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# **PRIVATE VS PUBLIC OWNERSHIP OF WATER AND SEWERAGE COMPANIES**

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## 1. INTRODUCTION

The Labour Party's 2017 general election manifesto pledge to take a number of the UK's privatised industries back into the public sector has brought the structure of water and sewerage companies into focus. This paper is intended to be a contribution<sup>1</sup> to the debate about the merits of private versus public ownership. It is organised into five main parts as follows:

- section 2 provides a summary of current company ownership arrangements;
- section 3 looks at the cost of financing investment on private-sector balance sheets;
- section 4 examines the evidence that there is on the relative efficiency of private- and public-sector water companies;
- section 5 contemplates other consequences that ownership structures can have; and
- section 6 offers some concluding observations.

## 2. BACKGROUND

Up until the late 1980s, most<sup>2</sup> customers' water and sewerage services in the United Kingdom were provided by publicly owned regional water authorities. After the privatisations of the likes of BT and British Gas in the mid-1980s, the government moved on to a major restructuring of the water authorities in England & Wales, which culminated in the creation of ten new water and sewerage companies. In 1989, shares in these companies were sold by the government in a public flotation which raised more than £3 billion in proceeds for the public purse.

Almost 30 years later, the ten privatised firms continue to operate in broadly their original form (albeit, in a majority of cases, with an array of new shareholders following several rounds of acquisition activity). The notable exception is Welsh Water, which converted from a company limited by shares to a not-for-dividend company limited by guarantee<sup>3</sup> in 2001. The water and sewerage industries in Scotland and Northern Ireland have remained mainly in public hands: in Scotland, most services are provided to customers by a public corporation; and in Northern Ireland, services are provided by a central government body.

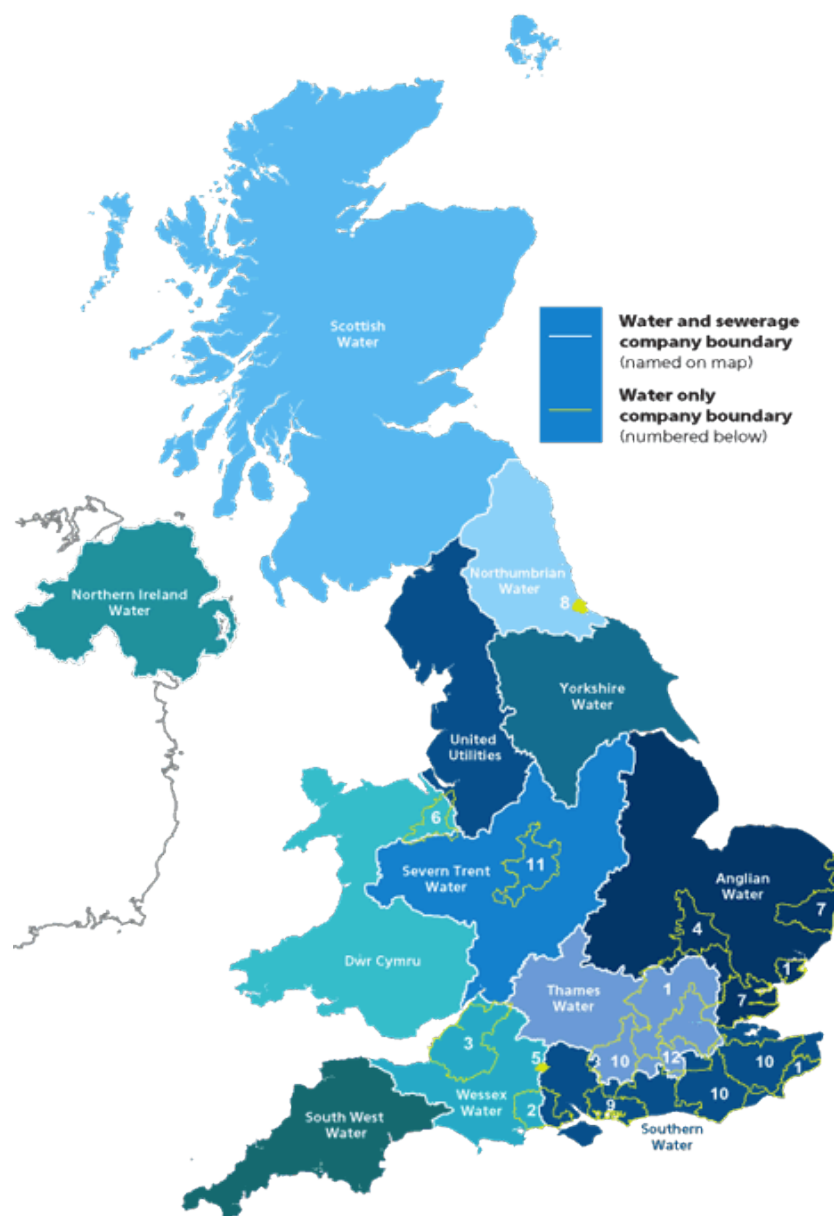
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<sup>1</sup> I am an economist who has more than 20 years experience advising regulators, government and companies on the economic regulation of the utility and transport sectors. This is a contribution of my own initiative and draws on my interactions with the UK's water companies and other regulated sectors during the 1990s, 2000s and 2010s.

<sup>2</sup> In some parts of the country, water services were provided by small, privately owned water-only companies.

<sup>3</sup> The appointed business Dwr Cymru is a company limited by shares. Its owner, Glas Cymru, is a company limited by guarantee.

Figure 1: The UK's water companies



*Note:* 1 = Affinity Water, 2 = Bournemouth Water, 3 = Bristol Water, 4 = Cambridge Water, 5 = Cholderton and District Water, 6 = Dee Valley Water, 7 = Essex & Suffolk Water, 8 = Hartlepool Water, 9 = Portsmouth Water, 10 = South East Water, 11 = South Staffs Water, 12 = Sutton & East Surrey Water.

### 3. THE COST OF PRIVATE SECTOR CAPITAL

As private-sector firms, the companies in England & Wales rely on lenders and shareholders, rather than government, for financial capital. The sector has been investing heavily in environmental and other quality improvements in recent years, meaning that the total amount of capital that the privatised companies have had to take from investors has grown from less than £5 billion at privatisation to more than £70 billion as at the start of 2018.

The lenders and equity holders that make capital available to companies do so in exchange for a financial return. In the case of lenders, this return takes the form of annual interest payments. Shareholders, in turn, have a claim on the after-tax profits that companies earn, which may be paid out as dividends or retained with the company.

The water industry regulator, Ofwat, recognises the cost of capital as a legitimate and unavoidable cost of doing business when it sets companies' regulated revenue entitlements. 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.<sup>4</sup> This is a lower figure than Ofwat currently provides for, reflecting the recent shift down in global interest rates, but will still mean that the average household customer will have to pay around £60 to £70 per annum to cover the cost of the England & Wales companies' external financing.

In any assessment of the costs and benefits of different ownership models, a first consideration has to be the difference that there is between the private-sector cost of capital and the financing costs that companies would pay in alternative world in which investment was/is financed by government debt. The arithmetic is broadly as follows:

- long-dated government gilts currently pay a yield of around minus 1.6% (after RPI inflation);
- the difference between the private-sector cost of capital and the public-sector cost of capital is therefore approximately 4 percentage points; and
- 4 percentage points multiplied across £70 billion of outstanding capital is approximately £2.8 billion per annum.

Seeing this arithmetic, proponents of renationalisation argue that private ownership imposes a significant cost on consumers. The proposition is that there would be a sizeable saving if companies are taken back into public ownership and if private-sector capital were to be swapped for new government debt. The (up to) £2.8 billion of avoided cost could translate directly into a reduction in customers' bills, or, alternatively, the government, as owner, could decide to retain a surplus to pay for other public expenditure. In either case, so the argument goes, society as a whole would be better off not having to pay interest costs and dividends to the providers of private-sector capital.

#### 4. PRIVATE SECTOR EFFICIENCY

The argument is an 'all other things will be held equal' argument. The voices that have argued recently for renationalisation, notably the academics Kate Bayliss and David Hall in their paper *Bringing water back into public ownership: costs and benefits*,<sup>5</sup> positively take the position that there is no reason to think that company operations would be affected by a change of ownership arrangement. That is to say that the prize of a lower cost of capital is one that can be obtained without any change in levels of efficiency, investment or service quality.

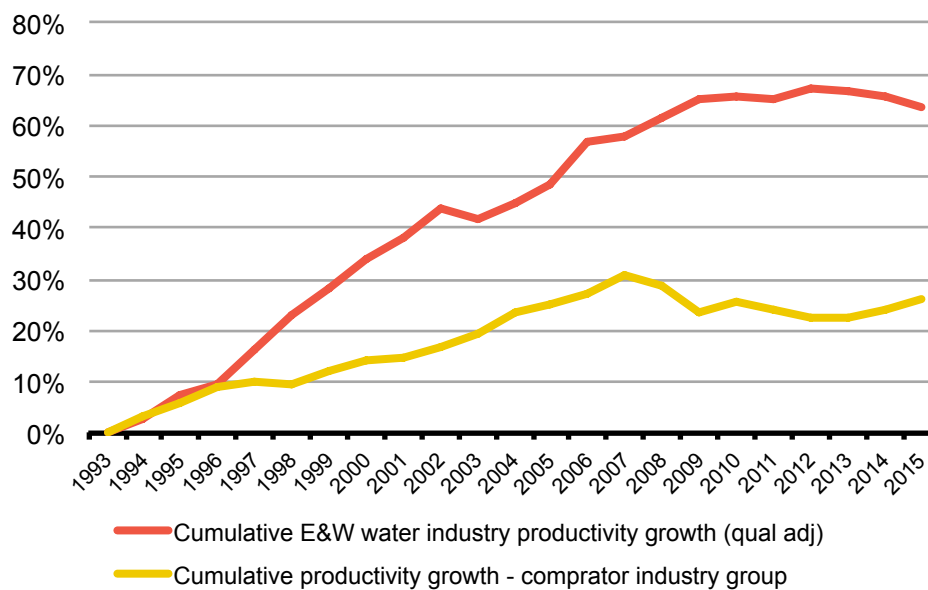
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<sup>4</sup> Ofwat (2017), *Delivering Water 2020: our final methodology for the 2019 price review*.

<sup>5</sup> Bayliss and Hall (2017), *Bringing water into public ownership: costs and benefits*.

Historical experience does not tend to support this point of view. Across most of the privatised infrastructure industries, there is evidence that the switch to investor ownership and incentive-based independent economic regulation led to step-changes in companies' performance. In the particular case of the water industry, Professor David Saal and Frontier Economics last year published a study<sup>6</sup> which compared rates of productivity growth<sup>7</sup> in the England & Wales water and sewerage industry to productivity growth in the wider economy. The results of this analysis are summarised in figure 2.

Figure 2: Water industry productivity growth



Source: Frontier Economics.

The chart shows that productivity growth averaged more than 3% per annum during the first two decades after privatisation. This is more than double the productivity growth achieved in comparable sectors of the UK economy during the same period, or more than 30% more productivity improvement in cumulative terms. The contrast with public-sector productivity growth is even more stark: during the same period, productivity was flat or slightly declining across the government-run public services, giving the water sector a productivity lead of more than 60%.<sup>8</sup>

Another way of drawing out the benefits that privatisation has brought for customers is to look at the experiences of the full range of water companies in England, Wales, Scotland and Northern Ireland during the last 30 years. As highlighted in section 2, this is a petri dish that contains:

- England & Wales – a set of companies that have been operated wholly by the private sector since 1989;

<sup>6</sup> Frontier Economics (2017), Productivity improvement in the water and sewerage industry in England since privatisation.

<sup>7</sup> The measure of productivity improvement is total factor productivity growth, inclusive of allowance for the quality improvements achieved by the England & Wales companies.

<sup>8</sup> ONS (2017), Public service productivity estimates.

- Scotland – a public corporation, Scottish Water, created out of the merger of three regional water authorities in 2002;<sup>9</sup> and
- Northern Ireland – NI Water, created in 2007 as a corporate entity within central government to take over services that were up until then provided from within the NI Department for Regional Development.<sup>10</sup>

It is also possible to expand the comparator set one stage further to include the water provider in the Republic of Ireland:

- Republic of Ireland – a semi-state corporation, Irish Water, which was formed in 2014 to take over responsibilities previously discharged by local authorities.

Benchmarking of these different structures has repeatedly corroborated the picture that figure 2 gives. It has shown, in particular, how the privatised companies in England & Wales stole a considerable march on their peers in the years that followed their transfers from the public to the private sectors. This is set out in detail in annex A to this paper. Table 1 offers an overall summary by highlighting the efficiency gaps that the regulators found immediately following the creation of Scottish Water, NI Water and Irish Water, as well as how much of those gaps have since been eliminated.

(Note: the percentage figures indicated how much more a company was/is spending in comparison to the best-performing companies in England & Wales, e.g. a figure of 80% indicates that the company was spending £1.80 for every £1 spent in England & Wales.)

**Table 1: Comparisons to the privatised companies**

<b>Company</b>	<b>Date of creation</b>	<b>Calculation of initial inefficiency versus leading England &amp; Wales companies at the point of creation</b>	<b>Current position</b>
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%

*Sources:* see Annex A.

Historically, the superior efficiency of the England & Wales companies can be shown to have more than offset the expense of the higher private-sector cost of capital. For example, the England & Wales companies nowadays manage annual expenditures of around £4 billion per annum, so the level of productivity growth shown in figure 2, and the avoided inefficiency that table 1 highlights, is today worth at least £3.2 billion in cost savings versus the £2.8 billion that we earlier identified that

<sup>9</sup> The three authorities themselves took over responsibility for water and sewerage services from the Scottish Regional Councils in 1996.

<sup>10</sup> The Department took over responsibility for water and sewerage services from an Executive Agency within government, the Northern Ireland Water Service, in 1999.

private ownership adds to customer bills. (The break down of this calculation is given in annex B.) If the England & Wales companies were today only matching the efficiency with which Irish Water manages its expenditures, the gap would be even greater.

The final column of table 1 is also then important, in that it shows the strides that Scottish Water and NI Water have made in recent years, with Scottish Water's current efficiency and performance, in particular, now standing up very favourably to comparisons with private-sector peers. All industry participants will readily verify how the key to this turn-around has been benchmarking, benchmarking and more benchmarking, year after year, to the standards that the England & Wales companies were and are setting.<sup>11</sup> In effect, privatisation in England & Wales can be said to have had spillover benefits, through which customers in Scotland and Northern Ireland, and latterly in the Republic of Ireland, are getting lower bills at least in part because governments and regulators have been able to use comparisons to the privatised England & Wales companies to spur their own industries to greater efficiency and better performance.<sup>12</sup>

The question that naturally follows in the light of this experience is: what confidence can there be that costs across the whole of the UK will continue on an efficient trajectory if private ownership, and the scope to make comparisons between public-sector companies and private-sector companies, were to be eliminated? If the historical evidence is that the old regional water authorities imposed large avoidable costs on consumers, it feels, on the face of it, a backward step to return companies to public ownership, at a considerable cost, at least without being clear as to how it might be possible to compensate for the removal of some of the enablers of private-sector efficiency improvements (e.g. the profit motive, hard budget constraints, a market for corporate control).

## 5. OTHER DIFFERENCES BETWEEN PRIVATE AND PUBLIC OWNERSHIP

There are also other factors to consider.

### *Service levels*

The evidence on service quality and other performance metrics since privatisation is very similar to the evidence on costs. A large part of the original rationale for privatisation was that the government had been investing too little and that private-sector balance sheets could support a scale of investment in service standards, drinking water quality improvements, and cleaner rivers and beaches that was unthinkable in a public-sector setting. There has never been an argument that the England & Wales companies have disappointed on this front – Annex C gives the relevant facts and figures.

This is an important additional consideration because customers place considerable value on the improvements that have been delivered. Just as a move back to the public sector would present

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<sup>11</sup> The Scottish Water regulator, for example, has frequently stated that “comparisons with water and sewerage companies in England and Wales are critical in helping assessments to be made of the scope for further improvement and the challenge that Scottish Water should be set.” WIC (2009), staff paper 6.

<sup>12</sup> This ‘comparative competition’ has also been harnessed by Welsh Water in numerous ways since its creation in 2001 – e.g. in the design of management remuneration packages.

risks, not opportunity, in relation to efficiency, so it may also be said that there is downside not upside in relation to other consumer and environmental outcomes.

### *Risk transfer*

On first inspection, the calculations in section 3 and annex B of the difference between the private- and public-sector cost of capital looks like a deadweight cost. There are, in fact, two sides to this coin: on the one side, private-sector capital is (relatively) expensive; but this is because risks around costs and performance have been transferred out of government and are being managed and borne by investors. This means, for instance, that if the privatised companies encounter difficulties with the performance of their networks or asset replacement programmes or major projects, the cost falls on the investor and not on taxpayers.

The benefits of paying for this transfer of risk to the private sector can be seen by looking at two real-life examples of companies that have hit problems in recent years.

In the water industry, Thames Water has been experiencing difficulties with bursts and leakage and is facing the threat of regulatory enforcement action in response to its failure to meet commitments made in this area to customers in 2014. Its response has involved the deployment of additional engineers and a significantly increased mains replacement investment programme. As a consequence of these actions, the company over-spent its regulatory expenditure allowances by more than 10% in 2015/16 and 2016/17,<sup>13</sup> and there is an expectation of further over-spending to come – at shareholders' expense – in the next three years as the company seeks to get back to previously agreed levels of performance.

In the rail industry, Network Rail was renationalised in 2014. It has since under-performed with respect to the delay it causes to trains, the delivery of its capital renewals programme, and its budgeting for major projects. Because it has no access to private capital, the company has had to negotiate with government for the extra money that it needs to fulfil its regulatory commitments, and the response from HM Treasury has, by and large, been that Network Rail needs to live within the original funding envelope that it was given four years ago. This has resulted in a mutual acceptance of missed targets, delays to previously announced projects and a cut-back in the amount of day-to-day renewal work that the company does, all of which have then themselves created a further downward spiral of inefficiency.<sup>14</sup>

The rail regulator ORR's most recent published assessment states that Network Rail is currently falling short of efficiency targets by around 20%<sup>15</sup> and has so far deferred more than £3 billion of work that was scheduled for the 2014-19 regulatory period to after 2019.<sup>16</sup> In a privatised industry this level of deferral, with consequent adverse impacts on users, would not be allowed: an under-

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<sup>13</sup> Thames Water (2017), Annual performance report 2016/17.

<sup>14</sup> The rail regulator reported last year that: "Network Rail's inefficiency at the start of CP5 led to cost pressures. Network Rail then repeatedly re-planned its 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." Source: ORR (2017), Annual efficiency and finance assessment of Network Rail 2016-17.

<sup>15</sup> This percentage figure is for operations, maintenance and renewals expenditure only and excludes Network Rail's overspending against budgets for enhancement projects.

<sup>16</sup> *ibid.*



performing company would be required to spend whatever is necessary to deliver its regulated outputs (as in the case of Thames Water). By contrast, in a public-sector setting, risk falls on the taxpayer and it is up to the government to decide whether it makes resources available to a company it owns to address under-performance or passes the consequences down to customers.

### *Investment levels*

Network Rail's recent experience illustrates a more general point of difference between private- and public-sector infrastructure companies. In privatised industries, investment levels are determined through a process of customer engagement, in which end user preferences shape the improvement programmes that companies take on in each five-year regulatory period. In the public sector, customer preferences can be pushed to one side in government spending reviews.

A transfer of the privatised water and sewerage companies back to the public sector would reverse a conscious decision made 30 years ago to take water industry investment outside of politics and outside of public expenditure rules and constraints (a decision that is widely acknowledged to have contributed to the unlocking of more than £140 billion that the England & Wales companies have invested in their networks since 1989). If, in the future, companies' investment expenditures were once again to impact on public-sector borrowing numbers, governments might well be willing to endorse the plans that companies and governments come up with. But they might also be situations in which governments decide to constrain companies' borrowing for outside fiscal reasons.

To highlight that this is more than a theoretical possibility, one can look not just to Network Rail but also to the recent experience of NI Water. The company has been operating since 2015 in resource-constrained mode after the NI Assembly decided that it could not adopt the plans developed by NI Water with customers and other stakeholders during the NI Utility Regulator's PC15 price review. As a consequence, NI Water is having to delay previously agreed projects.<sup>17</sup> This is precisely the scenario that privatisation in England & Wales was designed to avoid and helps to illustrate how public control of infrastructure industries brings pitfalls as well as advantages.

### *Impact of renationalisation on government borrowing*

This, in turn, leads to a final, over-arching observation about the very substantial cost of buying existing investors out of water companies. (The term "buying out" here means the government paying existing investors fair value to cancel the capital that they have put into the sector over the last 30 years, as recognised in companies' regulatory capital values (RCVs). Any compulsory purchase at below fair value would have a long-lasting adverse impact on investors' perceptions of political risk in the UK across a range of private-sector industries.)

On its own terms, a swap of private capital for government borrowing involves issuing debt to acquire an asset of matching value. There is neither an improvement or a deterioration in the public-sector balance sheet. Unfortunately, governments, lenders, rating agencies, etc. do not necessarily look at debt issuance in such a logical way. Rather, there will be those that are concerned about the sheer scale of the new debt that the government will have to issue in a short space of time, the impact of debt-to-GDP ratios and other commonly quoted measures of fiscal health, through to possible consequences for the UK's credit rating.

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<sup>17</sup> Utility Regulator (2016), Water and sewerage services: cost and performance report for 2015-16.

It may not be realistic, therefore, to think that the government can issue upwards of £70 billion<sup>18</sup> of new debt to pay for the acquisition of water companies (plus, potentially, £60 billion to acquire the country's energy networks, plus additional sums for Royal Mail and train companies), and then take over the financing of continuing investment programmes, without crowding out other government spending. If there are constraints on government debt, it then becomes reasonable to ask if finite borrowing capacity is best allocated towards renationalisations or to other investments that have the potential to improve living standards and societal well-being, like the expansion of other infrastructure and/or government spending priorities like health and education.

## 6. CONCLUDING REMARKS

The evidence set out above – from the former water authorities, from places where water companies have remained publicly owned, and from Network Rail – is that the renationalisation of England & Wales' water companies would not be, as some have claimed recently, a sure-win, no-lose move for consumers. Looked at in isolation private capital has a definite cost, but private ownership has brought significant efficiency benefits and provides consumers with safeguards around service and future investment that are hard to replicate in public-sector organisations. A purchase and transfer of companies back to the public sector could result in an immediate and tangible reduction in ongoing financing costs, but it also necessitates a sizeable upfront expense and presents both short- and long-term risks around costs and performance that, although more difficult to quantify, could come to outweigh the cost of capital savings.

That is not to say, however, that there is no room to refine and improve the privatisation model. One clear takeaway from the analysis set out in this paper is that the amount of private capital has grown very substantially since privatisation. This means that it is crucial that the private-sector cost of capital – i.e. the bottom-line returns that investors require in order to finance past and future investment – is optimised so that it is not a single basis point higher than it needs to be. This in turn highlights how important it is that Parliament and Ofwat keep under review the packaging of the risks that are transferred to investors, as well as investors' perceptions of risk (which can sometimes differ from the perceptions of policymakers), with a view to assuring themselves that consumers are getting the best possible value for money from the continuing use of private financing mechanisms.

Proponents of continued private-sector involvement in the sector also want to be sure that responsibility for essential services are vested in the right private companies. While it would be wrong to think that public ownership would create a natural alignment to the interests of consumers (for the reasons set out in section 5, in particular), there needs also to be a recognition that many in society are distrustful of privatised companies and their profit motives and want greater assurance that their interests permeate through companies' decision-making. This requires that companies run their businesses, and are seen to run their businesses, at all times in the public interest.

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<sup>18</sup> This is the current aggregate value of companies regulatory capital values (RCVs) and is the minimum amount that the government would need to pay in order to honour the implicit promise that regulators have made to ensure that shareholders and lenders are paid back the capital that they have sunk into companies since 1989.

Water companies have made considerable strides in recent years in their customer engagement, but there is arguably more that can be done, especially in the area of corporate governance. When one compares the 'standard' company limited by shares model to other, more explicitly consumer-focused structures like community benefit societies and community interest companies, it is open to water companies to embrace innovations like asset locks, community purpose statements, community interest reports and open membership schemes voluntarily, so as to more visibly embed their community orientation into all stakeholders' consciousnesses.

In this observer's assessment, this is the natural response for companies to make to recent calls for a switch away from private-sector ownership and financing. Private ownership can be shown to bring real benefits, but there should be no complacency about either the scale of the current stock of private capital or the opportunities that there might be in the future to adapt and improve existing private-sector structures.

## ANNEX A

The story behind table 1 in the main body of the report is best told through the words of the sectoral regulators and other independent bodies that the governments in Scotland, Northern Ireland and the Republic of Ireland have appointed to examine the performance of their water and sewerage providers.

### *Scotland*

The Scottish Executive was the first government to introduce major reforms to its water and wastewater industry following the England & Wales privatisations. The changes culminated in the appointment of a new independent regulator, the Water Industry Commission for Scotland (WIC), and then the creation of Scottish Water.

Writing in 2001, the regulator described Scottish Water's starting position in the following terms:<sup>19</sup>

The record of the water companies in England and Wales is one of improved delivery of ... outputs, whilst at the same time consistently and significantly reducing their operating expenditure ... The water authorities [in Scotland] do not compare well with their peers in England and Wales ... If the Scottish authorities and the proposed Scottish Water were added to [the efficiency league table for the privatised water companies], they would take the bottom positions.

He went on to compare the trajectories that the industries were then on as follows:

The water authorities are currently positioned well behind their potential competitors in England and Wales. Unfortunately, the gap has been widening ... [The figures show] that, generally, underlying operating expenditure ... has, until recently, increased even after adjustments to remove the effects of annual inflation. Overall, the underlying real increase between 1996-97 and 2000-01 is 10%. Comparable figures reported by the water and sewerage companies in England and Wales show a marked reduction, averaging 18%, over the same period.

This assessment triggered the first of a series of hard-hitting regulatory reviews built around benchmarking to companies in England & Wales. In his first decision, the regulator estimated that the efficiency gap to the leading companies in England was 44% (i.e. Scottish Water was spending £1.80 for every £1 spent by the English companies) and challenged Scottish Water to eliminate four fifths of this excess by 2006. He also expected Scottish Water to move towards the quality and service standards being achieved by leading companies in England. Subsequent reviews in 2005/6 and 2009/10 were cut from the same cloth as Scottish Water's attention was constantly directed to better-performing peers in England via benchmarking targets of:

- SR06 – estimated efficiency gap = 25-30%;<sup>20</sup> and
- SR10 – estimated efficiency gap = 10%.<sup>21</sup>

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<sup>19</sup> Water Commissioner for Scotland (2001), Strategic review of charges 2002-06.

<sup>20</sup> WIC (2006), The strategic review of charges 2006-10 – the final determination.

<sup>21</sup> WIC (2009), The strategic review of charges 2010-15 – the final determination.

Scottish Water has mostly hit or exceeded its regulatory targets over the 15 years since its creation and the regulator now rates it 'in the pack' with the leading companies in England.

### *Northern Ireland*

The Northern Ireland government commissioned an independent review of NI Water just after its creation in 2007, which provides a useful snapshot of the divergent paths that the industry in Northern Ireland had taken from the industry in England & Wales over the preceding 15-20 years. The panel's report stated that "we have found that there has been and still is enormous scope for improvement in NIW's efficiency". Drawing on benchmarking to England, Wales and Scotland, the panel recommended that the NI government needed to double a previously agreed efficiency target of 20% to a new, much more challenging target of 40%.<sup>22</sup>

The Northern Ireland Utility Regulator subsequently took over responsibility for regulation of NI Water and completed its first periodic review of the company in 2010. The regulator in this review identified a 49% efficiency gap to the frontier in England & Wales (i.e. NI Water was spending £1.95 for every £1 spent by the leading English companies) and challenged NI Water to close two thirds of this gap within five years.<sup>23</sup> Subsequent reviews in 2013 and 2015 required further catch-up, with the long-term ambition that NI Water will eventually push its costs down towards the level seen in England & Wales:

- PC13 – estimated efficiency gap = 38%;<sup>24</sup> and
- PC15 – estimated efficiency gap = 22%.<sup>25</sup>

The Utility Regulator's most recent published assessment found a gap of 13%.<sup>26</sup>

### *Republic of Ireland*

The structure of the Republic of Ireland's water industry became a hot economic and political issue following the country's EU/IMF-led bailout from the global financial crisis. The government commissioned an independent expert to review the industry's performance and possible future operating models, which led to the finding that:<sup>27</sup>

When the 2010 data for the local authorities is compared against the UK Water Companies, the results indicate that the current model for providing water services has not achieved the potential levels of efficiency and service delivery for customers evidenced by the data from UK water companies.

The expert observed that:

Efficiency levels do not compare well against international benchmarks. Some of the key metrics include:-

- Operating expenditure per connection is more than twice the average of UK water companies;

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<sup>22</sup> Independent water review panel (2007), Strand one report.

<sup>23</sup> Utility Regulator (2010), Water and sewerage service price control 2010-13.

<sup>24</sup> Utility Regulator (2012), Water and sewerage price control 2013-15 Northern Ireland Water: PC13 final determination.

<sup>25</sup> Utility Regulator (2014), Water and sewerage price control 2015-21 Northern Ireland Water: final determination.

<sup>26</sup> Utility Regulator (2016), Water and sewerage services: cost and performance report for 2015-16.

<sup>27</sup> PwC (2011), Irish Water phase 1 report.

- The level of “Unaccounted for Water” (largely due to leakage) at 41% is very high against international benchmarks [e.g. nearer 20% in England]
- Staffing levels are higher than comparable UK water companies on an employee per population served basis ...

Irish Water started taking over responsibilities from 34 local authorities three years ago. It is regulated by the Commission for Regulation of Utilities (CRU), which has followed the lead of its counterparts in Scotland and Northern Ireland by investing considerable effort into benchmarking to companies in England & Wales. The first benchmarking results three years ago showed that Irish Water’s inherited costs were double the frontier level of expenditure in England.<sup>28</sup> A subsequent assessment in 2016 resulted in a revised assessment of a 40-50% efficiency gap (i.e. Irish Water is spending £1.70 to £2.00 for every £1 spent by the most efficient companies in England). The Commission has recently challenged Irish Water to make efficiencies worth 20% of costs over a four-year period.<sup>29</sup>

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<sup>28</sup> NERA (2014), IW interim review assessment – annex econometric benchmarking.

<sup>29</sup> CRU (2016), Irish Water second revenue control 2017-18.

## ANNEX B

A cost-benefit analysis for the privatisation of the England & Wales companies has to weigh (a) the cost of a higher private-sector cost of capital against (b) the benefit of greater private-sector efficiency. This is a calculation that changes over time depending, in particular, on the amount of capital that companies have taken from investors and the amount of expenditure that companies are managing. A forward-looking calculation for 2020 is set out below via two different methodologies.

### *Productivity growth*

Figure 2 highlighted how water companies' productivity growth since privatisation has outstripped the productivity growth achieved by comparator sectors within the UK economy. The higher private-sector cost of capital can be compared to the value of this productivity out-performance as follows:

$$\begin{aligned} \text{Cost of private ownership} &= \text{industry investor capital base x [ private-sector cost} \\ &\quad \text{of capital – cost of government borrowing ]} \\ &= \text{£70 billion x 4\%} \\ &= \text{£2.8 billion} \end{aligned}$$

$$\begin{aligned} \text{Benefit of private ownership} &= \text{industry economic costs}^{30} \text{ x productivity out-} \\ &\quad \text{performance since privatisation} \\ &= \text{£10 billion x 32\%} \\ &= \text{£3.2 billion} \end{aligned}$$

### *Relative efficiency*

Table 1 summarised the efficiency gaps that regulators found when they first benchmarked public-sector water companies to the leading companies in England & Wales. Taking the smallest of the reported efficiency gaps from the table gives the following cost-benefit analysis:

$$\begin{aligned} \text{Cost of private ownership} &= \text{industry capital base x [ private-sector cost of capital} \\ &\quad \text{– cost of government borrowing ]} \\ &= \text{£70 billion x 4\%} \\ &= \text{£2.8 billion} \end{aligned}$$

$$\begin{aligned} \text{Benefit of private ownership} &= \text{current industry expenditure x avoided inefficiency} \\ &= \text{£4 billion x 80\%} \\ &= \text{£3.2 billion} \end{aligned}$$

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<sup>30</sup> Industry economic costs are the annualised costs of all labour, capital and other inputs.

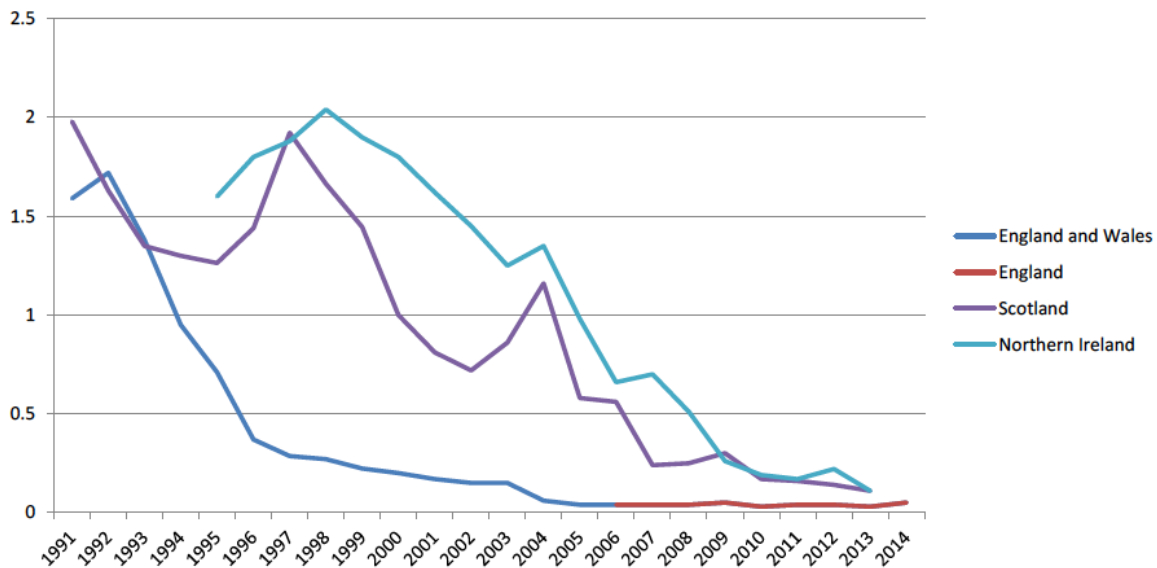
## ANNEX C

This annex outlines the quality, environmental and service quality improvements that the England & Wales companies have made since privatisation.

### *Drinking water quality*

Industry-wide improvements in drinking water quality are comprehensively documented in the 2015 Drinking Water Inspectorate (DWI) report: *Drinking water quality in England: the position after 25 years of regulation*. Problems that were apparent in 1990 particularly with regards to lead in water, trihalomethane concentration, pH levels and water discolouration have been substantially reduced or, in some cases, almost entirely eliminated. As a result, the DWI reported that only 0.04% of tests failed to meet standards in 2016 compared to failed tests in more than 1.5% of samples at the start of the 1990s.

Figure 3: Percentage of failed drinking water quality tests (England & Wales)



Source: DWI.

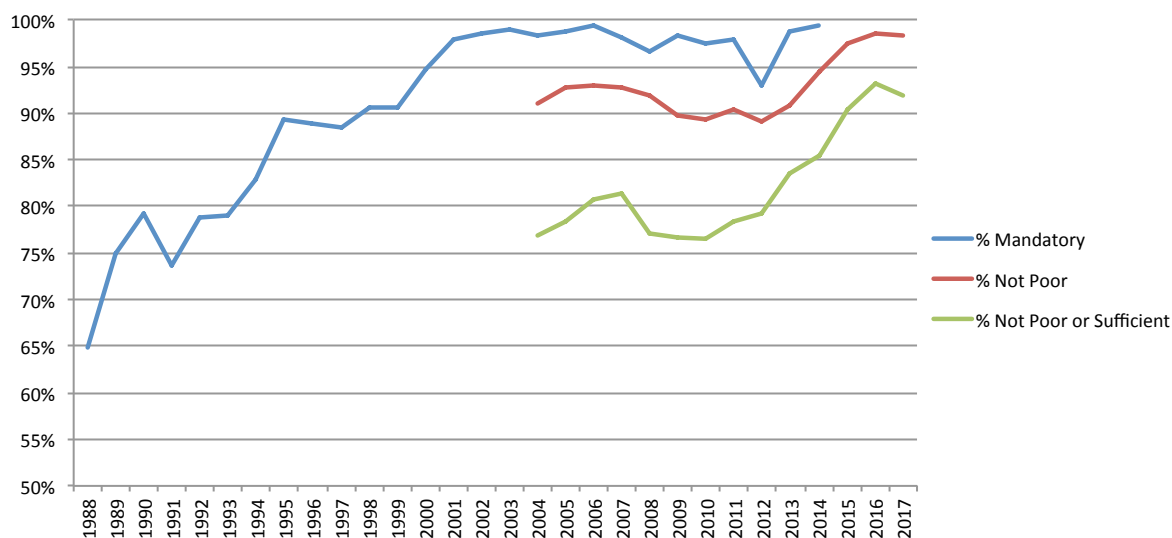
### *Environmental impacts*

The percentage of the population that is connected to both primary and secondary treatment has increased from less than 80% at privatisation to 100% today.<sup>31</sup> This has led to step changes in the quality of the country's beaches and rivers. Figure 4 overleaf shows the proportion of beaches that comply with the mandatory standards in the European Commission's 1976 Bathing Water Directive, as well as the higher standards introduced by the 2006 Bathing Water Directive. Figure 5 plots the percentage of total river length that was judged to be of good biological quality and good chemical quality by the Environment Agency prior to the discontinuation of these indices in 2010.

<sup>31</sup> <https://www.eea.europa.eu/data-and-maps/indicators/urban-waste-water-treatment/urban-waste-water-treatment-assessment-4>

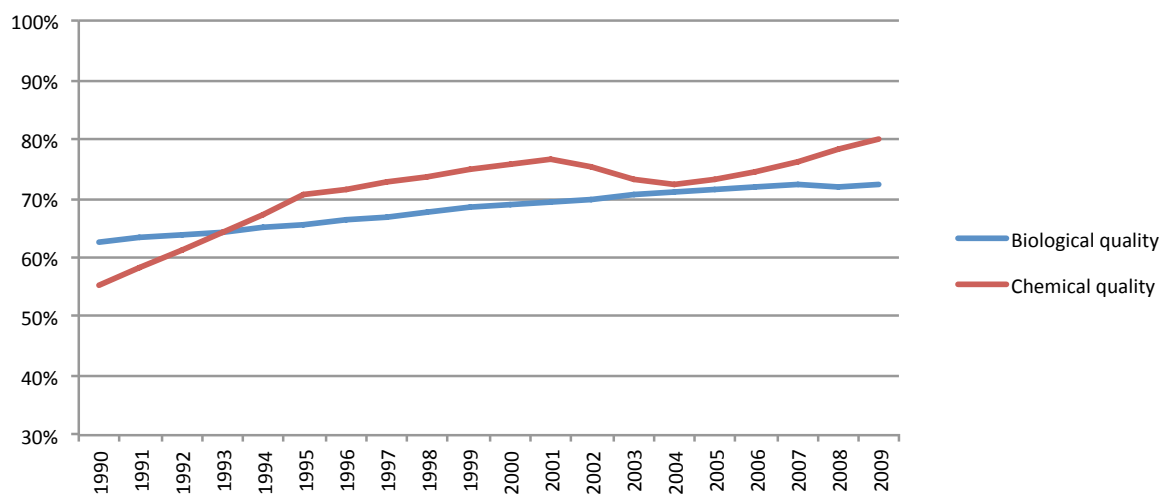


Figure 4: Compliance with bathing water mandatory standards (England & Wales)



Source: Defra.

Figure 5: Percentage of total river length that is good biological/chemical quality (England)



Source: Environment Agency.

### Service quality

Improvements in service quality are documented in detail in the annual performance reports that Ofwat published during the first two decades after privatisation.<sup>32</sup> The table overleaf gives a summary of performance improvements across eight key metrics.

<sup>32</sup> See, for example, Ofwat's 2010 report at: [http://webarchive.nationalarchives.gov.uk/20110110112513/http://www.ofwat.gov.uk/publications/los/rpt\\_los\\_2009-10](http://webarchive.nationalarchives.gov.uk/20110110112513/http://www.ofwat.gov.uk/publications/los/rpt_los_2009-10)

Table 3: Industry performance against Ofwat Indicators (England & Wales)

Description	1990-95 %	1995-00 %	2000-05 %	2005-06 %	2006-07 %	2007-08 %	2008-09 %	2009-10 %
DG2: Properties at risk of low pressure	1.33	0.35	0.07	0.03	0.02	0.02	0.03	0.01
DG3: Properties subject to unplanned supply interruptions of 12 hours or more	0.33	0.21	0.09	0.08	0.15	0.69	0.08	0.06
DG4: Population subject to hosepipe bans	14	15	0	7	30	0	0	0
DG5: Properties subject to sewer flooding incidents (overloaded sewers and other causes)	0.03	0.03	0.02	0.02	0.02	0.03 <sup>2</sup>	0.02	0.03
DG5: Properties at risk of sewer flooding incidents (once in ten years)	–	0.07	0.05	0.02	0.02	0.02	0.01	0.01
DG5: Properties at risk of sewer flooding incidents (twice in ten years) <sup>1</sup>	0.08	0.05	0.02	0.01	0.01	0.01	0.01	0.01
DG6: Billing contacts not responded to (within five working days)	21.78	5.39	0.71	4.44	5.08	2.71 <sup>2</sup>	1.08	0.44
DG7: Written complaints not responded to (within ten working days)	21.42	3.22	0.34	3.15 <sup>2</sup>	3.71 <sup>2</sup>	6.82 <sup>2</sup>	0.38	0.62
DG8: Bills not based on meter readings	–	1.51	0.39	0.52	0.86	0.32	0.21	0.21
DG9: Received telephone calls not answered within 30 seconds <sup>3</sup>	–	16.16	7.01	–	–	–	–	–
DG9: Telephone call handling:								
Calls abandoned		5.40	2.27	6.69	9.76	7.63	7.03	4.96
All lines busy <sup>4</sup>			5.17	3.91	5.66	3.23	0.45	0.49
Call handling satisfaction <sup>5</sup>				4.50	4.47	4.58	4.60	4.60

Source: Ofwat.

Since 2010, the regulator has been updating and expanding the original post-privatisation indicators to capture the full range of outcomes that today's customers now want their companies to deliver in the period through to 2024/25.