Draft Determination Supporting Document NGET - Finance Annex Earwaker report

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INFORMATION ASYMMETRY AND THE CALIBRATION OF PRICE CONTROLS

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FOREWORD

A 2018 expert report for the UKRN recommended that the UK's regulators should consider setting allowed returns for regulated companies below the cost of capital. The thinking was that regulators suffer from an asymmetry of information and tend unwittingly to set price controls that are too generous to firms and their investors. The authors' proposition was that allowing explicitly for some of investors' required returns to come via the out-performance of expenditure allowances and output incentives, with an offsetting deduction from the allowed return on the regulatory asset base, would help to align expected returns in the regulated sectors with the underlying cost of finance.

It is fair to say that the idea has received a mixed reception. One regulator and several outside commentators have said that they agree with the experts' analysis and recommendation. Others have been more sceptical. At the time of writing, more than two years on from the publication of the 2018 report, there is still a fierce debate between supporters and opponents of the idea, particularly in the context of Ofgem's RIIO-2 reviews of energy network price controls.

We thought that it might be helpful to obtain a wider set of perspectives on this matter. We felt, in particular, that it would be informative to discover what experienced regulatory practitioners make of information asymmetry, the challenges that there are in setting fair price controls and the specific suggestion put forward in the UKRN report. We therefore set out to interview a representative sample of former regulators over a three-week period in August 2020.

The results of that work are summarised in this report.

1. INTRODUCTION

This research report contains a survey of opinion on one of the current topics of debate in UK economic regulation: the question of whether regulators should deliberately set allowed price control returns below the best available estimate of the cost of capital.

It records, in particular, the results of a series of one-to-one interviews that we conducted on this topic in August 2020 with 32 ex-regulators from across the UK's regulated sectors.

The paper is structured into five main parts as follows:

- section 2 sets out the proposed rationale for changing the way in which regulators approach the calculation of allowed revenues;
- section 3 explains how we structured our interview work;
- section 4 summarises the perspectives that we heard during our conversations with our regulatory experts; and
- section 5 assesses the feedback; and
- section 6 offers some conclusions.

2. CONTEXT

We begin by defining the proposition that we set out to research.

2.1 The 2018 UKRN report

The motivation for this piece of work has its origins in the February 2018 UKRN report *Estimation of the cost of capital for implementation of price controls by UK regulators* written by Professor Stephen Wright, Phil Burns, Professor Robin Mason and Derry Pickford.[1] The four authors pointed out in their paper that UK regulators have tended to use the terms "cost of capital", "allowed return" and "expected return" interchangeably, and suggested that in future much greater rigour should be shown in relation to use of terminology. They observed that:

- "cost of capital" or the "weighted average cost of capital (WACC)" is the annual return that lenders and equity investors require in exchange for making finance available to a regulated firm;
- the "allowed return" is the rate of return that a regulator applies to a company's regulatory asset base (RAB) in order to calculate the £m profit entitlement that it factors into the company's revenue cap; and
- "expected return" is the return that investors expect to earn on their investment after receiving a regulator's price control determination and assessing likely scenarios for expenditure and performance.

(NB: for ease of presentation, we adopt the above definitions throughout the discussion that follows.)

After establishing terminology, three of the authors – Wright, Mason and Pickford – wrote about the approach that a regulator should take to the calibration of the allowed return. They began by identifying two main reasons why the cost of capital, allowed return and expected return might logically have different values:

- the first reason stems from the inevitable imprecision that there will be in a regulator's estimate of a regulated firm's (unobservable) cost of capital. In the presence of uncertainty, regulatory practice across a range of jurisdictions has entailed 'aiming up' in the selection of WACC parameters and/or the selection of a point estimate from within an estimated WACC range on the grounds that the adverse consequences of setting an allowed return that is too low (e.g. possible under-investment or, in extremis, financial distress) are more severe than the adverse consequences of setting an allowed return that is too high (e.g. customers pay higher prices or there is over-investment); and

- the second reason relates to the quality of information that a regulator has, vis-à-vis the regulated firm's management, when they are setting price caps. Here, Wright, Mason and Pickford argued that the "informational advantage firms possess over regulators will almost certainly always result in a positive 'informational wedge'". That is to say that regulators will tend inadvertently to set price caps too high and set the average regulated

[1] Available at: https://www.ukrn.org.uk/wp-content/uploads/2018/11/2018-CoE-Study.pdf

firm up in such a way that it can expect to out-perform and earn unjustifiably high returns for its shareholders.

It follows, using the above framework, that the relationship between the cost of capital, allowed return and expected return at the end of a typical UK price review will be:

AR = WACC + WR

and

ER = AR + WI

= WACC + WR + WI

where:

AR is the allowed return

WACC is the regulator's best estimate of the cost of capital[2]

WR is the percentage amount by which the regulator chooses to aim up from its best estimate of the WACC (the "regulatory wedge")

ER is the expected return

WI is expected price control out-performance, expressed as a percentage rate of return (the "informational wedge")

Wright, Mason and Pickford next argued that the values of WR and WI, and hence the values of AR and ER, have hitherto emerged in a very haphazard way:

- in the case of WR, the UKRN report surveyed where in cost of capital ranges regulators have positioned their final point estimates of the WACC and identified that there has been considerable variation across sectors and over time, owing to the lack of clear rules or convention, or even an accepted methodological framework, for regulators to refer to when they make decisions on the allowed return; and

- in the case of WI, the authors' view was that regulators have unwittingly over-rewarded companies for making cost savings. Wright, Mason and Pickford said that they can accept that incentive regulation and out-performance necessarily go hand-in-hand, but find it implausible that the rewards for efficient behaviours should be anywhere near as high as has been the case recently in some regulated sectors.

This analysis then underpinned two key recommendations:

Recommendation MPW1: Regulators should set explicit numerical target values for both WR and WI, such that the sum of the two wedges should be equal to the desired value of the "aiming up" wedge [i.e. WI + WR]. These values would be periodically

[2] Wright, Mason and Pickford suggest several possible ways of defining the WACC. The points they make are not obviously relevant to the discussion in this paper, therefore references to WACC from hereon should be read as references to companies forecast interest costs plus the cost of shareholder equity.

revisited at low frequency (probably in light of information emerging over the course of a full price control period), but they would be constant at higher frequency.

Regulators would clearly need to take a view on the values of the two individual wedges. This is clearly novel, but we would argue that it is not an insuperable problem. Clearly also, if, as we would prefer regulators take an explicitly top-down approach by first setting their target value of the sum of the two, the "aiming-up" wedge, then they only need to set an explicit target for either WR or WI, but not both.

and

Recommendation MPW2: Regulators should assemble a systematic and comprehensive database of historic outperformance, to enable them to make their best-informed forecast of the "informational wedge", WI.

The authors did not offer a quantification of either WI on its own or WR and WI in combination (i.e. the "aiming up" wedge). However, the report stated that the authors' initial instincts were that WI ought logically to be zero, and, even after having been persuaded that this might not be realistic or desirable, they considered that the two elements should individually and collectively be fairly small. Importantly for the discussion that follows, the report went on to conclude that WR might need to be negative – i.e. that a regulator might aim down from the estimated WACC when it sets the allowed return – in circumstances where WI looks unavoidably to be particularly high.

2.2 Subsequent reactions

The recommendations straight away provoked a good deal of debate and discussion, including in a dissenting chapter of the UKRN report itself written by one of the four authors, Phil Burns. Some commentators have subsequently agreed with both the thrust of the above arguments and the specific recommendations. Others have been less sure, particularly as regards the need for change in the way in which regulators set allowed returns.

Arguably the most noteworthy new perspective on the matter came in a National Infrastructure Commission (NIC) report[3] on economic regulation published in October 2019. The NIC said that it agreed with the argument that regulators will tend to set price controls that are biased in favour of companies and recommended that regulators consciously ought to 'aim off' in their calibration of expenditures allowances and allowed returns:

… in future price controls, regulators should seek to take direct account of the fact that their best estimate of costs, based on the information available to them, is likely to be biased in the interests of companies. In setting a fair, mid-range cost of capital and total expenditure allowances, regulators may need to 'aim off' in order to take the known information bias into account. This will enable the regulators to allow investors to make a fair return compared to alternative investments, whilst protecting consumer bills and rewarding genuine efficiency.

The UK's regulators have subsequently had to consider if and how they will apply the above recommendations in their price control work. At the time of writing in August 2020, one

[3] NIC (2019), Strategic investment and public confidence.

regulator – Ofgem – has proposed that it should make an explicit deduction from the estimated cost of capital in its new RIIO-2 price controls. Its first RIIO-2 reviews are currently at draft determination stage, ahead of a final decision due later this year.[4] The other regulators that the UKRN report was addressed to – the CAA, Ofcom and Ofwat – have so far chosen not to make explicit changes to the methodologies that they use when making price control determinations. Similarly, the Competition & Markets Authority (CMA) opted not to include a deduction from the cost of capital in a recent price control determination in the aviation sector.

[4] Ofgem's thinking on the setting of allowed returns is set out in Ofgem (2020), RIIO-2 draft determinations – finance annex.

3. METHODOLOGY

We thought that it would be valuable to understand the views that experienced regulators have about the ideas that we laid out in section 2, based on the learning that they have taken away from past regulatory reviews. We set out below the way in which we approached this exercise.

3.1 Research approach

We first drew up a long list of the individuals that we could recall had either been a decision-maker during a UK price review or who had worked at a senior level within a UK regulator's office in support of the final decision-makers.

We then struck out the names of anyone that (a) currently works for a regulator or as a civil servant or (b) currently works for an energy network company. In both of these cases, we felt that it might currently not be possible for us to access an individual's personal opinions, as distinct and separate from the views of their present employer.

We next selected 40 names from our list that we would go on to approach to participate in the study. We tried at this point to make sure that we had a good mix of individuals, including as regards the regulators they worked for, the sectors that they regulated, and recency/vintage of experience.

We wrote a short introductory email to each of the 40 individuals on our final list to tell them that we were conducting a research project on one of the new ideas that has emerged in economic regulation in recent years. We asked if the recipient would be willing to participate in a 30-minute telephone interview in which we would ask them questions about their experiences as a regulator.

32 of the 40 individuals responded positively. The 32 people in our sample covered the vast majority of the UK's economic regulators past and present (i.e. Oftel, Ofcom, the CAA, Offer, Ofgas, Ofgem, Ofwat, ORR, Postcomm, the NI Utility Regulator, the Competition Commission (CC) and the CMA). 22 of the 32 had previously served as regulators, on regulators' boards or as CC/CMA members. The remaining 10 had worked at a senior level within a regulator during a price review. The names of the individuals are listed with their express permission in annex A.

We scheduled telephone interviews during a three-week period in August 2020.

We structured each call around a common set of eight questions (detailed overleaf). Each of these questions came with possible tick-box answers so that we could construct an objective record of the interviewees' answers to our main queries. However, we were also keen to get as much colour as possible from the individuals that we spoke to and, to this end, we asked each interviewee to think out loud for us as they read the questions and formulated their answers.

After the completion of each interview, we emailed the interviewee the answers that we had heard them give to our eight questions and asked them to confirm that our record was correct. We also invited them to make any additional comments.

3.2 Questions

The eight questions, and accompanying tick-box answers, are listed below.

1) Should the principal purpose of setting price controls be to incentivise companies to reveal efficient levels of expenditure or to anticipate efficient levels of expenditure?

Reveal

Reveal more than anticipate

Both reveal and anticipate equally

Anticipate more than reveal

Anticipate

2) "There is usually an asymmetry of information between regulators and regulated companies"

Strongly agree

Agree

Neither agree nor disagree

Disagree

Strongly disagree

3) "A regulator conducting a price review should strive to set up a 'fair bet', in which the likelihood of a regulated firm earning returns above or below the cost of capital are evenly balanced"

Strongly agree

Agree

Neither agree nor disagree

Disagree

Strongly disagree

4) "A regulator conducting a price review using available approaches to cost assessment and output setting (via business plan challenge, models, etc.) will usually be unable to set expenditure allowances and output targets that are sufficiently stringent to set up a 'fair bet' (referred to in 3) above)."

Strongly agree

Agree

Neither agree nor disagree

Disagree

Strongly disagree

5) "After setting a firm's expenditure allowances and output targets a regulator should make a final lump-sum deduction from allowed revenues to capture otherwise overlooked scope for the regulated firm to make cost savings and/or output improvements"

Strongly agree

Agree

Neither agree nor disagree

Disagree

Strongly disagree

6) "The deduction referred to in 5) above, should be the equivalent of 5% of the regulator's estimated annual expenditure allowances"

Strongly agree

Agree

Neither agree nor disagree

Disagree

Strongly disagree

7) The deduction referred to in 6) above should be applied via:

Setting the allowed return on the RAB below the cost of capital

Adjustments to calculated totex allowances and/or output targets

Either or both of the above

Neither of the above

8) "If a regulated company goes on to out-perform its price control and make returns above the cost of capital, this indicates that the regulator failed to set the price control at an appropriate level"

Strongly agree

Agree

Neither agree nor disagree

Disagree

Strongly disagree

4. RESULTS /FEEDBACK

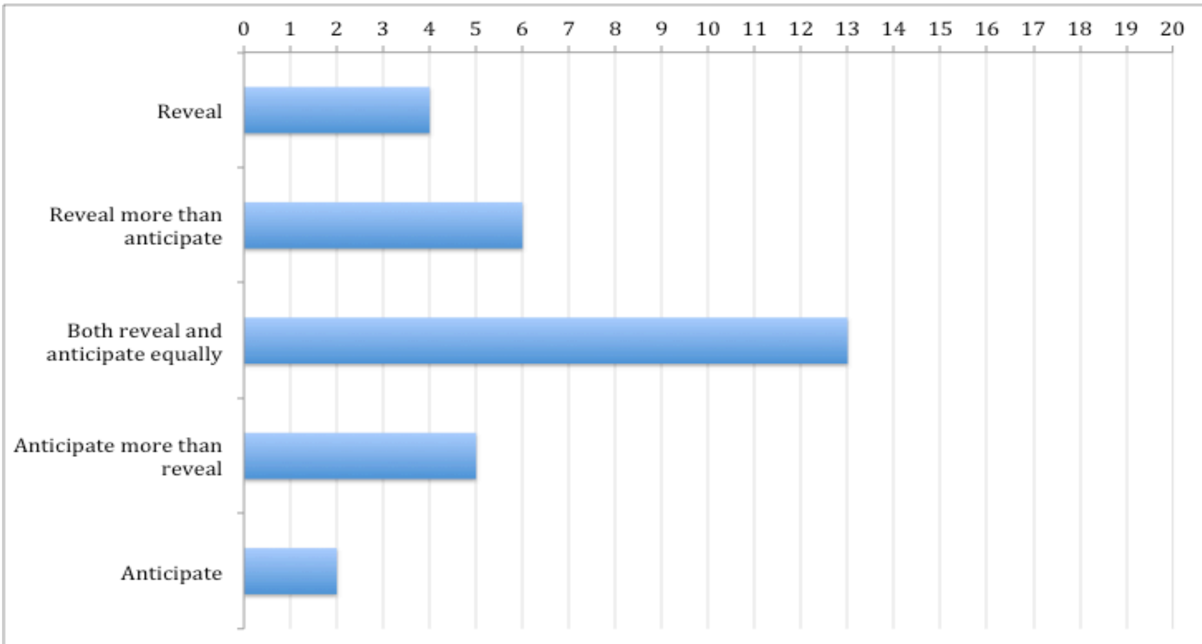
The key points that we took away from our interviews are set out under the eight question headings below.

In each case, we present a chart summarising the answers that the ex-regulators gave to our set-piece questions. We then go on to describe some of the commentary that we heard as interviewees responded to the question prompts.

4.1 Question 1

Should the principal purpose of setting price controls be to incentivise companies to reveal efficient levels of expenditure or to anticipate efficient levels of expenditure?

Chart 1



Number of responses: 30; two interviewees did not respond.

The first of our questions elicited a balanced response. Just under half of all respondents answered "both reveal and anticipate equally". Other responses were split roughly equally between those who considered the principal purpose of a price control should be on revealing efficiency and those who thought it should be on anticipating it. Two respondents considered that neither objective should be regarded as the principal purpose; instead, regulatory decisions should be aimed at furthering statutory objectives.

Those that prioritised revealing efficiency reasoned that:

- price control regulation is a 'repeated game' designed to allow investors to enjoy (at least a proportion of) genuine efficiency improvements until the next reset, after which customers can enjoy those benefits in perpetuity;
- to attempt to anticipate future levels of efficiency in full is to embark on a "fool's errand" as there is simply too much uncertainty to know what efficient costs will be; and

- there is little benefit from regulators striving to anticipate efficiency, as – for most utilities – the opportunity to make major improvements in network operation are modest.

On the other hand, those who considered that price control should principally anticipate efficiency argued that:

- price controls are, by definition, forward-looking, and therefore judgements about cost allowances should be too;
- whilst, in theory, efficiency should be revealed as incentives play out, in practice the process of a price review throws up lots of information, which necessarily includes information about future efficiency opportunities, and therefore needs to be taken into account; and
- consumer and public opinion tend to demand that price controls should require immediate efficient delivery, not simply incentives to become efficient in future.

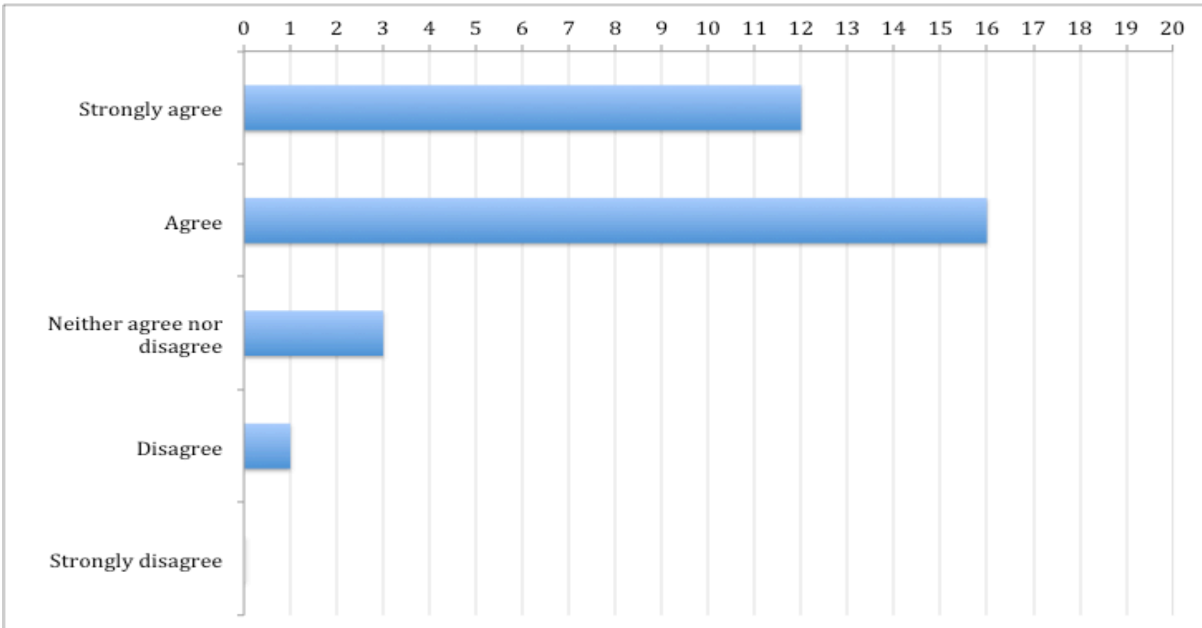
A couple of respondents made the point that context matters. Specifically, if the company or companies being regulated are close to the efficiency frontier (or have been subject to price controls for many years) then there is less need to anticipate efficiency. Another commented that recent history was a factor and that – specifically in respect of forthcoming price control determinations – it might be politically untenable for there to be a repeat of the returns enjoyed by some companies under certain recent price controls.

By contrast, another respondent agreed that efficiency needed to be anticipated, but that “it is important to leave something on the table for the company”.

4.2 Question 2

“There is usually an asymmetry of information between regulators and regulated companies”

Chart 2



Number of responses: 32.

A large majority of respondents considered that there is usually an asymmetry of information between regulators and regulated companies, with 28 of 32 either agreeing or strongly agreeing with the statement.

Most respondents qualified their response in some way. Some interviewees thought that information asymmetries affected not just the regulator-company relationship but also the flow of information from operatives/managers in companies through to company boards. While there was an acceptance that regulation teams have an incentive to put "the best gloss" on numbers and information, the view tended to be that the information advantage companies have lies in the better innate understanding that the people that work for an organisation have of what they are ultimately capable of achieving rather than a deliberate withholding of knowledge.

Several commented that information asymmetries can operate in both directions. Whilst companies are likely to know more about running their business than the regulator, a regulator of multiple companies can use comparative data to develop a better picture of the relative performance of companies across a sector. Others went further commenting that during a price control review regulatory staff build up an understanding that is often better than the directors of the companies they are regulating, and – when it comes to complex incentive mechanisms – regulatory staff can find they understand them better than the boards of the companies they regulate. After all, as a regulator, your only job is to study these things, whereas boards need to concentrate on managing their businesses.

Of those who commented on it, some observed that the scale and nature of information asymmetries had changed over time. Regulators had introduced mechanisms to deter "intentional game playing'', which we were told had been pretty effective. Greater challenge and engagement from groups representing customers had also helped to address the problem. In more stable sectors, such as the water sector, there was a view that regulatory bodies had built up their understanding over successive price reviews.

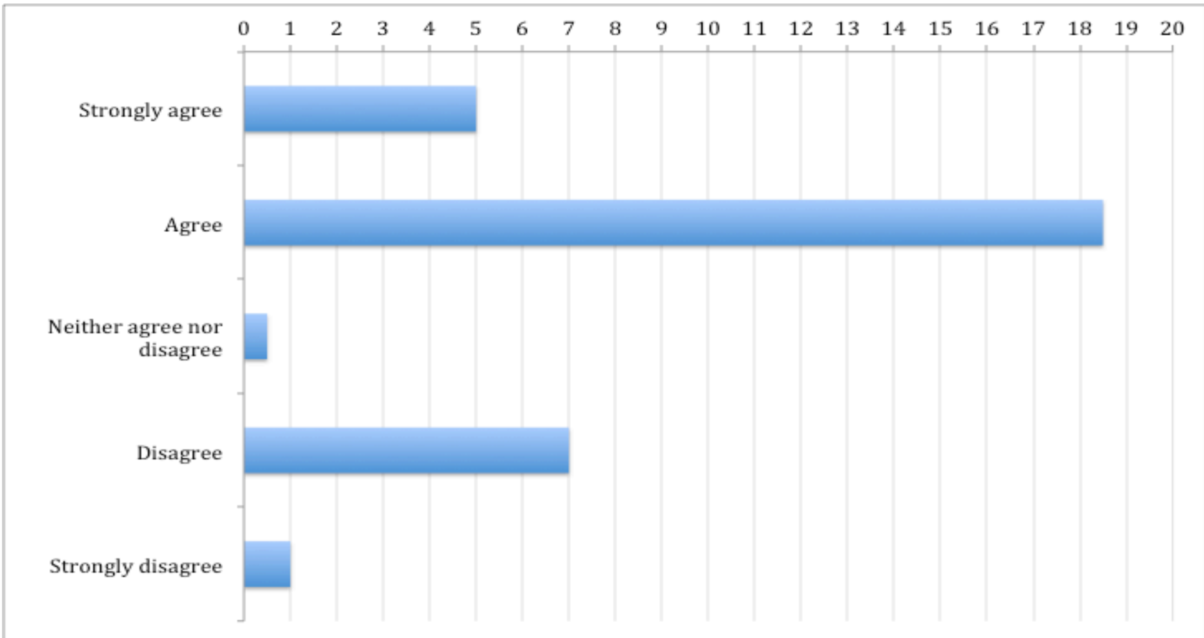
However, despite these advances, there was a view that regulatory bodies still struggled to maintain clear visibility of the options that are available to companies. Several respondents thought that the residual problem ran along the following lines: a company can always manage to a budget; so, however tight cost allowances are set, companies can usually align expenditure to match or even beat allowances (e.g. by cutting non-essential maintenance costs, or postponing non-urgent capital expenditure).

One former regulator commented that regulators (and companies) face "radical uncertainty", i.e. there is inevitably going to be a difference between the world as it understood at the time decisions are made, and as it unfolds. The message was that regulators need to recognise that their decisions on price controls should be arrived at with an appreciation of the very different paths the world can take.

4.3 Question 3

"A regulator conducting a price review should strive to set up a 'fair bet', in which the likelihood of a regulated firm earning returns above or below the cost of capital are evenly balanced"

Chart 3



Number of responses: 32.

Almost three-quarters of respondents either agreed or strongly agreed with the statement that in setting a price control, regulators should strive to set up a 'fair bet'.

Of those who agreed or strongly agreed, a good number commented that they had not necessarily used the language of a 'fair bet' in their previous work (although some had), but that they recognised and had adopted the principle that regulators should chart a challenging, but achievable course for the regulated company in which the likelihood of an efficient firm out-performing is no greater than the likelihood that the firm will under-perform. Several interviewees told us that where price controls are set for multi-company sectors, such as water, ideally the regulator should strive for a spread of outcomes in which some companies outperform, some perform about in line with the determination, and others under-perform (although how this should be measured was not discussed).

Those disagreeing with the statement did so for different reasons. Some considered that regulators should be a little tougher than implied by a 'fair bet'. This was necessary to address the asymmetry of information (as discussed above), asymmetric rights of appeal (whereby in some sectors, e.g. water, consumer groups cannot appeal regulatory determinations) and to take into account that companies' management teams – if they are any good – will perpetually review and revisit problems and find ways to outperform (compared to what is considered to be achievable at the time the price control is set).

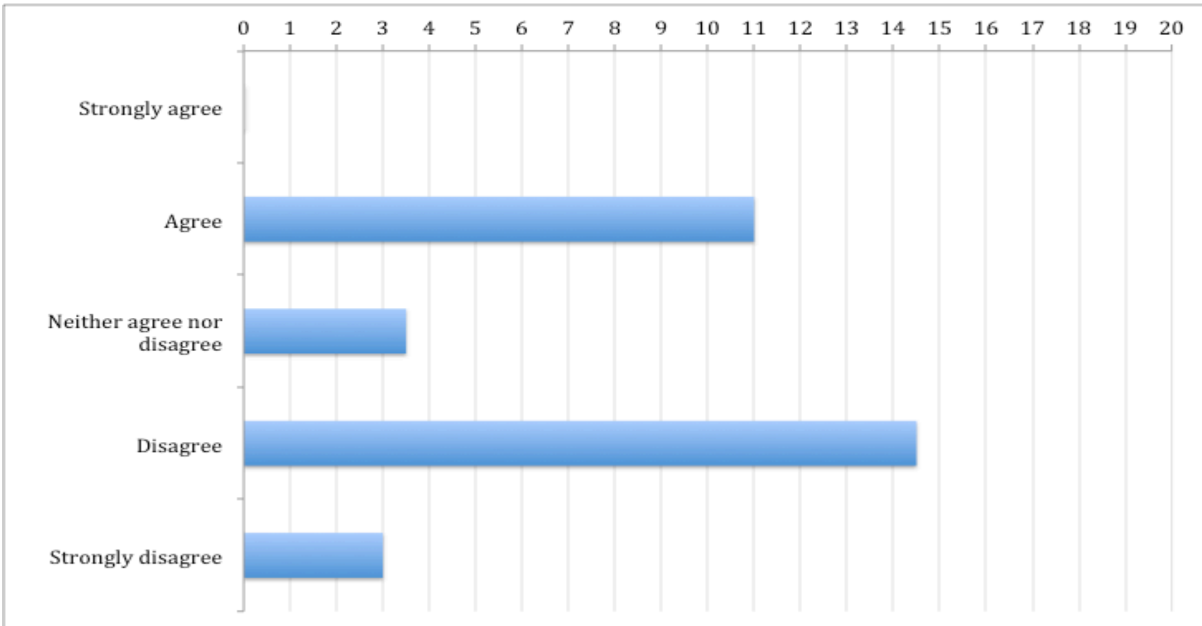
Others, by contrast, considered that regulators ought typically 'aim up', and thus set price controls that were a little more generous than implied by a 'fair bet'. More than one interviewee remarked that the costs to consumers in being too tough (e.g. under-investment) were more serious than the costs of being too generous (i.e. higher bills). One simply commented that aiming up was needed to ensure that companies had the opportunity to earn above the cost of capital. Another considered that there was a danger in regulators over-estimating the degree to which management had an opportunity to invest and operate in companies in ways that would yield significant efficiency savings/improvements in performance. After all, core network monopolies operate in much the same way around the globe, and in some sectors have done so for centuries: do today's regulators really have any good reason to suppose that great untapped efficiency opportunities exist?

A further subset of those disagreeing with the statement did so on the grounds that striving to achieve a 'fair bet' suggested that setting a price control was an exact science. In reality, regulatory judgements are more complex than that. Another added that the intricate blend of incentive mechanisms that tend to be deployed by regulators these days itself made setting up a 'fair bet' hard to achieve in practice.

4.4 Question 4

"A regulator conducting a price review using available approaches to cost assessment and output setting (via business plan challenge, models, etc.) will usually be unable to set expenditure allowances and output targets that are sufficiently stringent to set up a 'fair bet' (referred to in 3) above)."

Chart 4



Number of responses: 32.

Question 4 received a more mixed response.

A majority of the former regulators (i.e. 18 out of 32) considered that the toolkit that regulators can deploy during price reviews is sufficiently robust to enable the regulator to set up a 'fair bet' (if the regulator is minded to do so). The interviewees in this camp took the view that:

- regulators have devised ways of obtaining good quality information about regulated firms' capabilities, including via intra and inter-industry benchmarking, business plan competitions, and the application of differentiated incentive regimes;

- one of the most important weapons that a regulator can wield is the exercise of expert judgment in the presence of incomplete information, especially when drawing conclusions from business plan challenge and cost/output modelling; and/or
- where a regulator is genuinely uncertain about the level of efficient costs or achievable outputs, the regulator can put in place uncertainty mechanisms which limit or even eliminate the scope for the regulated firm to earn profits or make losses from the regulator's uncertainty.

There was a broad acceptance that regulators would never get every decision completely 'right'. However, after reflecting on the combined power of modern-day regulatory analysis, regulatory judgment and uncertainty mechanisms, most felt that there was no reason why price controls would generally turn out to be lop-sided in investors' favour. Instead, the feeling was that any regulator error would be symmetrically distributed over time and across the sectors.

Individuals that agreed that regulators would usually be unable to set up sufficiently stringent cost allowances and output targets also often made some of the same points. However, they tended to be guided by what they perceived to have been a bias in certain past decisions towards regulators unwittingly being too generous to regulated firms rather than too tough. Interestingly, several of the former regulators that agreed with the statement in question 4 told us that they thought they were able to set up a fair bet in the specific reviews that they worked on. They just did not think that other regulators had attained the same high standards in reviews that they had watched from afar.

Two specific perspectives from individuals who agreed with the statement in question 4 are also worth recording.

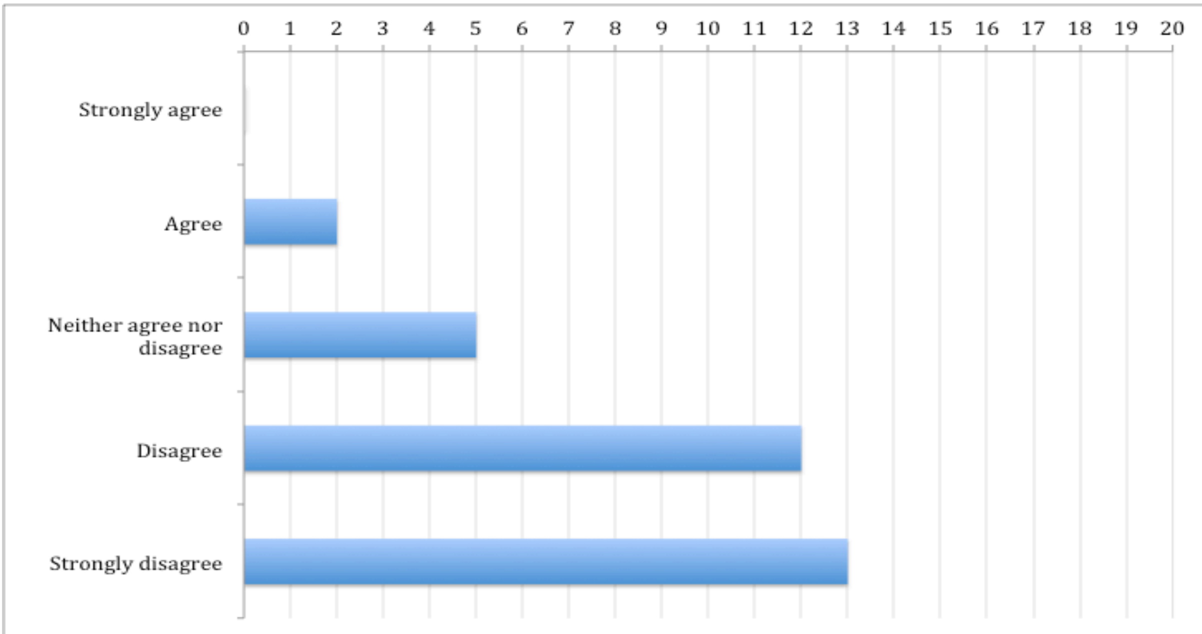
One interview interviewee argued that the appeals process in some industries had an asymmetric impact on price review outcomes. Specifically, the interview thought that in the event that a regulator is too tough, a regulated firm will go to the CMA and ultimately obtain its fair bet from a new decision-maker, whereas in the event that a regulator is too generous, consumer representatives will either be reluctant or unable to secure the same sort of redress in the other direction.

Another interviewee took the view that it would be too difficult in practice for a regulator to set a price control that was sufficiently stringent to secure a 'fair bet'. This respondent likened setting a price control to pricing a new equity issue (or Initial Public Offering), where there is an unstable equilibrium. If you price the issue too cheaply, you are criticised for not getting the best deal for the issuer, but the issuer does get its money. Conversely, if you price it too expensively – even by a very small margin – the issue fails completely. There is a similar risk of asymmetry in setting a price control so, knowing this, sensible regulators when setting price controls err on the generous side. This respondent also went on to say that when regulators push things too far, it can force radical and not always positive change. By way of an example, he commented that the tough PR99 Ofwat price review prompted many water companies to securitise their businesses (which he thought had not necessarily proved to be in customers' long term interests).

4.5 Question 5

"After setting a firm's expenditure allowances and output targets a regulator should make a final lump-sum deduction from allowed revenues to capture otherwise overlooked scope for the regulated firm to make cost savings and/or output improvements"

Chart 5



Number of responses: 32.

There was more of a consensus on question 5, with 25 out of 32 former regulators stating that they were not keen on the idea that a regulator should make a final lump-sum deduction from allowed revenues as a way of securing a 'fair bet'.

All of the individuals who under question 4 had agreed or strongly disagreed with the notion that a regulator would not be able to set cost allowances and output targets at a sufficiently stringent level also then disagreed that lump-sum deductions might be necessary (with a notable increase in the number of 'strongly disagree' answers). This followed directly from the belief that they had in regulators' ability to set appropriate price controls using a standard regulatory toolkit. Some went as far as to argue that a lump-sum deduction would necessarily have to be an alternative to and displace the kind of detailed analysis that regulators otherwise conduct, which they saw as tantamount to an abdication of a regulator's responsibilities and something that would be likely to increase rather than reduce regulatory error.

Among the former regulators that were not inclined to accept that regulators are able to set up a 'fair bet', around half did not see a case for a lump-sum deduction. Several of the individuals in this group told us that they disliked the concept of a final, stand-alone catch-all down-sizing of revenues and considered that it would be much better for a regulator to express any additional challenge that they felt it necessary to give a regulated firm earlier and more directly within one or more of their price control building blocks. They noted that regulators are normally required to calibrate point expenditure allowances and output targets from a range of admissible values, and said that a regulator ought to focus on where in these ranges its assumptions ought to be pitched rather than state, in effect, that such judgments must somehow be wrong.

This sense of possible circularity – i.e. that the need for and sizing of any lump-sum deduction had to be looked at in tandem with the mindset that a regulator had when setting the individual price control line items – was a point that was raised in many of our interviews.

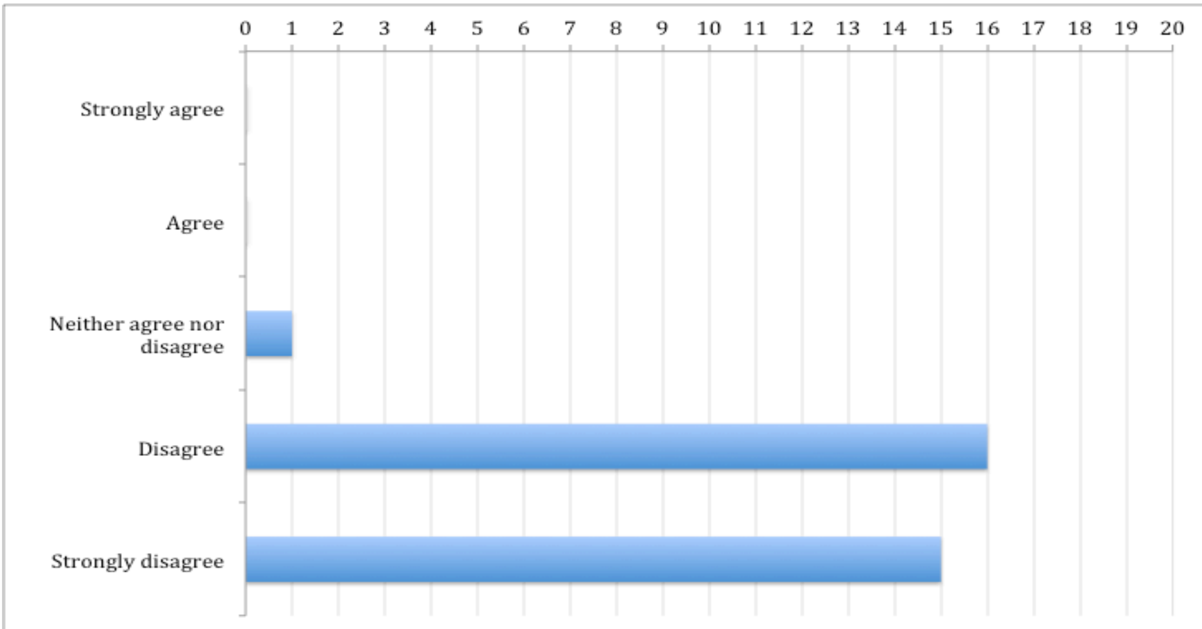
The five individuals that neither agreed nor disagreed with the statement in question 5 told us that they thought that it would be useful for a regulator to know that a final revenue deduction is an option that sits in the regulatory locker. However, they were reluctant to go any further than this and conclude that it should be a fixed step in the price control process, for the kinds of reasons we have just set out.

This left just two individuals who agreed with the statement. The first believed that anticipating outperformance could be a way for a regulator to deal with what he termed "negative contingency". Since regulators make allowances for positive contingencies, why not do the opposite? Such an adjustment would need to be calibrated by reference to historical data. But, if such an historical analysis identified a real, non-negligible phenomenon, there might be a case for adjusting for it. The second respondent regarded the application of, say, a 1% stretch efficiency challenge as akin to applying a lump-sum deduction. However, this respondent was clear that the adjustment should be justified by reference to available evidence on potential efficiency improvement (with reference to recent performance of comparable companies), and commented that an arbitrary adjustment would simply encourage gaming.

4.6 Question 6

"The deduction referred to in 5) above, should be the equivalent of 5% of the regulator's estimated annual expenditure allowances"

Chart 6



Number of responses: 32.

Question 6 produced the highest disagree/strongly disagree tally. At the end of our interviews, none of the 32 people that we spoke to agreed with the proposition that the deduction considered in the previous question should be set at a fixed 5% of allowed expenditure.

The word that we heard most often in the answers that interviewees gave us was "arbitrary". Almost all of the individuals that we spoke to, including people that were sympathetic to the propositions in questions 4 and 5, baulked at the idea it was possible to put a set value on any deduction from revenues. Instead, we heard once again about circularity and the interlinkage that interviewees saw between the toughness of a regulator's expenditure allowances and output targets and the need for and sizing of any final deduction from allowed revenues.

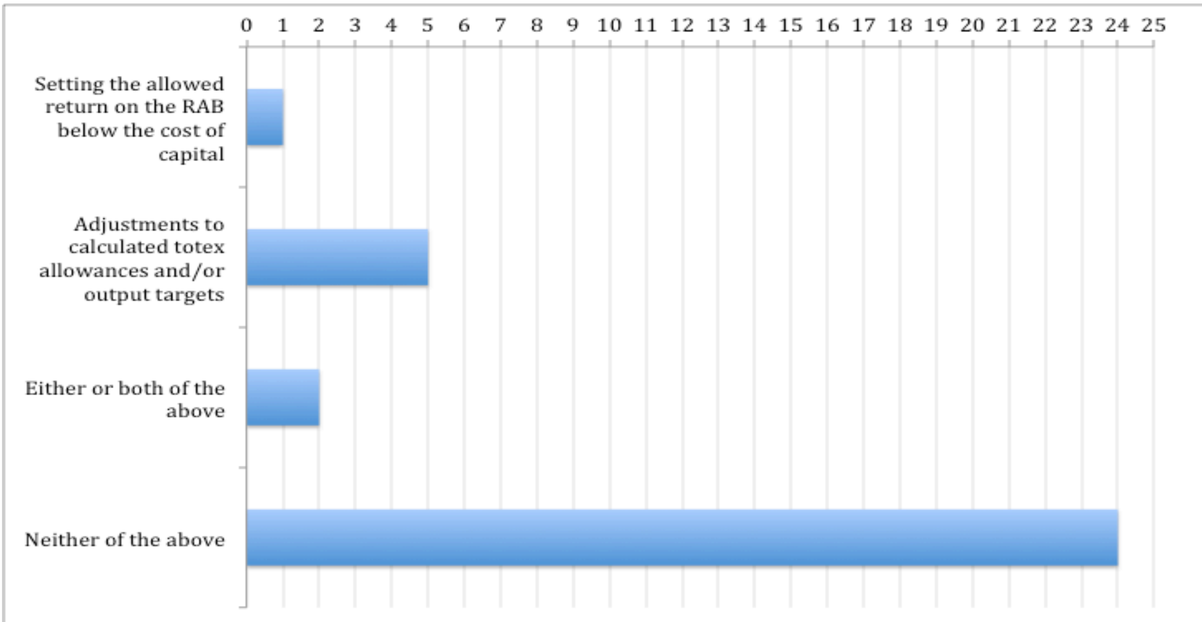
Several of our ex-regulators suggested that foreknowledge on the part of regulated companies that a regulator would ultimately be making an x% deduction from revenues would cause companies to change their business plan submissions. Specifically, a company would be wise to pad out its costs ahead of a final regulator-imposed cut. We were told that this would undermine efforts that regulators have been making, with notable success, to get better, more accurate cost forecasts from companies.

When interviewees reacted to the specific 5% value that we cited in the question, the overall feeling was that 5% is a large number. Several individuals remarked that one would need to assume that a regulator had under-estimated the scope for new year-on-year efficiency savings by the equivalent of 2% per annum in order to be persuaded that the regulator should allow for a 5% expenditure deduction in all five years of a typical five-year price control period. It was put to us that it was unlikely that regulators would systematically make errors of this magnitude in every price control in every one of the UK's regulated sectors.

4.7 Question 7

The deduction referred to in 6) above should be applied via:

Chart 7



Number of responses: 32.

There was also a good degree of similarity in the answers that our interviewees gave when we suggested the above ways of packaging a possible deduction from revenues.

It should be said that, at this point in the interviews, many people had taken a dislike to one or more of the propositions in questions 4, 5 and 6 and so responded to question 7 with a "neither of the above" answer as a corollary to answers given previously.

The former regulators that considered this question more deeply generally disliked the idea of adjusting the return on the RAB. Most people did not see the propositions that we were putting to them in our interviews as cost of capital issues and thought that it would be unnatural to encroach on what has hitherto been a separable and self-contained part of the regulatory framework. There was also a worry that adjustments to the allowed rate of return might not be properly understood by investors and rating agencies and so inadvertently interfere with investment hurdle rates, interest cover ratios, credit ratings and/or overall perceptions of the returns that are on offer in the UK's regulated sectors, particularly when compared to returns that are available in other industries.

There was marginally more support for an adjustment to expenditure allowances on the grounds that any lump-sum deduction would, at least to some degree, reflect a feeling on the part of the regulator that it had set expenditure allowances too high. However, several interviewees expressed a fear that regulated companies would view a lower totex as a blanket directive to reduce expenditure, and that this could lead to forced reductions in activity levels with attendant adverse consequences for customers.

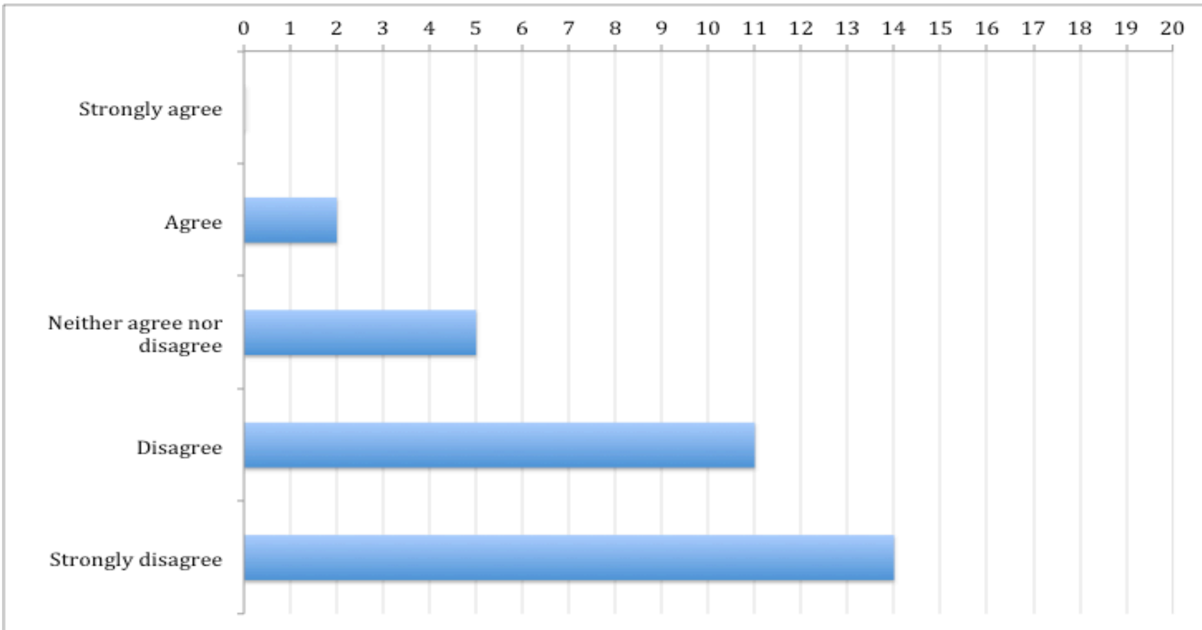
The respondent that favoured an adjustment to the allowed return did so because he felt that a regulator that thought there was scope to reduce costs would already have reflected potential savings in its calibration of expenditure allowances and did not need to undo/overwrite any of its earlier work.

A small number of interviewees went on to suggest that the obvious alternative to an adjustment to the return on the RAB or a reduction in totex allowances would be to enter a deduction from the allowed revenue calculation as a stand-alone line item of its own. While we would not wish to overstate the support for this approach, we should record that we did hear arguments that a self-contained deduction would be the most transparent and natural way for a regulator to express a feeling that it might be being too generous to a regulated firm in its building-block price control calculations but without being able to identify precisely where.

4.8 Question 8

"If a regulated company goes on to out-perform its price control and make returns above the cost of capital, this indicates that the regulator failed to set the price control at an appropriate level"

Chart 8



Number of responses: 32.

Most of the regulatory practitioners we spoke to were very clear that outperformance leading to earnings above the cost of capital did not indicate that the regulator had failed to set the control at an appropriate level. Indeed, one respondent observed wryly that had this view been taken in 1983, things might have turned out rather differently!

Most found the catch-all nature of the statement in question 8 difficult to grapple with. We were told repeatedly that there could be a range of possible reasons why a company might make higher-than-expected returns and that more information would be needed before a regulator could opine either way.

Several made the point that, in an uncertain world, risks will necessarily crystallise on either one side or the other of the mean. It would be wrong to say that the regulator got it wrong just because the cards fell in a particular way. Others pointed out that outperformance will often be a consequence of companies responding positively to incentives that consciously share gains between shareholders and customers, which is exactly what a regulator would hope for (providing incentives were well-designed).

One stated quite simply that whether a price control is successful or not depends on whether it delivers for customers. Its success should not be measured by whether returns have exceeded an assumed cost of capital.

Several interviewees reasoned that it is far easier for regulators to defend and welcome earned outperformance (e.g. as a result of a defined efficiency improvement or change in management practice) than it is to accept outperformance that has resulted from egregious regulatory error or deferring maintenance or postponing large capital expenditure projects (even where, perhaps as a result of cost changes, doing so is justified).

A number made the point that – when setting price controls in sectors with multiple companies – ideally there should be a range of outcomes.

By contrast, two respondents agreed with the statement, with one pointing to what they saw as the history of outperformance enjoyed by network monopolies, with the exception of airports. And one commented that if all companies in a sector outperformed for a long period then the answer might be “yes”.

That said, the vast majority of respondents shared the view that, as a general rule, regulators should not revisit price controls (unless, perhaps, they have uncovered fraud).

5. ASSESSMENT

Taken as a whole, the responses detailed in section 4 seemed to us to tell a clear story in which our interviewees (i) were sympathetic to the challenges that regulators face during price reviews, but (ii) were not convinced that it is necessary to respond to those challenges in the particular way that the UKRN report proposes.

Drawing on the views we heard, in this section we offer some conclusions. In doing so, we consider in greater detail:

- the objectives that regulators should adopt when setting price controls;
- the context in which price controls are currently applied;
- the problems that the identification and quantification of the terms WR and WI are seeking to solve, namely:
  - 'aiming up' in the selection of WACC parameters; and
  - the information asymmetry problem;
- the extent to which it is feasible to calibrate WR and/or WI; and
- the implications of out- and under-performance at the end of the regulatory period.

For the avoidance of doubt, the commentary that follows contains our own opinions and is not intended to reflect the views of any individual that we interviewed for our study.

5.1 Objectives

One of the themes to emerge from the discussions we had with the former regulators is that no regulator should attempt to set a price control without having first identified its objectives. These objectives will normally be rooted in statutory duties (and the strategic policy direction and or guidance provided by the UK Government), and will usually take the form of furthering the short- and long-term interests of customers. But regulatory authorities would be well advised to go further than this and identify priorities, drawing on the intelligence they have collected from companies and from customers directly.

It was striking, in particular, how former regulators were keen for current regulators to depart from old public-policy objectives (e.g. such as driving out 'fat' from companies recently under public ownership), and instead prioritise objectives which better reflect the needs and wants of today's customers, including how customers themselves would wish their interests to be safeguarded.

5.2 Current context

It has become clear with time that applying modern-day price controls is very challenging. Old certainties are giving way to a realisation that the future in many of the regulated industries is very difficult to predict.

The degree of uncertainty, of course, varies by sector. The telecoms sector has historically been the most dynamic of the regulated industries and continues to show rapid technological change. Transport has been heavily affected by COVID-19, and its future seems to be particularly uncertain at the time of writing. Energy and water networks, on the other hand, seem to be less affected by the pandemic, yet face substantial uncertainty from future changes in the pattern of supply and demand arising from the Government's response to the threat of climate change, the nature and timing of which are currently unknown.

The general point, however, is clear: uncertainty facing both regulators and the companies they regulate is substantial. As noted in the interviews, wise regulators will recognise this. Where previously, it might have seemed obvious that regulators should set fixed price limits and provide for under- and over-spending against allowances to fall to shareholders for five-year periods, today's regulators are increasingly devising methods of regulation that do not assume that they can accurately forecast all aspects of performance, cost and efficiency. It may even be that there is more fundamental change ahead in some of the sectors (see, for example, Ofcom's new approach to regulating full-fibre networks).

5.3 The problems that WR and WI are seeking to solve

It is worth considering the alleged 'problems' that the WR and WI overlays in the UKRN report are intended to solve.

Attributing a value to WR seems to be aimed at the 'problem' that regulators cannot estimate the cost of capital with precision. However – as several interviewees acknowledged – setting price controls is not an exact science. And simply identifying that an error term exists without offering a means of quantifying it does not bring greater precision and thereby solve the 'problem'. It merely describes the problem in another way.

WI is based on the notion that there is information asymmetry. Although there was consensus that information asymmetry exists, it is no longer of the sort in which the company "hides the sausage", and the regulator has to try to find it. Discussions with former regulators suggested that differences in understanding can occur in many different ways: within companies; between companies; and – quite naturally – between regulators and regulated companies. Regulators sometimes have a better knowledge of the sectors they regulate (and the comparative performance of companies in it) than individual companies. On the other hand, companies may have a better understanding of the activities they manage, although not necessarily a better view of the degree of future efficiency improvements they can achieve. There was also a strong sense that the differences in understanding between regulatory bodies and the companies they regulate are as nothing when compared to the level of ignorance about the future suffered by both regulators <u>and</u> regulated companies (given the perceived (and unknown) uncertainties described in section 5.1).

Given these asymmetries, the near-consensus among our ex-regulators was that it is natural and right that regulators should recognise the dangers of unwittingly showing undue generosity to regulated firms. The question is: what does this mean in practice?

5.4 The ability to calibrate WR and WI

No analysis was presented in the UKRN report to suggest what the precise value of WI is or what value regulators should, as a consequence, select for WR. A good number of our interviewees were nonetheless guided by history as they responded to our questions, suggesting that the UKRN authors were not wrong to think in terms of quantifying WI through the prism of past performance. However, historical experience is not necessarily a good guide to future performance. In particular, it overlooks that:

- companies have been subject to very powerful efficiency incentives for several decades, and thus the low-hanging fruit has likely already been picked;
- business plans are nowadays put forward by companies with stronger-than-ever incentives to forecast honestly;
- the greater use of uncertainty mechanisms will, by definition, improve the congruence of total expenditure allowances and outturn expenditure; and
- regulators ultimately have to make new judgments at each new price review about the challenge that they are going to give to regulated firms, the magnitude of which may differ from sector to sector and from price control to price control.

The last of these points is probably the subject that gave our interviewees the most pause for thought as they answered Q4, Q5, Q6 and Q7 on our question list. In summary terms, the experienced regulatory practitioners that whose brains we were picking found it very hard to reconcile the knowledge that regulators get to choose where to place efficiency benchmarks, productivity assumptions, output targets, etc. with the idea that there is an ineradicable informational wedge that always and everywhere will operate to the benefit of shareholders over customers.

This is the nub of the dispute that the former regulators collectively had with a pre-programmed deduction from allowed revenues. Regulation generally ought to be evidence-based, but in this case the shared feeling was that there is always going to be an absence of evidence on the need for and required scale of such a deduction borne out of the way in which a regulator's own actions shape the 'bet' that it is putting to a regulated company at each new price review. In this context, the idea that a regulator should, with one hand, strive hard to set fair expenditure allowances and output targets yet, with the other, concede that it is doomed to fall short – crucially, without any contemporaneous evidence to support this conclusion – left the vast majority of our regulatory experts feeling very uncomfortable.

It is perhaps not surprising, therefore, that our interviewees, on balance, expressed a strong preference for packaging any necessary remedies for asymmetry of information within the line-by-line assumptions that regulators can make when assembling expenditure allowances and output targets. In the view of the people we spoke to, for a modern-day regulator, with all the tools that it has at its disposal to apply an arbitrary revenue deduction worth, say, 5% of forecast expenditure, would be "dangerous", "analytically wrong" and perhaps, in the words of one interviewee, even "so arbitrary as to be illegal as it would be outside the boundaries of what a High Court judge would consider reasonable".

5.5 Ex post assessment of price controls

Our interviews also sent a clear message that it is not automatically the case that the position needs to be revisited if a company or a sector goes on to out-perform against the regulator's price controls.

There can undoubtedly be situations in which regulated companies profit (or lose) from regulatory error. However, there will also be reviews in which companies respond to the incentives that their regulators set and go on to exceed prior expectations around efficiency and service. In both these sets of circumstances, there was a consensus that it would be wrong for a regulator to go back to price controls retrospectively and confiscate profits. But, just as importantly, there was also a strong feeling that “earned rewards” are part and parcel of a healthy regulatory regime and must not be subsequently rebadged – by regulators or by others – as a symptom of regulatory failure.

6. CONCLUSIONS

The analysis presented in the UKRN report seems to come from a place in which regulators should be expected to know what the future will look like. This is a proposition with which we – and the majority of our respondents – would have to disagree with, especially as regards the argument that performance against future price controls will necessarily and unavoidably look very similar to performance against previous controls.

Our interviews gave us mixed evidence on the impact of information asymmetry on price review calibration per se. In particular, there was little acceptance of the notion that regulated companies understand what is possible and the regulators do not. Instead, it seems more realistic to approach questions about regulatory design with the attitude that neither regulators nor regulated companies can be fully aware of what the future holds.

It follows that modern-day regulators, with a toolkit that is brimming with modern-day regulatory weaponry, ought to have the self-belief that they are capable of making balanced, and well-justified choices when they calibrate price controls, including by challenging regulated companies to continually improve performance and by putting in place uncertainty mechanisms to deal with situations in which it is genuinely impossible to predict the future. The corollary is that it is also inappropriate for regulators to decide before a price review even begins that they will inevitably fail to set expenditure allowances and output targets in such a way as to set up a 'fair bet' (or equivalent).

For us, the key point in all of this – which in fairness the UKRN report authors acknowledge – is that any decision on the allowed return can only be reached by a regulator in full consideration of their statutory objectives, and with regard to the degree of challenge and incentive built into the proposed price control determination. In other words, it is a judgment that must be reached 'in the round'. Sometimes these judgments will be vindicated; other times they will be proven wrong. Provided that a regulator grounds its judgment in evidence, including, for the avoidance, of doubt, an appropriate reading of history, we do not think that the scales will always tilt in the direction of shareholders or that there is a reason to conclude that it is necessary to make a final, lump-sum cut to mop up regulatory error. Indeed, we would say to anyone that is contemplating such an overlay that they will needlessly leave themselves vulnerable to appeal if they omit to use the discretions that are afforded to them as a regulator and show a preference instead for a fix that our sample of experienced regulatory practitioners has indicated is open to challenge.

ANNEX A

The interviewees for this study are listed below.

Shane Anderson

✂

Chris Bolt CB

Sonia Brown

Peter Bucks OBE

Dr Harry Bush CB

Sir Ian Byatt

Sarah Chambers

Stuart Cook

Peter Culham

Phil Evans

Nic Francis

Professor Julian Franks

Stephen Gibson

David Gray CBE

Kyran Hanks

Jim Keohane

Richard Khaldi

Professor Stephen Littlechild

Roger Mountford

Ed Richards CBE

Graeme Sims

Steve Smith

Tony Smith

Clare Spottiswoode CBE

Martin Stanley

Daniel Storey

Professor Sudi Sudarsanam

John Thomas

Andrew Williams-Fry

Andrew Wright

Professor George Yarrow

(The ✂ symbol indicates that an interviewee asked not be named in our report.)

ANNEX B

About the authors of this report:

John Earwaker is an economist who has worked in regulation in the UK and overseas since 1996. He previously headed up ORR's price control work in the railway. He has also acted as an adviser embedded in price control teams at the CAA, Postcomm, the NI Utility Regulator and the CC/CMA. He is currently a director at the economic consultancy First Economics.

Nick Fincham has worked in UK economic regulation for over thirty years, on both sides of the regulatory fence. He held senior positions at a number of regulatory bodies including Ofgem (and both of its predecessors, Offer and Ofgas), the CAA and Postcomm. For the past ten years, he was a member of the Executive and Board of the UK's largest water company, Thames Water. He recently took up the Chair of the Regulatory Policy Institute and now runs an advisory company – Skylight Consulting Ltd – which provides advice to clients in the energy, water and aviation industries.

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