NERI Research inBrief

October 2014 (no17)

Water Charges, Water Poverty and Water Credits

Thomas A McDonnell

ISSN 2009-5848

SUMMARY

Until October of 2014 water and wastewater services in Ireland were funded through general taxation with an additional contribution from commercial rates. Usage based water charges take effect from October for residential households and are expected to raise close to €370 million on an annual basis. Charges based on use should improve water conservation as well as the economic efficiency of water use. However, consumption charges are regressive, impact disproportionately on low income households and raise affordability concerns. The current system of free allowances is expensive, poorly targeted and economically inefficient. Alternative models are described, including a water credit model to alleviate water poverty, and a zero free allowance model to generate a more progressive distribution of the cost of water service provision. These options are discussed in the context of the current regime; a changed water regime may be able to more effectively deal with issues of water poverty, affordability, efficiency and conservation.

KEY POINTS

- Water policy pursues multiple objectives. These include affordability and social concerns, environmental sustainability, financial sustainability and economic efficiency.
- Moving the funding model from general taxation to user charges reduces the progressivity of the overall system of taxes and benefits, and raises issues of water affordability and water poverty.
- Using universal free allowances to reduce the average tariff level over the population is costly and reduces the scope for targeted affordability measures for lower income groups.
- The most economically efficient way to protect vulnerable households and to prevent hardship is to supplement the capacity to pay of low-income households through direct cash transfers or some other income supplement.
- In the longer-term the universal free allowance system should be completely replaced by a system of income related water credits. This would best protect low income households.

Nevin Economic Research Institute (NERI)
31/32 Parnell Square
Dublin 1
+ 353 (1) 8897722

e-mail: *info@ NERInstitute.net*
Web: *www.NERInstitute.net*

Carlin House
4-6 Donegall Street Place
Belfast
BT1 2FN
Northern Ireland
+ 44 28 90246214

Nevin Economic Research Institute

Research for new economic policies

Introduction

The affordability of water and the distribution of the cost of provision should be central concerns of water funding models. Ireland's funding model for water and wastewater service provision is moving from a government subsidised unlimited free allowance model to a model that combines government subsidies with usage based water charges. The change in funding model raises serious affordability issues for low income households.

Current context

Access to clean and affordable water is a human right. Yet there is no such thing as free water. On an annual basis, the provision of water and wastewater services costs in excess of €1 billion. Water is difficult to transport and a consistent and secure supply of clean water is expensive to provide. Indeed the provision of water and waste water services requires the construction, maintenance, operation and improvement of expensive network infrastructure. The question isn't 'whether' we should pay for water and wastewater services but 'how' we should pay for them.

We can pay for water through taxes or tariffs or both. Until 2014 water and waste water services for domestic users were mainly paid for out of monies raised from general taxation (e.g. VAT and income tax) which was allocated as subsidies from central government to local governments. Thus households were paying for water in the same way they were paying for most other public services – through their taxes.

Ireland is now returning to a combined tax and tariff system with the reintroduction of water charges for all domestic users in October 2014. A portion of the cost of water will continue to be subsidised from central government (taxes) while the remaining cost of water will be paid for through charges linked with water use (tariffs). The prior abolition of residential water charges in the 1990s had been opposed by environmental groups as an abandonment of the 'user pays' principle and no economic or environmental rationale was given for the abolition of charges. Funding for water became a combination of government subsidies and commercial rates paid by businesses.

Water policy

Water policy pursues multiple objectives. In addition to clean and secure water provision, policy can be structured around four main 'sustainability dimensions'. These are A) Affordability and social concerns, B) Conservation and environmental sustainability, C) The financial sustainability of water services as a non-profit utility and the compensation of resource inputs (i.e. capital and labour) and D) Economic efficiency such that water is allocated to the highest value uses.

Volumetric pricing based on metering enables us to internalise environmental costs to the user, while setting the price of water (the volumetric rate) equal to its marginal cost allows us to achieve an economically efficient outcome. We can then address financial sustainability concerns by adding a recurrent fixed component to the bill. Multiple policy objectives create dilemmas for policymakers. Trade-off is almost inevitable. Significantly, financial, economic and environmental sustainability may not be consistent with water affordability.

The new tariff based model for domestic water use is consistent with improved economic efficiency, as well as greater water conservation. However, consumption charges are regressive, impact disproportionately on low income households and raise significant affordability concerns.

Affordability concerns

The previous funding model for water was heavily reliant on general taxation and therefore contained progressive (income tax) and regressive (VAT) elements. The new funding model for domestic water charges is regressive in its current form. A recent ESRI report noted that concern over water affordability issues among low income households is well-merited.

Table 1: Charging models based on a stylised two-adult household using both services (€)

Income Decile	2011 Gross Household Income	Disposable Household Income	Annual Water Bill	1% Income Threshold	Subsidy (% bill)	Final Bill (User)	No Allowance Water Bill	Subsidy (% bill)	Final Bill (User)
Bottom	8,675.97	8,594.05	278	85.94	69.09%	85.94	424	100%	0
2nd	15,317.44	15,244.39	278	152.44	45.17%	152.44	424	90%	42.40
3rd	21,949.00	21,512.25	278	215.12	22.62%	215.12	424	70%	127.20
4th	27,852.12	26,728.68	278	267.89	3.64%	267.89	424	50%	212.00
5th	34,795.19	32,691.29	278	326.91	0%	278	424	35%	275.60
6th	43,264.53	38,403.96	278	384.04	0%	278	424	15%	360.40
7th	55,139.13	46,434.46	278	464.34	0%	278	424	0%	424.00
8th	70,346.99	55,725.51	278	557.26	0%	278	424	0%	424.00
9th	93,277.49	68,997.61	278	689.98	0%	278	424	0%	424.00
Top	159,018.03	103,949.87	278	1,039.50	0%	278	424	0%	424.00

	Baseline	**Plan A**	**Plan B**
Household Contribution	278	278	424
Credits	0	39.06	152.64
Net Contribution	278	238.94	267.76

Calculations based on microdata from CSO's 2011 Survey on Income and Living Conditions.
Each income decile represents 10% of households. The figures for gross income and disposable household income are for 2011 and represent averages within each of the decile groups. The €278 annual water bill is the baseline for a two adult household using both services. 1% water poverty threshold is defined as a percentage of disposable household income. The household contribution, the cost of water credits and the net household contribution figures are for a stylised two-adult household using both services.

The Irish Government has directed that a Universal Free Allowance (UFA) of 30,000 litres per household will be provided for water and for wastewater. The value of this subsidy is €146 per household using both services. In addition, there is a UFA of 21,000 litres for each child. There will be no recurrent fixed charge and the combined service will cost domestic users €4.88 per thousand litres. The Commission for Energy Regulation estimates a two adult household will pay €278 per annum – and that this amount will be the assessed charge for non-metered households. €278 represents 3.2% of disposable household income for the bottom (poorest) income decile, 1.8% for the second poorest decile and 1.3% for the third poorest decile. Meanwhile a two adult household in the top (richest) income decile will on average pay 0.3% of disposable household income.

UFAs are an unsuitable means of addressing affordability concerns for low-income households. A small UFA will not address the affordability issue while a large UFA is an expensive, poorly targeted (subsidising richer households) and economically inefficient poverty alleviation instrument. Crucially, the key consideration for protecting low income groups is **not** average tariff levels over the population. Reducing the average tariff level through a UFA is costly and reduces the scope for better targeted affordability measures for lower income groups.

There are a number of affordability options that can be availed of to reduce the burden of water charges on low income households. Common affordability measures in the OECD include income supports for low-income households, progressive water tariffs, social tariffs, targeted assistance, and subsidies as a percentage of total water cost. The most economically efficient way to protect vulnerable households and to prevent hardship is to supplement the capacity-to-pay of low-income households through direct cash transfers or some other income supplement.

Disposable household income is the most appropriate subsidisation criteria because water affordability is best assessed by comparing the water bill to the users'

capacity-to-pay. A 2008 study by the OECD found that water and wastewater bills were below 2% of the disposable income of the lowest income deciles in over half of the countries surveyed. While there is no universally agreed threshold for assessing water poverty, or affordability, a reasonable target would be to ensure that the cost of water for households does not exceed an average of 2%, or even 1%, of disposable household income for any income group.

Water credits

The most cost effective way to deal with the issue of water affordability is to restrict household subsidies to those in danger of water poverty. This could be achieved through a system of income related water allowances or water credits. Under a system of water credits, the relevant government agency would directly contribute to the water bill for each household up to a value equivalent to that household's water credit, albeit a maximum contribution no greater than the total cost of the household's water bill. Abolishing the 30,000 litre UFA creates scope for a much more generous and sufficient system of water credits that would ameliorate the regressive nature of the water charging system.

Cost of water credits

Table 1 shows the cost of averting water poverty for a two-adult household at the 1% disposable income threshold. The average cost is just over 14% of total revenue from domestic water charges. Households in the bottom four income deciles would rquire water credits under a 1% income threshold. Table 1 is illustrative and based on a stylised population of two adult households. The average cost over the population depends on the exact distribution of adults per household and the distribution of disposable household income. The average charge over the population is expected to be close to €238 per annum in 2015 and 2016. This represents 2.8% of disposable household income for the bottom decile. Faced with a €238 charge a two adult household in the bottom decile would require an average annual subsidy (water credits) of €152.06 to avert water poverty under the 1% disposable income threshold.

Table 1 also shows the effect of moving to a no UFA system. A no UFA water bill equates to €424. The illustrative model described in Table 1 would have a net cost of less than 4% of gross household contributions for the population of two-adult households.

Conclusion

The introduction of water meters and usage based water charges will improve water conservation by reducing demand and helping to identify leaks within the system. However, the change in funding model raises affordability issues for low income households. The most efficient way to address these affordability issues is through the introduction of a system of income related water allowances or water credits. It is estimated water poverty can be averted for less than €50 million under such a system.

The new funding model is highly regressive. The UFA is identified as a serious barrier to the creation of a system of progressive water charges that could ensure the cost of water service provision is fairly distributed over the population while maintaining the conservation and efficiency advantages of a user based model.

References

This NERI *Research inBrief* summarises one part of a forthcoming *NERI Working Paper*. The working paper provides further details on the concepts, references, data and calculations presented here as well as details on how water credits could be operationalised. The paper will be made available on the institute's website and its reference is:

McDonnell, T. (2014) *Water Charges, Water Poverty and Water Credits*, NERI Working Paper. Dublin, NERI.