
**PRIVATE VS PUBLIC FINANCING OF WATER
COMPANIES: A COMPARATIVE ASSESSMENT**

John Earwaker

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EXECUTIVE SUMMARY

- One strand in the debate about the merits of private vs public ownership of England's water companies has been a difference of views about the costs that customers would bear under alternative ownership models.
- On one side, proponents of public-sector structures have claimed that a change of ownership would lower industry financing costs and unlock a reduction in bills worth as much as £100 per household. On the other side, critics have pointed to the private sector's track record of efficiency and argued that higher financing costs are a price that is worth paying for lower industry expenditure and better quality.
- In this paper I seek to ground future discussion in this area in a more accurate analysis than I have seen put forward to date of the costs of financing companies in the private and the public sectors.
- I start by showing that the academic research in which the £100 figure first appeared contains multiple errors. I then show that the specific financing proposals put forward by the Labour Party in September 2018 are capable of reducing industry financing costs by the equivalent of no more than £40 per household, potentially increasing to about £45 per household over five years.
- This, to me at least, alters the terms of the debate. If Labour could credibly promise customers an initial £100 reduction in bills, it could perhaps be argued that there would have to be a very striking backslide in companies' efficiency in order for households to end up worse off overall. However, when the initial step down in bills is actually no more than £40-45 per household, the margin for error is much smaller and scenarios in which bills end up higher – or there is a future call on taxpayers – become far more plausible given the scale of the expenditures that companies are managing and the known scale of the privatised water companies' efficiencies.
- As evidence for this, I highlight in the paper the loss of efficiency that Network Rail has experienced since its renationalisation five years ago and the consequences of Transport for London's difficulties with the Crossrail project, as two cautionary tales that I think might usefully act as reference points in the future debate about ownership choices.

1. INTRODUCTION

The Labour Party ran at the 2017 general election with a manifesto commitment to take England's water and sewerage companies into public ownership. In September 2018, the Party produced a pamphlet, *Clear Water: Labour's Vision for a Modern and Transparent Publicly-owned Water System*,¹ which explained how publicly owned companies could be structured and financed.

In this paper I offer a critique of these proposals. My objective is to establish how much of a saving Labour's proposals are capable of generating for consumers, and to draw out some of the other consequences that a switch to public-sector financing might have.

The paper is organised into five main parts, as follows:

- section 2 gives a brief snapshot of current industry financing arrangements;
- section 3 summarises the proposals in the *Clear Water* pamphlet;
- section 4 attempts to calculate by how much the Labour Party's plans could reduce industry costs;
- section 5 offers a few observations on this analysis; and
- section 6 suggests some conclusions.

2. CURRENT INDUSTRY FINANCING ARRANGEMENTS

Since the privatisation of the water industry in 1989, England's nine water and sewerage companies have relied on outside investors to finance investment in new infrastructure. The external financing requirement in the last 30 years has typically been several billion pounds a year, meaning that, as of 2019, the companies have built outstanding capital obligations of a little over £60 billion.

Approximately 70% of this amount is money that has been borrowed from lenders, typically in the form of corporate bonds. The remaining 30% is capital that has been invested by the owners of the companies as equity. When the industry regulator, Ofwat, calculates the charges that customers must pay to companies, it recognises the cost of both forms of capital as a legitimate and unavoidable cost of doing business. This means that customers ultimately pay for private-sector financing costs. In its most recent analysis, published in December 2017, Ofwat has indicated that it expects to factor a 2.4% real (i.e. after RPI inflation) weighted average cost of capital into allowed revenue calculations for the period 2020-25.² This is a lower figure than Ofwat currently provides for, reflecting the recent shift down in global interest rates, but will still mean that around 20p in every pound of a typical household customer's bill will go towards paying for the industry's external financing.

3. LABOUR'S PROPOSALS

The Labour Party's policy would transfer ownership away from private-sector shareholders to the state. The detailed proposals in Labour's *Clear Water* policy pamphlet are summarised in Box 1 overleaf.

¹ Available at: <https://www.labour.org.uk/wp-content/uploads/2018/09/Conference-2018-Water-pamphlet-FINAL.pdf>

² Ofwat (2017), *Delivering Water 2020: our final methodology for the 2019 price review*.

Box 1

Ownership of England's nine water and sewerage companies would transfer under an Act of Parliament from existing shareholders to nine newly created Regional Water Authorities (RWAs). The new RWAs would be composed of local authorities in the regions served by the companies, and the RWAs' boards would be made up of local councillors, trade union representatives, and individual members nominated by Citizens Advice, the Environment Agency and a proposed public participatory observatory.

Existing shareholders would be compensated with bonds issued by the RWAs. The companies' existing debts would be carried over to the new owners and honoured in full until maturity, at which point there would be an opportunity to refinance borrowings with further tranches of new bonds.

All staff would transfer over on a TUPE basis, except for directors and senior executives whose posts would be re-advertised (with salaries capped at 20x the salary of the lowest paid staff).

Services would then be run on a not-for-profit basis, with any surpluses earned by the companies reinvested in the sector's infrastructure and staff or used to reduce bills.

The industry regulator, Ofwat, would be absorbed into the Department for Food, Rural Affairs and Agriculture, which would develop a new regulatory function in the form of a new National Water Agency to oversee pricing and performance standards.

Labour's proposals raise lots of questions: how well equipped are local authorities to run water companies; is there a strong enough consumer voice in the governance structures that Labour is proposing; how would the likely management upheaval affect water companies' performance; and what long-term consequences would flow from abolishing independent economic regulation? In the next section of the paper, though, I take on just one specific point: what, in isolation, holding all other things constant, would it mean for customers to replace equity capital and, eventually existing borrowings, with public-sector bonds?

4. THE COST OF CURRENT AND POSSIBLE FUTURE FINANCING ARRANGEMENTS

The Labour Party has argued on several occasions that private ownership and private financing cost the average household £100 per year.³ One of the key arguments for change has been that public ownership would eliminate this cost, either allowing bills to come down (if the saving were to be passed directly to customers) or permitting the government to spend more on other public services (if bills were to remain unchanged and surplus monies were transferred to the Treasury).

In the calculations that follow, I try to establish if this, at least in the first instance, is a plausible claim (i.e. leaving aside all of the other facets of the debate about private vs public ownership). I do this by working through three possible financing scenarios.

³ This figure has also been cited in press coverage – e.g. <https://www.bbc.com/news/election-2017-39930278> and <https://www.ft.com/content/90c0f8e8-17fd-11e8-9e9c-25c814761640>.

Counterfactual 1: Full replacement of existing private-sector capital with government gilts

The £100 figure comes from analysis published by Kate Bayliss and David Hall, two researchers at the University of Greenwich. In a 2017 paper,⁴ they argued that a Labour government could replace all existing private-sector capital with government gilts. They determined that the consequent elimination of all shareholder dividends and a lowering of the interest payable on companies' borrowings would generate savings of £2.2-2.5 billion per annum, which they said equates to a possible reduction in bills worth approximately £100 per household customer.

In annex 1, I identify a number of mistakes that Bayliss and Hall make in their computations. The mistakes, in combination, mean that the £100 figure cannot be relied upon either as an accurate calculation of the cost of servicing existing private-sector capital or of the saving that public ownership could release for customers and/or taxpayers.

My take on Bayliss and Hall's thought experiment is set out below. The first line in the calculation is the total amount of capital that the nine water and sewerage companies have taken from investors but not yet repaid, as measured by Ofwat's regulatory capital values (RCVs). The next two inputs are the rate of return that Ofwat has indicated it will factor into customers' bills from 1 April 2020, when the regulator's next five-year price control comes into effect, and the cost at January 2019 of financing the existing RCV wholly via government gilts⁵ at a mix of different maturities.⁶ The difference between these figures is approximately 4 percentage points or the equivalent of around £2.5 billion. The last line in the calculation then allocates this saving 80:20 between household and non-household customers and solves for the average saving for a typical household customer.

Current industry RCV = £62 billion

Ofwat's PR19 cost of capital = 2.4% (after RPI inflation)

Interest rate payable in counterfactual 1 = - 1.6% (after RPI inflation)

Difference = 4%

Initial saving in counterfactual 1 = £62 billion x 4% = £2.5 billion

Possible reduction in average household bill = £2.5 billion x 0.8 / 23.1m households
= £85 per household

⁴ Bayliss and Hall (2017), Bringing water into public ownership: costs and benefits.

⁵ At 31 December, the yield on 10-year gilts was 1.31% and the yield on 25-year gilts was 1.92%.

⁶ It is likely that issuing a large quantity of new gilts in a short space of time would cause yields to rise from current levels. I have not factored any such increase into my calculations.

The calculations suggest that a typical household customer pays £85 per each year due to the industry's use of private finance.

Counterfactual 2: Replacement of existing equity capital with government gilts

The calculations set out above, although they are interesting, are not a characterisation of the policy proposals set out in *Clear Water*. The pamphlet made it clear that a Labour government would not seek to swap existing borrowings with new public-sector debt, but would instead leave existing debts in place until previously agreed maturity dates. There is a good reason for this: most of the debt issued by water companies is in the form of bonds with fixed coupons, and these bonds have been changing hands at well above face value following recent economy-wide falls in interest rates. This means that it would cost the government many billions of pounds to redeem these bonds early – a course of action which, in the wider scheme of things, would probably not represent a good use of taxpayers' money.

We must, therefore, adjust the earlier calculations so as to depict properly the consequences of replacing only the equity portion of the industry's current capital base. The arithmetic is set out below. I estimate that the total amount of equity capital across the nine companies is currently around £18 billion. The return to equity holders under Ofwat's current proposals for the 2020-25 regulatory period will be approximately 5.4%.⁷ This is roughly 7 percentage points above the cost of government gilts, meaning that there could be a potential saving of around £1.3 billion or £45 per household customer if equity were to be swapped for newly issued gilts.

Current industry equity capital = £18 billion

Ofwat's PR19 cost of equity capital (restated) = 5.4% (after RPI inflation)

Interest rate payable in counterfactual 2 = - 1.6% (after RPI inflation)

Difference = 7.0%

Initial saving in counterfactual 2 = £18 billion x 7.0% = £1.3 billion

Possible reduction in average household bill = £1.3 billion x 0.8 / 23.1m households

= £45 per household

⁷ Ofwat has provided in its PR19 proposals for a 4.0% rate of return for a company with a 40:60 equity:debt capital structure. This is equivalent to a 5.4% rate of return to companies that choose a more highly geared 30:70 capital structure.

Counterfactual 3: Replacement of existing equity capital with sub-sovereign bonds

The revised calculations still fall short of completely capturing the precise financing arrangements outlined in *Clear Water*. As set out in Box 1, the policy proposal is that the new RWAs should issue bonds as stand-alone entities, rather than look to central government to disburse the proceeds of new gilt issuance – an arrangement which is modelled on the way that Transport for London (TfL) currently finances itself. This is an important distinction because the debt issued by RWAs would not come with any sort of explicit guarantee from government regarding the payment of interest or the repayment of principal.

In practice, the government may give certain assurances about its support for the RWAs and/or lenders may end up implicitly assuming that the newly issued bonds are ‘safer’ than normal corporate bonds (I discuss this further in section 5). It could be, therefore, that lenders and rating agencies would view such debt as ‘sub-sovereign bonds’. If this were the case, public-sector financing would likely deliver a saving relative to the interest costs that private-sector water companies currently have to pay, but not to the extent that interest rates would be driven down all the way to the level of central government gilts.

Based on the evidence that I present in annex 2, I think it would be reasonable to assume that the RWAs might have to pay a premium of around 75 basis points above gilts. If I factor this premium into the calculations that I set out above, the saving to customers that comes from replacing equity capital with new debt drops from £45 per household to £40 per household, as follows.

Current industry equity capital = £18 billion

Ofwat’s PR19 cost of equity capital (restated) = 5.4% (after RPI inflation)

Interest rate payable in counterfactual 3 = - 0.85% (after RPI inflation)

Difference = 6.25%

Initial saving in counterfactual 3 = £18 billion x 6.25% = £1.15 billion

Possible reduction in average household bill = £1.15 billion x 0.8 / 23.1m households

= £40 per household

Extension: Refinancing or existing debt and financing of new investment with sub-sovereign bonds

The only piece that is now missing from my calculations is the saving that can be obtained by issuing new public-sector bonds when (i) existing industry debts mature and (ii) water companies need new capital to support new investments.

The amount of maturing debt varies from year to year, but in the period 2020-25 I estimate that approximately £13 billion of borrowings will need to be refinanced regardless of whether companies are in private or public hands. The amount of capital that companies will need for their investment programmes is harder to quantify, given that Ofwat is still reviewing the plans that companies submitted to it last September, but could be in the order of £6 billion over five years.

I noted above that sub-sovereign bonds might pay a premium of 75 basis points above the yield on government gilts. The evidence in annex 2 suggests that private-sector water companies might need to pay a higher premium of around 150 basis points. This means that by 2025, public ownership could potentially save customers an additional £0.15 billion or the equivalent of £5 per household via the switch to a cheaper form of borrowing.

Additional capital requirement up to 2025 = £13 billion + £6 billion = £19 billion

Cost of private-sector debt = gilts + 150 basis points

Interest rate payable in counterfactual 4 = gilts + 75 basis points

Difference = 0.75%

Additional saving in counterfactual 4 by 2025 = £19 billion x 0.75% = £0.15 billion

Possible reduction in average household bill = £0.15 billion x 0.8 / 23.1m households

= £5 per household

Summary

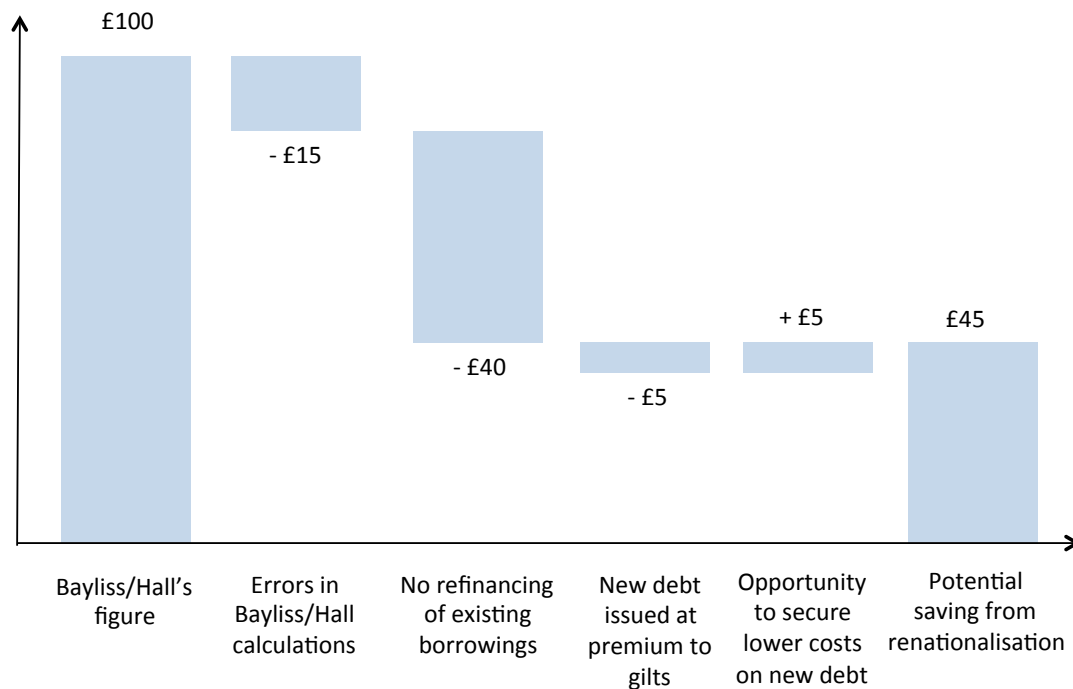
The calculations that I have run show that the £100 saving per household figure that has been cited by some proponents of public ownership significantly overstates the cost reductions that the financing structure in the *Clear Water* pamphlet are capable of achieving. It would be more accurate in future to talk about a possible initial saving of £40 per customer, potentially increasing by around £5 to £45 per household customer after a period of five years.⁸

The waterfall diagram overleaf shows how this overstatement has come about. An important issue that the chart highlights is that a sizeable proportion of the difference between the private- and the public-sector costs of capital is effectively 'locked up' in long-term borrowing – a point that I do not

⁸ NB: I reiterate again that all of the calculations in this paper, whether those by Bayliss and Hall, the Labour Party in its *Clear Water* document or my own reworkings of these figures, are predicated on a steady state gilt/bond market. It is beyond the scope of this paper to quantify the impact that the advent of a Labour Government committed to significant additional public expenditure and nationalisation might have on financial markets.

think has been properly appreciated or acknowledged by many commentators. It would appear that there is scope to refinance other elements of companies' capital bases with cheap public-sector debt, but not to the extent that customers can be offered a saving in their bills of £100 a year at the point at which a change in ownership occurs.

Figure 1: Saving that could result from a switch to public-sector financing over a five-year period



5. COMMENTARY

A potential saving of £45 per household customer is nevertheless still a significant sum in its own right. The question that follows from the analysis I have just presented is: is there a good reason why customers should have to pay a £45 'levy' for private-sector financing?

Lower financing costs vs higher expenditure?

Voices that have spoken out in favour of the current industry structure have advanced a range of arguments in support of current water company ownership and financing arrangements. One of the key contentions that they make is that a transfer of companies out of the private sector and into the public sector would risk reintroducing some of the old inefficiencies that privatisation helped to weed out.

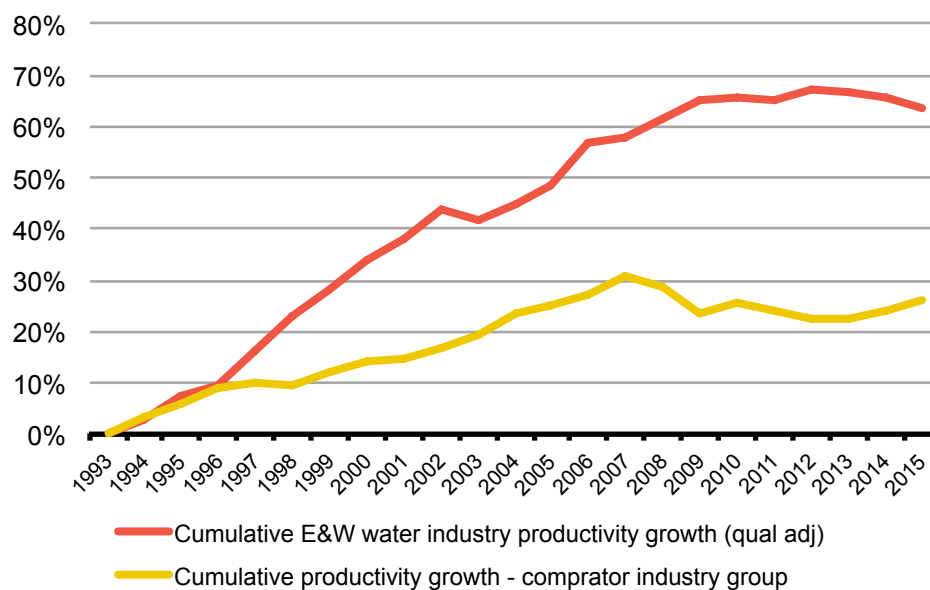
Box 2

In my 2017 paper, *Private vs public ownership of water and sewerage companies*,⁹ I reviewed evidence that England & Water's water companies had increased productivity by 30% more than

⁹ Available at: <http://www.first-economics.com/privatepublicwater.pdf>

comparator industries in the UK economy in the 25 years following privatisation and by 60% more than the public sector.

Figure 2: Water industry productivity growth



Source: Frontier Economics.

I also highlighted benchmarking work that showed the publicly owned industries in Scotland, Northern Ireland and the Republic of Ireland were spending at least 80% more than their peers in England until industry regulators started to challenge water companies to close the gap to the efficiency and performance standards being achieved by the leading English companies (NB: further details and supporting information can be found in section 4 and annex A of my previous report.)

Table 1: Comparisons between water companies

Company	Date of creation	Calculation of initial inefficiency versus leading England & Wales companies at the point of creation	Current position
Scottish Water	2002	80% in 2001	Scottish Water now ranks 'in the pack' with English companies
NI Water	2007	95% in 2010	Latest estimated inefficiency gap = 15%
Irish Water	2014	>100% in 2014	Latest estimated inefficiency gap = 70-100%

An obvious question to ask, given past experiences of public and private ownership, is whether the promise of a financing-related saving of £45 per household saving is likely to provide enough of a downpayment against the risk of future cost increases. The maths here is fairly straight-forward. In

section 4 I calculated that the *Clear Water* financing model could potentially reduce industry financing costs by £1.3 billion per annum. Business plans that companies published in September 2018 indicate that the nine water and sewerage companies will be managing annual expenditures of almost £10 billion over the period 2020-25 (NB: these projections have not yet been endorsed by Ofwat). It follows that water company efficiency would have to slip back by around 13% in order for customers be worse off.

13% sounds like a lot of inefficiency. But it is by no means an outlandish scenario. I can say this because we have a very recent case study of a network business that has been taken into public ownership and which has very quickly become markedly less efficient: Network Rail. The company's experience is drawn out in detail in annex 3 to this paper, from which the key points to note are that:

- Network Rail was challenged in 2013 by the railway's independent regulator, the Office of Rail and Road (ORR), to improve its efficiency by 19% over the period 2014 to 2019;
- Network Rail's most recent business plan states that it likely to have become 11% less efficient over the period of five years since its transfer to the public sector in 2014 (i.e. a shortfall of 30% against ORR's efficiency target); and
- ORR's investigations into the reasons for this deterioration in cost control have pinpointed renationalisation as one of the key explanatory factors behind the company's growing inefficiency.

It can be seen that the loss of efficiency that Network Rail has suffered would, if replicated by England's water companies, wipe out the saving in financing costs of £45 per household that I identified in the previous section. This is by no means a certain scenario but, Network Rail's experience at the very least tends to corroborate the line of argument that we have heard from opponents of public ownership – i.e. that it can be worthwhile for customers to pay higher financing costs in exchange for the greater efficiency that private-sector ownership and financing structures are capable of achieving.

Risk transfer

One other aspect of the debate about private versus public financing that I think is worth pausing on is risk transfer. In my 2017 report, I pointed out that the lower financing costs that come from swapping private-sector capital for government debt is not a free lunch. That is to say that the private-sector cost of capital is higher than the public-sector cost of capital for a reason – i.e. because private-sector investors take operational and financial risks away from customers and taxpayers, and require compensation for bearing and managing these risks.

The example I cited in my paper was Thames Water. The company's shareholders are currently funding a significant overspend as the business struggles with leakage from its pipes and as management battle to meet regulatory performance commitments. This serves to demonstrate that, under current ownership arrangements, it falls to shareholders to fund any additional expenditures that a company needs in order to meet customer expectations.

There is not the same buffer under public ownership. This comes through very clearly in TfL's finances (an organisation that *Clear Water* cites as providing the template for publicly owned and

financed water companies). TfL currently holds credit ratings of Aa3 with Moody's, AA- with Standard & Poor's (S&P) and AA- with Fitch, thus enabling it to borrow more cheaply than most private-sector organisations. However, the strong credit rating and low borrowing costs come directly from an assumption that customers and/or taxpayers are very likely to bail TfL out of any financial difficulties it encounters. This is formally expressed in the following terms by Moody's:¹⁰

The credit profile of Transport for London, as expressed in an Aa3 stable rating, combines (1) a baseline credit assessment (BCA) for the entity of a2 and (2) a very high likelihood of extraordinary support coming from the UK government in the event that the entity faced acute liquidity stress.

and S&P:

We factor the very high likelihood of support into our rating with a two-notch uplift to the stand-alone credit profile

and Fitch:

Fitch believes that extraordinary support from the UK government would be forthcoming if needed.

These are assumptions that have been proven correct by the recent injection of additional government funding for the cost and delivery overruns on the new Elizabeth Line (see annex 4).¹¹

It follows that a publicly owned water company is not going to be able to finance 100% of its RCV with debt, and it is not going to be able to pay the kind of interest rates that I picked in section 4, unless there is a very strong commitment from government to underwrite payments to lenders. This ought to be entirely self-evident: in the absence of government support, even small instances of overspending at a company that operates on a non-for-profit basis will jeopardise the company's ability to make payments to lenders.

This means that the notion of an instant £40-45 saving is, in some sense, an illusion. Yes, it is possible to engineer public-sector water companies' finances so that the companies pay less to lenders and customers pay less to the companies. But the quid pro quo is that customers and taxpayers, not outside investors, have to be pick up the bill if risks crystallise in an unfavourable way.

6. CONCLUSIONS

The examples of Network Rail and TfL highlight that owners of businesses bear risk. For the water and sewerage companies, those risks are largely around operating performance and the delivery of investment programmes. Transferring ownership doesn't mean these risks go away. They remain. To the extent that they are not borne by private investors, they will be borne by customers or taxpayers or a mixture of both.

¹⁰ Rating agency reports are available on TfL's website at <https://tfl.gov.uk/info-for/investors/Ratings?intcmp=13172>

¹¹ <https://tfl.gov.uk/info-for/media/press-releases/2018/december/new-financing-agreement-confirmed-for-crossrail-proje>

Payments made to private financiers and owners are payments/compensation for bearing risk. The rationale for private ownership and private financing of water companies – or, indeed, for private-sector provision anywhere in the economy – must be that the benefits that the private sector brings in terms of efficiency, service delivery and risk management more than offset the higher private-sector cost of capital. In this paper I have added to the critique that I originally put forward in my 2018 paper by showing that:

- it is wrong to say that continued private ownership is going to cost a typical household £100 per annum;
- financing costs under Labour’s Clear Water, in isolation and holding everything else constant, might initially be around £40-45 per household lower than at present; but
- there is a reasonable argument that this is a price that is worth paying, given the scale of the expenditures that companies are managing and recent experiences of private- and public-sector cost efficiency.

The paper should, therefore, help to better define the terms of the debate between proponents and opponents of change. If Labour could credibly promise customers an initial £100 reduction in bills, it could perhaps be argued that the backslide that there would have to be in companies’ efficiency for households to end up worse off would have to be very striking. However, when the initial step down in bills is actually no more than £40-45, the margin for error is much smaller and scenarios in which bills end up higher or there is a call on the taxpayer (see Network Rail and TfL) become far more plausible.

ANNEX 1

A CRITIQUE OF BAYLISS AND HALL'S COSTING OF PRIVATE-SECTOR CAPITAL

In their 2017 report, Bayliss and Hall present the following tables, which purport to show that public ownership of England's water and sewerage companies would unlock a cost saving worth the equivalent of £100 to every household customer.¹²

Table G. 1 Savings from public ownership (£ million) using 2016 figures

Company	2016 Dividends	2016 Net interest payable and similar charges	2016 Dividend + net interest	Debt+equity 2016	cost of capital (dividends + interest /debt+equity)	Public: refinanced with 10,15,20 yr gilts @ 1.25% (OFWAT)	Annual saving on cost of public capital over private capital	Annual saving per household (23.1m.)	average household old bill in E&W (Water UK)	saving as % of household old bill
Anglian Water	345.0	-143.4	488.40	9,553.30	5.1%	119.42	368.98			
Northumbrian Water	211.0	-106.3	317.30	3,357.80	9.4%	41.97	275.33			
Severn Trent Water	197.0	-209.3	406.30	5,841.90	7.0%	73.02	333.28			
South West Water	74.9	-55.4	130.30	2,323.40	5.6%	29.04	101.26			
Southern Water	125.1	-156.6	281.70	5,986.30	4.7%	74.83	206.87			
Thames Water	82.4	-231.0	313.40	13,267.90	2.4%	165.85	147.55			
United Utilities Group Plc	258.7	-219.4	478.10	8,966.00	5.3%	112.08	366.03			
Wessex Water	97.5	-73.5	171.00	2,613.60	6.5%	32.67	138.33			
Yorkshire Water	90.9	-255.2	346.10	4,699.70	7.4%	58.75	287.35			
Total / annual total	1,482.5	-1,450.1	2,932.60	56,609.90	5.2%	707.62	2,224.98	96.32	395.00	24%

Table G. 2 Savings from public ownership (£ million) using 2007-2016 averages

Company	2007-2016 average Dividends	2007-2016 average Net interest payable and similar charges	2007-2016 average Dividend + net interest	Debt+equity 2016	cost of capital (dividends + interest /debt+equity)	Public: refinanced with 10,15,20 yr gilts @ 1.25% (OFWAT)	Annual saving on cost of public capital over private capital	Annual saving per household (23.1m.)	average household old bill in E&W (Water UK)	saving as % of household old bill
Anglian Water	370.9	-138.8	509.73	9,553.30	5.3%	119.42	390.31			
Northumbrian Water	180.8	-113.3	294.03	3,357.80	8.8%	41.97	252.06			
Severn Trent Water	244.2	-212.5	456.70	5,841.90	7.8%	73.02	383.68			
South West Water	101.4	-62.7	164.08	2,323.40	7.1%	29.04	135.04			
Southern Water	66.7	-162.9	229.58	5,986.30	3.8%	74.83	154.75			
Thames Water	253.1	-300.6	553.75	13,267.90	4.2%	165.85	387.90			
United Utilities Group Plc	266.3	-205.3	471.58	8,966.00	5.3%	112.08	359.51			
Wessex Water	111.8	-74.1	185.89	2,613.60	7.1%	32.67	153.22			
Yorkshire Water	217.9	-194.7	412.56	4,699.70	8.8%	58.75	353.81			
Total / annual total	1,812.9	-1,465.0	3,277.90	56,609.90	5.8%	707.62	2,570.28	111.27	395.00	28%

There are a number of problems with these calculations, which mean that the £100 is not, in the end, a reliable estimate of either the cost of servicing private-sector capital or the saving that could be achieved via a change in ownership and a switch to public-sector financing. These are detailed below.

¹² I note in passing that the £100 figure is sometimes said to be the cost of the dividends that companies have paid out to shareholders. This is a factual error. The above tables show that Bayliss and Hall's analysis considered both the cost of interest payments to lenders and the cost of dividend payments, and that one has to add together both of these expenses in order to arrive at a figure of £100 per household.

1. The calculations are backward looking

All of the figures in the tables relate to financial payments made by water companies in the past (i.e. between 2007 and 2016). Ofwat's proposals for the 2020-25 regulatory period envisage significantly lower financing costs, and consequently significantly lower bills, consistent with the fall that there has been in global interest rates in the last few years.

At the time of writing, the best forecast we have is that the regulator will factor a 2.4% rate of return into its calculations of maximum charges, down from 3.6% for the period 2015-20 and 5.1% for the period 2010-15. It follows that future payments made to both shareholders and lenders will be much lower than the figures on the previous page, and that the calculations in the table overstate the savings that could be achieved at the current point in time.

2. Replacing existing debt would be prohibitively expensive

The calculations assume that all of the industry's existing capital (worth over £60 billion) would be swapped for new government gilts. In the case of existing debts, this is unlikely to be feasible, at least without making one-off compensation payments to lenders worth billions of pounds. As I note in the main body of the report, the reductions that there have been market interest rates during the last 10-20 years have meant that bonds issued by water companies when rates were higher than they are now trade at sizeable premia to par values. The government would therefore have to pay well in excess of face value to redeem most existing borrowings under the contractual terms normally included in such bonds.

It is noteworthy in this regard that the *Clear Water* pamphlet indicates that a Labour government would leave existing debts in place. This likely reflects a recognition of the large bill that early redemption would trigger.

3. Dividend payments are not an exact measure of the cost of equity capital

Bayliss and Hall use companies' annual dividend payments as their measure of the cost of shareholder capital. This is always going to be an imperfect proxy because most firms in the economy do not pay out all of their profits as dividends – i.e. they retain some level of profit to reinvest in their businesses. In addition, there are multiple reasons why water company dividend payments might vary from year to year. For example, a particular company at a particular point in time might be out- or under-performing its regulatory targets, leading it to temporarily boost or cut its dividend payments. Or a company may use higher or lower dividend payments to rebalance its capital mix between debt and equity financing, including by making inter-company payments within the group to which it belongs.

In a regulated industry like the water sector, it is possible to observe much more directly how much customers pay to fund the cost of servicing equity capital. In the 2015-20 regulatory period, Ofwat factored a cost of 5.65% (after RPI inflation) into customer bills. For the 2020-25 period, Ofwat's current estimate is that it will provide for a cost of 4.01% (also after RPI inflation). This latter figure is the best available anchor for any calculation of the cost saving that could be generated by swapping shareholder equity for government debt.

4. Confusion of real and nominal interest costs

When costing up a policy in which one type of financing is to be replaced with another type of financing, it is important that the costs of both forms of capital are measured on a like-for-like basis. This is not the case in Bayliss and Hall's calculations. Some of the interest paid by companies between 2007 and 2016 was coupons on conventional bonds (i.e. debts in which the principal owed by the company to the lender remains constant over time) and some of the interest was coupons on index-linked gilts (i.e. debt in which the principal owed to the lender increases each year in line with RPI-measured inflation). By contrast, the calculations in the table assume that all of the replacement capital would take the form of conventional gilts

This apples-for-pears comparison causes Bayliss and Hall to omit to account for the accretion of the principal on index-linked debt, and means that they misidentify the difference between the cost of private- and public-sector borrowing.

5. Over-allocation of cost to household customers

Towards the bottom of the tables on the previous page, Bayliss and Hall convert the £ billion savings that they think public ownership would unlock into an amount per household customer. The maths in the calculation is simply cost divided by the number of households.

In practice, only around 80% of water companies' costs are paid for by household customers. The remaining 20% is funded by charges paid by non-household business customers. It follows that any saving in financing costs one can identify must also be split 80:20 between household and non-household customers.

Conclusion

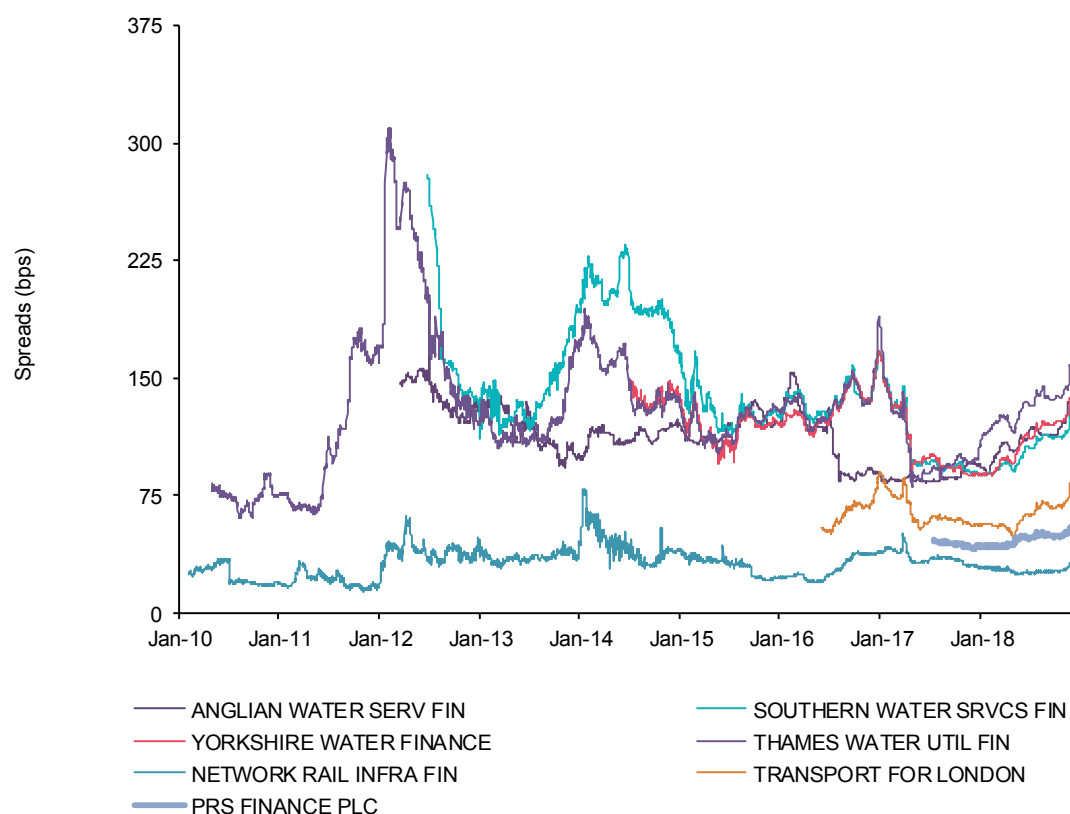
I have not attempted to correct line-by-line for all of the above errors, on the grounds that the underpinning logic in the original calculations is so flawed and the scale of the adjustments that I would have to make are so great as to require a complete re-write of Bayliss and Hall's original thought experiment. Instead, the counterfactuals that I set out in section 4 of the main body of the report are set up to sidestep many of the flaws in the 2017 analysis and give the correct costings for three different approaches to replacing existing capital with government debt.

ANNEX 2

HISTORICAL BOND YIELDS

The chart below plots the credit spreads in the secondary market of several publicly traded bonds relative to the nearest equivalent government gilt.

Figure 3: Credit spreads, 2010-18



Source: NatWest.

The chart shows variation in spreads over time. However, the premia in water company bonds averages approximately 150 basis points. The premia for TfL's bond averages around 75 basis points.

ANNEX 3

NETWORK RAIL: A CASE STUDY

Network Rail was set up in 2002 to take over the responsibilities of old Railtrack. It is a company limited by guarantee that is owned by member(s), not shareholders, and which is run on a not-for-dividend basis.

Between 2002 and 2014, Network Rail operated as a private-sector company. Then, in late 2013, following new guidance from Eurostat on the interpretation of European accounting rules, the Office of National Statistics announced that Network Rail would be classified as a public-sector company in the national accounts with effect from 1 September 2014.¹³ The reclassification prompted the Secretary of State for Transport to exercise rights that he had under Network Rail's Articles of Association to terminate the appointments of the company's owner members and to take control of the company. Network Rail also at this point had to adhere to Parliament's and HM Treasury's public expenditure rules including, among other things, the adherence to expenditure and borrowing limits.

Renationalisation occurred at a point in time when the company was facing challenges in a number of areas, including faltering performance and efficiency, a large investment programme, and a tough regulatory settlement for the 2014-19 control period. Its problems came to a head in early 2015 when it became clear that the business would not be able to stay within the public expenditure limits that had been agreed between Network Rail, government and the industry regulator, ORR, at the point of reclassification.

As a private-sector company, Network Rail would have been able to borrow additional money from the financial markets in order to fund the higher levels of expenditure that it needed to incur in order to maintain the condition of its infrastructure and get back on track to meet delay targets. As a public-sector company, this option had been taken away from it, and Network Rail had to negotiate with government for additional financial flexibility and/or permission to postpone planned expenditures and planned deliverables until after 2019. A composite package was eventually agreed in late 2015,¹⁴ comprising a higher borrowing limit, an injection of new funding from asset sales, and deferrals of planned renewal and enhancement work, together with a shared acceptance that Network Rail would be unlikely to meet key regulatory targets.

The rail regulator, ORR, whose regulatory determination for the 2014-19 had been effectively overwritten by the 2015 package of measures, continued to monitor Network Rail's spending and performance. The quarterly reports¹⁵ that it issued during 2016, 2017 and 2018 repeatedly painted pictures of further deterioration in performance. This can be seen most clearly in the two charts below. The left-hand chart shows the delay that Network Rail caused to passenger train services. The right-hand chart shows the efficiency with which Network Rail was operating, maintaining and renewing the railway.

¹³ ONS (2013), Classification of Network Rail under European System of Accounts 2010.

¹⁴ <https://cdn.networkrail.co.uk/wp-content/uploads/2015/11/hendy-report.pdf>

¹⁵ Available at: <http://orr.gov.uk/rail/economic-regulation/regulation-of-network-rail/monitoring-performance/network-rail-monitor>

Note that the right-hand side chart covers only the first four years of the five-year regulatory period. Figures for 2018/19 are not yet available, but, in its latest business plan, Network Rail forecast that it would experience a further decline in efficiency this year to a gross -10.7% behind its starting position in 2013/14.¹⁶

Figure 1: Network Rail delay minutes

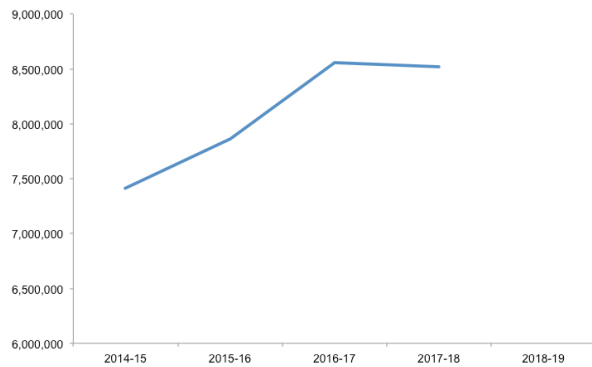
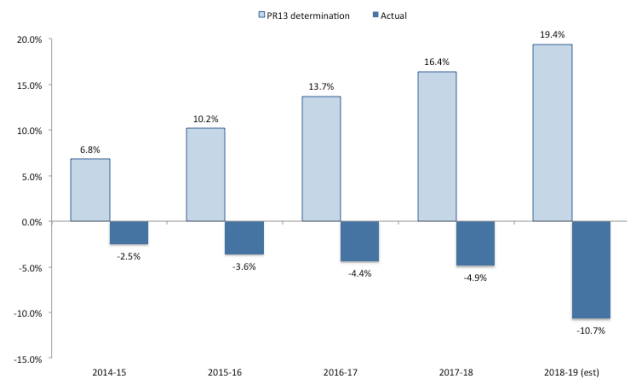


Figure 2: Network Rail's efficiency



Source: ORR.

By no means all of the backward steps that Network Rail has taken in the last five years can be attributed directly to renationalisation. Among other things, the company prepared poorly while in the private sector for the work that it was to take on in the 2014-19 control period and has suffered from constraints in engineering hours on an increasingly busy network. At the same time, Network Rail's public-sector status has meant that it has reacted much more slowly than one might expect to growing inefficiency and it has probably looked too quickly and too much to government to tell it how to plug financial shortfalls. ORR has also made it clear in its published reports that public expenditure rules has exacerbated problems and made it much harder to remedy poor performance. The following quote, taken from a document ORR published last year, exemplifies this point:¹⁷

[Network Rail] was affected by its reclassification into the public sector with the introduction of fixed borrowing limits. Inefficiency at the start of CP5 led to cost pressures and repeated re-planning of renewals projects, reducing the volume of work to keep spending within the borrowing limits. This re-planning created further cost pressures, leading to a downward spiral of deferred work and higher costs for the work done.

In its regulatory determination for the forthcoming 2019-24 control period, ORR has noticeably scaled back on its ambitions for the company. Whereas five years ago ORR was challenging Network Rail to deliver a 20% improvement in efficiency over a five-year period and match the best-performing railways in Europe, in the five-year period starting 1 April 2019 ORR is merely asking Network Rail to get back to get back to 2013/14 efficiency levels.¹⁸ For a business that spends close to £10 billion every year, the lost efficiency translates to in excess of £2 billion per annum of cost that is today being borne by passengers and taxpayers.

¹⁶ ORR (2018), Annual efficiency and finance assessment of Network Rail 2017-18.

¹⁷ *ibid.*

¹⁸ ORR (2018), 2018 periodic review final determination.

ANNEX 4

TfL'S SUPPORT FROM GOVERNMENT

TfL is a statutory corporation owned by the Greater London Authority (GLA). It is funded by user charges and government grants.

In 2018, TfL encountered financial difficulties following the delay to the opening of new Elizabeth line (the operational name for the Crossrail project) from December 2018 to autumn 2019. At the time of writing, the expectation is that the capital cost impact of the delay to the project will be in the region of £1.6 billion to £2.0 billion.

In December 2018 it was agreed that cost is to be funded via contributions of £150m, £150m and £100m from the TfL, DfT and the GLA, respectively, and a £1.3 billion loan to the GLA from the DfT. The DfT is also making a £750m loan facility available to TfL as an additional contingency measure.

On 20 December 2018, S&P wrote:¹⁹

This agreement supports our view of a very high likelihood that TfL would receive extraordinary support, if needed ... We factor the very high likelihood of support into our rating ...

It affirmed TfL's AA- rating and removed the organisation from CreditWatch negative.

¹⁹ <http://content.tfl.gov.uk/s-and-p-research-update-december-2018.pdf>