RPI Conference: Merton College: 12-13th September 2016[1]

25 Years of Regulation; Water Services[2]

Observing the progress of the revolution in Paris in the 1790s Mme de Stael wrote "Theory without experience, is only a phrase; experience without theory, is just prejudice."[3]

Early-stage liberalisation and market opening

Water privatisation was very unpopular: Ofwat helped to make it work by publicity &explanation. Explanation (transparency was critically important) - in simple ways that could be understood by a wide range of interested parties, not in the form of long and complex papers.

Did it work well? Replies should be more nuanced: nothing stands still - nor should; some things went well, but policy still needs to move on.

The politics is as important as the economics. Institutions, and personal & institutional networks, are crucial. So are personal & institutional incentives, often pulling in different directions.

<u>The Regulatory Office</u>

The quality of the regulatory office is key; I was fortunate to have skilled and creative senior staff. Focus on the straightforward regulatory objectives was vital; mission creep was to be avoided. The regulator only does a good job when the companies do a good job.

We devised systems for collecting information, which stood us in good stead when making decisions, appointing independent Reporters, to challenge company information.

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[1] I have made minor amendments to this paper in the light of the discussion at Oxford. In particular I have noted the contribution that might be made by adoption, or adaptation, of a new procedure devise for the Australian electricity, made in a lecture by John Pearce, Chair, Australian Energy Market Commission, published in this [volume] and an insight by Stephen Smith in his presentation on the Evolution of Network Price Determination Processes. I am particularly grateful to Alan Sutherland & Rupert Darwall for help in the drafting of this paper.

[2] See my article on the Regulation of Water Services in the UK in *Utilities Policy* 24 (2013) for my account of my term of office from 1989 to 2000.

[3] *Of Present Circumstances*

We addressed three major issues in the early days;

- paying for water (1991):
- cost of capital (1991) & assessing capital values (1992)
- cost of quality (1991 & 1993).

Working with Companies

I declined to work with the Trade Associations normally used by Government, preferring direct personal touch with the companies: visiting them regularly: always being open to their visits: and establishing working groups to test regulatory strategies. Things need to be talked through and regulators and companies needed to listen to each other.

I visited the European Investment Bank to encourage it to finance privatised as well as state-owned utilities. We regularly briefed the City, including Rating Agencies, on regulatory intentions.

Working with Regulators, Ministers and Parliament

The main networks relate to customer representation, water & environmental quality & Ministerial policy. Good relations, not subservience to Government Departments (not only the Department of the Environment), were the key to accountability. The emergence of formal interactions between regulators and Parliament[4] was a step forward in the public governance of utilities.

Ofwat cooperated with the Environment Agency to check that big investment projects were on course. In Scotland, the Water Commission (WICS) developed an output monitoring group to track capital expenditure.

Working with Customers

The Customer Service Committees (CSCs) were closely involved: the Chairmen, coming from across the political spectrum played a major part in the Ofwat consultation on metering: they each attended the meeting where companies made representations on the 1994 draft price determinations: & the chairman of the Ofwat National Customer Council attended my regular planning meetings.

[4] Starting with *The work of the Directors General of Telecommunications, Gas Supply, Water Services and Electricity Supply Report by the Comptroller and Auditor General HMSO 1996.* An all-party Group was a useful pre-curser.

Desirable Changes?

These networks have shifted over 25 years, not all for the better. Reappraisal, based on results, is needed. I believe that customer representation is best brigaded with the regulator to increase the power of the consumer. I also believe that the single regulator is to be preferred to the Board; it ensures more transparency and better accountability. Regulators need advisers,[5] but a regulatory Board has confused responsibility.

Industry Structure

The privatisation structure of ten Water & Sewerage companies & the remnants of C19th private water companies, mainly owned by French water companies, was (sensibly) derived from the transformation of the municipal supply of water and sewerage in the early 1970s. Subsequent changes, such as the development of multi-utilities did not prosper & were abandoned.

A particularly important change at privatisation was to take regulation of their environmental activities away from the authorities and put it in the hands of an environmental regulator, initially the National Rivers Authority, and subsequently, although not entirely happily, the Environment Agency.

A special merger policy was introduced at privatisation to preserve comparative competition. This ensured that any merger would be accompanied by a prior transfer of "claimed" efficiency to customers. Valuable to customers, it was regularly attacked by the City.

There is little evidence of economies of scale in networks beyond a low level; indeed there are arguments for dividing the biggest company, Thames Water, into separate London & Oxfordshire companies.

Incentives &Efficiency

RPI-X (in water RPI-X+Q), where Q=water & environmental quality) worked well with respect to operating expenditure (broadly a third of total costs of supply). Efficiency rose by some 50%: half in the form of a better product &half in the form of lower costs. The sticks of the tough price review of 1999 proved more powerful incentives to efficiency than the carrots of higher profits.[6] This shows

[5] For example, I appointed a group of business advisers when it became clear that Ministers would separate CSCs from Ofwat.
[6] See Erbetta & Cave *Dynamic Efficiency in the English and Welsh Water and Sewerage .Industry.*

that regulators should aim on the side of severity; I found companies good at responding to challenge

These benefits were duly passed on to customers at successive price reviews, again broadly half in the form of lower prices, and half in the form of better water & environmental quality.

RPI-X+Q was also a formula for transparency, so that customers would know how changes in their bills were attributable to greater efficiency and how much to the cost of enhanced water & environmental quality.

Regulation of Investment

Regulation of capital costs (capital enhancement & capital maintenance) was more difficult. Following work in the Treasury on nationalised industry finance[7], Ofwat adopted capital base regulation, involving the estimation of a capital value (RCV/RAB) based on the sale price of the companies at privatisation, updated for new net (i.e. after depreciation) capital expenditure and inflation, as measured by the RPI.[8]

To this was applied a uniform, national cost of capital, the weighted average cost of capital (WACC),[9] although cost-base comparisons of standard capital projects were made to reflect differences in efficiency across the companies.

This dealt with the differences resulting from the sale of assets, valued in the books at £50 to £100 billion, net or gross, & privatisation proceeds of around £5 billion, & provided a system for incorporating future capital expenditure. But it remained largely cost-plus, storing up problems for the future

Ring-fencing of the Licensed Business

Ring-fencing of licenced water companies has been an object of policy from privatisation onwards. This prevented any recourse to the revenues of the regulated monopoly by a company pursuing expansionary but unprofitable diversification.

2007 and Charlotte Pointon *Essays in the Measurement pf Efficiency for the English and Welsh Water and Sewerage Industry* Ph.D Cardiff University 2014

[7] See, esp. *Accounting for Economic Costs & Changing Prices; A Report to HM Treasury by an Advisory Group.* HMSO, 1986

[8] The capital base was crucial to any calculation of the "reasonable rate of return provided for in the privatisation legislation. We consulted, to our surprise, with only limited dissent.

We considered that the WACC used by the Secretary of State in setting the privatisation K factors for ten years was much too high, leading to unacceptable increases in prices for customers. Our consultation paper on the cost of capital was received with horror by the City; our speculations of possible gearing were dismissed as amateur. Little did we realise that we were anticipating the Northern Electric defence of 1994.

The ring-fence was strengthened at the time of any take-overs and was particularly valuable in the case of Wessex when taken over by Enron. After the Enron collapse its bonds became junk, while Wessex bonds retained investment grade status.

I tried to develop the position of non-executive members on the Boards of Licenced companies, as part of the policy of treating them as free-standing Plcs. But I was disappointed at their quality; it was still necessary for the regulator to relate to the ultimate owners. Because of the take-over of most of the industry by private equity/infrastructure funds, with immensely complex ownership structures, this has now become quite difficult.

So far, so good.

Responses to variations in regulatory contexts and the emergence of new issues

Problems of Capital-base Regulation

Capital base regulation (RAB/RCV) may have been appropriate initially, but it became over concerned with inputs and too optimistic about the outputs that were being achieved. There are financial incentives for proposing new projects, whose cost effectiveness is dubious but which would achieve an immediate inflow of revenue to the companies.

Privatisation water and wastewater quality objectives were achieved by the early years of the new century. But new ones were always emerging; capital schemes that primarily, benefit investors were developed under the badge of "infrastructure". Under capital base regulation, they all generate dividends for investors, while benefits for customers are more elusive.

The Thames super sewer is the outstanding water example, involving spending £4 billion for minimal customer or environmental benefits.[10] I am delighted that the NAO is challenging both the project and its method of financing.[11]

Experience in financing privatised utilities has shown that the supply price of finance (the cost of capital) is very much lower than was thought possible in the 1980s. Over the last 25 years, interest rates (nominal & real) have fallen

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Chris Binnie *Thames Tideway; Measures to protect the river from the adverse effects of waste water discharges* January 2014. Chris Binnie@btoprnworld.com Sustainable Urban Drainage Schemes (SUDS), as at Llanelli & Philadelphia, would give more environmental benefits at lower costs.)

[11] The issue goes much wider than water. See my article, *Do invest in infrastructure - but only if it raises living standards.* in the Business Section of the Daily Telegraph, 9th September 2016

dramatically. Their financing duty has made regulators cautious; they, have taken advantage of lower interest rates, but not to the extent that would have been possible.

Reductions in the cost of finance/capital had three effects.

- the WACC has fallen, and reductions would be passed on to customers at the next price review,
- investment allowed for in a price review could be financed by increases in gearing, i.e. the marginal cost of finance was below the WACC. and
- increases in gearing allowed for (restructuring) dividends on top of otherwise rising dividends.

Overcharging?

What are we to conclude from this?

- customers have been overcharged, both because the investment allowed for has become too high (and project choice not subject to competition) and because the cost of capital allowed for has also been too high
- massive, & growing dividends pose a continuing problem. If companies are not willing to retain funds for future investment, customers are entitled to feel that they are being overcharged,
- A "pay-as-you-go" approach to capital maintenance puts future customers at risk of companies cutting corners.[12] The political flurry concerning leakage, had the useful effect of inducing water companies to improve their network management; but more information and more analysis is required.[13]
- problems will arise if financial flows though tax havens are tightened up to plug perceived tax loopholes, and/or when interest rates begin to rise towards more sustainable levels.

Retail Competition

A significant change since privatisation has been the successful separation of retail supply for non-household customers in Scotland in 2008, to be followed in England nine years later. It has yielded good results in Scotland, involving substantial savings for customers, more from better service than lower prices.

[12] I was concerned about this and argued, in MD 161 (April 2000) that "Each company needs to demonstrate how the flow of services to customers can be maintained at least cost in terms of both capital maintenance and operating cost, recognizing the trade off between cost and risk, while ensuring compliance with statutory duties."
[13] Yet Ofwat scrapped its collection of information on capital maintenance when the annual June returns were abolished

Customers have become much more aware of the importance of measurement of water use and the scope for economising on use & reducing leakage.

The spread of domestic metering has increased choice for household customers. It also effects the need for new sources of supply, giving customers additional collective gains by avoiding price increases. Studies of metering (the best carried out by Wessex Water) show that merely having a meter (whatever the tariff) reduces household consumption by some15 - 20%.

But many companies have been slow and governments have been unhelpful. While welcomed by environmentalists, customer bodies seem hesitant. Specific regulatory action, is needed where companies have plans for major new projects, such as Thames's Abingdon reservoir.

<u>Wholesale Competition</u>

Progress on wholesale competition has been painfully slow. reflecting both regulatory inertia and ministerial reluctance.

- the inset appointments devised at privatisation had modest results, mainly in allowing geographically specific retail competition:
- common carriage has not taken off: time has been wasted on fruitless debates:
- government adopted a retail-minus approach, passing an unhelpful Act:
- which Ofwat interpreted as the minimally effective Efficient Component Pricing Rule:
- Ofwat failed to give proper attention to the Shotton water case.

Was this inevitable? Not all of it.

<u>Geographical transfers</u>

Water trading has scarcely developed despite geographical differences in supply & demand. Companies prefer to build reservoirs rather than buy from neighbours. Regulatory action is needed to facilitate trading (of water or of licences), and to stimulate the spread of household metering; before adding potentially unnecessary facilities, such as desalination plants, into the capital base.

<u>Customer Engagement</u>

Stephen Littlechild advocates paying greater attention to customer priorities. Customer engagement went particularly well in Scotland at the last Price Review, showing, inter alia, the benefit of taking account of a local situation. But it is necessary to remember that most of the obligations' imposed on water companies come from governments. Switching suppliers cannot help; the political process needs improvement.

The evolution of network price determination processes

Undoing Capital Bias

Reform is needed to remove the capital bias, especially the bias to rewarding capital expenditure. The shift from separate opex and capex analysis to totex should help but is not enough.[14] Several strands of work are needed:

- Regulation should shift towards performance regulation, where suppliers are rewarded for delivery of outputs, and where choice of capital solutions is open to competition. There is much work to do in this area, in utilities generally. Regulators should step in to open up the choice of capital solutions to more competition.
- The cost of quality needs revising as it remains a source of problems. Environmental pressure groups are politically powerful and dismissive of trade-offs with other human objectives. Ofwat papers in the early 1990s set the stage for a reappraisal of environmental objective , and their costs.[15] This needs to come to the forefront again, put in the context of performance (output) rather than capital base (inputs) regulation.
- Work should proceed on defining, & costing environmental priorities, setting performance targets and then considering how competition could be used to deliver cost-effective and innovative solutions.

Performance regulation

Performance measures, that show progress, or otherwise, in maintaining serviceability to customers, are available in the form of the drinking water standards devised by the DWI, the waste water standards by the NRA/EA & the customer service standards[16] devised by Ofwat. Where new obligations are

[14] Capital investment is popular among operators, who see their costs reduced, among ambitious engineers who like prestige projects and financiers who earn higher dividends. Under present arrangements, customer have to pay for it.
[15] Ofwat. *The Cost of Quality; A strategic assessment of the prospects for future water bills.* August 1992. Ofwat. Paying for Quality; the Political Perspective July 1993
[16] The Guaranteed Service Standards, involving financial compensation for failure

imposed on the industry, new indicators need to be added, after being costed, - & delivery opened to competition.

Performance against these measures would become the key element in regulation, enforcing the delivery of outputs to customers and to the environment. Companies would face financial penalties for failure to deliver. This would go well beyond ticking the progress of capital projects.

Vague talk of "resilience" will not do. There is much work to do on the identification &specification of such indicators & on the mechanics of the competitive process.

<u>A framework for Negotiation</u>

The missing part of the privatisation settlement was to create a framework for regulators to talk to, and negotiate with, each other.

- the Environment Agency should formulate, and declare, its objectives, and their priorities, over a specific time scale. This need not be in cost-benefit format; but environmental objectives should be ranked within an affordability envelopes.
- prices should be an objective in their own right. This would change incentives and could halt the creep, whereby new environmental objectives are added without proper costing. Brexit also offers us opportunities to re-consider the outcomes of EU Directives.
- affordable envelopes should be created by a simpler form of RPI+/-K, where a par position was set early in a price review, enabling the regulator to show the financial consequences of rolling forward neutral K factors.

Customers should be involved in discussions from the beginning. Ofwat and WICS[17] devised ready-reckoners, derived from bigger regulatory models, to show the consequences of regulatory options and regulatory decisions. They were designed to allow consultation with customers (and to facilitate discussions within regulatory offices) about the effect on prices of different input and output assumptions, including different environmental policies.

A forum for discussion is needed. This should cover the interests of a range of parties: customers, including local customers: environmentalists: companies: regulators, governments, etc. It should be open and independently chaired, with

[17] Water Industry Commission for Scotland

ability to require companies and regulators to provide information and the results of analysis.

There are lessons to be learned from customer engagement in the latest review of charges in Scotland; the introduction of an independent dimension brought significant benefits.[18] An open system for consultation has been devised in Australia that could have valuable lessons for us.[19]

Bottom Line

We live in a world of constant change, which requires constant re-appraisal of regulatory arrangements. New evidence is being constantly revealed. Customers have been over-charged & failure to develop fresh approaches in would undermine the legitimacy of the private provision of monopoly services

In recent years, living standards have not been rising adequately. Utility regulation has a critical role in raising them by redoubling the search for efficiency, higher productivity and better value for money in an important area of consumer expenditure. New approaches for doing so need to be widely debated in the light of experience, particularly that of customers.

The biggest issue seems to me to be that of whether, and how, performance regulation can progressively replace cost-base regulation. There is considerable scope for enhanced competition, especially for new investment schemes. In particular we need to discuss how best to promote effective competition for ideas of how best to solve new, & existing, problems.[20]

This could involve switching risks from customers to companies. who seem, however, sufficiently well rewarded to deal with them.

These issues, of course, go much wider than water; they are also important in energy, railways and airports.

September 2016 Ian Byatt

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[18] The Consumer Forum for Water in Scotland. *Legacy Report: Lessons learned from Customer involvement in the 2015-2021 Strategic Review of Charges* February 2015

[19] Steve Smith of Lloyds Bank. also made an important contribution to the debate by pointing out that present arrangements have created a monopoly of ideas for dealing with problems. Such problems would include how best to deal with urban drainage is more sustainable ways. (See above; there is considerable well informed opposition to the Thames Tideway Tunnel, but no adequate forum for proper discussion of the issues involved.)

[20] In 2012 the UK government decided to encourage competition between companies to demonstrate the technology of carbon capture & storage and to help keep costs down. Funding of up to a billion pounds was available in a bid to get workable large-scale schemes working by the end of the decade; this grant was, however, subsequently withdrawn.