

Ain't misbehavin'



Ofwat's move to risk-based regulation must be founded on how water companies actually behave, not on how economists expect them to. By Felicity Furness and Paul Ormerod

The government's agenda for regulation, including economic regulation, entails a shift towards risk-based, proportionate regulation. We have already seen changes by Ofgem and Ofwat. In principle, risk-based regulation looks to reduce the regulatory burden, give companies more freedom in their modus operandi and to innovate, and encourage companies to take more responsibility for delivering outcomes. All of this can provide value for customers, investors and stakeholders.

The move to risk-based regulation, however, is not necessarily risk free. Rewriting the regulatory rule-book by leaving out many familiar rules has risks of at least two sorts.

One is a transition risk, as entities on both sides adjust to new arrangements that inevitably will be capable of different interpretation. We have seen contrasting views, for example, about what risk-based regulation means for company boards and within regulators – stock responses from the ancien régime are not unknown. The consequences could be radical, and if they are not understood properly, problems will be inevita-

ble and regulatory reform will be less effective.

Risk-based regulation entails regulatory attention being focused on areas assessed as high risk, with a judgement of materiality driving the allocation of regulatory resources. Inherent in this is that riskiness is misjudged. This may be mitigated by strong incentives for the right outcomes, but how to get to this nirvana is neither obvious nor trivial, particularly if incentives or defined outcomes are not soundly based. This may mean that the regulated will act in ways that are contrary to the regulator's aims, the interest of customers and in the longer term those of investors and society more widely.

It is difficult to create the right incentives. To date, the thinking of economic regulators has been mainly grounded in the standard model of economic rationality – based on profit and customers operating in contestable markets – with incentive designs derived from an essentially static analysis. The realisation that companies and customers do not always react as that model implies is not new. The prevalence of unintended consequences in regulation is well documented. The primary

questions is: how can regulators avoid the move to risk-based regulation making this worse? More positively, we might express this as: how can the shift improve things?

Given the current level of understanding of what has become known as the transmission mechanism – the process whereby regulatory incentives and decisions are translated into action and outputs by a regulated business – we need ways of debating and understanding that go beyond the conventional sort of engagement that takes the form of consultation papers and responses.

Indepen and Volterra, with the sponsorship of three water and sewerage companies and the active involvement of an executive director of Ofwat, set out to develop an approach to allow experimentation on aspects of the redesign of the incentive package in water regulation. This is of particular relevance given Ofwat's Future Price Limits project.

We began by thinking about the obvious relevance of behavioural economics. This proposes that individuals may not behave as mainstream economic theory says they would and as such provides a different perspective on how to design incentives. We are applying the idea to company behaviour, using an approach known as “agent-based modelling”. Standard economics accepts that agents – decision-makers – make optimal decisions, subject to the constraints they face at the time. Agent-based modelling allows other types of behaviour to be built into a model of a problem.

Behaviour may be complex, with companies' decisions affected by constraints and motivations other than short-term profitability. These may derive, for instance, from ownership, financial structures, internal governance or reward arrangements. In addition, uncertainty and costs restrict knowledge and affect behavioural traits.

To use agent-based modelling to analyse the

existing incentives in water regulation, our sponsors and Ofwat worked together to describe the relationships and kinds of behaviour observed in the sector. This occurred over a number of meetings, during which we were able to model relationships and incentives while participants gained understanding from the process.

Agent-based modelling allows us to think like decision-makers rather than in the way economists theorise. Nor does the modelling technique require quantities of hard data, but works with the views of experienced players of the regulatory game on how things really work. The water model gave insights and results that all of those involved found interesting and informing. Comments from some of the participants are shown in the box.

Indepen and Volterra are exploring how the approach can be used as a structured way of involving the participants in regulatory relationships to better understand what is going on. We are also looking at how it can be maintained and developed over time.

We believe this approach can provide for risk-free experimentation by regulators and significantly improve the process of regulatory policy and incentive design. It encourages the creation of incentives that map actual behaviour and do not rely on disputed data. It can improve impact assessment and provide a framework for assessing alternative business strategies and regulatory actions without the risks of real-life implementation. Finally, it creates a language in which politically charged items can be discussed in a non-adversarial way. ●

Felicity Furness is a consultant at Indepen, and Paul Ormerod is an economist and director of Volterra Consulting.

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Comments from participants

Tony Ballance, director of regulation and strategy at Severn Trent: “The unexpected benefit of this approach was the real engagement between the regulator and the companies. This has the potential to control ... unintended consequences.”

Martin Silcock, strategy manager, Anglian Water: “The interactive process whereby the model was developed gave time for thought and refinement that a more intensive or technically-based approach would not have done.”

Cathryn Ross, director of railway markets and economics, Office of Rail Regulation: “For a regulator, the approach provides a way of considering how different types of company might respond to different incentive

structures. It provides behavioural insights that are often lacking in regulatory policymaking.”

Andy Pym, head of regulation, policy and audit, Wessex Water: “The relatively limited requirement for detailed assured data was a major benefit of the approach, in that it allowed us to focus on how things worked rather than what the numbers were.”

Chris Esslin-Peard, director of Future Price Limits, Ofwat: “When we think about designing new incentive schemes or reviewing existing ones, we need to think about the transmission mechanism. Behavioural modelling could give us a useful insight into how companies respond to the regulatory framework.”