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“Social policies and private sector participation in water supply – the case of Great Britain”

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Contents

1. Introduction

2. Institutional setting

- 2.1. England and Wales 1974 to date
- 2.2. Scotland 1975 to date

3. Changing policy priorities

- 3.1. From social to economic equity and back
- 3.2. England and Wales
- 3.3. Scotland

4. Implications of changing policy priorities for low income households

- 4.1. Access
- 4.2. Affordability
- 4.3. Social policies in England and Wales
 - 4.3.1. Disconnection policies
 - 4.3.2. Public health
 - 4.3.3. Consumer debt
 - 4.3.4. Review of policy
- 4.4. Social policies: Scotland
- 4.5. Comparing Scotland with England and Wales

5. Calibration

- 5.1. Calibration using family resources survey data
- 5.2. Comparison: Scotland versus England and Wales

6. Conclusions

References

1. Introduction

One of the most contentious political issues in the United Kingdom (UK) in the second half of the twentieth century was the relationship between individual citizens and the state. In the years immediately following the second world war a consensus emerged between the main political parties on the role of the state as a provider to citizens of a range of goods and services— particularly those associated with the utility industries - in order to achieve specific distributional ends¹. By the mid 1970s, however, doubts were being raised by leading politicians² about the efficacy of public corporations in meeting redistributive or other social obligations, and the consensus began to break down. The election, in 1979, of a Conservative administration committed to changing the relationship between the citizen and the state marked the beginning of a period in which alternatives to the public sector provision of goods and services were explored. A technically challenging and politically ambitious privatisation programme followed, in which many nationalised industries, including some but not all the utilities (previously considered the exclusive preserve of the state), were restructured, divested of particular social obligations, given clearer economic objectives, made subject to new forms of economic regulation, and sold to private sector investors³.

The water and sewerage industry in Scotland, England and Wales was not immune to these wider policy developments. Indeed, according to Bakker (2001, p1), the English and Welsh industry's evolution over the last thirty years may be understood in terms of shifting policy priorities, resulting in a changed perception of the relationship between the service supplier and recipient. Thus, instead of suppliers prioritising social equity in seeking to supply all citizens at subsidised rates, changes in policy ensured that they gradually came to prioritise economic equity in selling to those customers able to pay on a full-cost recovery basis. In other words the 'public service' model⁴ of the relationship between producer and consumer began to give way to a 'business organisation' model.

Against this background the Great Britain case study analyses the issue of affordability of water services and how social policies are designed, in Scotland, England and Wales⁵, with particular reference to low income households.

2. Institutional setting

During the early and mid twentieth century a wide variety of organisations, both public and private, undertook the tasks of supplying water and sewerage services to domestic households across Great Britain. Whilst local municipalities generally came to assume responsibility for the provision of sewerage and sewage disposal services

¹ Thus a National Health Service was established and industries such as coal, rail, gas and steel were taken into public ownership. In the water industry the number of private sector operators dwindled as local authorities took over responsibility for service delivery across most, but not all, of the country.

² Most notably from within the Conservative Party led by Mrs Margaret Thatcher.

³ An early discussion of the rationale for the UK privatisation programme is presented by Kay and Thompson (1986). More comprehensive analyses are offered in Vickers and Yarrow (1988), Armstrong et al (1994) and most recently for the English and Welsh water industry in Bakker (2003).

⁴ Penning-Rowsell and Parker (1983), p 170.

⁵ The analysis does not extend to the fourth constituent of the United Kingdom, Northern Ireland, as at present the costs of domestic service delivery are met primarily through an allocation from a general consolidated property-based tax fund. It is therefore not possible to identify accurately charges for water and sewerage attributable to individual household units. This undermines empirical analysis.

within their own jurisdictions, private sector organisations worked alongside public sector bodies in the abstraction, treatment and distribution of water. A process of consolidation and amalgamation gradually reduced the numbers of separate undertakings in both branches of the industry from over 2000 at the beginning of the century to around a tenth of this number by 1970.⁶

2.1. England and Wales 1974 to date

In England and Wales, the most significant organisational change to the industry in the second half of the twentieth century came about through the passing of the 1973 Water Act, which created ten Regional Water Authorities (RWAs)⁷. These bodies, organised under the general principle of ‘Integrated River Basin Management’, assumed responsibilities relating to the planning and control of all uses of water in each river catchment area: responsibilities which had previously been exercised by a large number of separate water and sewerage organisations⁸. As public bodies, they were ultimately responsible to central Government, in particular the Department of the Environment (the Welsh Office for Welsh Water) except on matters of land drainage and fisheries where they reported to the Ministry of Agriculture, Fisheries and Food.

A significant feature of this reorganisation was the fact that the 29 private (statutory) water companies existing in 1973 were allowed to continue operating under section 12 of the 1973 Water Act, even though the RWAs assumed responsibility for the supply of water in all areas. Where a private company operated within the area of the RWA, the RWA was required to discharge its water supply and distribution functions through the company. Close cooperation was required as responsibility for water resource development lay with the RWA. However, in many areas the company acted as agent of the Authority. All twenty-nine private water supply companies in existence in 1973 continued to operate under tight regulatory control until 1989. Supplying approximately one quarter of the population in England and Wales their combined contribution was significant throughout the period. Thus private and public water suppliers co-existed in England and Wales from 1974 to 1989.

In 1989 the RWAs were privatised⁹ and ten public limited companies were created. These were group holding companies sharing similar corporate structures, in which a subsidiary water and sewerage company (WaSC), assumed the main operational responsibilities. The WaSCs delivered services under an ‘Instrument of Appointment’ granted by the Secretaries of State for the Environment and Wales.

The assets and liabilities of the RWAs were transferred to the subsidiary Appointees on 1st September 1989 with shares in the holding (Group) companies being offered for sale in November 1989. The share offer was oversubscribed, due in part to the success of previous public share offerings in the large utilities, and the perception on the part of potential investors that the companies had been underpriced to maximise the chance of a successful floatation.

⁶ A description of the twentieth century development of the English and Welsh water industry may be found in chapter 5 of Hassan et al (eds) 1996 and chapter 11 of Vickers and Yarrow (1988).

⁷ The Regional Water Authorities came into existence on 1st April 1974.

⁸ The creation of the RWAs was intended to allow the exploitation of economics and scale and scope in service provision and the promotion of greater pollution control.

⁹ Under the Water Act 1989.

Each Appointee's Licence to operate, granted either by the Secretary of State for the Environment or the Secretary of State for Wales, was awarded initially for a period of 25 years. Licence terms and conditions, binding the companies in various ways, were enforced by the industry's new economic regulator, Office of Water Services (Ofwat), and covered matters such as charging, codes of practice on consumer matters, debt and leakage, levels of service, asset management plans and the provision of information.

A special or 'golden' share in the WaSCs was retained by the Secretary of State until 31 December 1994. This share gave ultimate ownership rights to the Secretary of State, effectively ruling out the threat of merger or takeover for the initial post-privatisation period. For all water companies the Director General of Water Services was required to refer any proposed merger of companies which breached a particular financial threshold to the Competition Commission. For larger mergers EC Mergers Regulations came into play.

As far as the 29 private water companies were concerned, the Act preserved their status and areas of supply. They were appointed to supply water services (only) within their own areas under Licence in the same way as the ten WaSCs. Restrictions on their ability to borrow and pay dividends were loosened, some became PLCs, and many attracted the interest of domestic and foreign companies as potential takeover targets. To date, the majority of the original 39 companies have either merged or been taken over and now operate as subsidiaries of larger companies. Only a minority retain a separate London Stock Exchange listing.

As far as economic regulation was concerned, the main innovation of the 1989 Water Act was the appointment of an independent economic regulator, the Director General of Water Services (Ian Byatt), who headed the Ofwat¹⁰. The economic regulator's duties set out in section 2 of the consolidating 1991 Water Industry Act as updated by section 39 of the 2003 Water Act included; the promotion of consumer interests (through the promotion of competition where appropriate), securing that the functions of the companies were properly carried out and that they abided by the terms of their licence to operate. Significantly, the economic regulator was to regulate through the use of a price cap mechanism, with periodic reviews every five years. In setting price caps Ofwat's primary duty was to ensure that the companies were able to finance their functions, in particular, by securing a reasonable rate of return on their capital. From 1 April 2006 the functions of the Director General of Water Services transferred to the new Water Services Regulation Authority¹¹.

2.2. Scotland 1975 to date

Scotland's answer to the English and Welsh industry's reorganisation in 1974 came about as part of wider local government reform. Thus under the terms of the Local Government (Scotland) Act 1973 the nine regional and three islands councils established on 16th May 1975 became responsible for water and sewerage services within their own areas, and responsibility for the prevention of pollution of inland and

¹⁰ Ofwat is a non-ministerial government department, and therefore not subject to direction from Ministers. It is accountable to Parliament, provides evidence for Parliamentary Select Committees and provides an annual report to the Secretary of State and the First Minister of Wales.

¹¹ The Ofwat title was retained.

defined coastal waters on mainland Scotland was transferred to seven River Purification Boards (RPBs)¹².

Overall responsibility for the economic regulation of the industry post 1975 remained with the Scottish Office, a department of central government. It continued to set the macroeconomic framework within which the bodies were to work, but delegated some regulatory powers to regional and islands councils that set charges at a level high enough to cover annual expenditure. The councils were responsible for their actions to the local electorate. Funds for capital investment were allocated by the Scottish Office on an annual basis under section 94 of the Local Government (Scotland) Act 1973.

Following privatisation of the ten English and Welsh RWAs in 1989, the Conservative Government signalled its intention to restructure the Scottish industry as well. After lengthy public consultation and heated debate, during which a proposal to privatise the industry was decisively rejected, the statute reforming the industry passed into law as the Local Government etc. (Scotland) Act 1994. Under its terms, responsibilities for water and sewerage services were transferred from the nine regional and three islands councils to three new Public Water Authorities (PWAs) on 1st April 1996. The Secretary of State for Scotland became responsible for the appointment of all PWA board members, effectively removing responsibility for these services from local government control for the first time. He also remained ultimately responsible for the setting of prices, and for the release of money for large scale capital investment through fixed Eternal Financing Limits. The amount of money available through this route, however, was restricted and PWAs were encouraged to bridge any funding gap with money from the Private Finance Initiative (PFI) and increased charges. Thus, although privatisation of the industry had not been implemented, the principle of private sector involvement had been established for the first time since 1975.

An important regulatory change came about through the Water Industry Act 1999 which established the post of Water Industry Commissioner for Scotland¹³. The Water Industry Commissioner's primary functions were to promote the interests of the water authorities' customers and to advise the Scottish Executive on the level of water charges over periods of several years. Responsibility for approving charges, however, remained with the Minister. For the first time Scottish water authorities were issued with individual price caps or limits on annual price increases.

Concerns over the impact on customer charges of the large investment programme and a desire to capture further unexploited economies of scale led to the creation of a single public water authority for Scotland. Under the terms of the Water Industry (Scotland) Act 2002 the North, East and West of Scotland PWAs merged on 1 April 2002 to become Scottish Water. Most recently the Water Services etc (Scotland) Act 2005 replaced the Water Industry Commissioner for Scotland with a Water Industry Commission (WIC) which began operating on 1 July 2005. This new body acts independently of Scottish Ministers to set periodic price caps for Scottish Water. Should Scottish Water contest price determinations of the Commission the appeal is now to the UK's Competition Commission and not to Scottish Ministers.

Although a public authority, Scottish Water has inherited a set of commercial relationships with private sector firms, and has sought to develop others. Inherited

¹² The role of the existing Central Scotland Water Development Board, in developing bulk supplies to regions of southern Scotland, was preserved by this institutional restructuring.

¹³ The first Water Industry Commissioner for Scotland (Alan Sutherland) took up post on 1st November 1999.

commercial relationships included, significantly, the nine large scale waste water projects that were eventually commissioned under PFI agreements and which currently process around half of the waste water in Scotland. More recent public-private partnerships include a joint venture enterprise – Scottish Water Solutions Ltd (SWS) – the purpose of which is to manage and deliver a large part of the industry's capital investment programme.

To summarise, during the last thirty years the pattern of water and sewerage service provision across Great Britain has evolved in ways which have increased private sector participation. Having sketched in this background we turn now to consider the broad changes in government and regulatory policy relating to service provision that precipitated many of the institutional reforms.

3. Changing policy priorities

3.1. From social to economic equity and back

A survey of water service pricing practices in OECD countries, published in 1987 (OECD 1987), listed criteria used by governments and regulatory bodies in designing charging systems. Ten years later (OECD 1999) the list of criteria remained largely intact¹⁴. However, the author drew attention to the way in which particular criteria had been given greater priority over others by different governments and regulatory agencies during that time. Some, for example, had introduced policies which had given greater emphasis to criteria emphasising narrow economic efficiency objectives; others had prioritised broader social equity goals¹⁵.

3.2. England and Wales

In a penetrating study of the English and Welsh water industry, Bakker (2001) developed this theme of changing government and regulatory priorities within a British context, arguing that institutional developments in general, could be helpfully understood in terms of changing government and regulatory policies. Changes to tariff structures resulting from new regulatory arrangements, for example, could be seen to reflect a shift towards the prioritisation of economic equity over social equity: a movement from the ability to pay principle to the benefit principle¹⁶. Thus it is notable that in the early 1980s an English and Welsh inter-regional charge equalization levy was phased out and Keynesian regional employment policies which contributed to high staffing levels within the industry fell out of favour. RWA boards were restructured, reduced in size and populated with central rather than local government appointees. Challenging financial targets were set which required RWAs to achieve particular rates of return. Cost benefit analysis was embedded in company decision making and attempts made to introduce long run marginal cost pricing¹⁷.

Despite these developments it would be deceptive to assert, in terms of charging, that all post privatisation policy changes exclusively prioritised the principle

¹⁴ The criteria included, allocative (economic) efficiency, equity, financial requirements, public health, environmental efficiency, consumer acceptability and understanding and administrative costs. It was suggested that energy and employment, which had appeared in the 1987 list, would probably be omitted in the late 1990s. OECD (1999), p 17.

¹⁵ OECD (1999) p19.

¹⁶ Bakker (2001), p 158.

¹⁷ Synnott 1985, p70.

of economic equity over social equity. It could be argued that in order to achieve the aims of privatisation, the government had to articulate more precisely and clearly the social obligations laid upon the companies. This is quite different of course from removing social obligations altogether, and in the years following privatisation, distinct spatial patterns of consumption and access to water services did not emerge in the water industry to the extent that they did in the post-privatisation energy industry. This was due to statutory measures which have continued to include both a *universal service obligation* on suppliers¹⁸ and specific protection for rural customers¹⁹.

Concern that the movement towards prioritising economic over social equity in industry policy had gone too far lay behind the newly elected Labour government's decision to hold a 'Water Summit' in May 1997. Water companies and their regulators were brought together, and a ten point plan devised in which new political priorities were articulated. Immediate measures included the introduction of mandatory leakage targets and an announcement that the government would conduct a broad review of water charging and metering policies²⁰. Legislative changes reflecting the new policy emphases came through the Water Industry Act (1999). The Act prohibited domestic disconnection for non-payment of charges, prohibited the use of limiting devices (eg trickle valves), gave ministers the authority to provide statutory guidance to the economic regulator on charging and to make provision for the protection of vulnerable groups.

3.3. Scotland

In Scotland, the principle of social equity in relation to water industry policies enjoyed a prominence and longevity exceeding that in England and Wales. The reasons behind this are explored in more detail by Sawkins and Dickie (2006). Thus, rather belatedly, following the 1996 restructuring of the industry, policy measures marked out the change in emphasis with new policies including the introduction of designated sewerage charges²¹, the phasing out of water and sewerage charge reliefs for charitable organisations, the imposition of strict performance targets and the consequent sharp decline in employee numbers within the organisations. Against this must be set the single most significant social policy innovation of the period, charge harmonisation for the whole country, which was achieved in 2004/5.

Despite a delay in the reorientation of industry policies towards prioritising economic over social equity in Scotland, the movement gathered momentum. However, as in England and Wales, it is also possible to discern politically inspired movements in the other direction, an example being the phasing out of reliefs to voluntary organisations. Bakker's (2001) conclusion drawn in the context of England and Wales therefore has relevance too to Scotland.

4. Implications of changing policy priorities for low income households

Having outlined recent changes to institutional arrangements and broad policy priorities, we examine in more detail changes in policies aimed at addressing the

¹⁸ Water Industry Act 1991, section 37.

¹⁹ Water Industry Act 1991, section 2 (3) (a) (i).

²⁰ Reviews of the water charging and abstraction licensing schemes were conducted under the auspices of the DETR (1998a, b, c, 1999a, b). A broader review of utility regulation was conducted under the auspices of the DTI (DTI 1998a,b).

²¹ Previously sewerage costs had been met out of general tax revenues.

access and affordability-related concerns of low income households across Great Britain.

4.1. Access

Since the middle of the nineteenth century government policymakers have attached great importance to providing all households with access to treated water piped directly into individual residences, and corresponding sewerage systems for the conduct of foul flows away from the same residence, regardless of geographical location, social class or income. This was achieved, technically²², for the vast majority of urban residents across Great Britain by the middle of the twentieth century. However, in remote rural areas, small-scale private supplies have only gradually been joined to larger public networks²³. The extent of this work continues to be limited by the costs of extending the network, which in some areas remains prohibitive.

Nevertheless for Scotland, England and Wales, physical access to water and sewerage services for domestic consumers may be regarded for all practical purposes as being universal. Changes in policy priorities to emphasise economic over social equity have not seriously impinged upon the underlying principle of universal access which has continued to enjoy a degree of statutory protection²⁴. Tables 1 and 2 record the percentage of the resident population connected to mains water and sewerage in England, Wales and Scotland. They highlight the fact that there is little geographical variation in connection rates.

Table 1: Percentage of resident population connected to mains water and sewerage in England and Wales 1987/8

Year	% Resident Population Connected to Mains Water	% Resident Population Connected to Mains Sewerage
Anglian	99%	92%
Dwr Cymru	98%	94%
Northumbrian	99%	98%
North West	99%	97%
Severn Trent	100%	98%
Southern	100%	95%
South West	95%	85%
Thames	100%	98%
Wessex	97%	94%
Yorkshire	99%	96%
Total:	99%	96%
England & Wales		

Note: Figures relate to water authority areas in 1987/8.

Sources: Water Authorities Association. 1988a, b.

²² i.e. in terms of physical connections being made.

²³ Networks of mains and sewers are generally of rather small scale. No national network exists, for example – although within regions such as that covered by Yorkshire Water schemes have been devised to move large quantities of water around the area.

²⁴ For example the Water Industry Act (1991) discussed above.

Table 2: Percentage of resident population connected to mains water and sewerage in Scotland 2000/1

Year	% Resident Population Connected to Mains Water	% Resident Population Connected to Mains Sewerage
North East	96%	93%
North West	94%	82%
South East	98%	97%
South West	99%	98%
Islands	94%	67%
Total:	98%	96%
Scotland		

Sources: Scottish Executive (2001b). Figures Relate to 2000/1. Areas are those used by Scottish Water. Islands include Western Isles, Orkney and Shetland.

4.2. Affordability

An enduring feature of government efforts to secure universal access to water and sewerage services for households has been continuous downward pressure on prices, applied directly or mediated through quasi-independent economic regulatory bodies. Prior to privatisation of the English and Welsh RWAs in 1989 and reorganisation of the Scottish industry in 1996, prices were generally some way below a level that, together with government lending, was necessary to recover the full economic cost of service provision, and despite increases particularly in the mid 1980s in England and Wales and the late 1990s in Scotland, this remained the position up to the end of the respective decades.

Where households were unable to pay for services, financial support was offered through the tax and benefits system. Thus in the 1980s, claimants of Supplementary Benefit received an amount of money which reflected the actual costs of water and sewerage bills. Where households were unwilling rather than unable to pay for services, suppliers in England and Wales had the power of disconnection. This power did not extend to Scotland.

As part of the Conservative government's reform of social security arrangements Supplementary Benefit was abolished in 1988 and replaced by Income Support. Significantly, for water and sewerage consumers, this broke the link between benefit and bills and a system was introduced in which a series of personal allowances – related to particular household circumstances – were granted to cover day to day living needs²⁵. Water and sewerage service charges were thereafter deemed to be met by the personal allowance element in the overall Income Support payment²⁶. This change effectively passed responsibility for meeting water and sewerage charges from the Department of Social Security, which no longer automatically rebated charges in full to the benefits claimants themselves – a further example of the way in which government policy came to prioritise economic over social equity.

Two features of the post 1988 system are notable from the point of view of low income water and sewerage customers across Great Britain. First, Income Support rates did not, and do not vary regionally despite the fact that local variations

²⁵ Details are given in DSS / Benefits Agency (1999).

²⁶ No other (national) social security benefit may currently be claimed in respect of these charges; in particular Council Tax and Housing Benefit do not apply.

in water and sewerage charges in England and Wales began to open up following the abolition of inter-regional equalization grants²⁷. This clearly disadvantaged those in high charge regions such as the south west of England (Kempson and Bennett 1997). Second, the index used to up-rate means-tested benefits – the Rossi Index - did not include water charges until 1992, and generally lagged well behind water and sewerage charge increases in the post 1989 period in England and Wales, and the post 1996 period in Scotland. In Table 3 we show the annual percentage change in the benefit uprating index (Rossi / New Rossi) against changes in the Retail Price Index and for the purposes of illustration the average water and sewerage charge for England and Wales.

Table 3: Indices and prices

Year	Annual % Change in Retail Price Index (RPI)	Annual % Change in Rossi / New Rossi Index	Annual % Change in Average English and Welsh Water and Sewerage Charge
1988/9	4.2%	3.2%	-
1989/90	5.9%	4.7%	11.2%
1990/1	7.6%	5.2%	12.6%
1991/2	10.9%	8.1%	16.4%
1992/3	4.1%	7.0%	8.3%
1993/4	3.6%	3.6%	9.5%
1994/5	1.8%	3.9%*	7.6%
1995/6	2.2%	1.8%	6.0%
1996/7	3.9%	3.0%	3.3%
1997/8	2.1%	2.6%	5.5%
1998/9	3.6%	2.4%	5.7%
1999/0	3.2%	2.1%	1.2%
2000/1	1.1%	1.6%	-11.0%
2001/2	3.3%	1.6%	2.3%
2002/3	1.7%	1.7%	1.8%
2003/4	1.7%	1.3%	3.5%
2004/5	2.8%	1.8%	5.5%

Source: Department for Work and Pensions (2004b) Table 2 Uprating History, p31. Ofwat's (various) Tariff Structure and Charges Reports. Income Support is uprated annually in early April using the Rossi / New Rossi index which is currently defined as RPI (all items) less rent, local taxes and mortgage interest payments. Pre April 1992 the Rossi index excluded water charges. The RPI and Rossi indices in this table relate to the uprating date (April), however the data on which the uprating figures are based relate to the previous year to September (e.g. the uprating of 11 April 1988 used September 1986 to September 1987 data). Note that Ofwat adopts a November RPI figures in its regulatory functions. (See: Ofwat (2005)).

* In April 1994 Income Related Benefits were uprated by 3.9% to take account of the introduction of VAT on fuel. The Rossi factor for this period was 3.5%.

The erosion in the value of support for water and sewerage charges via the Social Security system was outlined by Fitch (2002), who quoted figures given in a reply from the House of Commons Library to Helen Jackson MP on 17 May 1996.

²⁷ In Scotland regional charge harmonisation was introduced.

The base Social Security figure of £1.65 per week was not an amount included in Income Support for the payment of water and sewerage bills, but the estimated average bill for those in receipt of Supplementary Benefit in 1988. In Table 4 we extend the time series of Fitch (2002) by uprating the benefit element within Income Support (notionally ascribed to water and sewerage in 1988) by the Rossi index, setting this alongside the average water and sewerage charge for England and Wales. Benefit as a proportion of the average charge has clearly fallen quite markedly over the period: a point underlined recently by the National Consumer Council²⁸. In Table 5 the effect of the large regional variation in water and sewerage charges on effective support levels is teased out for two of the English and Welsh water companies: South West Water, a high charge area, and Thames Water, a low charge area. In the case of South West Water the benefit element as a percentage of the average charge has been under 50% since 1992/3.

Table 4: Changes in income support benefit element and English and Welsh charges 1988/9 to 2004/5

Year	Benefit Element (Weekly) £ (uprated by Rossi)	Average Water and Sewerage Charge (£) Annual (weekly)	Benefit Element as % of Average Charge
1988/9	1.65	107 (2.06)	80%
1989/90	1.73	119 (2.29)	76%
1990/1	1.82	134 (2.58)	71%
1991/2	1.97	156 (3.00)	66%
1992/3	2.11	169 (3.25)	65%
1993/4	2.19	185 (3.56)	62%
1994/5	2.28	199 (3.83)	60%
1995/6	2.32	211 (4.06)	57%
1996/7	2.39	218 (4.19)	57%
1997/8	2.45	230 (4.42)	55%
1998/9	2.51	243 (4.67)	54%
1999/0	2.56	246 (4.73)	54%
2000/1	2.60	219 (4.21)	62%
2001/2	2.64	224 (4.31)	61%
2002/3	2.68	228 (4.38)	61%
2003/4	2.71	236 (4.54)	60%
2004/5	2.76	249 (4.79)	58%

Sources: Annual average water charges. 1988/9: Water Services Association (1989). 1989/90 to 1990/91: CRI (1994). 1991/2 to 1994/5: Ofwat Annual Reports 1990 - 1993. 1995/6 to 2004/5: Ofwat Report on Tariff Structure and Charges 1995/6 – 2004/5. 1988/9 to 1994/5 average household charges for unmeasured water and sewerage. 1995/6 to date for measured and unmeasured. Weekly charges = annual charges / 52. When Supplementary Benefit was replaced by Income Support no specific amount was included for water and sewerage charges in the latter. However in correspondence from the House of Commons Library to Ms Jackson MP (17 May 1996) an amount of £1.65 was cited. This is used as the basis for the benefit series (uprated by Rossi / New Rossi)

²⁸ In evidence to the House of Commons Environment, Food and Rural Affairs Committee (2003), paragraph 37.

Table 5: Changes in element of income support benefit and charges for Thames and South West 1988/9 to 2004/5

Year	Benefit Element (Weekly) £ (uprated by Rossi)	Average Water and Sewerage Charge £ Annual (Weekly) Thames	Average Water and Sewerage Charge £ Annual (Weekly) South West	Benefit Element as % of Average Charge Thames	Benefit Element as % of Average Charge South West
1988/9	1.65	93 (1.79)	128 (2.46)	92%	67%
1989/9	1.73	100 (1.92)	146 (2.81)	90%	62%
1990/1	1.82	113 (2.17)	164 (3.15)	84%	58%
1991/2	1.97	130 (2.50)	192 (3.69)	79%	53%
1992/3	2.11	138 (2.65)	228 (4.38)	80%	48%
1993/4	2.19	152 (2.92)	266 (5.12)	75%	43%
1994/5	2.28	162 (3.12)	304 (5.85)	73%	39%
1995/6	2.32	172 (3.31)	317 (6.10)	70%	38%
1996/7	2.39	181 (3.48)	329 (6.33)	69%	38%
1997/8	2.45	191 (3.67)	343 (6.60)	67%	37%
1998/9	2.51	201 (3.87)	354 (6.81)	65%	37%
1999/0	2.56	206 (3.96)	356 (6.85)	65%	37%
2000/1	2.60	187 (3.60)	314 (6.04)	72%	43%
2001/2	2.64	194 (3.73)	313 (6.02)	71%	44%
2002/3	2.68	197 (3.79)	326 (6.27)	71%	43%
2003/4	2.71	201 (3.87)	342 (6.58)	70%	41%
2004/5	2.76	209 (4.02)	361 (6.94)	69%	40%

Sources: Annual average water charges – see notes to earlier Tables.

At this stage, it is worth discussing about poverty issues in England and Wales. Changes in levels of relative poverty – the ‘headline’ approach used by the UK Government - are set out for all individuals and for children in Tables 6 and 7 respectively. For all individuals the measure, defined as the percentage of individual households with incomes below various fractions of median income (before the deduction of housing costs), show a reduction in all three cases between 1996/7 and 2003/4, with the 60% median and 70% median falls being statistically significant. For children the pattern is the same. Child poverty has fallen consistently since 1998/9 following a large rise during the 1980s and early 1990s. On all measures the falls since 1996/7 are statistically significant.

Table 6: Relative poverty: percentage of individuals in households with incomes below various fractions of median income

	Percentage of Population		
	50% Median	60% Median	70% Median
1996/7	9.9	18.4	27.3
1997/8	9.9	18.3	26.9
1998/9	10.0	18.2	27.0
1999/00	9.7	17.9	27.0
2000/01	9.7	17.0	26.0
2001/02	9.3	16.9	25.7
2002/03	9.6	17.0	25.8
2003/04	9.4	16.8	25.5

Note: Calculations using FRS data. Measured before the deduction of housing costs.

Source: Extracted from Brewer et al (2005) Table 3.2, p 26.

Table 7: Relative child poverty: percentage of children living in households with incomes below various fractions of median income

	Percentage of Population		
	50% Median	60% Median	70% Median
1996/7	12.5	24.9	35.2
1997/8	12.6	24.7	35.2
1998/9	12.6	24.5	35.1
1999/00	11.7	23.4	35.1
2000/01	11.1	21.0	32.8
2001/02	10.4	20.7	33.1
2002/03	10.6	20.8	32.4
2003/04	10.5	20.5	31.8

Note: Calculations using FRS data. Measured before the deduction of housing costs.

Source: Extracted from Brewer et al (2005) Table 3.3, p 28.

4.3. Social policies in England and Wales

Turning to examine the question of affordability for low income households in England and Wales we note that the combination of rapidly rising charges, diminishing social security support (in relative terms), the ending of direct subsidies to firms from government and the unwinding of cross subsidies within the charging regime resulted in growing political pressure on central government and the economic regulatory agency in the early 1990s, to address the problem of water affordability and reverse the direction of policy. For the economic regulator, Ofwat, a symptom of the underlying problem – the number of domestic disconnections for non-payment – acted as the focus of political and media attention in this debate.

In framing the original privatisation legislation the government had given Ofwat a general customer protection role²⁹. It did not, however, regard this as encompassing responsibility for the mitigation of financial hardship caused by water and sewerage tariffs. Ofwat was careful, therefore, to ensure that it remained an

²⁹ Water Act 1989, section 7.

economic regulatory agency, operating at ‘arms-length’ from both industry and government. In its policy statements it carefully avoided giving the impression of having any sort of social security role; of being merely another arm of the Department of Social Security. It sought also to defend this principle for the water companies themselves. “It would be unfair to other water customers if general tariff policy were to reflect social objectives. These should be part of health and social services policy. Any costs from providing support to customers with particular needs should be met by the appropriate agency, and not by water customers generally.”(Ofwat 1990, p.10).

Nevertheless Ofwat came under early pressure to take a more proactive stance with regard to affordability in the light of information on the number of domestic disconnections for non-payment that was emerging.

4.3.1. Disconnection policies

In contrast to Scotland, where disconnection of domestic households for non-payment of charges had not been permitted, the practice was not uncommon in England and Wales amongst the public RWAs and private statutory water companies. Amongst the statutory provisions of the 1989 Water Act was a requirement for companies to prepare a code of practice on debt and disconnection³⁰, which would be approved by Ofwat. These company codes were to include guidance to households who had difficulty in paying bills, and an outline of procedures to be followed by companies before disconnection³¹. In the year before privatisation the number of domestic disconnections for non payment was 15,255³². This fell sharply post privatisation as companies began to ‘feel their way’ with regard to the new statutory procedures. By 1991, however, there was a rapid rise in the number of county court summonses and judgements which resulted in a record number of disconnections that year (Table 8).

Table 8: Disconnections (England and Wales): household water supply disconnections for non-payment of charges

Year	Number of Disconnections	Percentage of Households
1989 / 90	8,426	0.042
1990 / 1	7,673	0.038
1991 / 2	21,282	0.105
1992 / 3	18,636	0.092
1993 / 4	12,452	0.062
1994 / 5	10,047	0.050
1995 / 6	5,826	0.029
1996 / 7	3,148	0.016
1997 / 8	1,907	0.009
1998 / 9	1,129	0.005

Source: House of Commons Hansard Written Answers for 30 Nov 2000 (pt 22), Water (Disconnections), Column 795W. Also for 1990 / 1 to 1998 / 9 see Ofwat’s (2004) Debt & Disconnection Figures 2003-04, http://www.ofwat.gov.uk/aptrix/ofwat/publish.nsf/Content/debt_disc180804. Figures are years to March 31st. 1998/9 was the last full year in which domestic disconnection for non-payment of bills was

³⁰ Condition H of the company licence.

³¹ Generally a customer could only be disconnected after the company had obtained a court judgement for the unpaid charges.

³² Ofwat Annual Report 1996, p 19.

permitted. The disconnection of domestic properties for non-payment of water bills in England and Wales was abolished by the Water Industry Act 1999 with effect from 1 July 1999. Industry data is not available pre-privatisation split down by domestic and non-domestic. However Total disconnections for 1988/9 for water authorities and statutory water companies for domestic and non-domestic was 15,255 (House of Commons Hansard Debates for 24 Jun 1992, Water Disconnections, column 203). Water Authority only data on total disconnections is available for 1986/7 onwards.

At the same time as the number of disconnections was growing Ofwat undertook a consultation on the principles of charging for water and sewerage services (Ofwat 1990). In the report outlining the Director General's conclusions (Ofwat 1991) the principle of domestic metering was endorsed subject to certain caveats³³ and approval given to the extension of domestic metering on a voluntary basis. The Ofwat policy stance and the enthusiasm of some companies³⁴ to extend metered provision – consistent with prioritisation of economic over social equity – raised concern amongst charitable organisations and consumer bodies which highlighted the budgeting problems faced by low income families connected to a metered supply of water. In a well-publicised study³⁵ of the potentially health-endangering measures taken by low-income families to conserve water, Save the Children concluded that “70 per cent of the sample, were taking measures to reduce their use of water. Common measures included sharing baths, taking fewer baths or showers, washing clothes less often, flushing the toilet less often and preventing children from playing with water (...). Save the Children calls on the Government to ensure that water for basic human needs is affordable for all families. The impact on children in low-income families should be taken into account in deciding on methods of charging for water.”(Save the Children 1996, p. 7).

4.3.2. Public health

Another issue arousing public concern at about the same time was the reported rise in notified cases of dysentery and hepatitis. In a House of Commons written answer³⁶ the Secretary of State for Health highlighted a rise in the incidence of dysentery in 1992 in all major conurbations other than London. Commenting on this he noted that trends in dysentery exhibit a periodicity with peaks every seven to eight years in the UK, although the peak in 1992 was higher than other peaks in the previous two decades. Although the association between disconnections for non-payment of bills and incidents of dysentery was not a clear one, the media began to make this link. For example, “New evidence from the West Midlands points to a ‘very significant’ link between water disconnection and risk of disease outbreaks. Dr John Middleton, director of public health at Sandwell Health Authority, compared the postcodes of people whose water was cut off with those of notified dysentery and hepatitis cases, and found a ‘strong correlation’.” ([Healthmatters³⁷, issue 14, Summer 1993, p. 4).

More thorough research into the issue was carried out by the British Medical Association (BMA 1994). Whilst not finding the simple causal link characteristic of

³³ The Director General supported the principle of universal domestic metering but regarded a rapid change as uneconomic. Metering should therefore be targeted, spread progressively and installed when requested by consumers (Ofwat 1991, p 4).

³⁴ Notably Anglian Water.

³⁵ Save the Children (1996).

³⁶ House of Commons Official Report, 10 December 1993, vol 234 c 395.

³⁷ <http://www.healthmatters.org.uk/issue14/dysentery>. Healthmatters is an independent quarterly magazine covering current issues in healthcare and public health policy.

media reports, the BMA did raise public health concerns related to the disconnection policy³⁸.

4.3.3. Consumer debt

Meanwhile with diminished levels of social security support, water-related consumer debt levels rose rapidly. During 1994 nearly two million households defaulted on water bills and by the end of the year over one million, or 5% of all households, were in payment arrears (Herbert and Kempson 1995). Another survey³⁹ found that 75% of those claiming Income Support had difficulty in paying water bills and that for low-income families the most rapidly rising component of overall debt related to water.

4.3.4. Review of policy

Under pressure to respond to all these developments Ofwat reviewed company practice in relation to disconnection and debt, identifying substantial differences between companies in terms of the number of summonses issued, the level of disconnections and the overall approach to customer relations. This review led to the publication of Guidelines on Debt and Disconnection (Ofwat 1992) which emphasised the importance of companies minimising the use of court action, improving information for customers and providing a range of payment methods to help customers budget for water and sewerage charges. Thereafter the number of disconnections fell rapidly until by 1996-7 five water companies⁴⁰ had what amounted to a no-disconnection policy for domestic premises. Overall disconnection figures fell far below pre-privatisation levels.

Undoubtedly this action by Ofwat resulted in some households which would otherwise have faced disconnection for non-payment remaining connected to the supply. Nevertheless Ofwat took care to ringfence its activities, ensuring that together with the water companies it fulfilled its statutory obligations but did not offer any form of additional financial assistance for those unable or unwilling to pay their bills. Two other initiatives taken by Ofwat in the early 1990s related to the wider affordability debate. First was an Ofwat-commissioned report by the Institute for Fiscal Studies into the distributional impact of alternative charging schemes (Ofwat 1993). Information from this study underpinned discussions of alternatives to unmeasured tariff regimes, and their effect on low-income households. Second was its support for Budget Payment Units (BPUs) - restrictive flow devices, which were offered to households at risk of disconnection for non-payment to assist them to budget effectively for water services. The devices, operated by means of payment cards, were declared unlawful in February 1998 on the grounds that the possibility of self-disconnection posed a health risk to those using them and the wider public. The decision disappointed Ofwat, which had seen them as a helpful and popular budgeting device for a particular class of customer.

In general, Ofwat's careful refusal to transgress the strict statutory limits of its operations was a stance congenial to Conservative central governments from 1989 onwards. In 1997, however, the new Labour administration quickly showed itself eager to become more involved at a micro level in the economic and environmental regulation of the industry, convening the Water Summit discussed earlier. The limited

³⁸ Healthmatters, issue 18, summer 1994, p 4.

³⁹ Cited in Bakker (2001) p 152.

⁴⁰ Cholderton, Mid Southern, South East, South West and Wessex.

return to the prioritisation of social over economic objectives in water related policy matters was handled with care by the economic regulator. Ofwat quickly showed itself to be adept at working in the new political environment, managing once again to resist pressure - this time from central Government - to add a range of social objectives to its portfolio of responsibilities. In this it succeeded; for the Government chose to address its particular social concerns in England and Wales - including affordability of water and sewerage services - by means of primary legislation.

Following a period of intense lobbying and political discussion over the plight of vulnerable households in relation to disconnection and debt, the Water Industry Act 1999 put in place various protections for particular groups in line with Governmental social objectives. Although not designed to address the affordability problem directly the measures did offer some support to particular vulnerable groups. The Act prohibited the disconnection of households for non-payment of charges (section 1) thereby bringing England and Wales into line with Scotland. It prohibited the use by companies of limiting devices, for example trickle valves, to enforce payment (section 2). It gave powers to the Secretary of State to make Regulations on charging to issue regulations setting out requirements that should be included in companies' charges schemes, and in particular to make provision for the protection of vulnerable groups (section 5). Finally it gave domestic consumers the right to opt for a measured charge (section 6)

The effects of these measures were wide ranging. The prohibition of domestic disconnection for non-payment of charges led, predictably, to an increase in the numbers of customers in debt and the overall level of outstanding revenue for companies. It is not possible of course to identify the extent to which this reflects a growing reluctance on the part of customers to pay for the service, as against changes in ability to pay. However Ofwat suggested that the change itself was due, in no small part, to blunted payment incentives. It has since formally recognised that companies may spend more recovering debt and that interim price determinations may be required to reflect these new circumstances⁴¹.

Vulnerable group regulations were made in The Water Industry (Charges) (Vulnerable Groups) Regulations 1999⁴² and Water Industry (Prescribed Conditions) Regulations 1999. Both offered tariff based assistance to particular target groups. However recent evidence offered by the National Consumer Council to the House of Commons Environment, Food and Rural Affairs Committee stated that the scheme had been a failure with only a 1.4% take up among eligible customers in 2001/2⁴³. It further alleged that the scheme cost more to administer than it paid out to customers.

One company-led innovation to address the problem of affordability, however, did enjoyed limited success, and did not fall foul of legislation or economic regulation. This innovation was the establishment of charitable trust and hardship funds. These funds, discussed in detail by Fitch (1998) were established by most water and sewerage operators in the mid 1990s, and offered targeted assistance to customers who had difficulty in paying their bills. They varied greatly in scale and constitution. Some were administered by boards of independent trustees, others run by water companies on informal lines, dealing with cases on an ad hoc basis. Trust

⁴¹ For example, in September 2001 Dee Valley Water applied for an interim determination for reasons which included the effect of the disconnection ban on its costs and ability to recover debt. Ofwat accepted that its costs and level of debt had both risen.

⁴² Statutory Instrument 1999, no.3441. Note these regulations apply only to England. Water and sewerage are devolved responsibilities of the National Assembly for Wales.

⁴³ House of Commons Environment Food and Rural Affairs Committee 2003, para 39, p 13.

funds were derived largely from the companies themselves which, in 2000-1, contributed £3.7 million - a fall of nearly 20% from 1998-9 levels⁴⁴. Levels of support and take-up rates vary quite widely across the country and there is no automatic entitlement to assistance. Nevertheless the existence of such bodies at the very least indicates some level of concern for financially disadvantaged customers by the companies themselves.

4.4. Social policies: Scotland

A slightly different pattern of events affected consumers of water and sewerage services in Scotland. Social security provision in the form of Income Support arrangements applied to low-income consumers in Scotland as in England and Wales, however the option to disconnect domestic households for non-payment of charges was not available to Scottish suppliers throughout the period. Other differences are also evident.

First, it is important to note that from 1996 onwards domestic consumers in Scotland continued to be charged for water and sewerage services on the basis of property valuations, however this was related to the council tax banding of their residence⁴⁵ and not its rateable value⁴⁶. In addition local authorities remained responsible for billing and collection which was undertaken in parallel with the ingathering of general council tax revenues. A corollary of this was that single person households were eligible for a 25% reduction in council tax liability if they were sole eligible occupants of the property. This reduction extended to water and sewerage charges and was in effect a benefit over and above that available through the Income Support system. We note the significance of this point later.

Second, the large price rises experienced by consumers in England and Wales in the late 1980s and early 1990s were delayed in Scotland until after reorganisation in 1996. Thus in 1995/6 the average unmeasured Scottish household (domestic) bill for water and sewerage services was £107 and the corresponding figure for customers in England and Wales was £208. By 2002/3 the situation had reversed and the average unmeasured household bill for consumers in Scotland had increased to £248, whilst in England and Wales it was £236⁴⁷. Both the speed of the rise in domestic charges in Scotland, and the fact that the gap was closed, are notable. Important also is the observation that the impact of increased charges was not evenly felt across the country. A policy of inter-regional or geographical charge harmonisation⁴⁸ ensured that consumers in areas previously enjoying particularly low charges suffered the steepest rises, effectively cross subsidising consumers in high charge areas. Thus whilst bills for consumers in the Western Isles, Orkney and Shetland have roughly trebled in absolute terms since 1996, those for consumers in the Forth Valley area have increased by a factor of six. Although economically inefficient, cross subsidisation on this scale has been defended, politically, on the grounds of regional and social equity.

⁴⁴ Ofwat (2001) RD (Letter to Regulatory Directors) 12/01, Ofwat, Birmingham.

⁴⁵ Properties were valued and allocated to one of eight Council Tax bands A to H. Charges were levied in fixed proportion to the Band D charge.

⁴⁶ Domestic meter penetration in Scotland was and remains extremely low.

⁴⁷ Source: WCCP (2003a), p7.

⁴⁸ Initially within the North, East and West of Scotland Water Authority areas and since the creation of Scottish Water across Scotland.

In stark contrast to England and Wales where the government and the economic regulator proved reluctant to sanction explicit financial support for low income households, low income consumers in Scotland have enjoyed two separate packages of temporary or transitional financial support funded by central government. First, a transitional sewerage relief grant (TR) running for three years from 1996/7⁴⁹, provided relief for domestic consumers who, for the first time, faced meeting the costs of sewerage services directly⁵⁰. Second, a scheme of relief offered to households in receipt of Council Tax Benefit whose charges were above a qualifying threshold⁵¹. This most recent scheme however, regarded by the Executive as a means of supplementing the support already offered through the progressive Council Tax charging arrangements⁵², enjoyed rather modest funding, and was poorly targeted. Thus whilst those already in receipt of Council Tax Benefit qualified for support, this support was not automatically extended to Income Support claimants. Furthermore in terms of absolute numbers of households benefiting from the scheme the relatively high threshold meant that in 2002/3 more Band E households received assistance than those occupying Band A properties. In the scheme's favour was relative administrative simplicity whereby local authorities identified eligible households and made automatic reductions in bills. Undoubtedly it benefited some low income households particularly in the North of Scotland.

Concerns over the efficacy of the second transitional relief scheme and the wide ranging public debate over the question of support for low income and other vulnerable households⁵³ coincided with the Scottish Executive's consultation on the principles of charging (Scottish Executive 2004). The Executive's response was to seek to regularise and make permanent a new form of relief linked to the Council Tax benefit system. To this end, in its statement on 'The Principles to be Applied in Charging for Public Water and Sewerage Services in Scotland 2006-2010' (Scottish Executive 2005) it announced a new scheme in which the 25% discount on water and sewerage bills would continue to be granted to all single-adult households irrespective of the Council Tax valuation band of the property occupied or eligibility for Council Tax benefit. Crucially, eligibility for the 25% discount was extended to households with two or more adults in receipt of Council Tax benefit. The cost of the extension was partly met through the abolition of discounts on water charges for second homes and other empty dwellings. Under the new scheme some customers in receipt of Council Tax benefit (primarily those occupying higher banded properties) received less generous reductions in charges than they did under the transitional arrangements. However those low-income households in receipt of Council Tax benefit and previously not eligible, or eligible for only a limited reduction in their water charges, received more assistance. The new arrangements came into force on 1st April 2006.

4.5. Comparing Scotland with England and Wales

This description of policy initiatives in relation to affordability has highlighted the quite marked differences in approach pursued in the different jurisdictions. In terms

⁴⁹ The grant was £89.7 million in 1996/7, £59.7 million in 1997/8 and £29.6 million in 1998/9 (WCCP 2003a, page 16).

⁵⁰ Prior to 1996 sewerage costs had been met through general Council Tax revenues.

⁵¹ Thresholds were: £180 in 2001-2, £198 in 2002-3 and £220 in 2003-4. The total cost of the scheme was £24 million over 3 years.

⁵² Such as single person discounts and the progressive weighting within the charging structure.

⁵³ WCCP (2003a).

of government and regulatory policy it is clearly the case that greater priority has been given to social equity concerns in Scotland. The Scottish Executive has taken the initiative on more than one occasion to offer direct support to low-income households. In England and Wales Ofwat has shown great reluctance to endorse measures offering a degree of direct financial support or relief to low income households.

The question then arises, how have consumers fared under the two sets of arrangements? What empirical evidence may be assembled to assess whether water and sewerage services have become more or less affordable for low income households across time? In the next section we present a calibration exercise to analyse changes in affordability for households in general, and low income households in particular.

5. Calibration

In prosecuting its political agenda through legislation the post 1997 Labour government has sought, as a matter of routine, to measure progress in achieving particular objectives, and to publish quantitative and qualitative information regularly.

On water and sewerage affordability there was no ‘benchmark’ or ‘standard’ from which measurements of improvement or deterioration could be taken. Instead a simple calibration statistic, created as one of a number of indicators of sustainable development under the previous Conservative administration, was available. This statistic was the percentage of gross or net household income spent on water and sewerage services as a proportion of all income. A decision was taken to continue to track this indicator over time (Table 9), which implied a particular understanding of ‘affordability’ within government, namely that the higher the proportion of household income spent on water and sewerage services, the less affordable the services are to the household. In other words the proportion of a household’s income or budget spent on the service is negatively correlated with affordability.

Table 9: Water affordability illustrative indicator (England and Wales)

	Proportion of households spending more than 3 % of their income on water and sewerage charges (England and Wales)
1995/6	15
1996/7	14
1997/8	15
1998/9	15
1999/2000	15
2000/01	11
2001/02	10
2002/03	9

Source: DEFRA (2004a) Quality of Life Counts Update 2004. Indicator Q3.

The importance of the distinction between calibration and benchmarking in relation to water affordability should be emphasised. This point has been well made in

the extensive literature on minimum income standards⁵⁴, which itself informed UK Government initiatives such as the design of policies to reduce child poverty. To date, no studies designed to establish affordability benchmarks for water have been undertaken in the UK⁵⁵. Indeed Veit-Wilson (2004)⁵⁶ notes the existence of only one official UK study of the adequacy of benefits rates in general. Thus, whilst the term ‘affordability’ has come to be calibrated, and therefore understood in terms of the percentage of gross or net household income spent on water and sewerage services as a percentage of all income, without an appropriate affordability benchmark there are, in strict terms, no grounds for judging whether charges are in fact affordable or not.

Calibration is, however, possible. For this purpose we employ British microeconomic survey data at the household level – the Family Resources Survey (FRS).

5.1. Calibration using family resources survey data

The FRS contains data relating to water and sewerage charges paid by a cross section of households in various years. The fact that this is a cross sectional survey rather than a panel means that particular care is needed in comparing results between years or extrapolating beyond the particular time periods selected. More positively the FRS benefits from the inclusion of McClements⁵⁷ scales permitting the calculation of estimates properly equivalised to reflect household size and composition.

In Table 10 the mean percentage of gross household income spent on water and sewerage charges by income decile is given for 1997/8 and 2003/4 for Scotland and England and Wales separately. Both years fall between Periodic Price Reviews in England and Wales, and come more than a year after episodes of industrial restructuring in Scotland. All income estimates in the analysis were equivalised using the McClements scale to adjust for household size and composition. Gross income estimates were employed⁵⁸, with the latter being defined according to the pattern of the Government’s Households Below Average Income publication (DWP 2004b).

⁵⁴ See for example US work by Citro and Michael (1995), and an international survey by Veit-Wilson (1998).

⁵⁵ In contrast a Fuel Poverty benchmark does exist. See DEFRA (2001).

⁵⁶ Veit-Wilson (2004), Appendix A, Para (IV).

⁵⁷ McClements (1977).

⁵⁸ Gross income estimates have the virtue of being ‘computationally clean’. i.e. there is no need to determine what deductions should be made in order to arrive at a net figure.

Table 10: Mean % of gross household income spent on water and sewerage charges by income decile: 1997/8 and 2003/4

Income Decile	Mean % Gross Household Income Spent on Water and Sewerage Charges by Income Decile			
	Scotland		England and Wales	
	1997/8	2003/4	1997/8	2003/4
1 (low)	1.3	2.8	3.5	2.7
2	0.9	1.9	2.5	2.0
3	0.7	1.6	2.1	1.6
4	0.7	1.5	1.8	1.4
5	0.6	1.3	1.5	1.2
6	0.6	1.2	1.3	1.0
7	0.5	1.1	1.1	0.9
8	0.4	1.0	0.9	0.7
9	0.4	0.8	0.7	0.6
10 (high)	0.3	0.5	0.5	0.3

Source: FRS 1997/8 and 2003/04. *Note:* Equivalised Income. (cells based on under 5 observations are excluded).

The large price rises faced by domestic customers in Scotland following the 1996 reorganisation of the industry are reflected in the figures. For England and Wales the change is less marked, however of particular note is the fall in the charge burden for households in the lowest income decile. Reasons for this include industry initiatives such as the extension of domestic metering, but more significantly changes to the UK tax and benefits system, which raised the real incomes of those towards the bottom of the income distribution⁵⁹. The latter clearly applied to Scottish households as well. However, the effect of this is masked by the effect of rapidly rising charges in absolute terms for Scottish consumers over this period.

Developing the analysis we follow the patten of Sawkins and Dickie (2005) by analysing charges according to household type. In Table 11 the analysis is presented and indicates both a convergence in charge burden between Scotland and England and Wales over the period and an improvement in the position of single pensioners in England and Wales; due presumably to changes in the tax and benefits system combined with the ready availability of a metering option.

⁵⁹ DWP (2004).

Table 11: Household water and sewerage charges by household composition

Household Composition	1997/98			2003/4		
	Mean Weekly Household Water & Sewerage Charge (£)	Mean Gross Weekly Household Income spent on Water & Sewerage	%	Mean Weekly Household Water & Sewerage Charge (£)	Mean Gross Weekly Household Income spent on Water & Sewerage	%
Scotland						
Single person without Children	1.4	0.3		3.8	0.7	
Couple without Children	2.0	0.4		5.9	0.9	
Three or more adults no children	2.1	0.5		6.1	1.1	
Single person with children	1.4	0.6		3.8	1.2	
Couple with children	2.2	0.5		6.5	1.2	
Three or more adults with children	2.2	0.6		6.3	1.3	
Single Pensioner	1.4	0.5		4.0	1.2	
Pensioner Couple	2.1	0.7		6.1	1.6	
All households	1.8	0.5		5.0	1.0	
England and Wales						
Single person without Children	3.6	0.7		3.8	0.6	
Couple without Children	4.5	0.8		4.6	0.6	
Three or more adults no children	4.8	1.1		5.1	0.9	
Single person with children	4.1	1.7		4.6	1.4	
Couple with children	4.8	1.1		5.0	0.9	
Three or more adults with children	5.0	1.4		5.2	1.1	
Single Pensioner	3.8	1.5		3.6	1.0	
Pensioner Couple	4.6	1.5		4.5	1.3	
All households	4.4	1.1		4.6	1.1	

Source: FRS 1997/8 and 2003/04. Note: Equivalised Income.

Disaggregating these results further we may analyse the position of households in the lowest income decile only. This revealing exercise (Table 12) shows once more the large increase in household income spent on water and sewerage in Scotland for all groups. In relative terms those carrying the greatest burden are three or more adult households with no children, pensioner couples and couples with and without children. Single people without children are apparently better placed north of the border where single person discounts for charges (via the Council Tax system) are available.

Table 12: Household water and sewerage charges by household composition – lowest income decile

Household Composition	1997/98		2003/4	
	Mean Weekly Household Water & Sewerage Charge (£)	Mean % Gross Weekly Household Income spent on Water & Sewerage	Mean Weekly Household Water & Sewerage Charge (£)	Mean % Gross Weekly Household Income spent on Water & Sewerage
Scotland				
Single person without Children	1.3	1.1	3.4	2.4
Couple without Children	1.6	1.6	4.8	3.4
Three or more adults no children	2.2	1.8	5.5	3.6
Single person with children	1.4	1.1	3.5	2.1
Couple with children	1.9	1.8	4.9	3.3
Three or more adults with children	1.8	1.5	4.6	2.7
Single Pensioner	1.4	1.1	4.1	2.7
Pensioner Couple	2.0	1.7	5.7	3.5
All households	1.9	1.5	4.3	2.8
England and Wales				
Single person without Children	3.4	3.3	3.7	2.6
Couple without Children	4.3	4.1	4.4	3.2
Three or more adults no children	4.2	3.8	4.2	2.9
Single person with children	4.2	3.4	4.6	2.8
Couple with children	4.4	4.0	4.4	3.1
Three or more adults with children	4.6	4.3	4.9	3.4
Single Pensioner	3.4	2.9	3.4	2.1
Pensioner Couple	4.2	3.5	4.2	2.6
All households	4.6	4.3	4.9	3.4

Source: FRS 1997/8 and 2003/04. *Note:* Equivalised Income. (cells based on under 5 observations are excluded).

5.2. Comparison: Scotland versus England and Wales

The quantitative evidence presented above suggests convergence between Scotland, England and Wales over time in the affordability measure. Thus having outlined differences in policy emphases, nuanced approaches to the questions of access and affordability, differing ownership and regulatory arrangements, our simple calibration exercise suggests that, overall, the position of Scottish household consumers in relation the affordability of water and sewerage charges appears similar to that of their counterparts in England and Wales. However, in terms of regulation and government policy, we have noticed that Scotland puts more emphasis on social equity issues.

6. Conclusions

During the last thirty years there has been a reorientation of industrial and regulatory policy with respect to the water and sewerage industry in Great Britain in which policies prioritising economic equity have gradually displaced or modified those prioritising social equity. This change, discernable for example in relation to charging policy, began and took hold quickly, in England and Wales. In Scotland, instances of direct government intervention to mitigate some of the more politically unacceptable consequences of this change were more numerous.

Throughout Great Britain there remains a shared understanding at national and local level of the importance of access to basic water and sewerage services to the maintenance of the fabric of civil society. As long as UK governments continue to advocate policies designed to promote social inclusion in general, there is little doubt that both public and private sector water supply organisations will be involved in some way in their delivery.

Despite marked differences in ownership – public in Scotland, private in England and Wales – and more subtle differences in legal and regulatory arrangements, we find no pronounced evidence to suggest that, currently, low income or other vulnerable households are treated more or less favourably in a systematic way in any one particular jurisdiction. However, Scotland seems to have more social equity concerns.

Notwithstanding the regulatory and social security protection for low income and other vulnerable households, rising levels of water related household debt suggest that these protections are, currently, imperfect.

References

- Armstrong, M. Cowan, S. and Vickers, J. 1994. *Regulatory Reform. Economic Analysis and British Experience*. MIT Press, Cambridge Mass.
- Bakker, K.J. 2001. "Paying for water: water pricing and equity in England and Wales." *Transactions of the Institute of British Geographers*, vol 26, no. 2, pp 143 - 164.
- Bakker, K. 2003. *An uncooperative commodity: Privatizing water in England and Wales*. Oxford University Press, Oxford.
- British Medical Association. 1994. *Water – a vital resource*. British Medical Association, London.
- Centre for the Study of Regulated Industries. 1994. *The UK Water Industry. Charges for Water Services 1994/95*. CIPFA, London.
- Citro, C. and Michael, R. (eds). 1995. *Measuring Poverty: A New Approach*. National Academy Press, Washington DC.
- Department for Environment, Food and Rural Affairs (DEFRA). 2001. *The UK Fuel Poverty Strategy*, DEFRA, London.
- Department for Environment, Food and Rural Affairs. 2004a. *Quality of Life Counts Update 2004*, DEFRA, London.
- Department for Work and Pensions, Office for National Statistics. Social Survey Division and National Centre for Social Research, *Family Resources Survey, 2003-2004* [computer file]. Colchester, Essex: UK Data Archive [distributor], April 2005. SN: 5139.
- Department for Work and Pensions. 2004a. *The Abstract of Statistics 2003 Edition*, Information and Analysis Directorate, Information Centre, DWP, London.
- Department for Work and Pensions. 2004b. *Households Below Average Income 2002/3*, DWP, London.
- Department of the Environment, Transport and the Regions (DETR). 1998a. *Water Charging in England and Wales – a new approach: consultation paper*, Department of the Environment, Transport and the Regions, London.
- Department of the Environment, Transport and the Regions. 1998b. *Water Charging in England and Wales: government decisions following consultation*, Department of the Environment, Transport and the Regions, London.
- Department of the Environment, Transport and the Regions. 1998c. *The Review of the Water Abstraction Licensing System in England and Wales: consultation paper*, Department of the Environment, Transport and the Regions, London.

Department of the Environment, Transport and the Regions. 1999a. *Taking water responsibly: government decisions following consultation on changes to the water abstraction licensing system in England and Wales*, Department of the Environment, Transport and the Regions, London.

Department of the Environment, Transport and the Regions. 1999b. *Water Industry Act 1999: consultation on regulations*, Department of the Environment, Transport and the Regions, London.

Department of Social Security, Office for National Statistics Social Survey Division, Social and Community Planning Research, Family Resources Survey, 1997-1998 [computer file]. 2nd Edition. Colchester, Essex. The Data Archive [distributor], 22 September 2000. SN: 4068.

Department of Social Security / Benefits Agency. 1999. *Income Support Guide IS20 from November 1999*. Benefits Agency, London.

Department of Trade and Industry. 1998a. *A fair deal for consumers: modernising the framework for utility regulation*, Department of Trade and Industry, London.

Department of Trade and Industry. 1998b. *A fair deal for consumers: modernising the framework for utility regulation: response to consultation*, Department of Trade and Industry, London.

Fitch, M. 1998. *Water Charities*, Working Paper 6/98, Centre for Utility Consumer Law, University of Leicester, Leicester.

Fitch, M. 2002. *Water Poverty in England and Wales*, Working Paper, Centre Utility Consumer Law, University of Leicester, Leicester.

Hassan, J. Nunn, P. Tomkins, J. and Fraser, I. (eds) 1996. *The European Water Environment in a Period of Transformation*. Manchester University Press, Manchester.

Herbert, A. and Kempson, E. 1995. *Water debt and disconnection*, Policy Studies Institute, London.

House of Commons Environment, Food and Rural Affairs Committee 2003. *Water Pricing*. First Report of Session 2003-2004. HC121. London: TSO.

Kay, J.A. Thompson, D.J. 1986. "Privatisation: A Policy in Search of a Rationale." *Economic Journal*, vol 96, pp 18-32.

Kempson, E. and Bennett, F. 1997. *Local Living Costs. Variations in the Costs Borne by Low Income Households*, Policy Studies Institute, London.

McClements, L. 1977. "Equivalence Scales for Children." *Journal of Public Economics*, vol 8, pp 191-210.

OECD. 1987. *Pricing of Water Services*. OECD, Paris.

- OECD. 1999. *Household Water Pricing in OECD Countries*. OECD, Paris.
- Ofwat. (various). Annual Reports. HMSO, London.
- Ofwat .1990. *Paying for Water. A Time for Decisions*. Ofwat, Birmingham.
- Ofwat. 1991. *Paying for Water the Way Ahead*. Ofwat, Birmingham.
- Ofwat .1992. *MD76 Guidelines on Debt and Disconnection*, Ofwat, Birmingham.
- Ofwat .1993. *The Distributional Effects of Different Methods of Charging Households for Water and Sewerage*, Ofwat, Birmingham.
- Ofwat. 1997. *1997-98 Report on tariff structure and charges*, Ofwat, Birmingham.
- Ofwat. 2000a. *Tariff Structure and Charges 2000-01 Report*, Ofwat, Birmingham.
- Ofwat .2005. *Tariff Structure and Charges 2005-2006 Report*, Ofwat, Birmingham
- Penning-Rowsell, E.C. and Parker, D.J. 1983. "The Changing Economic and Political Character of Water Planning in Britain." *Progress in Resource Management and Environmental Planning*, vol 4, pp 169-199.
- Save the Children. 1996. *Water Tight: the impact of water metering on low-income families*. Save the Children, London.
- Sawkins, J.W. and Dickie, V.A. 2005. "Affordability of Household Water and Sewerage Services in Great Britain." *Fiscal Studies*, vol 26, no 2, pp225-244.
- Sawkins, J.W. and Dickie, V.A. 2006. *Social Policy, Regulation and Private Sector Water Supply. Great Britain Case Study*. UNRISD Discussion Paper, Geneva.
- Scottish Executive. 2001b. *Dwellings Connected to Public Water Mains and Public Sewers*. Scottish Executive. Edinburgh.
- Scottish Executive. 2005. *The Principles to be Applied in Charging for Public Water and Sewerage Services in Scotland 2006-2010*. Scottish Executive, Edinburgh.
- Synnott, M.F. 1985. *The Relationship between the Regional Water Authorities and Local Planning Authorities*, unpublished doctoral thesis, Department of Geography, University of London (London School of Economics), London.
- Veit-Wilson, J. 1998. *Setting Adequacy Standards: How Governments Define Minimum Incomes*, Policy Press, Bristol.
- Veit-Wilson, J. 2004. *Memorandum submitted to House of Commons Select Committee on Work and Pensions*, TSO, London.

Vickers, J. and Yarrow, G. 1988. *Privatization: An Economic Analysis*. MIT Press, Cambridge, Mass.

Water Authorities Association.1988a. *Waterfacts '88*. Water Authorities Association. London.

Water Authorities Association.1988b. *National Performance Ratios and Statistics 1983/84 to 1987/88*. Water Authorities Association. London.

Water Companies' Association.1989. *Water Companies. The Facts, The Figures, 1989 Edition*. Water Companies' Association. London.

Water Customer Consultation Panels. 2003a. *Affordability of Scottish Household Water and Sewerage Charges*. WCCP. Stirling.

Water Customer Consultation Panels. 2003b. *Affordability of Scottish Household Water and Sewerage Charges. Supplementary Report*,. WCCP. Stirling.

Water Services Association. 1989. *Waterfacts '89*. Water Services Association, London.