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TAXING IMPUTED INCOME FROM
OWNER OCCUPATION:
DISTRIBUTIONAL IMPLICATIONS
OF ALTERNATIVE METHODS

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1. Introduction

The economic case for taxation of the imputed income from owner occupation (IIOO) has been strongly argued on theoretical grounds.[1] But there has been a dearth of empirical analysis of the distributional effects of such proposals. This paper aims to fill that gap. Thus, it models the distributional effects of taxation of IIOO, and of some proxies to such a tax. The logic of the economic case for a tax on IIOO also suggests that the distributional effects of other taxes cannot be adequately analysed in terms of cash income alone; it is necessary to consider, in addition, the distributional effects in terms of a wider income concept, incorporating the imputed income from owner occupation.[2] This is of particular relevance to other taxes incorporating a property tax element, such as the new Council Tax. The analysis undertaken here therefore provides new insights into the distributional effects of the council tax and other local tax options analysed by Hills and Sutherland (1991) - hereafter referred to as HS.

The analysis of policy options undertaken here concentrates on the structure of the taxes at national level. It abstracts, therefore, from variations in tax rates across local authorities and the degree to which they are influenced by the mechanisms determining central government transfers to local authorities. Ball (1990) argues in support of such a separation that "Many of the desired housing market effects of a reform....would work only if they were imposed nationally, uniformly, and with some degree of certainty as to their magnitude".[3]

The structure of the paper is as follows. In section 2, the basic policy options are set out, and the conclusions of the HS analysis are summarised. Section 3 outlines briefly the data, methods and calibration used in analysing similar options in an Irish setting. Section 4 reviews the HS analysis of council tax and capital value tax in the light of the wider income measure,

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1 See, for example, King and Atkinson (1980), Fender (1986), Muellbauer (1987) and Ball (1990).

2 This is referred to as "total" income, for convenience.

3 He also suggests that "The case for property taxation has been politically lost more because of the battle over the rights and wrongs of local government than because of the tax aversion of owner occupiers".

including imputed income from owner occupation (hereafter, IIOO); and goes on to examine the taxation of IIOO, and some proxies to such a tax. The main findings are drawn together in the final section.

2. Options Considered

In order to facilitate comparison with the HS analysis, the *Poll Tax* is treated as a baseline policy option against which all others are compared. The structure of the UK poll tax is a simple one: a set charge for each adult individual, with a very small number of exceptions. Income related rebates were provided to those on low incomes (on or below the Income Support rate, the safety net provided by the social security system); and these rebates were withdrawn at a rate of 15 per cent for those on somewhat higher incomes. The maximum rebate under the UK Community Charge has been 80 per cent, but in order to provide a baseline which abstracts from changes in the rebate scheme, HS used a 100 per cent rebate in their calculations. This structure has been followed here. In fact this rebate structure is also applied to all of the other options, with the exception of a tax on IIOO.

The *Council Tax* provides for a household-level tax related to the value of the property, through a system of property value bands. Taking the bill for a property close to the average value as a standard, the bill as a proportion of that standard rises from 67 per cent for a household in band A (less than 50 per cent of the average property value), to 167 per cent for a household in band G (over 200 per cent of the average value)[4]. HS note that "roughly speaking, therefore, the percentage rise in bills between the bands is *half* the percentage rise in property values". This feature combines a "dampening", "flattening" or "tilting" of the relationship between tax levels and capital values; and a "ceiling" on the maximum payment.

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4 Full details are set out in Table 1 of HS.

Council tax may be reduced by two factors. First, single person households are eligible for a personal discount of 25 per cent.[5] Second, there are rebates, again related to income support levels, and with a rebate withdrawal rate of 15 per cent.

HS also analysed a number of variants of the Council Tax, including one with steeper progressivity in the rate structure across property value bands. The initial structure gave a ratio between the maximum basic bill and the minimum basic bill of 2.5 to 1; the revised schedule increased this ratio to 7 to 1. In conclusion, they observe that the effects of this revised structure "would be very much the same as those of a switch to a pure property tax, with bills directly in proportion to capital values". This option, referred to as a *Capital Value Tax* is also explored here: a tax on the value of all residential property, with no discounts, but with the same rebate structure as for council tax or poll tax.

The main additional option considered here is the taxation of imputed income from owner occupation (an *Imputed Income Tax*). The economic arguments for such a tax have been argued by King and Atkinson (1980), Fender (1986), Muellbauer (1987) and Ball (1990) among others, and will not be rehearsed here. But there has been a dearth of empirical analysis of such proposals. The rationale for such a tax comes from different sources to those driving the UK debate on local taxation; but it is of considerable independent interest. It also underlies many of the arguments made for a property tax in the Irish context. Choices arising in the implementation of such a tax are discussed in section 3. Here it is sufficient to say that instead of calculating income tax liabilities on cash income, income tax is calculated on the basis of

"Total" Income = Cash Income *plus* (Gross House Value - Mortgage Outstanding) *times* Rate of Return

A number of forms of property tax have been proposed as proxies for IIOO, which might be administratively or politically more tractable. Two such proxies are also considered here: a tax on the gross value of owner occupied property, with mortgage interest relief being

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5 There are also personal discounts for some other groups; numerically the most important effect is that there is no additional charge for students.

retained; and a tax on the net equity stake held by owner-occupiers in their property, with mortgage interest relief being abolished. They are referred to respectively as a *Gross Property (Equity) Tax* and *Net Property (Equity) Tax*. They each differ from the Capital Value Tax in that they are designed to gain additional revenue only from property which is owner-occupied. In practice, either gross or net property tax might be applied as a withholding tax or tax on the notional rental income of owners of rented property, to encourage efficiency in the use of property; actual income tax on rental income would then take into account any pre-payment through a property tax of this kind. The difference between net and gross property tax is parallel to the difference between Fender's (1986) and Muellbauer's (1987) proposals for taxes on imputed income, on the basis of net and gross property values respectively. As Muellbauer points out, the use of net equity as a tax base would be desirable in the context of a comprehensive reform in which only real returns on various investments were taxed; but without such a reform, neutrality is better served by keeping a system of mortgage interest tax relief.

3. Data, Methods and Calibration

The empirical modelling of these options is undertaken on an Irish data set, the ESRI's 1987 Survey of Income Distribution, Poverty and Usage of State Services. This survey of 3,300 households included detailed information on incomes, together with self-assessed estimates of the capital value of the household's dwelling. Little difficulty was experienced in obtaining self-assessed values.[6] This suggests some advantages to self-assessment in this form of taxation, with incentives set to ensure that honesty is the best policy.

The distributions of UK and Irish households over the property value bands are set out in Table 1 below. For purposes of comparison with the HS analysis, the key difference is that more of the Irish households are close to the average (band D).

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6 Interviewer estimates of the capital values were also obtained, and a good correspondence between the two independent estimates was found (Callan, 1991). Kain and Quigley (1972) found that US property owners gave estimates of property value which were close to those obtained from professional valuers.

TABLE 1

Distribution of Property Values: England and Ireland

Property value as % of national average	Council Tax Band	England: DOE Estimate	England: Hills/Sutherland estimate	Ireland: ESRI estimate
		% of households		
Up to 50	A	19	14	13
50-65	B	16	15	12
65-85	C	20	18	20
85-110	D	17	19	25
110-150	E	13	20	18
150-200	F	8	9	7
Over 200	G	7	5	5

Sources: England: Hills and Sutherland (1991) Table 2.
Ireland: ESRI Survey of Income Distribution, Poverty and Usage of State Services, 1987.

The distribution of income in Ireland is broadly similar to that in the UK, with the main difference being a lower share for the bottom quintile and a higher share for the top quintile (Table 2). One other difference should be borne in mind in interpreting the results. This is the difference in the structures of income taxation across the two countries. The Irish system in 1987 had a standard rate of 35 per cent, and a much narrower standard rate band than in the UK. As a result, the proportion of taxpayers paying at higher rates (of 48 per cent and 58 per cent) was much greater in Ireland. Furthermore, mortgage interest relief in Ireland was, and is, allowable against the top marginal rate; whereas recent changes in the UK have led to its being allowed only at the standard rate of tax. Despite this difference in income tax structures, some useful and suggestive insights on the UK debate can be gained from the present analysis of Irish data.

TABLE 2

Distribution of Equivalised Household Disposable Income : UK and Ireland

Quintile	UK, 1987	Ireland, 1987
	% of income	
Bottom	8	6
2nd	12	11
3rd	16	16
4th	23	24
Top	41	43

Sources: UK: CSO *Economic Trends*, May 1990, Table O, p.94.
Ireland: ESRI Survey.

The UK poll tax (or Community Charge) raised about 1.8 per cent of UK GDP in 1990. Translated into the Irish context, this requires that the tax should raise approximately Ir£335m. Each of the options modelled was therefore required to raise that amount of revenue. This required a poll tax level of Ir£212 per adult, or an average council tax of Ir£527 per household (the ratio between the average council tax and poll tax being somewhat higher in Ireland than in the UK because of greater average household size).

Turning to the imputed income tax, a key issue is how the imputed income is to be arrived at. A number of approaches are possible, but those involving the application of a fixed rate of return to housing equity have considerable advantages over alternatives which require the identification at local level of appropriate comparators in a restricted rental market. The critical question is then what rate of return is to be applied to housing equity to derive the imputed income from owner occupation. Imputation to owner-occupiers of income at the rate of 3 per cent of net equity, which would be liable to income tax in the normal way, was found to be revenue-neutral, if mortgage interest relief was abolished. But there is no reason why this rate of return should approximate the true rate. Miles (1992) suggest that a rate of between 4 and 7 per cent would be conservative; the rates implicit in Ball (1990) are higher. Here income is imputed at the rate of 5 per cent for purposes of determining the true income from

owner-occupation, and obtaining a ranking of incomes using the "total" income concept; but for the "tax on IIOO" option this consists of a 3 per cent rate which is taxable, and 2 per cent which is not taxable, in order to maintain revenue neutrality.

The proxies to income imputation involve tax rates applied to gross or net property equity. The revenue-neutral rates for these options would be a tax rate of 2.2 per cent on the gross value of owner occupied property, if mortgage interest relief were to be retained; or a rate of 1.33 per cent of the net property equity held by owner-occupiers if mortgage interest relief were abolished.

The income support rate for the rebate scheme was set to correspond with the lowest rate of payment in the Irish social welfare system (Supplementary Welfare Allowance, or short-term Unemployment Assistance).[7] The equivalence scales used to adjust incomes for households of different sizes and compositions were derived from that scheme: 1 for the head of the tax unit, 0.66 for a spouse, and 0.33 for each dependant child. The distributive results are presented in terms of income per adult equivalent or "equivalent income", as it is usually called.

The analysis undertaken here, like that of HS, is on a "first-round" basis; second round effects through changes in the demand for housing and consequent capital gains or losses are not considered here.[8] The analysis also assumes, in line with HS, that the poll tax is incident at individual level, whereas the council tax is payable by the householder, and property taxes by the owner. Additional analysis in Callan (1991) of the incidence of a gross property equity tax on a *household* basis shows that while it makes a difference to the large number of non-householder tax units, it does not change the broad distributional picture of the tax unit based analysis undertaken here.

7 The rates were £34 for an adult, £24 for a spouse and £10 per dependant child.
8 For further discussion of these issues, see Callan (1991).

4. Impacts on Cash and "Total" Income Distributions

The impact of the *Council Tax* on the cash income distribution is found to be quite similar to the results reported by HS. Some 33 per cent of tax units are found to gain from the change, as against 28 per cent who lose. The average gains by equivalent net income decile are illustrated in Figure 1. Gains are concentrated in the lower middle area of the cash distribution. The similarity of the rebate structures means that gains at the very bottom of the distribution are limited. There are very few losers in the bottom half of the distribution; but thereafter, gains and losses are more mixed, with over 70 per cent of the top decile losing as against 28 per cent who gain from the change. Just under 6 per cent of tax units experience a loss of over £5 per week; all of these are in the top half of the income distribution.

FIGURE 1

Impact of Council Tax on Cash and "Total" Income Distributions
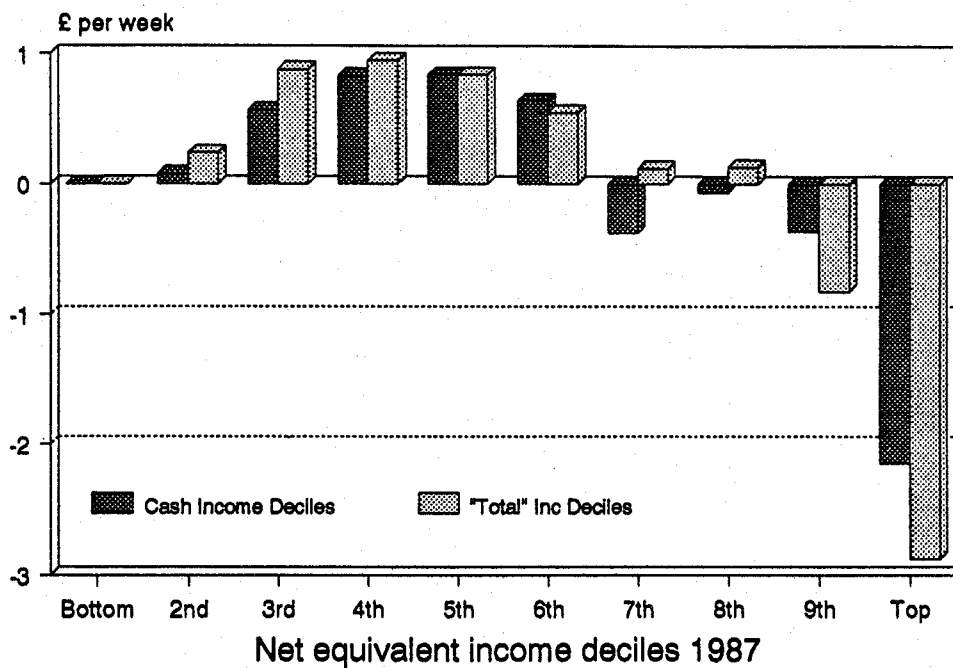
How is the distributional picture altered when we turn to the effects on the "total" income distribution (including imputed rental income for owner-occupiers at the rate of 5 per cent of the capital value of the property)? These effects are also illustrated in Figure 1. They show average gains which are no smaller for all but one of the lowest eight deciles, and larger losses

for the top two deciles. No decile below the 9th experiences an average loss, whereas the 7th and 8th deciles of the cash distribution show average losses. Thus the impact of the council tax is more progressive in terms of "total" income than in terms of "cash" income, largely because it contains a property tax element.

A tax based on capital values also has broadly similar effects in the Irish context as in the UK setting. The main difference is that gains outweigh losses in all but the top two deciles in Ireland, as against the top three deciles in the UK. The balance between the numbers of gainers and the number of losers is therefore somewhat more positive in the Irish context: 17 per cent more gainers in Ireland, as against 8 per cent more gainers in the UK. Analysis in terms of "total" income deciles again makes the tax appear more progressive.

FIGURE 2

Impact of Imputed Income Tax on Cash and "Total" Income Distributions

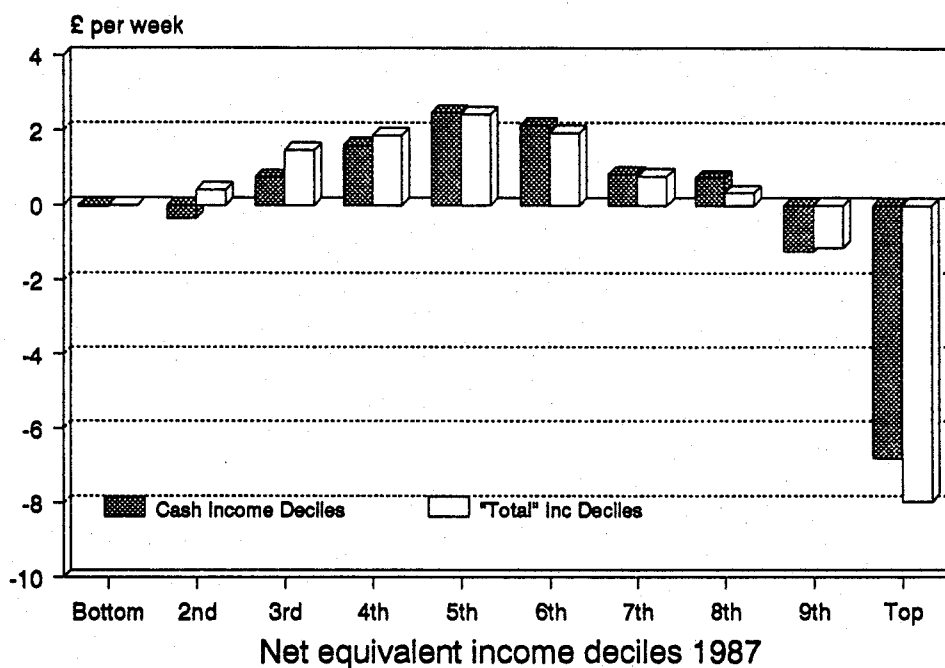
Net equivalent income deciles 1987

Figure 2 illustrates the effects of an imputed income tax on the cash and "total" income distributions. Here it is noteworthy that a small average loss in the second decile of cash income is replaced by a small average gain in the second decile of "total" income; average gains in the third decile are also somewhat greater. This arises because tax units which have

low cash incomes but are "housing-rich" are found to be ranked higher in the "total" income distirbution. Elsewhere in the income distribution, the effects of a switch from cash to "total" incomes are more limited; except for the top decile, where losses are more extensive for the distribution in terms of "total" incomes.

FIGURE 3

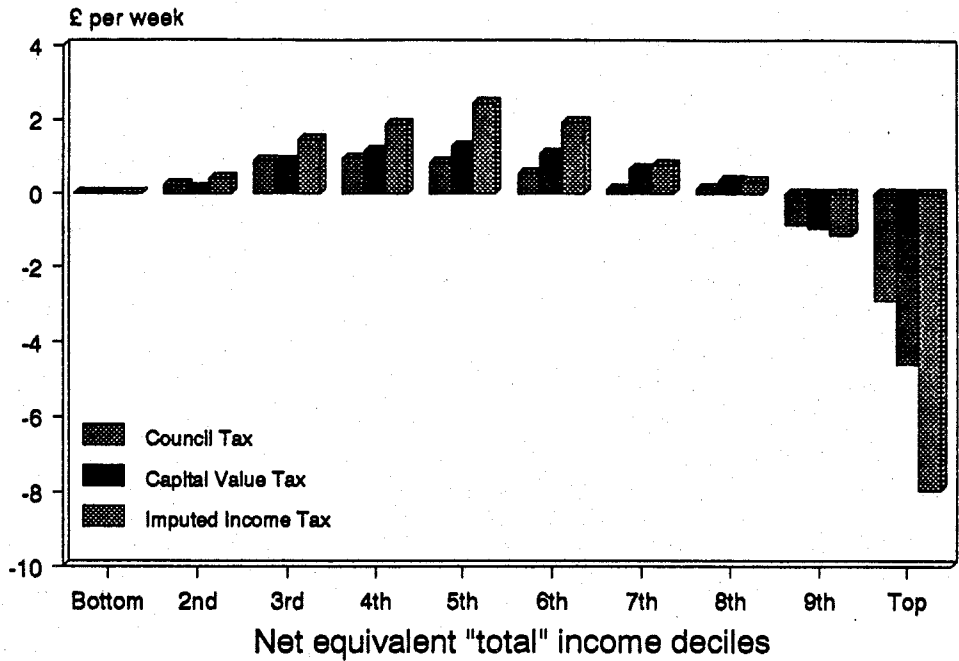**Impact of Council Tax, Capital Value Tax and Imputed Income Tax on "Total" Income Distribution**

£ per week

Council Tax
Capital Value Tax
Imputed Income Tax

Net equivalent "total" income deciles

Figure 3 allows a more direct comparison of the distributive effects of the different options on "total" income. The pattern is quite clear; an imputed income tax is more progressive than a capital value tax, which in turn is more progressive than the council tax.

FIGURE 4

Impact of Capital Value Tax, and Owner-Occupier Taxes on Gross and Net Values on "Total" Income Distribution

Net equivalent "total" income deciles
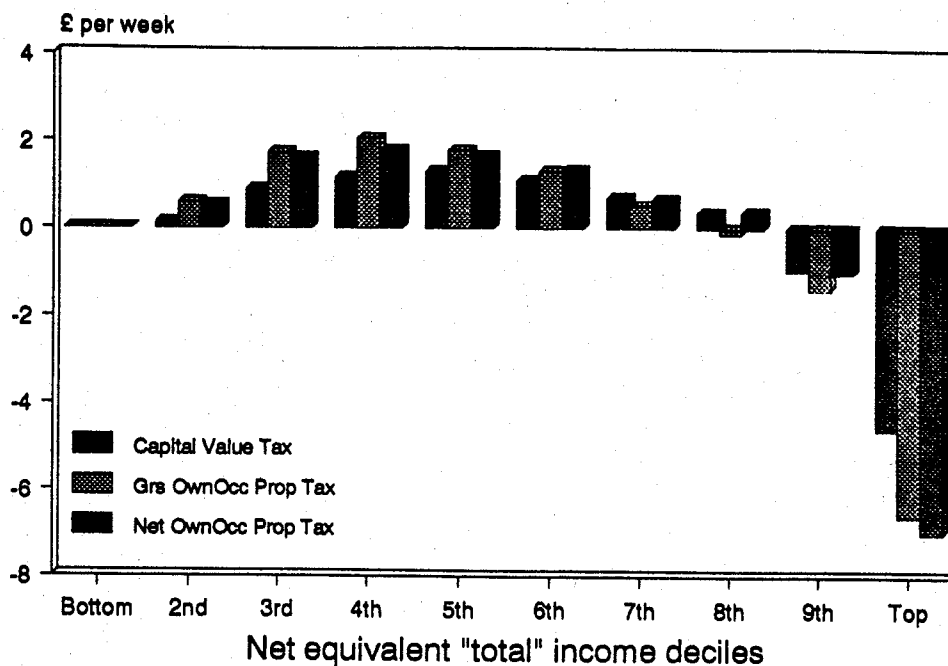
Two proxies which aim to achieve similar effects to those of an imputed income tax, but avoid the administrative difficulty of gaining joint information on income and housing values, and the political problem of explaining the rationale and implementation of the income imputation procedure are examined in Figure 4. The first is a tax on the gross value of owner-occupied property, and the second, a tax on the value net of the mortgage outstanding (the "net value" or equity stake). The net and gross property taxes each have quite similar distributive effects. Each involves greater average gains for the bottom half of the income distribution than a capital value tax; and significantly greater losses for the top decile.

The impacts of the five schemes modelled here on cash and "total" income distributions are summarised in Table 3. The schemes can be ranked unambiguously in terms of the size of the average gain to the bottom 50 per cent, and the average loss of the top 20 per cent. The council tax involves the lowest gain for the bottom half of the distribution, and the smallest

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loss for the top. Greater gains for the bottom half, and greater losses for the top of the distribution, are found for the capital value tax, taxes on the gross and net value of owner occupied property, and the imputed income tax.

TABLE 3

Summary Statistics of Impacts on Cash and "Total" Income Distributions

Option	Cash income distribution		"Total" income distribution	
	Average gain by bottom 50%	Average loss by top 20%	Average gain by bottom 50%	Average loss by top 20%
	£ per week			
Council Tax	0.46	1.26	0.58	1.86
Capital Value Tax	0.52	2.15	0.69	2.77
Gross Property Tax	0.98	3.29	1.22	4.00
Net Property Tax	0.81	3.52	1.11	4.02
Imputed Income Tax	0.89	4.02	1.24	4.55

Finally, Table 4 summarises the proportions of tax units gaining and losing under the alternative schemes. HS found that the balance between gainers and losers increased from 0 to 8 percentage points as between a council tax and a capital value tax; in the Irish setting the increase is from 5 to 17 percentage points. The analysis of the Irish dataset finds that this balance increases by a further 8 percentage points under either form of owner-occupied property tax. Gainers outnumber losers by an even greater proportion under an imputed income tax.

Correspondingly, of course, the numbers experiencing large losses also increase. The council tax involves losses of more than £5 for 6 per cent of tax units, and very few losses of over £10. The corresponding proportions for a capital value tax are 9 per cent and 3 per cent, while the imputed income tax involves losses of over £5 for 12 per cent of tax units. The extent of the large losses for the imputed income tax and the net property tax partly reflect the

considerable restriction of mortgage interest relief which they involve. This would be somewhat lower in the UK setting, where the relief is only allowable at the standard rate of tax, and that standard rate is considerably lower than the rate applicable in Ireland in 1987.

TABLE 4

Gainers and Losers

Option	Percentage of tax units gaining		Percentage of tax units losing		Percentage losing more than	
	UK	Ireland	UK	Ireland	Ir£5	Ir£10
			% of tax units			
Council Tax	37	33	37	28	6	0.1
Capital Value Tax	41	40	33	23	9	3
Gross Property Tax	n.a.	48	n.a.	23	11	4
Net Property Tax	n.a.	48	n.a.	22	10	5
Imputed Income Tax	n.a.	57	n.a.	22	12	6

Sources: UK: Hills and Sutherland, Table 6. Ireland: calculations from ESRI tax-benefit model.

4. Conclusions

The analysis undertaken here finds that the distributive implications of a move from a poll tax to a UK-style council tax, transplanted to an Irish setting, are quite similar to those found by Hills and Sutherland in their analysis of UK data. The effects are, however, still more progressive when evaluated in terms of an income concept which includes the imputed income from owner occupation.

A tax on the imputed income from owner-occupation, and proxies for such a tax through property taxes on owner-occupiers, were also considered. The taxation of imputed income from owner-occupation offers a possible alternative to income related rebates in linking a property-based tax to "ability to pay". When "ability to pay" is measured purely in cash terms, imputed income taxation does involve some significant losses at the lower end of the income distribution; but the losses are less extensive when a wider concept of "ability to pay",

encompassing imputed income from owner occupation, is taken into account when performing the income ranking. The tax bears more heavily on the very top of the distribution, and less on the middle, particularly when ranked according to the wider income concept.

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