seem to provide useful inputs, others will need to evaluate
 - And important recent developments in Australia (see later)
- But UK still confrontation, burdensome price control negotiations & appeals
- In that sense, the UK regulatory approach (process) is still a failure

Where to go now?

- UK regulatory approach still focused on 1983 problem of inefficiency
- That is no longer the main problem. That was last century's problem
- Today, the problem is regulatory process leading to confrontation
- Regulation is unduly focused on estimating/guessing how much scope there is for increasing efficiency, to avoid excess profits, to get X "right"
- In an ever-changing world, five year forecasts will always be wrong
- The regulator then looks foolish/weak/incompetent if the companies out-perform the regulatory assumptions
- Bringing yet more pressure to crack down and more confrontation

The challenge today & tomorrow

- What is today's challenge? Three-fold
- To discover what outputs, investments, prices & incentives make most sense in a world that is partly unknown & constantly changing (not least re Net Zero)
- Also what form & duration of price control(s), & procedures for monitoring & revising
- In a way that carries companies, customers & other interested parties with it
- To achieve this, it will be necessary for companies, customer groups, other interested parties and regulators to work together
- To exchange views, to explore options together, then to craft mutually acceptable policies, targets, prices, price controls, incentives, monitoring & revision processes
- So that customer groups in particular can support the deal, not criticise it
- Which is lacking in UK at present

Next steps?

- Regulators to accept that their role is not to decide the price control
 - Perhaps not even to provide a uniform framework for others to fill in the numbers
 - Because we need to try a variety of different approaches to see which works best
- Role should be to facilitate negotiation/discussion between the company, customer groups & other interest groups (including environmental)
 - To provide relevant information (e.g. on comparative costs)
 - Provide access to research & advice (e.g. on cost of capital)
 - Provide input on regulator's own concerns re statutory duties
 - Facilitate discussion, negotiation & reaching agreement
- To accept and implement a price control agreed by the parties, provided it is consistent with statutory duties
- If there is no settlement (or only partial), to propose a price control
 - With scope for appeal to competition authority as now

What will happen? Will it succeed?

- Honest answer is: We don't know. But reasons to be hopeful
- All parties surely want something less confrontational, more productive, and more satisfying than the present process
- Will customer groups & others be or feel outgunned? If so, they can simply hand over to the regulator. But they & companies will want to avoid that
- Probably new types of price control to reassure against excess profits
 - Perhaps shorter-term, perhaps sliding scale, perhaps with reopeners
 - Still efficiency incentives, but not so reliant on 5 year forecasts
 - If 5 year controls, they may not run full term, but be renegotiated after say 3 years
 - Probably more like commercial contractual arrangements
 - Different companies/customer groups will do different things – that's good
- All parties will want to make it work. It seems worth trying

Further reading: my own papers

- My Submission to the CMA on Ofwat price determination, 24 May 2020, contains further detail of the experiences noted above. It is available at
 - https://www.eprg.group.cam.ac.uk/wp-content/uploads/2020/06/S.-Littlechild_Submission-to-CMA_June2020.pdf
- At the end of this submission is a reference to a good (but now dated) survey paper on customer and stakeholder engagement by Bush & Earwaker (2015). Also details of a dozen of my own earlier publications on negotiated settlement
- A brief summary of my argument is in “The CMA and Ofwat: Another nail in the coffin?” *Utility Week* 26 Nov 2020, available at
 - https://www.eprg.group.cam.ac.uk/wp-content/uploads/2020/12/S.-Littlechild_Utility-Week_Dec2020.pdf

Recent developments in Australia & Scotland

- From c 2011/2 Australian water & electricity regulators were encouraging customer engagement
- ESC (Victoria) PREMO return on equity uplift for good engagement with consumers
 - <https://www.esc.vic.gov.au/sites/default/files/documents/Water-Pricing-Framework-and-Approach-Final-Paper-Oct-2016.pdf>
- ESCOSA (S Australia) appointed a Customer Negotiation Committee to reflect customers' interests in a Negotiation Forum with SA Water
 - <https://www.escosa.sa.gov.au/news/water-news/sa-water-regulatory-determination-2020-cncappointments-and-guidance-papers>
- 2018 AER/ENA/ECA *NewReg: towards consumer-centric energy network regulation*. Trial of a customer forum approach (inspired by WICS) with AusNet
 - David Havyatt, "Towards consumer-centric energy network regulation", October 2021
 - https://www.researchgate.net/publication/355788901_Towards_Consumer-Centric_Energy_Network_Regulation
 - This paper also contains a good review of theory and practice of incentive regulation & customer involvement
- The Customer Forum approach of the Water Industry Commission of Scotland (WICS)
 - Spending for a rainy day, Interview with Alan Sutherland of WICS, The Water Report, Nov 2020
<https://wics.scot/system/files/publications/SRC21%20Water%20Report%20interview.pdf>
- But none of these processes have gone quite as far on process as I am proposing here

Discussion of incentive regulation in USA

- The following articles in *The Electricity Journal* discuss the evolving *nature and content* of US incentive regulation, but typically not the *process* by which that regulation is determined.
- Makhholm, Ross & Collins “North American Performance-Based Regulation for the 21st Century”, 25(4) May (2012), 33-47
- Alvarez & Steele “Price-cap electric ratemaking: Does it merit consideration?”, 30(8) Oct (2017), 1-7
- Meitzen, Schoech, Weisman “The alphabet of PBR in electric power: Why X does not tell the whole story”, 30 (2017), 30-37 and “Debunking the mythology of PBR in electric power”, 31 (2018), 39-46
- Makhholm “The rise and decline of the X factor in performance-based electricity regulation”, 31 (2018), 38-43
- Kaufman “The past and future of the X factor in performance-based regulation” 32 (2019), 44-48
- Migden-Ostrander “Power sector transformation in state utility regulation: To boldly go where no regulator has gone before”, 32(2019), 106626
- Costello “How PBR can go wrong”, Aug-Sept (2020), 106801
- Sappington & Weisman “Designing performance-based regulation to enhance industry performance and consumer welfare”, 34(2021), 106902
- In contrast, note emphasis on “collaborative process” in Hawaii
- “Renewed interest in PBR in electricity sector in Hawaii”, <https://puc.hawaii.gov/energy/pbr/> December 2020
 - “a portfolio of new Performance Incentive Mechanisms, Scorecards, and Reported Metrics,”
 - “this portfolio of Performance Mechanisms offers additional financial incentives and penalties targeting exemplary performance in achieving the State’s clean energy goals. The PUC continued the collaborative process utilized to develop the PBR Framework, and worked with a wide variety of stakeholders to finalize the critical details of the performance mechanisms.”
 - “This decision ... builds on the successful collaboration of a diverse group of stakeholders, including the Hawaiian Electric Companies, State and County government agencies, clean energy companies, and non-profit organizations, who have continued to help propose, develop, and implement new ideas to facilitate this transformation.”