Taxing Imputed Income from Owner-Occupation: Distributional Implications of Alternative Packages

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I. INTRODUCTION

The tax treatment of housing has been a subject of continuing debate in the UK, as in many other countries. Economists have often pointed to the exclusion of imputed income from owner-occupation from the income tax base as a major distortion. As a result, a tax on the imputed income of owner-occupiers has been one of the perennial suggestions for ‘root-and-branch’ reform of the tax treatment of housing. But there has been a dearth of empirical analysis of the distributional effects of such proposals.¹ This paper aims to fill that gap. Thus it models the distributional effects of taxation of imputed rental income, and of some proxies to such a tax.

The distributional effects of a tax on imputed rental income depend in large part on the use which is made of that revenue, in terms of increased public expenditures or reductions in other taxes. Earlier analysis of the option of taxing imputed rental income (King, 1983) considered distributional effects in the context of a revenue-neutral lump-sum subsidy. Here the focus is instead on some more realistic tax-cutting packages. Two main types of analysis are conducted. The first is a revenue-neutral reduction in national income tax rates,

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¹ King (1983) is a notable exception.
in line with the logic of arguments for a comprehensive income tax, with lower
tax rates on a broader base. Second, the traditional link between taxes based on
property and local authority finance suggests consideration of a tax on imputed
income sufficient to allow the abolition of a poll tax along the lines of the UK
Community Charge; comparison with the actual replacement for the poll tax, the
new Council Tax, recently analysed by Hills and Sutherland (1991), is also of
interest.

The second type of analysis is still conducted at national level. It abstracts
from many other issues which arise in the context of local taxes\(^2\) in order to
focus more closely on the issues related to the structure of the taxes themselves.
It provides an alternative perspective on the distributional impact of a tax on
imputed rental income, which could arise under different assignments of
revenues to local and national authorities. It should be noted, however, 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 II, the basic policy options
to be analysed are set out. Section III outlines the data and methods used in
analysing these options in an Irish setting. Section IV examines the first-round
distributional effects of a tax on imputed income, with revenues being used
either to reduce the national income tax, or to provide national revenues which
would allow elimination of the poll tax, the results of which are compared with
those for a council tax. The degree to which a national residential property tax
could proxy for an imputed income tax is also considered. The main findings are
drawn together in the final section.

II. ALTERNATIVE TAXES ON RESIDENTIAL PROPERTY

The most fundamental reform considered here is the taxation of imputed income
from owner occupation (an imputed income tax). The economic case for taxation
of owner-occupiers’ imputed rental income has been strongly argued by King
and Atkinson (1980), Fender (1986), Muellbauer (1987) and Ball (1990) among
others. The basic thrust of the argument is that owner-occupiers derive an
income from their property which, since the abolition of Schedule A in 1963, is
not subject to income tax. This makes it more attractive to receive income in this
form than in other forms, which tends to distort decisions about housing tenure,
and the size and quality of housing. Inclusion of imputed income from owner-
occupation in the income tax base would represent a significant move towards a

\(^2\) Such as variation in tax rates across local authorities, and the degree to which they are influenced by
mechanisms determining transfers from central government.

\(^3\) Ball (1990). 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’. 
comprehensive income tax. While second-best considerations preclude any general guarantee that a move towards comprehensive income tax will reduce the dead-weight loss from taxation, it seems likely that a positive tax rate on imputed rental income would improve efficiency (cf. Rosen, 1985).

Despite the strengths of the theoretical case for taxation of imputed rental income, there has been little empirical analysis of such proposals. King (1983) explored the first-round effects of a tax on imputed income, coupled with a revenue-neutral lump-sum subsidy, and went on to consider the impact of behavioural responses to changes in housing costs. He estimated that 54 per cent of households would gain in cash terms from the reform he specified, but that when behavioural responses were taken into account, efficiency gains resulted in gains for a greater number of households - about 61 per cent. However, the distributional effects in terms of ‘cash gains’ (first-round effects) and ‘equivalent gains’ (first- and second-round effects) were not dissimilar.

In common with most studies of distributional impact, King’s analysis is based on a ranking of households in terms of cash income. But the logic of the economic case for a tax on imputed rent suggests that its distributional effects, and, indeed, those 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. This is of particular relevance to other taxes incorporating a property tax element, such as the Council Tax in the UK. The framework used in the present analysis is therefore also used to provide new insights not only into the imputed income tax, but also into the distributional effects of the council tax analysed by Hills and Sutherland (1991).

How is the imputed income for owner-occupiers to be calculated? A number of approaches are possible, but those involving a fixed rate of return have considerable advantages over alternatives which require the identification at local level of appropriate comparators in a restricted rental market. A further choice has then to be made between taxation of the real returns, net of real mortgage interest, or nominal returns, net of nominal mortgage interest. As Muellbauer (1987) 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 would be better served by keeping a system of tax relief on nominal mortgage interest. The difference between these two approaches is considered in the context of residential property taxes proxying an imputed income tax, outlined below. But the imputed income tax considered here is based on a real return to housing equity net of mortgage debt (equivalent to giving relief on mortgage debt at that real rate of interest). Thus ‘total’ income is defined as:

\[
\text{‘Total’ income} = \text{Cash income} + (\text{Gross house value} - \text{Mortgage outstanding}) \times \text{Rate of return}.
\]

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The final question to be decided is then what real rate of return is to be applied to housing equity to derive the imputed income from owner-occupation. Miles (1992) suggests that a rate of between 4 and 7 per cent would be conservative. 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.

A number of forms of property tax have been proposed as proxies for imputed rent, 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 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 are designed to gain additional revenue only from owner-occupied property. 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 prepayment through a property tax of this kind. As noted above, the difference between these two taxes is similar to the difference between ‘real’ and ‘nominal’ imputed income taxes, as proposed by Fender (1986) and Muellbauer (1987) respectively.

The structure of the poll tax must also be defined in order to examine the distributive impact of a revenue-neutral package involving the use of revenues from imputed income or property taxes to abolish the poll tax. 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 had been 80 per cent, but in order to provide a baseline which abstracts from changes in the rebate scheme with the introduction of the Council Tax, Hills and Sutherland (1991) used a 100 per cent rebate in their calculations. This structure has been followed here, and the same rebate scheme has been used in the modelling of the council tax and the gross and net property taxes.

The analysis also considers a tax with the same structure as the UK Council Tax, which 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

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4 In this, they differ from the capital value tax considered by Hills and Sutherland (1991).
Hills and Sutherland 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 ‘dampeining’, ‘flattening’ or ‘tilting’ of the relationship between tax levels and capital values; and a ‘ceiling’ on the maximum payment. Council Tax may be reduced by two factors. First, single-person households are eligible for a personal discount of 25 per cent. Second, there are rebates, again related to income support levels, and with a rebate withdrawal rate of 15 per cent.

III. DATA AND METHODS

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: owner-occupiers tended to have a good idea of the market value of their property. This suggests some advantages to self-assessment in this form of taxation, as against procedures which require independent valuation of all dwellings. Prices paid at transactions would provide information which could be used to design penalties; and selective auditing of self-assessed valuations could also help to ensure that honesty would be the best policy.

The distributions of property values in England and in Ireland, as measured by the banding system used in the UK Council Tax, are set out in Table 1. The main difference is that more of the Irish households are close to the average (band D).

The distribution of income in Ireland is broadly similar to that in the UK, with 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

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5 Full details are set out in Hills and Sutherland (1991, Table 1).
6 There are also personal discounts for some other groups; numerically the most important effect is that there is no additional charge for students.
7 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.
8 There are slight differences between the equivalence scales and the income concepts used, but the broad similarity of the income distributions is clear.
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. Some analysis is undertaken using a baseline closer to the current UK situation — a standard rate of tax of 25 per cent, a top rate of 40 per cent and a wide standard rate band — in order to gauge the likely importance of these differences in income tax structures.

### TABLE 1

**Distribution of Property Values, England and Ireland**

<table>
<thead>
<tr>
<th>Property value as a percentage of national average</th>
<th>Council Tax band</th>
<th>England: DOE estimate (percentage of households)</th>
<th>England: Hills/Sutherland estimate (percentage of households)</th>
<th>Ireland: ESRI estimate (percentage of households)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 50</td>
<td>A</td>
<td>19</td>
<td>14</td>
<td>13</td>
</tr>
<tr>
<td>50-65</td>
<td>B</td>
<td>16</td>
<td>15</td>
<td>12</td>
</tr>
<tr>
<td>65-85</td>
<td>C</td>
<td>20</td>
<td>18</td>
<td>20</td>
</tr>
<tr>
<td>85-110</td>
<td>D</td>
<td>17</td>
<td>19</td>
<td>25</td>
</tr>
<tr>
<td>110-150</td>
<td>E</td>
<td>13</td>
<td>20</td>
<td>18</td>
</tr>
<tr>
<td>150-200</td>
<td>F</td>
<td>8</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>Over 200</td>
<td>G</td>
<td>7</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>


### TABLE 2

**Distribution of Equivalised Household Disposable Income, UK and Ireland, 1987**

<table>
<thead>
<tr>
<th>Quintile</th>
<th>UK</th>
<th>Ireland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bottom</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>2nd</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>3rd</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>4th</td>
<td>23</td>
<td>23</td>
</tr>
<tr>
<td>Top</td>
<td>41</td>
<td>42</td>
</tr>
</tbody>
</table>

Notes: Equivalence scales – UK: McClements scale (see McClements (1977)) (before housing costs); Ireland: 1 for head of household, 0.66 for other adults, 0.33 for dependent children. Sources: UK – CSO, 1990, Table O, p. 94; Ireland – Callan and Nolan, 1992, Table 3.

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£335 million. Thus, in the analysis of imputed income tax and council tax as replacements for the poll tax, each tax is required to raise this 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). 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, i.e. 60 per cent of the total imputed income from owner-occupation is treated as taxable. This helps to give an idea of the distributonal impact of a more limited imputed income tax, but the income ranking is still based on the full imputed income of 5 per cent of net equity.

The income support rate for the rebate scheme (used in all options apart from that of taxing imputed income) was set to correspond with the lowest rate of payment in the Irish social welfare system (Supplementary Welfare Allowance). 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 dependent child. The distributive results are presented in terms of income per adult equivalent or ‘equivalised income’, as it is usually called in this journal.

The analysis undertaken here, like that of Hills and Sutherland, is on a ‘first-round’ basis; second-round effects through changes in the labour supply, demand for housing and consequent capital gains or losses are not considered here. The analysis also assumes, in line with Hills and Sutherland, that the poll tax is incident at individual level, whereas the Council Tax is payable by the householder and property taxes (or imputed income tax) 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 substantial 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.

IV. DISTRIBUTIONAL IMPLICATIONS

Figure 1 shows the distributional effects of an imputed income tax, as described above, coupled with a reduction in national income tax rates. Two sets of calculations are presented. The first measures effects from a baseline given by

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9 The rates were £34 for an adult, £24 for a spouse and £10 per dependent child.
10 For further discussion of these issues, see Callan (1991).
11 The question of whether rebate schemes operated with respect to tax unit or wider household income would also be relevant to household formation decisions and the ultimate incidence. Here it is assumed that the rebates are related to tax unit income, for comparability with the imputed income tax, but the focus remains on first-round effects before behavioural responses.
the three-rate, narrow-band system which operated in Ireland in 1987. From this baseline, a reduction of 4.4 percentage points in each of the three tax rates was found to be revenue-neutral, when combined with the inclusion of imputed income in the tax base. The second set measures effects from a baseline nearer to the current UK situation: a two-rate system, with rates of 25 and 40 per cent, together with a wide standard rate band. A reduction of just under 4 percentage points in the standard rate band was found to be revenue-neutral in this analysis, with the top rate being held constant.

FIGURE 1
Distributional Impact of Imputed Income Tax and Revenue-Neutral Income Tax Cut

It is readily apparent that the patterns of average gain and loss are quite similar under each of these scenarios. There are losses in the second to the seventh deciles, and gains in the top three deciles, particularly in the top two. The reduction in progressivity associated with the reductions in income tax rates tends to outweigh the increase in progressivity associated with the inclusion of imputed income in the tax base. The main difference is that the extent of gains in the top decile is limited if the tax cut is concentrated on the standard rate of tax. Under the UK-style system, the fortunes of the top decile under a standard rate

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12 The initial rates were 35 per cent, 48 per cent and 58 per cent.
tax cut tend to reflect those of top-rate taxpayers. The maximum gain for a top-rate taxpayer is given by the product of the cut in the standard rate times the width of the standard rate band: a critical level of housing equity (net of mortgage debt) then divides top-rate taxpayers who gain from those who lose.

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 for all households, and the political problem of explaining the rationale and implementation of the income imputation procedure, are examined in Figure 2. 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). Each is designed to produce sufficient revenue to finance the same cut in national income tax rates as the imputed income tax (4.4 percentage points off each tax rate). This results in a tax rate of 1.75 per cent on gross property value, when mortgage interest relief is retained, but just over 1 per cent of net property values, if mortgage interest relief is abolished.

FIGURE 2
Distributional Impact of Gross and Net Property Taxes with Revenue-Neutral Income Tax Cut

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13 Joint information is still needed to operate a rebate scheme for low-income households, as described in Section II.
The net and gross property taxes have quite similar distributive effects. These effects are also broadly similar to those for the imputed income tax. The main difference is that low income deciles fare somewhat better under the rebate scheme which is part of the gross and net property tax. This is partly due to the fact that the rebate schemes are designed around income support rates which allow for the greater needs of larger families, whereas the income tax thresholds do not. The trade-off for this support of the lowest income families is an increase in the tax-cum-rebate-withdrawal rate for a large number of families: the 15 per cent rebate-withdrawal rate translates into a 15 percentage point increase in the effective tax rate on income for as many as one in five tax units under a gross property tax, or one in eight under a net property tax. Most of these tax units have incomes below the income tax threshold, but may be facing other benefit withdrawal rates within the income maintenance system. Increases in marginal tax rates under the imputed income option are more limited, being confined to those whose imputed income brings their total income above the tax threshold, or pushes them into a higher tax bracket.

FIGURE 3
Distributional Impact of Imputed Income Tax or Council Tax Replacing Poll Tax

An alternative perspective on the distributional impact of an imputed income tax can be gained by modelling a more limited imputed income tax, sufficient to
finance the abolition of a poll tax. The results, together with those of a council tax, are shown in Figure 3. In order to maintain revenue neutrality, a reduction in the real rate of return imputed to owner-occupiers is necessary, from 5 per cent to 3 per cent. Thus income tax is imposed on only three-fifths of the ‘true’ imputed income, in this package.14

By contrast with the earlier results, a package involving taxation of imputed income to finance the abolition of a poll tax is clearly progressive. There are average gains for the lower and middle income deciles, and losses in the top two deciles, with the largest loss being in the top decile. The council tax is also found to have progressive effects, though not as strong as the imputed income tax. Average gains in the low and middle income groups are greater under an imputed income tax, while average losses in the top decile are substantially greater.

FIGURE 4
Distributional Impact of Council tax Replacing Poll Tax on Cash and ‘Total’ Income Distributions

How do the distributional pictures using cash and ‘total’ income distributions differ? These differences are illustrated for the analysis of a council tax

14 Alternatively, one could regard the full income as being taxed, but at three-fifths of the rates applying to cash income.
replacing a poll tax in Figure 4. They show average gains under the ‘total’
distribution which are no smaller than those for the cash distribution for all but
one of the lowest eight deciles, and larger losses for the top two deciles. No
‘total’ income decile below the ninth experiences an average loss, whereas the
seventh and eighth 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, because of the relationship between the property value
bands used in the council tax, and net equity/imputed income.

Average gains and losses, as examined thus far, do not give a full picture of
the complexity of the distributive effects. Table 3 summarises proportions of tax
units gaining and losing under the alternative schemes, and highlights the extent
of large losses. Under an imputed income tax with a revenue-neutral income tax
cut, the number of gainers exceeds the number of losers, though not by a large
margin. This margin is reversed in the case of an income tax cut financed by a
net property tax, while in the case of a gross property tax, the gainers are
substantially outnumbered by losers. Losses of 5 per week or more are quite
common under each scenario, and there are significant numbers of losses above
10 per week under the imputed income tax or net property tax. 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. There are substantial numbers of large gains
counterbalancing the large losses. But the large losses are spread across the
upper half of the distribution, peaking in the upper middle reaches, while the
gains are concentrated in the top two deciles.

**TABLE 3**

**Gainers and Losers**

<table>
<thead>
<tr>
<th>Option</th>
<th>Percentage of tax units gaining</th>
<th>Percentage of tax units losing</th>
<th>Percentage losing more than:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Ir£5</td>
</tr>
<tr>
<td><strong>Revenue-neutral income tax cut</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Imputed income tax</td>
<td>32</td>
<td>28</td>
<td>12</td>
</tr>
<tr>
<td>Net property tax</td>
<td>31</td>
<td>35</td>
<td>10</td>
</tr>
<tr>
<td>Gross property tax</td>
<td>29</td>
<td>37</td>
<td>11</td>
</tr>
<tr>
<td><strong>Poll tax abolition</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Council tax</td>
<td>33</td>
<td>28</td>
<td>6</td>
</tr>
<tr>
<td>Gross property tax</td>
<td>48</td>
<td>23</td>
<td>11</td>
</tr>
<tr>
<td>Net property tax</td>
<td>48</td>
<td>22</td>
<td>10</td>
</tr>
<tr>
<td>Imputed income tax</td>
<td>57</td>
<td>22</td>
<td>12</td>
</tr>
</tbody>
</table>

Notes: The counts of gainers and losers exclude gains and losses of less than 50 pence per week.
The lower panel of the table, illustrating the extent and frequency of gains and losses when revenues are used to abolish a poll tax instead of reducing income tax rates, shows quite different results. A council tax leads to a small excess of gainers over losers; Hills and Sutherland’s analysis of UK data found almost equal numbers of gainers and losers. But the balance between gainers and losers would increase by about 25 percentage points under either of the property tax options. Gainers outnumber losers by an even greater proportion under an imputed income tax. Correspondingly, of course, the numbers experiencing large losses also increase. The imputed income tax involves losses of over 5 for 12 per cent of tax units, and of over 10 for 6 per cent of tax units; but in this case of poll tax abolition, these large losses are concentrated at the top of the income distribution.

V. CONCLUSIONS

The distributive impact of a tax on imputed income from owner-occupation depends crucially on the use to which such revenue would be put. If an imputed income tax were to replace revenues gained from a poll tax or the UK-style council tax, the package would tend to favour low and middle income groups. But a revenue-neutral reduction in national income tax rates could tend to favour upper income groups. Taxes on the value of owner-occupied property (either gross or net of mortgage debt, depending on the tax treatment of mortgage interest) could result in similar distributive effects if coupled with an income-related rebate. All of these possible reform packages would involve substantial numbers of large gains and losses: the number and size of the losses have clearly been a factor in the political unwillingness to consider such options, despite their attractions from an economic standpoint.

REFERENCES


Taxing Imputed Income from Owner-Occupation


