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## GLOBALIZATION AND WATER RESOURCES MANAGEMENT: THE CHANGING VALUE OF WATER

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### PRIVATISING WATER IN ENGLAND AND WALES: WATER PRICING AND EQUITY

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**ABSTRACT:** This paper details the history of water privatisation in England and Wales and the associated evolution in concepts of efficiency and equity underpinning water regulation. It evaluates the implications for water consumers of the shift from the principle of inter- and intra-regional equalisation to that of a relatively narrow definition of economic equity in water charging. This provides the basis for a discussion of the redefinition of water entitlements enacted by water commercialisation, illustrated by examples of changes in methods of water charging and water access norms. The paper closes with a discussion of alternatives to the current policy regime.

**KEY TERMS:** privatisation, England and Wales, equity, efficiency, ownership, pricing

#### INTRODUCTION

Over the past two decades, water pricing policy in England and Wales has gradually incorporated the principle of 'economic equity' -- the principle that users of a utility service should pay, as near as possible, the costs they individually impose on the system (the 'benefit principle'). In contrast, the principle of 'social equity' underpinning earlier water policy implied that users should be charged according to their ability to pay (the 'ability-to-pay principle'). This paper examines the consequences of a shift from a policy goal of equalization (underpinned by a notion of social equity) towards one of efficiency maximization, and its corollary, neo-classically defined economic equity, for domestic consumers.

#### Equalization in Water Charging Policy

Underlying *inter*-regional equalization -- active cross-subsidization between regions and/or classes of consumers -- initiated in the 1970s was the principle that users in different regions should pay, as near as possible, equal bills regardless of the cost they imposed on the water supply system. Concerned about the disparities in average water supply charges *between* regions (from 17% below to 44% above the national average (Porter 1978)) the Labour Government initiated a review of the water industry in England and Wales (DOE, 1976, *Review of the Water Industry in England and Wales*), which recommended equalization of charges between regions via direct transfers between water authorities and companies.

Following the review, the Water Charges Equalization Act was passed in 1977 (Public General Acts & Measures, 1977, c. 4). Under its provisions, the Secretary of State was empowered to order those water undertakers whose financing costs (depreciation plus interest of assets in use for water supply purposes) were less than the weighted industry average to pay an 'equalization levy' to the National Water Council and to order the Council to pay 'equalization payments' to undertakers whose financing costs were greater than average. This implied rate rises in regions where domestic water bills were cheaper, and rate reductions in regions where bills were more expensive. The equalization payment/levy was applied to all twenty-nine of the private water supply companies, as well as the public Regional Water Authorities (RWAs), from 1978 to 1981. The amounts were relatively small -- on the order of 2% of the industry's income from unmeasured water, but had in some cases a significant impact on water bills (Table 1).

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Table 1: Equalization payments/(levies), for selected water authorities and companies (1978/79)

Water authority/ Company	Equalization payment/(levy) (£)	Equivalent income per m <sup>3</sup> of water supplied	Average domestic bill 1977/78 (£)*	Average domestic bill 1978/79(£)*	% change
Welsh WA	3,486,000	0.89	25.40	22.76	-10.4
Yorkshire WA	(375,000)	(0.08)	17.66	20.64	16.9

\* not corrected for inflation

Sources: DOE (1979) S.I. 1977/2165 and CIPFA (1979)

The Equalization Act did not provide for the payment of direct subsidies (via central Government grants) to RWAs with above average charges, as the Government was committed to phasing out subsidies for nationalised industries. The Labour Government was nonetheless determined to address regional disparities and “unreasonably” high costs in some RWA areas in accordance with “equity and fairness” – implying a concept of *horizontal* social equity, in which all consumers should pay, as near as reasonably possible, the same charges for water services, despite the different costs they impose on the system (Frankham and Webb 1977, 198). Direct transfers between water companies and the resulting ‘rebalancing’ of water charges were thus employed as an instrument for the achievement of income distribution objectives, despite evidence that rateable value-based charges were a poor proxy for income.

#### From Equalization To Economic Equity

In opposition, the Conservatives objected to the equalization scheme, arguing in favour of the principle of economic equity. Following the election of the Conservative Government in 1979, the equalization scheme was suspended. Critics of the scheme had argued that the pursuit of social equity, via equalization, was occurring to the detriment of efficiency, as equalization payments decoupled revenue and prices from costs, encouraging over-provision and over-consumption. Whilst attempting to equalise costs for consumers, in other words, the equalization policy was seen to discriminate against the RWAs that controlled their costs, and to benefit those that did not control their costs, removing incentives to contain costs and leading to higher than necessary prices overall (OECD 1987). Equalization with respect to capital charges, it was argued, penalized those companies with low capital charges in favour of those with high capital charges (due to a combination of lower population densities, more difficult terrain and, in some cases, heavier debt burdens). The regulatory framework created at privatization in 1989 consolidated and formalised the move away from intra-regional equalization of charges. Ofwat is charged with the duty of ensuring that “there is no undue discrimination” (Water Industry Act (1999), section 2.3.a.ii) in the setting of charges for water and sewerage services; the regulator “interprets this to mean that, where possible, there should be no cross-subsidy between classes of consumer” (Ofwat 2000, 23). In other words, cross-subsidies between services provided to recognized classes of consumers (e.g. from water to sewerage customers, or from industrial to domestic), as well as between individual consumers, should be eliminated. In contrast to the early phase of the nationalised era, when discrimination was understood to occur when customers were charged a different price for a technically similar product (i.e. a unit volume of water), discrimination is implicitly understood to occur when customers are charged the same price for a product that has different supply costs in different regions. In practice, balanced by the duty to ensure “that the interests of customers...in rural areas are protected”, this duty has been interpreted to mean that each customer should pay, as near as is practicable, the *actual* costs they impose on the water and sewerage systems. Ofwat therefore supports widespread (although not full) penetration of meters into domestic properties, whilst arguing that any regressive burden of water charges should be met through the social security system, not through corrective measures applied via water charging mechanisms.

#### Implications For Consumers

An analysis of increases in inter-regional variation of water charges since 1989 was conducted using data published by the water industry’s trade body, ‘Water UK’ in its annual *Waterfacts* ((2000); the water service company’s trade body, known as the ‘Water Services Association’ published the 1989 – 1998 issues). The data, uncorrected for inflation, were selected for unmeasured (i.e. unmetered) household charges; 80% of households were charged on an unmeasured basis in 2000 (Ofwat 2000).

Average water and sewerage charges per household have risen significantly, and consistently above inflation, since 1989 (tables A1 and A2). Some regions have experienced much higher rates of increase than others. South West region – with the highest average unmeasured charge in 1999/00 – has the highest ratio of the current

charge to that at the time of privatisation, and Dwr Cymru -- with the third highest average unmeasured charge in 1999/00 -- the lowest. Those regions with large lengths of polluted coastline, for example, such as the South West region, have experienced increases in sewerage charges well above average, to meet increasingly stringent EU beaches and bathing water quality legislation. On both a relative and absolute basis, bills have increased much more quickly for consumers in these areas. The average unmeasured domestic water and sewerage bill in the South West region in 1999/2000, for example, stood at £390 per year, as compared with a weighted industry average of £277 and the lowest average regional charge of £208 for those served by Thames Water. In two regions charges have also been 'de-averaged' regionally, by dividing the region into several zones where charges may differ by up to 10% of customers' bills. This has resulted in higher absolute intra-regional differences in zone charges. Other water companies have not moved to regionally de-averaged charging in part because of the complexity involved in billing, but also because of the implications for rural consumers (i.e. higher prices); de-averaged charging schemes would likely conflict with Ofwat's duty to protect rural customers (Ofwat 1999b).

Table A1: Average unmeasured water and sewerage charges, per household, 1999/00

Region	(£)
South West	390
Anglian	335
Dwr Cymru	300
Wessex	284
Southern	279
Yorkshire	251
North West	249
Northumbrian	243
Severn Trent	231
Thames	208
<b>Weighted average</b>	<b>277</b>

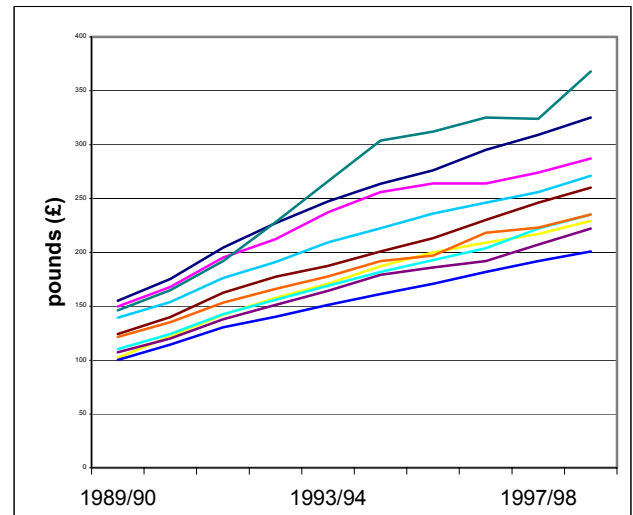


Figure 1: Average unmeasured bill, water and sewerage services, by WaSC region (1989 - 1998)

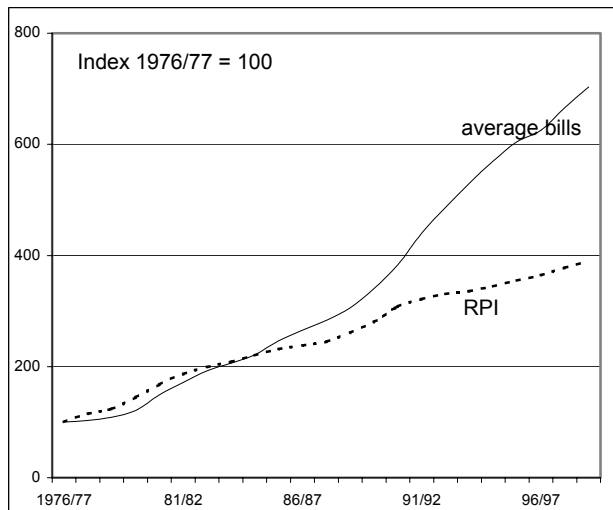


Figure 2: Average Domestic Water and Sewerage Services Charges (1976 - 1999)

Table A2: Ratio of 1999/00 price to 1989/90 price

Water and sewerage company	Ratio
South West	2.67
Northumbrian	2.38
North West	2.26
Southern	2.24
Severn Trent	2.15
Anglian	2.13
Thames	2.08
Yorkshire	2.06
Wessex	2.04
Dwr Cymru	2.00

Table A3: Ratio of highest to lowest avg. regional unmeasured water and sewerage charges, per household per year

Year	88/89	89/90	90/91	91/92	92/93	93/94	94/95	95/96	96/97	97/98	98/99	99/00
Ratio	1.45	1.56	1.57	1.58	1.63	1.76	1.89	1.82	1.79	1.69	1.83	1.88

Table A4

Coefficient of variation between average unmeasured regional household charges for water and sewerage, per year

1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00
0.156	0.149	0.154	0.169	0.190	0.201	0.193	0.186	0.168	0.185	0.184

*\*unweighted*

For domestic consumers, rapidly increasing water charges were in some cases exacerbated by the price differential between non-metered and metered domestic customers, the proportion of metered properties having increased significantly with the metering programmes initiated post-privatization. By the mid-1990s, some domestic consumers with metered supplies were paying – in some cases significantly -- more per unit volume of water than consumers with non-metered supplies (SCF 1996; WHICH 1996). In response to NGO campaigns such as that of Save the Children, following a well-publicised study of the often health-endangering measures taken by low-income families to conserve water (SCF 1996), Ofwat has required companies to equalise the rates charged to metered and non-metered customers. The regulator now requires companies to maintain a differential of no more than £30 between measured and unmeasured domestic consumers (Ofwat 1999a). This step was also encouraged by research carried out by the British Medical Association, examining the links between household water disconnections and the sharp rise in reported dysentery rates in the early 1990s (figure 6 and table 4) (BMA 1994). The correlation between disconnections of domestic properties for non-payment of bills and the sharp rise in dysentery rates is not a simple one, as there are many confounding variables. Nor was the rise in disconnection rates simply attributable to water companies' more draconian policies. The cessation of payment of water bills via local authority rates, and lack of allowance for the rapid increases in water bills during the 1990s in Income Support due to changes in the benefits system, were factors in increased consumer water debt in the 1990s (Herbert and Kempson 1995). During 1994 alone, almost two million households in Britain defaulted on water bills, and by the end of the year more than one million (5 percent) were behind with their payments (Herbert and Kempson, 1995). Another survey found that 75% of those on Income Support have difficulty paying water bills, and that water debt is rising faster than any other component of debt for low-income families (Marvin, Graham et al. 1996). Herbert and Kempson (1995) found that low income (as opposed to increases in water bills) was a significant factor in explaining water debt, with more than half of all households in water debt living in either local authority or housing association accommodation, and water debt being more common in the North and Midlands than elsewhere.

During the 1990s, disconnection rates and 'water poverty' became the source of much negative publicity for the water industry (Graham 1997; Harrison 1996; Huby 1995; Huby and Anthony 1997). The alleged shortcomings of the water industry were a focus of consumers groups' campaigns, as well as the Labour opposition, in particular through the campaigns of then-shadow Labour health secretary Frank Dobson (Dobson 1995a, 1995b). In response, water companies were directed by Ofwat to find alternative payment strategies for consumers, and to reduce disconnection rates, which have fallen since peaking at over 20,000 properties disconnected in 1992 (representing one disconnection for every 1000 households billed (Graham and Marvin 1994, Ofwat personal communication).

#### Equity in Water Charging

Following the election, one of the Labour Government's first initiatives was to call a water 'Summit', bringing together water companies and regulators in May of 1997 to announce a 'ten point plan' intended to reduce some of what it viewed as the privatized industry's worst excesses. Announcing the 'Windfall Tax' on the privatized utilities later that year fulfilled another key Labour election promise, to claw back excessive profits made in the first years after privatization due to lax regulatory regimes. The promised reviews of water charging and abstraction licensing were initiated under the auspices of the Department of the Environment, Transport and Regions (DETR

1998a, 1998b, 1998c, 1999a, 1999b), as was a broader review of utility regulation headed by the Department of Trade and Industry (DTI 1998a, 1998b). Due in part to the changed political climate, Ofwat has hardened its stance considerably; significant price limit reductions were announced at the most recent Periodic Review (in response to which share prices fell sharply across the industry). The negative price limits for the year 2000-2001 announced in the most recent Periodic Review will reduce bills by an average of 12.4% in real terms (an average reduction in bills for domestic customers of £30 (DETR 2000)), with broadly stable prices until 2005 (Ofwat 2000).

The result of these reviews of water policy has been a set of significant changes to water regulation and the entitlements of domestic consumers. The Labour Government's stance on social justice issues within the water sector differs distinctly from its predecessor. The Government has explicitly repoliticised water policy-making, noting in its guidance on water charging that: "ministers are better placed than an independent economic regulator to consider the acceptability of social impacts on consumers" (DETR 2000, para 2.18), and in its guidance on the designation of 'water scarcity' areas where metering can be more aggressively pursued that: "this is finally a political judgement, best reserved for the Secretary of State, though acting with the advice of the [Environment] Agency and the Director [of Water Services]" (DETR 2000, para 5.15).

The changes are significant. Under the provisions of the Water Industry Act (1999), disconnection of domestic water consumers, and other non-private sector users (schools, children's and residential care homes, hospitals) is prohibited, as is the use of limiting devices (e.g. trickle valves) in the case of non-payment. Company charging schemes will now have to be approved by the regulators, and Ministers will be able to give statutory guidance to the economic regulator on charging, and to make provisions for protection for vulnerable groups. Households on low-incomes or from vulnerable groups will have alternative charging options made available (DETR 2000; Ofwat 2000). Consumers have the right to optional metering, provided free of charge, and the right to revert to an unmeasured tariff if they so choose. Only 'non-essential' uses such as the use of garden sprinklers or filling of swimming pools are subject to mandatory metering. Although all new homes will be metered, consumers who choose not to have a meter will continue to be charged on the basis of rateable value.

### The Retreat From The Principle Of Economic Equity

The application of the principle of economic equity undermines a practice common in most industrialised countries throughout much of the twentieth century, in which water regulation explicitly incorporated various social policy goals such as income redistribution, employment generation, and regional equalization (OECD 1999). During the late 1990s, an active debate was initiated about the social policy implications of water charging; the Government's ensuing decision to address unacceptable distributive outcomes *within* the system of water regulation rather than through the benefits system stands in distinct contrast to the policies of the first half of the decade. The debate over optional metering deepened the rift between consumer advocates (who favoured low prices), and environmental groups (who argued for higher prices in order to allow for an increase in environmental expenditure). The latter favoured metering, arguing that meters, when implemented with specific (seasonally, temporally or volumetrically variable) tariffs, will encourage conservation; the former argued that metering will impact negatively, and most severely, on low-income consumers and vulnerable groups. The economic regulator sided with the environmental regulator, supporting metering, as he argued it provides customers with greater choice, as a meter provides them with information enabling them to control bill levels.

Despite the support for metering, and the underlying principle of economic equity, from both the environmental and economic regulators of the industry, the Secretary of State has introduced regulations designed to protect consumers who face severe hardship "when they are using large amounts of water for essential purposes and pay on a measured basis" (DETR 2000, para 1.5); these customers can opt for a fixed charge equal to the average household charge in their region. This may represent significant savings for some consumers, much greater than the average reduction of £3.67 for the yearly average metered household water and sewerage bill now available to water service company customers through 'social tariffs' (calculated from Ofwat 2000, Table 3). DETR calculated the cost to non-vulnerable consumers of its provisions at less than £1 per household per year across the industry, arguing that this level would be acceptable as it is not a 'disproportionate' increase in charges (DETR 2000), the cross-subsidy being limited by the tight definition of vulnerable groups and limited number of households which may have access. The Government's support for intra-regional equalization, and an underlying principle of social equity was made explicit: "costs should be allocated between different groups of consumers on an equitable basis. Charges...should take account of customer's ability to pay, and address the needs of all those on low incomes" (DETR 2000, para 2.8). The guidance from the Secretary of State for the Environment to Ofwat (DETR 2000) stated that "changes to

individual bills should not depart significantly from the average of each company, and...phasing-in of any large changes should be considered” (Ofwat 2000, 15). Post-privatisation, a degree of intra-regional equalization had continued given the persistence of rateable value as a charging mechanism, and the unwillingness to de-average regional charges given Ofwat’s duty to protect rural consumers. The Government expressed its opposition to the full application of the principle of ‘economic equity’ in water charging in arguing that the “link between water use and cost [established by a meter] is precisely [what] creates the possibility of hardship for customers most in need” (DETR 2000, para 4.3.1).

In response to water industry and regulatory arguments in favour of extending protection to vulnerable groups through the social security system, or by central financial provisions (such as the cold-weather payments to pensioners to offset fuel costs), the Government argued that: “water is unique: a supply of clean running water is essential to individual hygiene and to public health. The Government wishes to ensure that vulnerable customers do not have to cut down on essential water use, potentially compromising their health or the health of others, because of problems affording charges” (DETR 2000, para 4.4). The change in Government policy has entailed a return to deliberate, selective cross-subsidies within the water supply system, despite the fact that the industry is now privately rather than publicly owned. These cross-subsidies, as noted above, are however far more limited in size, and target far more tightly defined groups than those of the 1970s.

### Policy Alternatives

How might more socially equitable water charging policy frameworks be developed? If inter-regional equalization were to return to the agenda because of renewed concern about regional differentiation of water and sewerage bills, one policy response might be to regionally (rather than nationally) index the notional value of water in income support payments, as is already done for housing. Second, the false paradox between efficiency and equity requires deconstruction. Water, like energy, is an unusual commodity because it has a derived demand. Water is used directly for drinking, but it is also converted in appliances (dishwashers, washing machines, radiators, toilets) into the desired service (e.g. clean clothes, clean dishes, sewage disposal). Whenever water is used, the conversion efficiency of appliances will vary, so issues of capital and running cost are involved. Raising water prices to encourage more efficient water use may also have the effect of cutting consumption of water services, as greater water efficiency requires capital expenditure that lower-income families may not be able to afford. The immediate effect of a water price rise will be a drop in consumption, particularly by the poorest families, unless accompanied by the necessary capital expenditure in the home. Politically, the division between consumer advocates and environmentalist groups might be transcended through a more comprehensive consideration of a plan of capital investment to enable greater conversion efficiency for derived demands in the water sector. This relationship has already been recognised in the energy sector, where policies of providing capital investment in energy-efficient appliances in the home -- advocated as simultaneously sustainable and equitable -- have been implemented to address ‘fuel poverty’ (Boardman 1991, 1999). Similarly, ‘water poverty’ policies might provide subsidies to increase water efficiency in homes, targeted in particular at groups for whom water expenditure is above a threshold percentage of income.

### CONCLUSION

The evolution of water charging policies in England and Wales over the past three decades has been underpinned by a shift in the prioritisation of equity from social towards economic equity, and from the ability to pay principle towards the benefit principle. Given the incomplete application of policies of equalization, and the incomplete penetration of metering and application of marginal cost pricing, neither principle of equity has been fully applied in practice. The current consensus – that universal metering is theoretically desirable but impractical and expensive—implies that temporal and spatial cross-subsidies will continue in the water sector. The emphasis on economic equity has shifted the balance of these cross-subsidies. Increasingly stringent regulation, and the direct intervention of the government on numerous occasions in the late 1990s have sought to mitigate some of the most politically unacceptable effects. If the government’s stated goal remains tackling social exclusion, this paper recommends that policy-makers move away from the false paradox between equity and efficiency and implement water policies which simultaneously promote sustainability and equity.

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