The Case for Rolling Price Determinations in the Water Industry

A Discussion Paper by Mike Davis and Jeremy Liesner[1]

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Introduction and Context

Hopefully, most observers would agree that the private water sector's regulatory system has delivered a good deal overall for customers and taxpayers. In 26 years, the sector has steadily and surely been transformed from the "dirty man of Europe", with sewage sludge being towed out to sea in barges and dumped, to the envy of many of its peers, with environmental and water quality standards amongst the best in Europe, bills only modestly higher in real terms than they were at privatisation, and with barely a penny of taxpayers' money being sought or offered by way of subsidy.[2]

At the heart of this success story is the fixed five year[3] price control framework. Companies have just embarked upon the task of delivering the sixth five year "regulatory contract", a complex set of obligations and targets that they are required to meet or beat, in return for which they are entitled to charge customers in line with price and revenue determinations made by Ofwat. The system has achieved a unique combination of dynamism – the creation of incentives which drive cost efficiencies and innovations in financing – and stability, with customers bearing just enough risk to enable water companies to access the low cost finance which in turn helps to keep bills down.

As early as 1995, however, a few industry practitioners were already beginning to regard the fixed price control period as having a finite life, because its shortcomings were set to grow whilst its strengths would either wane as the regime matured or could be replicated and enhanced in an alternative system of "rolling price controls". Now that the 2014 determinations are in place, following a price review which was regarded as "successful" in most respects but which demonstrated some growing difficulties with the fixed period model, there is now an opportunity for a fresh debate on what system of price control offers the best prospect for customers and the environment over the next few decades. As part of its "Towards Water 2020" suite of publications, Ofwat has identified future challenges that the sector faces, including in particular climate change, resilience and affordability, and re-visited

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2 The notable exception is the annual £50 direct subsidy to each customer of South West Water which the Government has been making since 1st April 2013.

3 Originally price limits were to be set for ten years, with options on both sides to call periodic reviews after an interval of five years. However, by the time Ofwat proposed licence modifications in 1998 that established five-year reviews as the norm, there was little if any dissent.

the question of whether the five year duration of the regulatory cycle should be lengthened or shortened, and invited views.

It is the position of this paper, however, that making the period longer or shorter merely exacerbates some of the difficulties with the fixed period system, whilst ameliorating others, rendering none of the alternatives materially preferable to the present five-year duration. What is needed is a new model which retains and extends *all* the benefits of the existing fixed period system whilst overcoming its main shortcomings. This is the subject of the rest of this paper.

The Fixed Period Price Control System – Still "Fit for Purpose"?

By the time one has reached the end of this section one could be forgiven for believing that the fixed period system is in a complete mess, so it is important, at the outset, to put the problems identified below into perspective. Left unchanged, the fixed period system will continue to do a reasonably good job of delivering more or less the right outcomes at good prices for customers, and it still possesses to some degree the beneficial incentive properties that played a significant part in the case for its creation in the first place. The point is that its shortcomings will bring about increasing inefficiency in the way in which the "regulatory contract" is "struck", to the growing detriment of customers and the environment. The principal reasons why are set out in the following extensive, but by no means exhaustive, list of concerns.

The "variable uncertainty horizon"

First, put simply, dividing up the future into discrete five year "chunks" is ultimately somewhat arbitrary and "unnatural". At any given point in time, practically everything about the delivery of water and wastewater services (i.e outcomes, prices, etc) is prescribed with near certainty up to end of the current "regulatory contract", which may be anything from five years to a few months away, but practically nothing can be said about the period thereafter. To illustrate: a year ago, just before (most) draft determinations were issued, customers, companies, and others could not know what service targets would be in place now, or what (average) bill levels would be. Twelve months on, now that we are in the first year of a new regulatory contract, the targets and bill levels are set all the way to 2019-20. Inefficiency arises in both cases, in the first because of the magnitude of uncertainty about the near term, and in the latter because by the time 2019-20 comes around developments in the meantime could render the provisions of the regulatory contract for that year "not quite right". Typically, as a result, there is usually a step change between year 5 of one regulatory contract and year 1 of the next, often in terms of both bills and the focus of service provision.

In addition, with regulatory contracts being increasingly being driven by customers, it is particularly anomalous that a "snapshot" of customers' views is taken at fixed intervals and the consequences are more or less set in stone for the following five years. Although there is no suggestion that customer preferences are volatile, they do appear to change over time, and it would be much more natural to engage in a permanent, continuous dialogue with customers and to feed the findings into the planning process on an ongoing rolling basis.

As a result, all parties involved in the sector, including quality regulators, customer representatives and other stakeholders go into the price review with a great deal at stake. Whilst, ostensibly, there are arrangements for accommodating variations in the regulatory contract between price reviews, it is probably fair to say that at least some of the parties involved have limited faith in them, which creates strong pressures to "get things in" during the course of the price review process because the alternative is likely to entail a wait of a further five years.

It is worth adding, as Ofwat and others have acknowledged, that the "variable uncertainty horizon" also creates potential inefficiencies in the operational and financial management of service delivery, especially in relation to companies' capital programmes. The artificial time horizons that constrain procurement processes and the establishment of capital alliances, together with the lack of "forward visibility" of programmes, is considered to have restricted companies' ability to procure at least cost. Various attempts have been made to ameliorate the effects of the fixed price control period, e.g the "Early Start" arrangements at PR04, and the recognition of "transitional" expenditure at PR14, but these have not substantially reduced the near term uncertainty that affects the businesses as they approach the end of a five year period. Boards and managers are in a much better position to make medium term decisions about financing, manpower, procurement, and so forth immediately following final determinations than in the preceding months.

Incomplete information and growing complexity

A second difficulty is that the determination of each regulatory contract has to take place well before the previous one has concluded. This means that each determination, and the business plan on which it is based, necessarily incorporates assumptions about future out-turns for the remainder of the current period, and that a further "reckoning-up" has to be made at the subsequent determination. As a result, customers' bills in certain years could be influenced by differences between assumption and out-turn as much as ten years previously.

More pertinently, together with the growth in *ad hoc* mechanisms to make retrospective adjustments to deal with general in-period departures from the regulatory contract – revenue correction, cost-sharing, outcome delivery incentives, etc., all of which are similarly affected by the year 4/5 problem – this adds considerable technical complexity to the price review process, which comes on top of the incremental complexity caused by developments in regulatory process and methodology such as the dis-aggregation of price controls and the tendency for the number of major steps in the price review process to increase. A number of consequences have been seen as a result:

- price reviews have become more and more resource intensive, but there is no guarantee that the extra costs incurred have delivered compensating benefits;[4]

- the length of the price review timetable has become progressively stretched out. At PR94 business plans were submitted at the beginning of April of year five, and final determinations were made in July, three months later. In the proposed timetable for PR19 business plans would be submitted two thirds' of the way through the five year period, in the August of year four, and final determinations would be made in December of year 5, sixteen months later; and

- increasing complexity brings with it a heightened risk of error and/or unintended consequences. In particular, whilst a particular mechanism or calculation may be incorporated into the price determination methodology in order to create or preserve certain incentives or disciplines, second order interactions with other features may produce perverse or undesirable consequences.

"Famine and Feast"

For a regulator, one of the inexorable truths about a price determination is that it is never "right". However much companies are required to disclose, there will always remain an "information asymmetry" which confers a comparative disadvantage on the regulator. The (impossible) trick is to try to compensate for this just enough when exercising judgement in the compilation of the price determination. But, rightly or wrongly, views are quickly formed that a determination has been "too tight" or "too soft". However much substance there may be to the prevailing perception, the atmosphere within which regulation is conducted over the whole of the ensuing five year period can then be characterised by the sense that, one way or another, the outcome was tilted either in favour of or against the companies. This is neither efficient nor, frankly, fair on the economic regulator and its staff, most particularly because they must wait five years to give effect to the lessons that, inevitably, are learned every time a price determination is made. In addition, the periods when the regulatory contract appears to favour the companies appear to invite *ad hoc* political pressure to depart from the regulatory contract, e.g. by making voluntary rebates to customers. Again, the rolling price review proposal described below offers significant improvement, because each determination only applies to a single year and therefore does not have such potentially dramatic consequence. The regulator has five times as many opportunities to adjust and fine-tune its judgments, so the "stakes" are considerably smaller.

Removing the "peaks" in resource commitments

As a practical matter, the fixed period price control model creates significant variations in resource requirements for the companies, the regulator, the quality regulators, the customer

4 Anecdotal evidence suggests that the demand for consultancy support at the recent price review substantially exceeded demand in any previous review.

representatives, and other organisations. This is not a question of a peak of effort for a few months in each five year period. Despite the valiant efforts of Ofwat to streamline, the periodic review effectively spans between two and three years of each five-year cycle, and can approach four when there are appeals. At times, Ofwat can be dealing with both periodic review issues and interim determinations. In addition, there is inevitably a significant turnover of specialist personnel both within the companies and within Ofwat between one review and another, and the absence of continuity means that much of the "human capital" that is created at one review is not passed on to the next. This is potentially inefficient, especially as it gives rise to potential mis-interpretation of what was previously intended.

As well as the obvious inefficiencies this pattern creates, it also inhibits continuity, both between price reviews and within the period of each price review itself. By contrast, the rolling price review model offers the prospect of a constant level of activity from year to year, pitched some way between the peaks and the troughs of the current system (and with the added bonus that the interim determination provisions become much less important). With price determinations produced, effectively, as part of an ongoing process, the level of specialist human capital in the sector would be maintained as part of the continuous rolling determination framework.

Rolling Price Determinations – the Basic Concept

The essence of rolling price determinations is very straightforward. At the moment, the regulator delivers to the company a set of five annual price (or revenue) limits some four months or so before the five year period begins. If the company appeals the determination the first year price limit stands and the Competition and Markets Authority's determination effectively takes over from year two.

The rolling price review system would begin with a determination in the normal way, ideally when the next opportunity arises in 2019 for the five years beginning on the 1st April 2020. The autumn and winter of 2020 would see Ofwat carry out the price determination for "year six", i.e. the year beginning 1st April 2025, based on a rolling company business plan updated by 12 months from the one submitted for PR19, and reflecting the new information that the regulator now possesses following submission and publication of out-turn information for 2019/20, as well as any updated requirements of quality regulators, changes in legal obligations, and so forth. By 1st April 2021, the companies would again have a firm five year regulatory contract, including price limits, with which to plan and work. The following summer and autumn would see the preparation of the price determination for 2026/27, and so on.

Immediately it can be seen that an important feature of this proposal is that it keeps customers constantly involved in the planning of future service delivery, rather than at "set piece" events from time to time, whilst always maintaining the company's focus on customers' long term needs. In addition, since a company's internal business plan and the regulatory business plan that forms the basis of dialogue with the regulator and other stakeholders inevitably converge into one and the same thing, customer input would automatically become embedded in "business as usual" strategic decision-making.

The right of appeal against the determination of the regulator would remain, but, crucially, would only relate to the single year for which the determination was being made. This would narrow the scope of appeals and should therefore make them easier and shorter. This should go some way towards meeting the concerns of those who worry that the present binary appeal choice covers too wide a set of issues and is too "drastic".

Building flexibility into the regulatory contract

Obviously the fundamental benefit of dealing with the future on an ongoing rolling basis rather than in discrete five-year chunks is that it more closely mimics the way that economic agents view the future. In general, when businesses plan and Governments budget, they do so on a rolling basis, as do households in their own way. At any time, the effect of new information can be factored into plans, expectations, and strategies without having to wait for some artificial point in the future.

In order for the water sector to benefit in full from the efficiency gains that rolling price determinations offer, therefore, there must be some scope to modify the regulatory contract covering periods already determined. This can be achieved by providing a facility for companies to re-profile their regulatory contracts once each "year six" determination has been made, in accordance with clear and prescribed criteria and within the "envelope" of the determined five year regulatory contract taken as a whole. This might take the form, for example, of smoothing out price changes over years 5 and 6 if the former was due to see a real reduction in bills but the determination for year 6 would otherwise mean an offsetting increase. If a new customer priority had recently been identified leading to the introduction of first time targets in year 6, the scope for bringing this forward whilst perhaps deferring one or more other targets, all with customer support could be considered. In effect, what this does is to bring each successive "year six" into the planning horizon and then to re-evaluate how the whole of the five years can most efficiently be planned and delivered.[5]

A Shorter Regulatory Contract?

It should be evident, from the foregoing discussion, that a shift to rolling price determinations could open up the possibility of a shorter regulatory contract of four years or potentially even three. The optimal length of a fixed price control period is a function of a number of

[5] A further beneficial feature of such "re-profiling" is that any rewards and penalties associated with the Outcome Delivery Incentives introduced at PR14 can be factored into customers' bills much sooner, thereby overcoming the concern that the significant potential lag between performance and its financial effect makes the scheme less meaningful for customers.

considerations including the strength of incentives, the potential for cumulative "error" between forecasts and out-turns, the benefits of stability, and the costs of price reviews.

Under the present arrangements the average period to the end of the current price determination period is two and a half years. The average future period over which prices and obligations is known is slightly higher, given that determinations take place a few months before the end of each price control period. With a system of five year rolling price determinations that average would be just that, five years. This would give rise to significantly stronger incentive properties than the current fixed five year control. A case could be made, therefore, for shortening the period in a way that still improves on the incentive properties of the current approach. It is conceivable that a case could be made for a three-year rolling regulatory contract – an average of three years is still greater than the present two and a half – but the more obvious option would be a four-year model. Thus, in 2019, a determination would be made for the period 1st April 2020 – 31st March 2024, then in 2020 the determination for the 2024/25 financial year would be made, and so forth. Year five, the year that is subject to the greatest forecasting error under the present arrangements, would be "removed" from the regulatory contract, but companies would still have a longer average time horizon to "keep" the gains from innovation than at present.

Evaluation of the Basic Concept – Possible Disadvantages?

Potential criticisms of the rolling price review concept essentially divide into two categories. First, there is the question of regulatory "error": under a proposal for a four year rolling regulatory contract, the decisions being made by the regulator always have effect four years hence, and are therefore "bound to be wrong". At least, it is argued, under the current system the regulator can get close to "getting it right" for the first year or two of the five year package, whereas with rolling determinations it will always be "wrong", and probably by some margin, when it sets the price control five years before the year in which they are to have effect.

This view, however, overlooks the fact that the potential for "error" in the price-setting process actually plays an important role. Provided it is symmetrical (so that neither customer nor company is systematically disadvantaged) it does not matter – within reason – that the regulator always turns out to have "got it wrong" in the end. What matters is that the link between actual costs (revenues) and assumed costs (revenues) is sufficiently remote so as to safeguard the strength of the incentives that are so important to the success of the regulatory system.

The second type of concern is that annual price determinations merely offer the prospect of five times the effort and the resource of the present system, and are therefore more costly. Perhaps the best way of explaining why this criticism lacks validity is to think about what would happen if it were suddenly decided that the next fixed period price determination was to last for twenty years! With the "stakes" raised fourfold, the pressure on quality regulators to ensure that obligations are "in" rather than "out" (with the next window of opportunity not coming around till 2039) - even in the face of even greater uncertainty as to the extent to which each is justified - would be immense, and would bring about a commensurately determined response from the economic regulator and customer representatives, with companies potentially squeezed in the middle and demanding an even longer list of notified items together with other measures to limit their exposure to the very considerable uncertainties involved with such a long regulatory contract.

At the other end of the scale, the rolling price review proposal substantially "defuses" the process of striking the regulatory contract. If there are marginal or uncertain obligations being considered, the possibility always exists to defer a decision for just a year whilst the analysis or research necessary to facilitate an informed decision is carried out. The result, it is argued, is a more orderly, ongoing planning process, which evaluates new requirements as they emerge and translates them into specific obligations on companies in a more efficient way.

In addition, as hinted above, substantial synergies and savings are made possible by rolling reviews because instead of being separate, "set piece" events, price determinations would become integrated into "business-as-usual" processes for all parties, especially companies and regulators, and would acquire a more "mechanistic" character. This would manifest itself, for example, in Ofwat updating its modelling incrementally from one determination to the next, rather than building completely new models with different data requirements as has been the practice with fixed five-year control periods. In particular, the provisions for interim determinations would appear to be more or less redundant, because specific "change requests" to the regulatory contract could be accommodated at any time. Further, it is worth pointing out that considerable overlap already exists between annual performance reporting and the Business Plans that are prepared at price reviews. A single "enhanced" annual submission that both reports on the year just completed against the "regulatory contract" and submits proposals in the form of an updated forward-looking business plan may actually turn out to reduce the overall workload for both companies and the regulators over the course of a five year cycle.

One other potential concern is that regulators might use the annual setting of price limits for year five to seek to re-open the settlement for the preceding years, the temptation being especially strong if companies happen to be benefiting at the time from relatively benign operating circumstances. Measures would have to be built in to ensure that companies and regulators alike accept the four year regulatory contract in full, including the inevitable "swings and roundabouts" as now, and that the year five determination reflects the future effects of the current benign circumstances but does not attempt to "claw back" the benefits accruing in years 1-4.

Evaluation of the Basic Concept – Principal Advantages

Not only do there appear to be no significant drawbacks with the rolling price review proposal, but there are several clear and substantial advantages that it offers compared with the current system. These have, in large part, been stated or implied already, but it is worth re-capitulating the main benefits in summary terms. A system of rolling price reviews and regulatory contracts would:

- not only halt the inexorable trend towards unnecessary and excessive complexity in the price-setting methodology, but facilitate substantial simplification in a number of ways. The regulatory regime itself would be simplified (e.g though the removal of the need for separate interim determination provisions), and the price-setting methodology would be simplified as a result of the effect of the fixed four-year lag between the regulator's decisions and the year in which they are to have effect on the need for adjustment mechanisms;

- clarify and strengthen efficiency incentives, in all aspects of companies' functions, thereby encouraging more innovation;

- facilitate a substantially enhanced role for customer engagement in shaping service delivery. Whereas customers' views and preferences essentially feed into the regulatory contract once every five years under the present approach, rolling price determinations would encourage a permanent, dynamic and interactive role for customer engagement, with an automatic focus on the priorities for the medium to longer term;

- take the quinquennial "drama" out of the price-setting process by turning it into an ongoing, annual and more "low key" affair. Five important but smaller decisions would replace one large decision. Continuity would be substantially enhanced, not just for the companies and the regulator but for the quality regulators, Governments, and customer representatives, which in turn would facilitate a more informed and therefore more productive debate and process around the regulatory contract. Changes in regulatory methodology would proceed in a more gradual and incremental way, rather than in the form of the large changes that are inevitable with fixed periods, the effects of which are not always easy to foresee. Importantly, the demands imposed by the price review on both regulators and companies alike would be ironed out, with quinquennial peaks replaced by a more uniform level of effort, potentially enabling efficiency gains to be made; and

- completely remove the somewhat arbitrary nature of the variable uncertainty horizon, instead ensuring that planners, managers, regulators and investors always have a four-year contract to work with, and thus offering efficiency gains in terms of programme decisions, service delivery, and financing. This, in particular, would provide greater certainty at all times for customers and other stakeholders (including retailers) as to what is going to be delivered and for how much over the medium term, which in turn can only foster greater trust and confidence in companies and the sector in general.[6]

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[6] Note that this would also fit with companies' obligations as regards "future viability statements" under new corporate reporting requirements.

Towards the Introduction of Rolling Price Reviews – Over to Ofwat

This paper has argued that rolling price reviews would not only address the specific and growing shortcomings of the fixed period system, but would enhance its underlying strengths by creating a permanent rolling four or five year regulatory contract with which companies, regulators, and others could work. It has offered a thumbnail sketch of how the new system would operate. It has not sought to present a detailed blueprint of what this would entail, in part because the first and most important step is for there to be a debate around the principle of fixed versus rolling price regulation.

Rather, it is now for Ofwat to frame the debate on the future of the system for determining price limits. In doing so, they must make the very fullest use of the breathing space of maybe no more than 12-18 months that will end when the preparations begin in earnest for the 2019 price determination, whether or not it heralds the end of fixed period price reviews in the water industry and the beginning of the rolling arrangements that, we believe, offer the prospect of a significantly better future for price regulation.