

Price setting in regulated utilities and the potential application to the BBC

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Executive summary

1. The determination of the BBC's licence fee is the outcome of an opaque and non-transparent process, which contrasts dramatically with that which applies in the case of the regulated utilities.
2. In all the main privatisations from 1984 onwards, the utilities are variously required to carry out specified functions, defined in licences. An independent regulator is given the statutory duty to ensure that the functions can be financed, through the setting of prices. Most regulators were initially also given a primary duty to promote competition.
3. Independent regulation underpins the ability of the utilities to borrow to finance investment, rather than rely on current revenues to cover current capital investment as in the public sector and in the case of the BBC.
4. The chosen price setting formula in these privatisations has been RPI-X.
5. The distinctive feature of the formula is that it is set on a forward-looking *ex ante* basis, so that for a period – until the prices are reset – the utilities are price takers, and hence in theory profit maximisation is equivalent to cost minimisation. This is the main incentive mechanism in the original regulatory model.
6. This approach is deceptively simple, and over time more and more detail has been packed in, differing from sector to sector. Almost any approach to price setting can be described as RPI-X – provided it is *ex ante*. Given their statutory duties are general, regulators have been able to “make it

¹ The views expressed in this paper are those of the author, and all errors remain mine. Financial support is gratefully acknowledged from the BBC, but the views here are mine and not necessarily shared by the BBC.

up as they go along” and gradually a host of ancillary mechanisms have been added to the licences and periodic reviews. For the set piece of price setting these include: valuation of the assets (the regulated asset base); establishing the cost of capital; comparative efficiency for operating costs; and the establishment of efficient capital expenditure programmes.

7. The 2000 Utilities Act began a process of more significant reform – notably making the interests of consumers the overriding even more general primary duty on the regulators, who are also now subject to “guidance” by the government.
8. Over time, the regulators used their discretion to diverge significantly in the way the principles are applied, and the competition authorities provided little by way of consistency. Thus successive water regulators took a very interventionist approach, “leaning” on companies to reduce prices within periods; the energy regulators took a more hands off approach; whilst communications adjusted to take account of greater competition and gradually reduced the role of price cap regulation. All regulators have been obliged to pass on social and environmental costs, variously through levies and burdens on dominant companies, thereby blurring the distinction between taxpayers and customers.
9. The BBC has many utility characteristics. It has a large fixed cost base, a dominant role in its markets, and it is protected through a licence fee, over which it has a quasi-monopoly in respect of the revenues (though it has some sharing functions here too). Like most utilities it faces competitive pressures and it has broad social obligations.
10. Passing the duty to establish the licence fee for a future period to Ofcom or some other regulatory body will probably require the full architecture of the periodic reviews to be applied to the BBC, in the context of a defined licence, which the regulator would enforce. (This paper does not consider a purely advisory role for a regulator – and indeed this would be very hard to define).
11. If the utility model is followed, the first task is to define the functions in a licence. This is a matter for government and legislation – not the utility regulator. The BBC would submit a business plan consistent with these

defined functions, setting out the operating costs, capital expenditures, the asset base and the appropriate cost of capital for the period of the determination.

12. If this typical utility path were followed, once the regulator had determined the outcome, there would be a right of appeal. This would apply not just to the BBC, but third parties too. The appeal would be to the CMA. Its determination would then be final – subject to judicial review.
13. Once the licence fee is set, the regulator would be actively involved through the period in ascertaining: whether the BBC was fulfilling its obligations under the licence; whether there are changes in circumstance which merit revisiting the licence fee before the next formal periodic review; and developing the overarching regulatory framework.
14. In the case of publicly owned and not-for-dividend companies, the process has been carried over from the privatised utilities. Where there are direct subsidies – as in railways – the Treasury has a corresponding direct role. In the case of the BBC, the monies flow from its “customers”, not the Treasury, and hence if the utility model is followed, there is no obvious Treasury role other than determining the functions in the licence. Under the utility model, the BBC could borrow against these future revenues, creating a conventional balance sheet.
15. A process for licence amendment is an integral part of the regulatory framework. It varies between utilities, and is usually initiated by regulators rather than regulated entities. The government can also change the functions through legislation and the acceptance of new EU directives.

1. Introduction

The UK pioneered the RPI-X model of regulation. It arose out of the privatisation of the core utilities, and developed in a pragmatic fashion. The main features are designed to protect investors from *ex post* expropriation, guaranteeing that they can recover their investments through the duty to finance functions; and protecting consumers by capping prices. It is a contract: investors recover their sunk, fixed and variable costs, and consumers get fair prices.

At the outset – in the BT case – it was assumed that price capping would be temporary, holding the fort until competition came along to provide the discipline that applies in markets.

The model has evolved in the British pragmatic style of public administration, and its form has morphed into a complex set of overlapping regulatory interventions over the subsequent 30 years.

This paper describes the original model, identifies the main building blocks to price setting in the utilities, the treatment of functions and competition, and the periodic approach to resetting prices. It then identifies some of the implications of applying this model to the BBC.

The aim is to provide a short summary overview: each dimension has a considerable level of detail to fully appreciate the impacts of each and their interaction with each other. Utility regulation is a package, and not merely the sum of its parts: it is not, and was never intended to be “pick-and-mix”.

2. The RPI-X model

The RPI-X model of regulation was first proposed by Stephen Littlechild in advice provided to the DTI in respect of the privatisation of BT. This model had

an intellectual rationale grounded in the Austrian economics approach and not the mainstream neoclassical market failure paradigm.

Littlechild took the view that regulators could not possibly provide an accurate prediction of the costs of utilities, and that US style rate of return regulation provided few incentives for efficiency. His core idea was that regulation should mimic competitive markets – viewed through Austrian eyes.

Companies would be price takers. What mattered was to fix these prices in an *ex ante* fashion for a period. It was hopeless to try to get the prices “right”. Rather the regulated companies, faced with fixed prices, would profit maximise by minimising costs. They would therefore reveal their true costs, and at the next periodic review, the regulator would then rebase the price cap accordingly. Since the economy roughly was assumed to run at about RPI-2, the rebased cap would be the existing costs minus 2% per annum. There might be a slightly tighter “catch up” since the nationalised industries were assumed to be inefficient.

It was immediately apparent that utilities could maximise profits not only by being ever more efficient, but by cutting services (especially the social requirements) and by playing financial games with asset lives, depreciation and capital structures. As a result from the outset the regulators had to be minded to the functions and outputs the companies were supposed to provide in exchange for the revenues. Price caps and functions could not be separated. In defining these functions a host of ancillary regulatory architecture has been added – to which we return below, and which has significant implications for the BBC. Prices cannot be set without the detail of the contract being filled in.

These are set in licences in almost all cases (BAA was an early exception, being regulated by statute), and changes to the licences became the principle mechanism for evolving the contracts over time. Indeed, the price cap itself is typically embedded in a clause in the licence, and price re-setting is a process of formally changing the licence.

The Littlechild regime raised the central question of credibility: how could investors be sure that the regulator would not interfere within the period? How could they be sure he or she would keep their hands off both the prices and the functions?

To answer these questions, independent regulators were established by statute, and charged with a set of primary legal duties. An independent regulator is given the statutory duty to ensure that the functions can be financed, through the setting of prices. Most were also given a primary duty to promote competition. To these was amended a series of secondary duties, which gradually expanded over time, notably to include social and environmental obligations.

There have been three major ways in which the deceptively simple Littlechild rule has been expanded. These are: putting greater content into the construction of the price cap at periodic reviews and in particular in the building blocks; interventions within periods; and changes to the function within and between periods. The application of the rule has been further complicated by the intersection of monopoly regulation and competitive entry. Finally, the Universal Service Obligation (USO) has evolved, with all regulators paying particular attention to the poorer and more vulnerable customers.

Gradually more and more detail has been packed in, differing from sector to sector. Almost any approach to price setting can be described as RPI-X. Regulators “made it up as they went along” and gradually a host of ancillary mechanisms have been added to the licences and periodic reviews.

The 2000 Utilities Act began a process of more significant reform – notably making the interests of consumers the overriding primary duty on the regulators, who were also now subject to “guidance” by the government.

Over time, the regulators used their discretion to diverge significantly in the way the principles are applied, and the competition authorities provided little by way of consistency. Thus successive water regulators took a very interventionist

approach, “leaning” on companies to reduce prices within periods, and interfering with the company boards directly; the energy regulators took a more hands off approach, but nevertheless changed the formula to a new framework, indexed the cost of debt and lengthened the periods to eight years; whilst communications adjusted to take account of greater competition and gradually reduced the role of price cap regulation (though all of this might be about to change for broadband and Openreach). All regulators have been obliged to pass on social and environmental costs, variously through levies and burdens on dominant companies, thereby blurring the distinction between taxpayers and customers.

3. The building blocks

The building blocks for a periodic review and hence for setting and resetting prices comprise four main elements: the cost of capital; the asset base; the operating costs; and capital expenditure.

Whilst in the Littlechild model, these were thought to be beyond the capacity of regulators to accurately predict, it turned out that it was necessary to form a view on each of them, and then combine them together in a package. Littlechild himself as the first electricity regulator showed little interest in the financial elements, and it was left to Byatt at OFWAT and Carsberg at OFTEL to a start to fill in the details. Between them, they established the principle of a regulatory asset base to represent investors stake in the business, and a cost of capital derived from the Capital Asset Pricing Model. They also gradually turned to asset lives, depreciation and the crucial issue of whether assets should be set on an “in perpetuity” basis using CCA accounting, or could be depreciated from the asset base under historic cost accounting.

It turned out that regulators needed the same information base as rate of return regulation – that, in effect, RPI-X was a form of rate of return regulation, but with the crucial lag, making it *ex ante*, not *ex post*. What had looked like a regulatory

revolution turned out to be an evolution. Indeed, US rate of return regulation had in fact incorporated efficiency incentives and lags, so the differences were even less than many believed.

On operating efficiency, comparative efficiency exercises have been conducted in a wide range of cases, and at one stage a form of yardstick regulation was considered. These comparative techniques allowed regulators to rank companies, and discriminate at price setting on the basis of their relative rankings on comparative efficiency grounds. However, early optimism about such exercises soon got bogged down in the intricate and peculiar details of each case.

Worse still, utilities had a strong incentive in the early days to capitalise operating costs – and they played games here. A separate approach to CAPEX regulation required regulators to define the boundaries between OPEX and CAPEX – and in the last periodic review for water, the regulator moved to a TOTEX approach, combining the two together.

These often immensely complex details matter: they can have significant impacts on the outcomes of periodic reviews. Because so much is at stake, both sides engage in major exercises to persuade each other, and in some cases this then results in further rounds at the CMA.

4. The Functions, their determination and monitoring

As noted above, one way of making greater returns in a period is to under deliver on outputs and obligations. Thus, as in any contract, the price dimension cannot be viewed in isolation from the functions and obligations – what customers can expect to get for their money.

In all network utilities, these functions cannot be pinned down precisely, and often the regulators are forced to use somewhat arbitrary targets and

benchmarks to assess whether the utility has delivered on its side of the bargain – bearing in mind that it has incentives to underperform.

Worse still from a regulator's perspective, many of the functions are longer term than the period for the price cap, and hence the regulator needs to monitor and assess progress in allocating costs between periods.

The functions themselves are not only open to interpretation – and reinterpretation – but are subject to change. Indeed much of the process of regulation since the 1980s and 1990s has been about changing the functions either explicitly in the licences or implicitly through “understandings” and “agreements”. There have been endless “back-room” deals.

Changing the functions changes the costs, and regulators have refined error-adjustment mechanisms, logging up of costs, and other pass through mechanisms. Again these details matter greatly.

All regulators have had to develop monitoring regime to see if functions are being fulfilled, and they have been encouraged to do so by consumer groups, the media and especially the Select Committees.

5. Competition issues

All utilities raise substantive competition issues, and the form and content of price caps have a direct impact on competition – and competition affects the utilities too. Competition regulation in the context of the utilities is altogether more difficult to design than that for regulating monopolies. This will also be true for the BBC.

In many cases, the only credible solution has been to physically separate and ring fence the core utilities, and to determine access terms on an arms length and equitable basis. This has been done in the cases of electricity, gas and railways,

and the internal unbundling of BT and Openreach is currently a highly controversial matter of review, with full separation one possible outcome.

Unbundling, functional separation and competition issues matter greatly in the case of the BBC. The point here is that they cannot be neatly separated out from a utility licence, the functions and the finances. A utility style regulatory regime for the BBC would almost certainly end up with the regulator being involved in the structure of the BBC itself. That is the lesson from every single utility regulation case – from splitting water wholesale from water retail and applying different price caps, to direct unbundling for electricity and gas networks, the break up of BAA and the airports, the separation and now likely break up of Network Rail, and the unbundling of Openreach.

In the BBC's case there are several models that might come into play. One approach would be to treat the BBC as essentially a set of platforms, through which the competitive market provides programmes. At the other is the fully integrated model. Ofcom proposed a Public Service Publisher model in its strategic review some years ago. The point here is that the transfer of the regulation of the BBC to Ofcom is bound to bring Ofcom into this structural debate, because of the interaction between the licence functions and the competitive challenges.

6. Periods, periodic reviews and subsequent price setting

Periodic reviews have become the big centrepieces of utility regulation. Because the regulatory approach is *ex ante*, determining the fixed price contract is a key determinant of profits.

Most utilities were initially given 5-year periods, with scope for re-opening on the basis of clear licence conditions. (The exceptions were BT – seven years – and water companies – ten years). Interim determinations were made an explicit

part of the water licences – and in all cases the possibility of licence amendment was a core component of the contract.

As time has passed there have been two main developments – less formal and wider interventions within periods; and the lengthening of the periods. Most regulators, confronted with falling nominal interest rates since 1990, has looked to various strategies for persuading companies not to take their full entitlement. Arm-twisting, implicit threats and political pressures have been applied. In the recent water case, the regulator threatened one company with a major reopening of the formula if it pursued a narrow interim determination, at one stage giving an ultimatum of just 24 hours to withdraw its interim determination application.

The utilities have responded to these implicit challenges in a variety of ways. There has for many been an “understanding” that outperformance can only go so far, and in a number of cases extra social spending, advancing CAPEX and “voluntary” price amelioration have been the ways in which returns have been kept within “acceptable” boundaries. This is a form of self-imposed additional regulatory constraints.

This process of constant “renegotiation” happens in large measure behind the scenes, and regulated utilities have develop substantial regulatory teams and lobbying capabilities to manage this process of engagement with the regulators, MPs, ministers and wider interest groups – very much as the BBC already does.

There have been two main formal ways in which the process of continual engagement has been addressed. These are: the indexing of the cost of debt; and the lengthening of the periods, with rolling CAPEX adjustments and interim reviews. In both cases Ofgem has led the way.

Indexing the cost of debt takes the heat out of the financial impacts of interest rate movements. Since 1990 these rates have been falling, and in every forward looking period since then, the companies have had a windfall of the difference

between the cost of debt the regulator allowed, and the lower actual rate. Some of these gains have been soaked up through *ex post* interventions – effectively increasing the costs on the companies for social, environmental and other additional CAPEX and OPEX – but the scale of the remaining gains has led some regulators to formally index the contract.

Lengthening the period reduces the frequency of the major set pieces of periodic reviews, but it does mean that the contract needs to evolve as circumstances change between periods. Ofgem has adopted two mechanisms: a rolling CAPEX regulatory approach; and a shorter-term option of a limited interim review.

With a indexed cost of debt, a rolling CAPEX and interim review options, Ofgem has evolved towards a regime in which in theory it is far from clear why there needs to be further periodic reviews at all – and the result is a further convergence towards the more US style. Regulation, having started out radially different, may have ended up re-converging – especially as US regulation has been evolving to introduce further incentives too.

7. Applications to the BBC

The BBC's current regulation is by Royal Charter, and at intervals there is resetting of the licence fee, as the outcome of a process of “negotiation”. With the creation of the BBC Trust this process has become more crowded: between the government of the day, and the BBC Trustees, Board, Director General and other interested parties. The role of the BBC Trust might have been to become a sort of internal regulator, acting on the part of the licence fee payers (the “members” of the Trust, analogous to the National Trust model). This has not however proved to be the case.

It is far from explicit how the prices are determined, and the two sides inevitably engage in a strategic game in public, through lobbyists, through “reports” and

through the media, as well as behind closed doors in the Treasury, DCMS, the Prime Minister's office and Ofcom.

This largely non-transparent process draws in other affected parties, who try to influence the outcome.

The outcome of this sort of negotiation involves threats, persuasion and arm-twisting. Typically the Treasury attempts to off-load obligations on the BBC, in the name of social, competition and foreign policy objectives. Top-slicing, and absorbing extra costs have all been part of this process. The BBC for its part attempts to persuade the government that it is efficient, and that customers are very willing to pay its proposed licence fee, and that too little revenue will bring about the demise of the key features of the BBC, from closing channels to reducing drama and the quality of the news. Like a chess game, each side makes moves. In this case, they are extremely predictable – on both sides.

Before this process is replaced by something else, it is worth bearing in mind that it has worked reasonably well to date. The BBC has survived and indeed flourished for nearly a century on this model, which has adjusted and adapted over time. Indeed the scope of the BBC has grown considerably, and the website and the iPlayer have all been added. It has been achieved too without much access to borrowing and capital markets. It is still largely a cash-based model.

Applying the utility model to the BBC would significantly change the nature of the price determination process. An independent regulator would conduct the periodic reviews, and the role of the Treasury and the government more generally would be more formal and more arms-length. This has major attractions from the public interest and licence fee perspective.

It would however be practically – and probably legally – impossible in a utility regime for a regulator, whether Ofcom or a new BBC regulator, to fix the licence fee without being intimately involved in specifying the licence functions, and the regulator would be involved in the monitoring, adaptation and enforcement of

the licence. A new regulator would almost certainly be more intrusive than Ofcom, unless explicitly neutered in legislation.

The key point here is that the utility model cannot be disaggregated – it cannot be “pick-and-mix”. The periodic review would be through and cover the definition of the functions, the CAPEX and OPEX (or TOTEX) required, the ability of the customers to pay, and the delivery of the outputs. In addition, the regulator would be inevitably drawn into issues in relation to competition, the internal structure of the BBC and unbundling and cost allocation, the entry and use of system costs for the platforms of the channels, and much else besides.

Utility regulation is a package. The BBC “regulatory contract”, its revision and all the monitoring and enforcement would be entailed.

Applying the utility model to the licence fee, the building blocks would be as follows:

- (i) The government would determine the broad outputs, taking account of EU legislation and competition law. These would include the USO obligations that the BBC would be required to deliver (analogous to the USO for the Royal Mail which is enshrined in primary legislation), and matters in relation to general broadcasting law, such as “taste and decency”, the watershed and all the current components that the BBC is charged to deliver. The general framework within the Charter would not therefore change: but it would need to be explicit, and probably more explicit than at present, especially if the BBC wanted to borrow significantly in the capital markets.
- (ii) The Regulator would then determine the required revenues to deliver these functions efficiently, and do this by working through the main building blocks – the cost of capital, the asset base (and the debt), OPEX and CAPEX.
- (iii) The efficient costs for both OPEX and CAPEX would be determined through competitive tender, through benchmarking and comparative

efficiency exercises – and much more rigorously than for example the informal approach represented for example through the recent PWC exercises for, and surrounding publicity from, the BBC.

- (iv) The cost of capital would be determined from market rates – to the extent that the BBC uses debt to finance parts of its capital programme. This might be indexed.
- (v) The asset base would depend upon whether the BBC continues financing on a “pay-as-you-go” for capital expenditure or on a “pay-when-delivered” basis – in other words whether there are any assets, which need a return in addition to current revenues. (This is not to be confused with subscription payment models).
- (vi) The period could be five, eight or ten years – or indeed any variant. The BBC would face more continuous intrusion the longer the period.
- (vii) The regulator would have other statutory duties, and it is hard to envisage a utility model in which these did not include a general duty to have regard to the interests of customers, in the absence of a fully competitive market. It would also have duties in respect of competition.
- (viii) The regulator would need to monitor and enforce the contract, and those whose interests are affected by the behaviours of the BBC would automatically turn to the regulator to direct their lobbying and complaints. The regulator would therefore have to have the necessary resources, staff and monitoring and information about the BBC to respond.

These considerations point to one overarching conclusion in respect of the application of the utility model to the BBC – whether through Ofcom or a new regulatory body for the BBC. It is not just about setting the licence fee at arms-length from the Treasury. It would be a quite radical departure from the existing approach. A utility style regulatory approach is all about the regulatory contract – the price is just one dimension, amongst many.

As has been stressed throughout this brief overview paper, the detail of the regulatory contract matters, and it varies considerably from case to case. Although the precise form of the contract that would be applied to the BBC is way beyond the scope of this paper, it is very important that the details are fully considered before coming to a view about whether it would be a better approach than the current one.

It may turn out that the BBC is better able to “capture” the process of determining the Royal Charter than it would be in trying to capture a regulator like Ofcom. That in turn may open up a debate about the differences and nuances in respect of the BBC’s interests, and the wider public interest.