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Agenda

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The regulatory asset base and regulatory commitment

The regulatory asset base (RAB) is a key aspect of infrastructure industry regulation in the UK and elsewhere. Jon Stern, Honorary Visiting Professor at City University, London, argues that the most important feature of the RAB is the process by which it is reassessed and revised, and that this provides considerable evidence on the consistency and transparency of regulatory regimes

Great Britain developed the RAB to provide comfort to investors in privatised network utilities such as electricity, natural gas, railways, telecoms, transport and water that their investments would not be treated unfairly. RABs were initially developed in the early 1990s for UK infrastructure industries by Ofwat (the economic regulator of the water industry in England and Wales). Ofwat created the first infrastructure RAB for the purpose of setting its five-year price limits in 1994.

In the UK, RAB protection has become the de facto major perceived underpinning of investor expectations for UK infrastructure industries, particularly against retrospective 'asset-taking' and prospective asset-stranding. RABs exist in a number of other countries for both privately and publicly owned utility infrastructure industries; but, as discussed below, the degree to which they have been successful has depended primarily on the quality and predictability of the regulatory framework within which they operate.

One of the curiosities of the GB RAB approach is that it has become so important without any explicit legislative backing. For instance, the current legislation for water defines the primary duties of Ofwat as:

- furthering the consumer objective; and
- ensuring that regulated water companies 'are able (in particular by securing reasonable returns on their capital) to finance the proper carrying out [of their regulated water functions].'[1]

The relevant legislation for electricity, gas, railways and telecoms uses a similar formulation.

There is no explicit mention of RABs in UK primary legislation or in regulatory licences. *However, precisely because they have no explicit legislative support, their reliability as a commitment device depends crucially on regulators keeping to the spirit as well as the letter of RAB commitments.* If UK regulators were seen by investors as violating that spirit then the RAB's credibility as a commitment device could quickly disappear—and would probably be virtually impossible to retrieve. In this regard, investor perceptions are crucial, as has been found with British Gas in the 1990s and, more recently, with water industry regulation.

The importance of RABs as a commitment device is not, however, only in their existence. It arises primarily out of the regulatory context in which they are set, updated and revised. *Hence, my key conclusion is that the role of the RAB as a commitment device derives from the quality of its implementation plus the predictability and integrity of the process by which it is revised or redefined, rather than from the definition of the RAB per se.*

Well-defined RABs in insecure regulatory environments offer little as a commitment device, whereas, at least in principle, the same degree of commitment could be offered by a secure regulator using a different mechanism. It is just that RABs have been accepted as a useful device by infrastructure regulators in the UK and other countries, and their relative success—and familiarity—has provided reputational support. Indeed, it may be that some of the success of the UK RAB concept arises precisely because it does not have legal force. This, unlike the US 'rate base' model, allows the regulator to amend contracts via an ordered review, revision and renegotiation of licences.[2]

In the USA, investor protection is given via explicit legal protection—for example, by the 1944 Supreme Court Hope Natural Gas ruling and subsequent administrative law determinations.[3] This provides more certainty but, arguably, at considerable legal and management cost. However, the US 'rate base' approval model does not provide total protection to investors either in theory or in practice, since

only 'efficiently incurred' costs are included in the rate base, and 'inefficiently incurred' costs can be excluded. In practical terms, costs can be—and have been—disallowed from the rate base if they do not pass the efficiency test (viz. US disputes and disallowances of some nuclear power station construction costs in several US states in the 1980s). This undoubtedly had a chilling effect on US nuclear plant construction, but it does not appear to have had wider effects on the rate base approach as a commitment device to support private investment in electricity or other infrastructure network industries, not least because other strong legal underpinnings effectively limit cost exclusions.

RAB integrity, and the degree of protection of private investors on asset-stranding, have emerged as a problem in various jurisdictions, particularly over the introduction or widening of competition. Examples include the failed California electricity reform and Spanish electricity (both involving nuclear plants). Another example is the consequences of the unwinding of very long (e.g. 25-year) Central European privately financed generation refurbishment and operations contracts when their countries were obliged to introduce competitive generation markets on joining the EU.[4] In all these cases, transitional arrangements were made involving customer and/or network price surcharges.

The GB RAB alternative, although more fragile in theory, appears in practice to provide considerable protection relative to the US model via reputational effects on the cost of capital. Primarily because of the way in which UK regulators have treated their revision, UK RABs regularly score highly in ratings agency appraisals.

UK RABs appear to allow relatively easy negotiation of change between regulators and companies, for example as regards unbundling and the introduction of competition.[5] However, UK experience also demonstrates how the expectations of the parties and the limits on the regulator from modifications to the RAB can be perceived as threatening its security (e.g. in debt contracts).

RAB definitions in the UK and EU

The key concept behind the RAB is financial capital maintenance (FCM). This has been used as one of the control methods for the UK nationalised industries since the late 1980s. Hence, FCM—and the RAB—address the issue of whether the financial capability of the company is being maintained intact.

The value of the RAB can be expressed as:[6]

> gross current cost of assets + provision for depreciation = net book value

This is a general formulation that applies widely across all infrastructure industries.

In most non-UK cases, the net book value is the same as the RAB. However, for the privatised UK network infrastructure industries, the RAB is generally a lot lower than the current replacement-cost net book value because, at privatisation in the 1980s, the assets were sold at a substantial discount to the replacement cost. At the extreme, for the England and Wales water industry, the current replacement cost (or modern equivalent asset value) of the assets in 2010 prices was about £224bn, but the privatisation proceeds were £10.3bn (in 2010 prices).[7] The difference is a combination of the privatisation discount and the capital investment (net of depreciation) undertaken since privatisation. Hence, for the UK infrastructure industries privatised after 1980:

> net book value – privatisation discount = RAB

For infrastructure industries in the USA and other countries which have been in private ownership since their inception or for very long periods, the value of the RAB is the same as the net book value of the assets. The same applies to state-owned industries where there is a RAB.

A number of EU countries also have RABs, but 'simple' ones that are often linked to the historic-cost net book value with an adjustment for inflation. For instance, Austria, Belgium, Finland, France, Germany, Ireland, Italy, the Netherlands and Spain all have electricity and gas network RABs for electricity and gas transmission/transport. Several of these are partially or wholly state-owned. Somewhat surprisingly, the electricity network RABs in Belgium and France include working capital, as do the gas network RABs in Belgium, Germany and Italy.[8]

Looking more widely, Australia and New Zealand both have RABs for many of their infrastructure industries—as do Brazil and Chile for their water industries. Most of the Australian and New Zealand examples are for publicly owned entities, but often (as in gas and electricity) for vertically unbundled entities where the RAB applies to the network only.

The effectiveness of these RABs depends on the quality of the regulators who apply them. In general, one would expect them to be more effective for privately owned industries, and there can be major problems in RAB enforcement in state-owned industries (as in retail gas in France in 2012, where the French government refused to pass through a RAB increase, mandated by the French energy regulator CRE, into household gas prices[9]). However, Ireland has state-owned electricity and gas industries and there have been no such RAB commitment problems there. Conversely, RAB commitment concerns have arisen in some EU countries with privately owned infrastructure industries, such as Germany, the Netherlands and Portugal, but not Italy.[10]

RABs, vertical (dis)integration and competition

The privatisation of vertically integrated infrastructure companies as bundled entities became a major issue for the GB RAB approach, when governments and/or regulators decided, some years after privatisation, to separate networks from services, to introduce upstream and/or downstream competition in service markets, and to unbundle the companies. This affected natural gas, electricity in Scotland and English local areas, and water; plus, to a lesser extent, telecoms. In practice, these have raised the most important challenges to UK-style RABs since 1995.

RABs are regularly put in place for infrastructure industry monopoly *networks*. However, in many cases—e.g. British Gas pre-1995 and the England and Wales water supply companies—the RAB is applied to the whole vertically integrated *company*. This can create problems if the company is subsequently unbundled, as the original RAB has to be reallocated between the new entities.

The classic British example of these problems is the unbundling of British Gas in the mid-1990s. The key issue was the privatisation discount, and how it would be allocated between the network and non-network businesses. The choice was between:

- a 'focused' reallocation, under which all of the privatisation discount was allocated to the transmission business and its RAB; and
- an 'unfocused' allocation, under which the privatisation discount was allocated across the monopoly network and other businesses.

Fundamental regulatory economics suggested that the focused approach was the more appropriate, and that is what Ofgas (now Ofgem) recommended in its evidence to the UK Monopolies and Mergers Commission[11] inquiry in 1996–97. However, British Gas Transco argued strongly that it had operated all its businesses—network and non-network—under an unfocused approach for the 15 years since privatisation. It consequently argued that, whatever the theoretical arguments, the RAB reallocation should allocate some of the RAB (and the privatisation discount) to the non-network businesses to reflect this.

The eventual decision was in favour of the unfocused approach, which spread the privatisation discount between the transport business and the storage business. The importance of this for the valuation of the company and the cost of capital is shown via the share price of Lattice (which then owned Transco), which rose by about 10% at the news release of the Ofgem 2001 decision.[12] It had previously fallen back when it was felt that the *company's* RAB valuation was under threat, even though the core network RAB was always fully protected.

For long-lived non-network investments such as nuclear power stations, some commentators (e.g. Professor Dieter Helm of New College, University of Oxford) have argued for RABs. However, they compete with production from other assets which have no such protection. In the UK, the government's chosen alternative for new nuclear power stations has been to conclude 35-year contracts, which avoids the competition problem of a RAB. However, these very long-term nuclear contracts involve a much higher price than those in current wholesale generation contracts. This is apparently one reason why the European Commission has expressed concerns over cost justification of the proposals and the compatibility of the proposed approach with EU state aid legislation.[13]

It would be possible to create RABs for other major non-monopoly infrastructure industry investments, but this is rarely (if ever) done.

RABs and credit rating agencies

One of the main ways in which RABs and their management affect infrastructure financing costs is via ratings from the main credit rating agencies. In what follows, I focus on Moody's Investors Service Ltd (Moody's), which has been very active in the debate surrounding GB water RAB protection.

Moody's does not have a scoring mechanism specifically for 'RAB commitment'. It believes that it would be challenging to devise such a scale and, in any event, RAB is only one part of the regime and not the sole focus.[14] This reflects my main argument, which is to emphasise the quality of the regulatory regime within which RABs are embedded, rather than RAB definitions per se.

Moody's currently assigns the regulatory regimes in the UK a score of AAA for the regulatory stability and predictability sub-factor. This reflects the historic stability and predictability of the regimes with a more than 20-year history and reliance on clearly defined risk-allocation principles, which have been consistently applied and transparently disclosed.

The comments about the EU energy RABs above are drawn from Moody's appraisals using the methodology discussed.

RABs and financing costs

It is difficult to assess what effect changes in RAB values and in credit ratings have on share and bond prices. They are affected by a wide range of factors and are much more volatile than credit ratings. However, there are some pointers to significant RAB impacts, for example on share prices. One is the Lattice (Transco) share price impact discussed above. Another UK example is Severn Trent, an English water and sewerage company, whose share price initially fell by 3% following the publication of the proposed October 2012 Ofwat licence modification.[15]

A more spectacular example is SABESP, the Brazilian water company, where speculation that its RAB value would be increased was associated with an increase in its share price of almost 100% over 2012. However, one might expect a larger impact of RAB changes on share prices in countries such as Brazil, where regulatory reputations are more fragile than in OECD countries.

One of the most persuasive pieces of evidence in favour of positive RAB commitment effects within the UK regulatory system comes from the London Underground public–private partnership (PPP) contracts. These embodied the equivalent of RAB protection for efficient assets (and their operation), but in an unfamiliar and much less transparent format than the Network Rail equivalent.[16]

The National Audit Office reported that the likely real rates of return to the London Underground PPP contractors (Metronet and Tube Lines) were in the range 10–17%.[17] These compare to the 2008 GB Office of Rail Regulation (ORR) estimate of the cost of capital for Network Rail on its RAB of 4.75%. Of course, there were significant political risks with the PPP contracts and Network Rail is a company 'limited by guarantee' rather than a standard privately owned company. Nevertheless, the fact that the London Underground RAB was embodied in a special and rather different institutional setting seems to have made a major difference to its effectiveness as a commitment device.[18]

Concluding comments

This article (and the paper from which it derives) sets out the arguments in favour of RABs as an effective regulatory commitment device for infrastructure industries and, in particular, for their networks. However, this seems to depend primarily on the security of the regulatory setting within which they operate and are revised. This includes the effect, for example, on the transparency and consistency of regulatory decisions of both formal, legal frameworks and informal experience.

It is not clear how far the UK experience can be reproduced in different environments. It evolved over a period of more than 20 years after the privatisation of the main British infrastructure industries. The RAB approach is by no means a panacea. Nevertheless, it does seem to have provided a useful safety net for keeping down the cost of capital for privately financed infrastructure investment, and versions of it seem to have been successful in Latin America as well as in Australia—at least in countries with strong regulatory frameworks and track records.

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[1] See Ofwat (2010), 'Financeability and financing the asset base – a discussion paper', p. 10.

[2] Where licences represent explicit or implicit contracts. See Stern, J. (2012), 'The Relationship between Regulation and Contracts in Infrastructure Industries: Regulation as Ordered Renegotiation', *Regulation and Governance*, **6**:4.

[3] US Supreme Court, *FPC v. Hope Nat. Gas Co. - 320 U.S. 591 (1944)*, 3 January 1944. In this case, the US Supreme Court interpreted the 14th Amendment of the US Federal Constitution to prohibit 'regulatory takings'. This ruling became a cornerstone of US utility regulation.

[4] This was a particular problem for electricity in Hungary.

[5] See Stern, J. (2012), 'The Relationship between Regulation and Contracts in Infrastructure Industries: Regulation as Ordered Renegotiation', *Regulation and Governance*, **6**:4.

[6] See Vass, P. (1999), 'Accounting for Regulation', CRI, University of Bath.

[7] See Ofwat (2010), 'RD 04/10 Regulatory Capital Values 2010-15'. The privatisation proceeds in 1989 prices were £5.3bn gross.

[8] See IERN (2010), 'Overview of European Regulatory Framework in Energy Transport'.

[9] See Stern, J. (2014), 'The Role of the Regulatory Asset Base as an Instrument of Regulatory Commitment', *European Networks Law and Regulation Quarterly*, 2:1, p. 21.

[10] See Stern, J. (2012), 'The Relationship between Regulation and Contracts in Infrastructure Industries: Regulation as Ordered Renegotiation', *Regulation and Governance*, 6:4 for a fuller discussion of EU and other countries' experiences.

[11] Now the Competition Commission.

[12] See Shuttleworth, G. (2001), 'Ofgem "focuses" on important matters at Transco', NERA Energy Regulation Brief, July; and Oxera (2001), 'Transco's Price Control', *Utilities Journal*, July.

[13] European Commission (2013), 'State aid SA. 34947 (2013/C) (ex 2013/N) – United Kingdom Investment Contract (early Contract for Difference) for the Hinkley Point C New Nuclear Power Station', 18 December.

[14] Moody's (2009), 'Global Infrastructure Finance: Regulated Electric and Gas Networks', Rating Methodology, August; and communication with Neil Griffiths-Lambeth, Senior Vice-President, Moody's.

[15] These modifications were subsequently substantially changed in response to strongly voiced objections by the companies, not least concerning their impact on the cost of capital. See Moody's (2012), 'Announcement: Moody's: Latest licence modification proposals positive for UK Water Sector', Global Credit Research, 21 December.

[16] For a discussion of the London Underground PPP contracts and their financing obligations, see Bolt, C.W. (2007), 'Regulating by Contract and by Licence', CRI Occasional Lecture.

[17] National Audit Office (2004), 'London Underground PPP: Were they good deals?', 17 June.

[18] I am grateful to Chris Bolt for helpful information on the London Underground PPPs