

Evaluating Social Welfare Expenditures: How Well Does the System Perform in Reducing Poverty?

TIM CALLAN and

BRIAN NOLAN

The Economic and Social Research Institute, Dublin

Abstract: The results of the ESRI Survey of Income Distribution, Poverty and Usage of State services are used to assess the success of the Irish social welfare system in alleviating poverty. About 10 per cent of persons are found to fall below the safety-net income level provided by the system, many of whom are apparently entitled to but not taking up income support. Evaluating the system in terms of its effectiveness in bringing people up to independently-derived relative income standards, about 70-80 per cent of the pre-transfer poverty gap was eliminated by social welfare payments. The percentage of spending on transfers which goes towards bringing people up to the poverty line varied between 54 per cent and 77 per cent depending on the standard chosen. The Irish system appears rather less effective in reducing poverty than those of some other developed countries. Spending on contributory, as well as means-tested, schemes is quite highly concentrated towards the bottom of the income distribution, limiting the scope for reallocation. This is less true of Child Benefit. Rationalisation of the payment structure could increase the effectiveness of the system in alleviating poverty, though at current overall spending levels this would not be sufficient to bring everyone up to the highest of the relative poverty standards.

I INTRODUCTION

Total expenditure on social welfare is now of the order of £2,500 million per year. How effective is this expenditure? A full answer to this question would require an exact specification of the system's multiple objectives, their relative importance, and the nature of any trade-offs between them. The Commission on Social Welfare (1986) noted that "the trend has been for less emphasis to be placed on the original, historical objective of poverty relief and increasing emphasis on income distribution and income replacement". However, the reduction or elimination of poverty would be widely regarded as the single most important objective of the system; in this paper we concentrate on an assessment of the social welfare system in terms of this objective. In doing so we apply the methods pioneered by Beckerman (1979a, b), but also offer some refinements and additional analyses designed to shed more light on the system's performance.

The paper provides, therefore, a *partial* evaluation of the social welfare system in the sense that it neglects objectives other than poverty reduction; nevertheless, this helps to identify some particular problems and policy options

worthy of further investigation. A more comprehensive evaluation of the system's performance and of policy options, will be made possible by the further development of a model of the income tax and social welfare system's effects on households, as outlined in Callan and Nolan (1987). The value of the present analysis can best be gauged against the background of Bristow's (1980) assessment that this *Review* has, for lack of supply, been able to publish "disappointingly little" on the more micro level of public finance.

The gap highlighted by Bristow has persisted in more recent years, to a large extent due to lack of data on the effects of public expenditure programmes on households. The imbalance between the amount and quality of the information on the costs of public expenditure programmes, and the lack of information on their actual effects has been a striking one. The Economic and Social Research Institute's Project on Income Distribution, Poverty and Usage of State Services was designed to collect and analyse the data necessary for the evaluation of a wide range of public policies, including direct taxation, health, education and housing, as well as social welfare.¹ This paper draws on the results of the ESRI Survey completed in the autumn of 1987.

A brief description of the relevant aspects of the survey is given in the next section. Section III examines the performance of the social welfare system in meeting its own minimum income objective, as defined by the safety net scheme (Supplementary Welfare Allowance). Section IV contains some broader measures of the system's effectiveness and efficiency in reducing poverty as independently defined. Section V discusses some of the implications of these results, and compares different methods of targeting income support (contingency based payments, means-testing and taxation). The indirect costs associated with incentive effects of the social security system and its financing are then discussed in Section VI. The final section draws together the conclusions from the preceding analysis.

II THE DATA BASE

Only the briefest of descriptions of the data base provided by the ESRI Survey of Income Distribution, Poverty and Usage of State Services is given here: further details on the sampling procedure, data gathered, response and post-sampling reweighting are given in Callan *et al.*, (1988, Ch. 2). The main points to note are that the Electoral Register was used as a sampling frame in order to obtain a random sample representing the national population. Whelan (1979) provides details of the method, and Keogh and Whelan (1986) show

1. The project also provides the Irish element of a study on poverty and social security being carried out in a number of European countries. It is co-sponsored by the Directorate-General for Employment, Social Affairs and Education of the European Commission, by the Combat Poverty Agency, and by the ESRI itself; the Department of Social Welfare also played a key role in getting the project off the ground.

that the Register provides an adequate frame for this type of survey. Detailed information on income from all sources and on other objective and subjective indicators of poverty, as well as on education and labour force participation, usage of health and education services and a variety of related topics was gathered. Responses were received from about 3,300 households, representing 64 per cent of effective sample — comparable with the results of the national Household Budget Surveys of 1973 and 1980. Where possible each of the 8,200 adults in these households was interviewed, in order to obtain the most accurate and reliable information possible on incomes and labour force experience.

The fundamental income concept used in this paper is that of current disposable income, i.e., total income from all sources, less payments of income tax and pay related social insurance (PRSI) contributions. This is widely regarded as the single measure most relevant to spending power or “command over resources” which determine a family’s standard of living. The construction of the measure is parallel to that employed in the CSO’s Household Budget Survey, and the UK Family Expenditure Survey: for certain receipts which are more variable in nature, such as rent, interest, dividends and self-employment or farming income, a longer term measure is used and the weekly equivalent added to current income from employment, pensions, social welfare and so on. Other income concepts, and the income recipient units used in the analysis are discussed, as they are introduced below.

III EFFECTIVENESS OF THE SOCIAL WELFARE SYSTEM IN PROVIDING A SAFETY NET

3.1 *Outline of the Safety Net*

We begin this analysis of the performance of the social welfare system with a simple measure of the effectiveness of the system in providing a safety net income: the proportion of persons falling below the official minimum income standard. Measures of this type have been widely applied in the UK and other countries (see e.g., Abel-Smith and Townsend, 1965; Atkinson, 1969; Beckerman, 1979a; DHSS, 1988). Some applications have treated the results as a measure of poverty. The difficulties with this interpretation have been noted in Nolan and Callan (1988); for reasons detailed there, we regard the results as reflecting a combination of the extent of poverty, and the generosity of the social welfare system. The present analysis does not treat the safety-net income level as a “poverty line”, nor does it imply any judgement on its adequacy. Instead, it takes the system on its own terms, and evaluates its performance in achieving its safety-net objectives.

We treat the Supplementary Welfare Allowance rate as the safety net income which the social welfare system tries to guarantee. Its stated purposes at the

time of its introduction included guaranteeing a "standard basic minimum income" and the provision of a "residual and support role in the income maintenance structure".² The level of payment is the lowest provided by the system, equal to the Short-term Rural Unemployment Assistance payment. The rate of payment for a single person was £33 per week in the early part of the survey period, and £34 per week from July 1987 onwards.³

3.2 Basic Results

The details of the calculation are set out in our report to the Combat Poverty Agency (Callan *et al.*, 1988). Here we need only summarise the main features. The first point to note is that the calculations are based on a conservative estimate of what the safety net aims to provide; the baseline estimate takes no account of additional payments which many families receive under the Supplementary Welfare Allowance (SWA) scheme, for housing costs, dietary or special needs. The possible importance of the housing cost additions is illustrated later by applying the administrative rules for this discretionary payment to each of the families in the ESRI sample.

The SWA scheme, like most elements of the tax/transfer system, works with a unit based on a single person or married couple, together with dependent children. The precise definition of a dependent child for the SWA scheme is simply one under the age of 18. Our analysis of the safety net is necessarily at this "benefit unit" level. We do, however, take account of the "benefit and privilege" assessment, which implies a one-sided income sharing arrangement from parents to older, financially dependent children such as those unemployed or in full-time education.

The basic results are presented in Table 1. They show that approximately 1 person in 10 falls below the safety-net income level; 1 person in 11, if benefit units in full-time education are excluded; and 1 person in 9 if housing additions are included as part of the safety-net income standard. Comparison with results from the UK on the numbers falling below the Supplementary Benefit standard (the UK safety net scheme, recently revised and renamed Income Support) suggests that the Irish system has a safety net with rather more gaps. The UK figures for the 1970s and 1980s are at or below the 5 per cent mark: Beckerman (1979) gives a figure of 4.4 per cent for 1975, while the DHSS

2. Mr Frank Cluskey, Parliamentary Secretary to the Minister for Social Welfare, *Dáil Debates*, 24 June 1975.

3. The 1988 Budget provided for special 11 per cent increases in these lowest levels of social welfare payment, to £37.80 per week, effective from mid-July 1988. Child dependant payments were the subject of a smaller special increase of 6 per cent, while adult dependant payments were raised in line with the general increase of 3 per cent. The 1989 Budget also increased these lowest levels by a larger percentage than average.

(1988) gives figures of 4.9 per cent for 1981, 5.2 per cent for 1983 and 4.5 per cent for 1985.

Table 1: *Percentage of Benefit Units and Persons with Incomes Below the Supplementary Welfare Allowance Standard*

	<i>% of Benefit Units with Incomes Below SWA</i>	<i>% of Persons Included in These Benefit Units</i>
A. All Benefit Units	12.3	9.9
B. Excluding Benefit Units in full-time education	9.4	9.2
C. As B, but with additional allowance for rent or mortgage interest	11.2	11.4

3.3 *Nature of the Gaps in the Safety Net*

The obvious next question is, how can so many people be falling below the safety net income? There are two broad reasons. First, some persons are not eligible for the safety-net income; and second, some of those who are eligible for income support are not receiving it. In this section we attempt to identify the relative importance of these two reasons, an issue which appears to have been neglected in the UK.

The specific exclusions on the Supplementary Welfare Allowance are that it is not payable to persons in full-time employment, or in full-time education. Table 1 shows that the latter exclusion affects the proportion of benefit units falling below the standard, but we still find 1 person in 10 below the SWA income level, even if benefit units comprising persons in full-time education are excluded.

The implications of the exclusion of persons in full-time employment need careful interpretation. Full-time employees with children, who are on incomes below the SWA standard would be eligible for income support through the Family Income Supplement Scheme. Farmers would also be eligible for Unemployment Assistance, subject to a means test; however, whether or not a farmer would be eligible for income support depends partly on a longer-term measure of income from the farm than our 1986 calendar year estimate. Roughly speaking, it is only full-time employees without children, large farmers, and the self-employed who would effectively be ineligible for any income support.

We have classified benefit units falling below the SWA income standard in

a way which helps to identify whether or not they are eligible for income support, as shown in Table 2. A detailed characterisation of each of the groups is contained in Callan *et al.* (1988). Here we note the points of major relevance to the present paper. The group of persons ineligible for income support who fall below the SWA income standard, is a significant one, but not the major factor in explaining how 1 person in 11 falls below the safety net, when benefit units in full-time education are excluded from the analysis. Depending on the eligibility status of farmers, between 60 per cent and 85 per cent of this group are apparently entitled to income support, but are not receiving it. This is not just a question of small amounts going unclaimed; the average entitlement is quite sizeable (£20 to £30).

Table 2: *Benefit Units Below Basic SWA Income Level*

	<i>% of All Benefit Units</i>
All Benefit Units below Basic SWA income standard	12.3
of which:	
<i>Not eligible for any social welfare payment</i>	
Full-time education	3.2
Others not eligible for any social welfare assistance	1.2
<i>Mixed category (possibly eligible)</i>	
Farmers	2.7
<i>Eligible for some social welfare payment</i>	
Did not claim	2.8
Waiting for decision on some social welfare payment/ applied but refused	0.4
Some SW payment received, but less than apparent entitlement	
Farmers	0.7
Others	1.5

3.4 *Non-take-up of Means-tested Benefits: Causes and Implications*

The phenomenon of persons entitled to income support, but not actually receiving it, goes under the broad heading of "non-take-up". The analysis of the preceding section has shown that it is a sizeable phenomenon. There are, however, many possible causes of non-take-up, and their implications differ markedly. For this reason, we now turn to the question of the causes of non-take-up.

The simplest cause is that potential claimants are not aware of their entitlements. For instance, young unemployed adults may believe that they have no entitlement because they are living with their parents; the rules of the system mean that they could be entitled to the full payment, if the parental income was a low one. This could lead to serious financial difficulties for the persons and households involved, but would have no implications outside this group.

Basic information about the existence of a scheme is clearly a necessary condition for take-up of a benefit; but the extensive review of take-up research by Davies and Ritchie (1988, Chapter 1) makes it clear that it is not a sufficient one: "A number of studies have shown that . . . [w]hile eligible non-claimants may explain their behaviour in terms of ignorance, they still fail to apply when provided with information" (p. 4). Davies and Ritchie's own in-depth investigation confirmed this finding, and showed the importance of several other factors which tend to inhibit take-up of means-tested benefits, notably "lack of perceived need" and "negative beliefs and feelings about the claim process".

These factors can also be incorporated into an economic or utility-based framework for explaining why persons entitled to a benefit may not take it up. Non-take-up may be caused by the fact that for some people the value of the benefit entitlement (which would be influenced by the "perceived need") is outweighed by the costs of claiming the benefit. These costs could include items such as time, travel and any stigma felt to be attached to the payment or associated means test (incorporating the "negative beliefs and feelings about the claim process"). Atkinson (1984) emphasises that such costs may reduce the true value of the financial assistance given, even where the benefit is received. This approach also explains the well-established tendency for rates of take-up to increase with the size of the amount involved (i.e., it may not be worthwhile to incur the fixed costs of taking up a benefit for either a small weekly payment, or a payment which would be for a very short period of eligibility).

While the analysis in the preceding section has given a lower bound indication of the size of the aggregate non-take-up phenomenon, it is necessary to examine the rates of non-take-up for specific schemes in order to obtain a more accurate picture of both the rate and aggregate amount of non-take-up, and of the relative importance of different causes. In Callan *et al.*, (1988) we examined the take-up of Family Income Supplement in greater detail. This scheme is an extreme example in two senses. First, it is thought to be the scheme with the lowest rate of take-up of benefit. But, second, it is clearly the scheme with the least stringent means test: there is no capital income test, and once qualified, increases in earnings over the next 12 months are not penalised by any withdrawal of benefit. On these grounds one would expect the reaction to the FIS means test to be much milder than towards the more

intensive means test for Unemployment Assistance. Our results indicate that between 13 and 22 per cent of persons entitled to a payment actually receive it. While the rate of take-up is, as would be expected, lower for smaller entitlements, this is not a major factor in explaining the low take-up rate; between 18 and 30 per cent of those entitled to a payment of over £5 per week receive the payment. These figures compare unfavourably with the take-up rates of around 50 per cent in the UK, which themselves have given rise to concern about the effectiveness of the scheme's outreach.

As regards the causes of non-take-up of FIS, the survey evidence showed that most of those who were entitled to a payment, but had not claimed it, did not know of the scheme's existence. This indicates some scope for increasing take-up through improved dissemination of information (a route which recent policy measures have followed). However, the fact that information is a necessary rather than a sufficient condition for take-up of benefit may indicate that more radical measures, such as automatic payment of FIS through the wage packet (i.e., a partial integration of the tax and transfer systems in implementation) would be necessary to improve outreach substantially.

3.5 *Conclusions*

A significant proportion of persons falls below the safety-net income; around 1 in 10. Comparison with the corresponding results for the UK suggests that the system's performance in providing a safety net could be improved. Our analysis went further than the corresponding UK analysis in attempting to distinguish between those not entitled to income support, and those entitled to benefit but not taking it up. Further analysis is needed to establish the extent and causes of non-take-up for individual schemes, and the implications for policy in these areas.

IV MEASURES OF POVERTY REDUCTION EFFECTIVENESS AND EFFICIENCY AT ALTERNATIVE POVERTY LINES

4.1 *Concepts of Poverty Reduction Effectiveness and Poverty Reduction Efficiency*

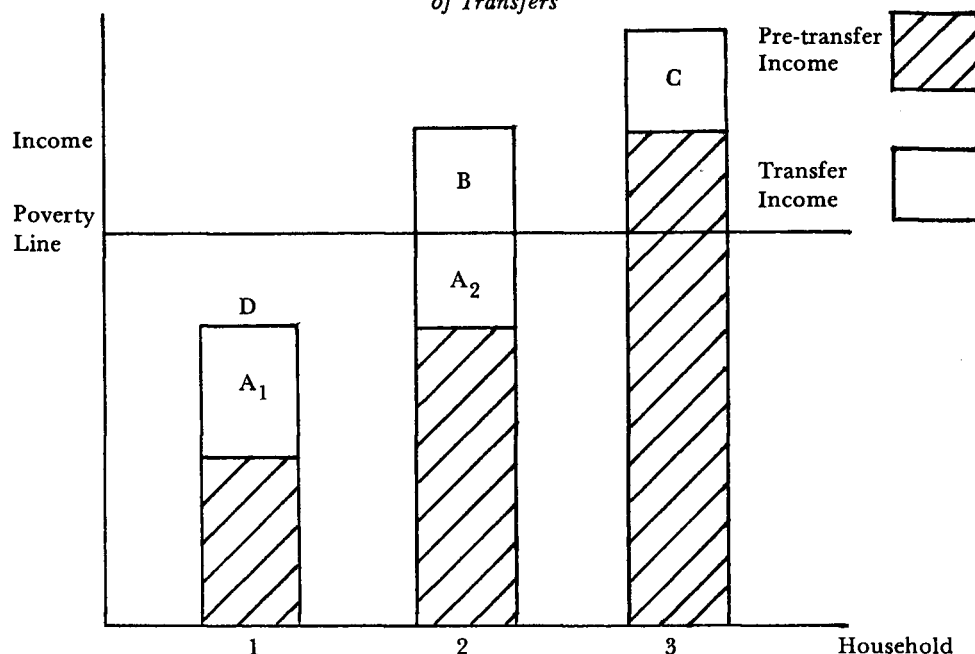
We now move on to a broader evaluation of the effectiveness and efficiency of the social welfare system in reducing poverty at some independently derived poverty lines. In this analysis we use the concepts and measures developed by Beckerman (1979a), and widely used since then in the evaluation of social security systems. The Beckerman measures of poverty reduction effectiveness and efficiency are based on two building blocks; the first is the concept of pre-transfer income, and the second is the poverty gap.

Pre-transfer income is defined simply as actual net income less actual social

security transfers received. There are two main drawbacks to this. First, it ignores the fact that net pre-transfer income would also be affected by consequent reductions in tax liability. Second, it ignores behavioural responses to the existence of social security transfers and the taxes needed to finance them. The drawbacks of this are obvious, but the difficulties involved in estimating a counterfactual based on the absence of all social security are equally apparent. Given these difficulties, and the limited relevance of the zero social security counterfactual, it seems preferable to invest our efforts into estimating counterfactuals for more realistic policy changes, allowing for the effects of the income tax system, and for possible behavioural responses. In the interim, however, the Beckerman concepts can be used to provide a preliminary picture of the system's performance which allows some comparisons across countries and at different levels of the poverty line; such comparisons may be less sensitive than the exact levels of effectiveness and efficiency to the two qualifications mentioned.

Given the concept of pre-transfer income, households or families can be classified into three types, illustrated in Figure 1. Type 1 has income below the poverty line even after transfers; type 2 has a pre-transfer income below the poverty line, but a post-transfer income above the line; and type 3 has a pre-transfer income above the line.

Figure 1: *Classification of Households for Analysis of the Effectiveness and Efficiency of Transfers*

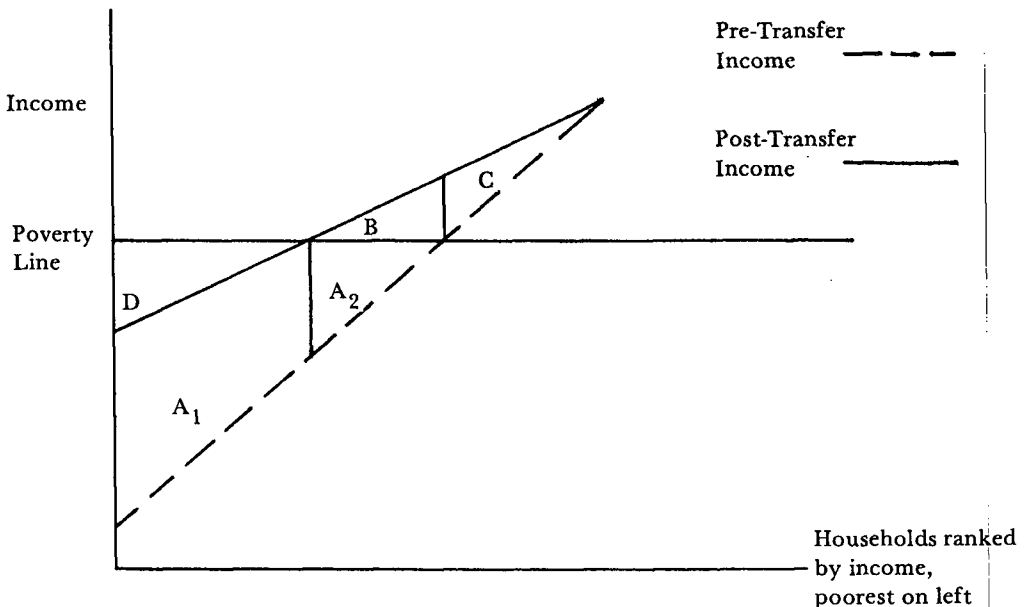


Note: Adapted from Dilnot, Kay and Morris, 1984.

The *poverty gap* for a family in poverty is the difference between its income and the poverty line. The aggregate poverty gap is simply the sum of these gaps for all households below the poverty line. (This is not to be confused with the "per capita income gap", used in Nolan and Callan, 1989b, which also discusses the relation between the two). The aggregate poverty gap provides a measure of poverty which has certain advantages over the more familiar head count (the proportion of families or persons in poverty), in that it takes account of how far below the poverty line families are falling. It is also particularly suitable for the analysis of the social security system, because it provides a measure of poverty in money terms, which can be related to social welfare spending.

The Beckerman measure of effectiveness is the percentage of the pre-transfer poverty gap which is eliminated after social security transfers are added: i.e., the ratio between total payments of type A_1 and A_2 on Figure 1, and the total pre-transfer poverty gap (which is equal to the sum of post-transfer poverty gaps, D, plus the total of payments of type A_1 and A_2). An alternative way of illustrating the concept is shown in Figure 2 where again it is represented by $(A_1 + A_2)/(A_1 + A_2 + D)$.

Figure 2: *Poverty Reduction Effectiveness and Poverty Reduction Efficiency*



Note: Stylised representation of the income distribution and income transfer system, adapted from Beckerman, 1979a.

$$\text{Poverty Reduction Effectiveness} = (A_1 + A_2)/(A_1 + A_2 + D)$$

$$\text{Poverty Reduction Efficiency} = (A_1 + A_2)/(A_1 + A_2 + B + C)$$

The Beckerman measure of efficiency is the percentage of total social security spending which goes towards the elimination of the poverty gap: in Figure 1, this is the ratio of the total of payments of types A_1 and A_2 to the total of all payments, including B and C. Again this can be illustrated in Figure 2 as $(A_1 + A_2)/(A_1 + A_2 + B + C)$. Implicitly this measure of efficiency takes the elimination of poverty at the particular poverty line chosen as the only goal of the social welfare system: it is in this sense that the amounts spent on raising incomes above that level are "inefficient" or "wasted", either as "spill-over" payments to those initially below the poverty line (payments of type B) or payments to those initially above the poverty line (payments of type C).

One can interpret these measures in several ways. Taken at their simplest, they are based on a view that poverty is not a matter of degree: at a certain income level, a person is in poverty, while at a slightly higher level he or she is not poor. Even if one accepted this view, one must allow that there is uncertainty and disagreement about where to draw the line: this alone would suggest that the analysis should be done for a range of levels of the poverty line. Our preliminary analysis of the standard of living indicators for households at different income levels (Callan *et al.*, 1988) also seems to suggest that poverty is not such a cut-and-dried phenomenon: there may well be degrees of poverty. This again supports examination of the efficiency and effectiveness measures at different poverty lines.

4.2 *Application of the Measures of Poverty Reduction Effectiveness and Efficiency to the Irish Data*

The basic results on the "effectiveness" and "poverty reduction efficiency" of the social welfare system are given in Table 3 below. The analysis presented here is based on what is often called a tax unit, i.e., a single person or married couple together with dependent children. The only difference from the benefit unit is that children aged 18 or over who are in full-time education are now counted as members of the parental tax unit (so a dependent child is one which would have counted for purposes of the child tax allowance before its abolition in the 1986 Budget). We have also conducted similar analyses at household level, and will refer to these results later.

This table is based on the equivalence scale of 1 for the head of the tax unit, 0.66 for other adults, and 0.33 for children, approximately implied by the payment structures of social welfare schemes. The use of other values could give rise to findings of inefficiency and ineffectiveness which would be wholly due to differences in equivalence scales. The results were, however, very similar when the equivalence scale was changed to 1 for the head of tax unit, 0.7 for other adults and 0.5 for children.⁴

4. The main results on the number and composition of those below the relative poverty lines were not greatly affected by the use of age-differentiated equivalence scales in Nolan and Callan (1989a).

Table 3: *Poverty Reduction Effectiveness and Poverty Reduction Efficiency at Different Income Standards*

% of Mean Equivalent Income	<u>40</u>	<u>50</u>	<u>60</u>
% of Tax Units Below this Standard	12	22	31
Poverty Reduction Effectiveness (% of pre-transfer poverty gap eliminated)	79	76	70
Poverty Reduction Efficiency (% of social security which goes towards reducing poverty gap)	54	67	77

Equivalence Scale: 1 for the Head of Household, 0.66 for other adults, 0.33 for each child.

A strong pattern emerges from these results: a rise in poverty reduction efficiency, coupled with a fall in poverty reduction effectiveness, as the level of the poverty line rises. The fall in effectiveness reflects the fact that several important schemes provided rates of payment at or just above the lowest of these poverty lines; as the poverty line is raised, these schemes tend to become less and less effective. The rise in efficiency also reflects the differentiated payment structure of the Irish social welfare system: payment rates vary not only between contributory and non-contributory schemes, but also between the elderly, widows and the unemployed, for example.⁵ If one considers tax units which depend on a single social welfare payment for their income, it is clear that a poverty line set at the system's lowest rate of payment is likely to find a high poverty reduction effectiveness but rather low poverty reduction efficiency, while a poverty line set at the highest rate of payment must find more efficiency but less effectiveness.⁶

The results presented in Table 3 strongly reflect this general tendency. This can be demonstrated using the following classification of the sources of inefficiency.

1. Social welfare payments going to persons who have pre-transfer income above the poverty line. This is labelled "vertically inefficient expenditure" by Beckerman (1979a).

5. The term differentiated payments is reserved to refer to differences based on these characteristics; it does not refer to the practice of making additions for adult dependants and dependent children.

6. If the system was 100 per cent effective and efficient at some poverty line, then analysis of effectiveness and efficiency at alternative poverty lines above and below this target poverty line would show a different pattern. Effectiveness would be 100 per cent up to the target poverty line, and decline thereafter; efficiency would rise while effectiveness was constant, and then stay constant at 100 per cent while efficiency was falling. Instead of this we observe rising efficiency while effectiveness is falling.

2. Social welfare payments which are themselves above the poverty line will involve an inefficiency even if the recipients have zero pre-transfer income. We will refer to that part of the inefficiency which arises solely from the excess of social welfare payments over the poverty line as the "excess payment effect".
3. We will refer to the remaining sources of inefficiency as "pure spillover".⁷ This includes cases where the recipient has other income below the poverty line, and a social welfare payment less than the poverty line, but the two together exceed the poverty line; it also includes the full amount of pre-transfer income for cases where the social security payment itself is above the poverty line.

The distinction between what we have termed the "excess payment effect" and "pure spillover" is an important one. Means-testing of payments can reduce the other sources of inefficiency, but "excess payment effects" arise even when the payments go to persons with no other income. For those tax units which have social security payments in excess of the poverty line, we have calculated this excess, as a measure of the excess payment effect.⁸ Table 4 shows the relative importance of these different sources of "poverty reduction inefficiency" at the three relative poverty lines.

Table 4: *Classification of Total Social Welfare Expenditure*
(£m per annum, 1987)

% of Mean Equivalent Income	<u>40</u>	<u>50</u>	<u>60</u>
Poverty Reduction ($A_1 + A_2$)	1,166	1,443	1,647
Excess Payment Effect	493	250	94
Pure Spillover	112	128	125
Vertically Inefficient (C)	378	329	282
Post-transfer Poverty Gap	318	463	720

Equivalence Scale: 1 for the Head of Household, 0.66 for other adults, 0.33 for each child.

Most of the inefficiency in poverty reduction at the lowest poverty line is due to the fact that recipients under many schemes would be brought above that level, even if they had no other income, i.e., the "excess payment" effect.

7. Beckerman (1979a) uses the term "spillover" to refer to the sum of what we have termed the "excess payment effect" and "pure spillover".

8. This estimate ignores complications arising from husbands and wives each receiving a social welfare payment. In the 1987 Survey, this phenomenon is likely to be numerically significant only in the case of Old Age Non-Contributory Pensions.

As the poverty line rises, the total of inefficient expenditure falls quite strongly, and the relative importance of other sources rises. But since the highest social welfare payment rates (Widows' and Old Age Contributory Pensions) are above the highest poverty line, part of the inefficiency remaining at this level is still due to persons with no other incomes being brought above the level of the poverty line. Vertical inefficiency is the most important source of inefficiency in poverty reduction only at the highest poverty line, at which 23 per cent of expenditure is "inefficient"; while the "pure spillover" effect is of minor importance at each poverty line.

The basic analysis does not allow for differential poverty lines for different groups (except on the basis of the number of adults and children in the tax unit or household). The social welfare system incorporates differences in payment levels which depend on several factors. Some of these are designed to approximate differences in the needs of different classes of recipient, e.g., whether persons are likely to be dependent on it on a long-term basis, such as the elderly, or just for a short period, such as some of the unemployed. Viewed simply from a poverty reduction perspective, such differentiation according to need might be justified, and would not necessarily represent an inefficiency as the simple measures presented here imply.

The differentiation of payments on lines which are not designed to relate to need, but to the "insurance principle" or "replacement function" adverted to earlier, are potentially more severely at variance with the poverty reduction objective. The higher level of payments under Contributory (Social Insurance) schemes, compared with the level of payments under Non-Contributory (Social Assistance) schemes represents an inefficiency from a poverty reduction point of view, if the poverty line is set below the highest rate of payment. For a poverty line at or above the higher rate of payment, the differentiation is not inefficient, in terms of the Beckerman measures, but it may be regarded as inequitable. If needs vary with a claimant's past PRSI record, it could be argued that those with irregular employment patterns, who tend not to qualify for the higher benefits, have greater rather than smaller needs.

We now turn our attention to the level of the poverty reduction effectiveness and efficiency figures. In interpreting the figures presented, one must bear in mind the scale to which these percentages apply: even the highest effectiveness figure does not mean that the remaining problem is small, if, as is the case, the pre-transfer poverty gap is very large. Similarly, even the highest efficiency figure implies a large aggregate amount spent on raising household incomes above the highest poverty line.

The efficiency and effectiveness figures at the lowest of the relative poverty lines are very close to those which were found for an additional analysis based on the Supplementary Welfare Allowance level of income. This analysis can be compared with the estimates of effectiveness and efficiency at safety-net

Table 5: *International Results on the Effectiveness and Efficiency of Social Security Systems at National Safety Net Income Levels*

<i>Country</i>	<i>Year</i>	<i>Source*</i>	<i>Effectiveness</i>	<i>Efficiency</i>
Australia	1973/4	ILO	74	56
Belgium	1973/4	ILO	99	8
UK	1973/4	ILO	96	49
UK	1981	DKM	91	54
USA	1984	W	74	31

*ILO: Beckerman (1979b)

DKM: Dilnot, Kay and Morris (1984)

W: Weinberg (1987), using "all transfers".

level for other countries summarised in Table 5 above. The Irish system seems on this basis to be relatively efficient, but rather ineffective. One possible explanation for such results is that the Irish safety net might be at a higher proportion of average income than elsewhere. Preliminary comparisons suggest, however, that the ratio of safety-net income to mean equivalent income is *lower* in Ireland than for a number of European Community countries, though perhaps higher than in the UK.⁹ A more important factor in explaining how Ireland exhibits low effectiveness together with high efficiency is that the pre-transfer poverty population is substantially larger in Ireland.

The pattern of results is similar in the household based analysis. The level of effectiveness is somewhat higher, and of efficiency somewhat lower. The reasons for this difference are clear: social welfare schemes are primarily aimed at supporting the incomes of tax units rather than households, which means that the tax unit level of analysis is more appropriate for evaluating the system's performance in terms of its own objectives. The evidence now available on patterns of income sharing within households is very limited, for any country. Some of this evidence suggests that most income sharing is within tax units rather than between them, which would also argue for a tax unit level of analysis in terms of independent criteria. The follow-up to the ESRI Survey will attempt to gather some evidence for Ireland on this topic.

9. In order to abstract from considerations of this type, it would be useful to compare the effectiveness and efficiency of the systems in reducing poverty at comparable national standards derived independently of the respective social security systems. Preliminary analysis of this sort has been undertaken in the EC Poverty Research Programme, of which the ESRI study forms a part. It indicates that, compared with Belgium, Luxembourg, and the Lorraine region of France, the Irish social welfare system is rather less effective in reducing poverty, but more efficient in the poverty reduction it does achieve. This confirms the tendency observed in the analysis at safety net level.

V SOME IMPLICATIONS

5.1 *How Much Scope is There for Improving Poverty Reduction Performance by Redirecting Social Welfare Expenditures?*

There are conflicting views on the scope for greater targeting of social welfare payments, and on the best methods of directing financial assistance to those in need. Our evidence on the overall poverty reduction efficiency of the system is obviously relevant to the first question. The proportion of social welfare payments which goes towards poverty reduction was found to be around 55 per cent at the safety net level of income. Dilnot, Kay and Morris (1984) comment on a similar level of efficiency in the UK as follows: "If our principal objective is to boost low incomes to an acceptable level, this could be done more cheaply, and/or we could afford to be considerably more generous to the poor if payments to those who do not strictly 'need' the money were curtailed" (p. 55). This comment highlights the possible role for reallocation, when almost half the social security budget does not contribute to the poverty reduction objective. But our analysis has also shown how rapidly the role for such reallocation diminished as the poverty line is raised; at the 60 per cent line, 77 per cent of social welfare expenditure goes towards poverty reduction. On the basis of these higher lines, the scope for improving performance by greater targeting is much less.

The exact limits to the retargeting strategy can be derived from Table 4, if we make two major assumptions. First, that other objectives of the social security system can be neglected, and all expenditure directed towards poverty reduction. Second, that the system can be made 100 per cent effective and efficient in this role. The figures in Table 4 then indicate that the level of payment which could be financed would be between 50 and 60 per cent of mean income per equivalent adult. That is, everyone below that income could be brought up to that level, if payments were concentrated entirely on this group, and adjusted to take account of their pre-transfer income. This is not, therefore, an estimate of what could be financed under a basic income scheme, which fulfils neither of these conditions. Given that our results have also shown the existing safety net had considerable problems, that other objectives are politically important, and that this hypothetical scheme would involve effective marginal benefit withdrawal rates of 100 per cent below the poverty line, we can safely say that this provides an upper bound to the uniform payment level the existing social welfare budget could achieve. It also indicates the cutoff which would distinguish potential beneficiaries from such a change (e.g., those on Unemployment Assistance) from those who would lose out (e.g., Contributory Old Age Pensioners).

To the extent that there is scope for retargeting, it is of interest to examine alternative methods for doing so. It is to this issue that we now turn.

5.2 *Methods of Targeting – Contingency or Means Test?*

Suppose then, that we take the size of the social welfare budget as a given. What would be the best strategy for targeting assistance to those most in need? The Commission on Social Welfare argued that:

Contingency based payments are an effective means of directing social security payments to persons in need of an income without actually undertaking means tests [because] The large majority of recipients of the present contingency based schemes do not have other incomes and their social welfare payment replaces an income loss arising, for example, from unemployment, illness or retirement (p. 181).

We can test this argument by comparing the distribution of payments under means-tested and contributory schemes over tax units arranged in order of their pre-transfer income. The results (see Table 6 below) show that non-means-tested schemes are quite selective, even relative to means-tested payments. Thus, 54 per cent of contributory payments go to tax units with no other income, as against 66 per cent of means-tested payments. At the other end of the scale, 6 per cent of contributory benefits go to tax units in the top four deciles, as against 1 per cent of means tested benefits. Corresponding analysis at household level, and on the major contributory and means-tested schemes revealed a similar pattern; nor were these results sensitive to a change in the equivalence scale.

This analysis does not take into account the fact that non-means-tested benefits will tend to raise recipients higher up the income scale than the corresponding means-tested payments: this can be seen from Table 7, which shows the distribution of payments over tax units arranged in order of *post-transfer* income. However, the figures in Table 6 show that the differential in the payment structure is the most important cause of this phenomenon, rather than the failure to adjust the contributory benefits for incomes from other sources by means-testing.¹⁰

This evidence broadly supports the Commission on Social Welfare's contention. The contingency basis for payments has been criticised on grounds other than lack of selectivity: for example, it has been criticised on the general grounds of increasing the incentive to fall into the contingent state (sickness, unemployment). But simply means-testing the contingency based payments would do little to alter these incentives either. Furthermore, the evidence of Section III suggested that means-testing could be associated with considerable problems of take-up; further work on the extent and causes of non-take-up

10. This reinforces the point made in Section IV about the relative importance of the "excess payment effect" and "pure spillover".

will help to establish the importance of this factor for the efficiency of means-testing as a targeting device.

Table 6: *Distribution of Social Welfare Expenditure over Tax Units Classified by Equivalent Income Decile (Pre-transfer)*

<i>Decile</i>	<i>Total Social Welfare Benefits %</i>	<i>Means-tested Benefits %</i>	<i>Contributory Benefits %</i>	<i>Child Benefit %</i>
Bottom 29%	54.8	66	54	19
Next 1%**	3.6	4	4	3
4th decile	20.3	20	23	8
5th "	8.6	7	8	17
6th "	4.8	2	4	16
7th "	2.9	1	2	14
8th "	2.1	0	2	9
9th "	1.5	0	1	8
Top 10%	1.5	0	1	6
	100.0	100	100	100

*i.e. those with incomes less than or equal to zero.

**remainder of third decile.

Table 7: *Distribution of Social Welfare Expenditure Over Tax Units Classified by Equivalent Income Decile (Pre-transfer)*

<i>Decile</i>	<i>Total Social Welfare Benefits %</i>	<i>Means-tested Benefits %</i>	<i>Contributory Benefits %</i>	<i>Child Benefit %</i>
Bottom 10%	2.9	4	1	7
2nd "	21.1	41	10	17
3rd "	18.1	19	19	10
4th "	15.0	13	18	7
5th "	16.6	12	20	10
6th "	11.8	6	15	14
7th "	5.1	2	6	11
8th "	4.4	2	5	9
9th "	2.6	0	3	8
Top 10%	2.3	0	3	7
	100.0	100	100	100

Table 6 also contains evidence on the distribution of child benefit payments. It could be argued that these are aimed at "horizontal" rather than "vertical" redistribution; but to the extent that we are evaluating the system's performance in reducing poverty, it is the redistribution towards the bottom of the equivalent income distribution which is of interest in the present context. The extent of this redistribution is sensitive to the equivalence scale used. At the equivalence scale approximating the present structure of payments (including the present level of child benefit), child benefit is not very selective: the poorest 30 per cent of tax units receive 34 per cent of the payments under the scheme. But it could be argued that the existing payment structure underestimates the costs of children (as might be suggested by the more generous child additions in the UK). At an equivalence scale of 1 for the head of household, 0.7 for other adults, and 0.5 for children, the proportion received by the poorest 30 per cent of tax units increases to 46 per cent. Even on this scale, however, over a third of expenditure on child benefit goes to the top 50 per cent of tax units.

5.3 *Targeting by Taxation*

Targeting is widely associated with means-testing; but we have seen that contingency-based payments are an alternative method of targeting, and taxation can also be used for targeting purposes. It already is, to the extent that long-term social welfare payments are subject to income tax. Both the Commission on Taxation and the Commission on Social Welfare recommended the taxation of short-term social welfare benefits; the Commission on Taxation favoured a non-taxable child benefit, while the Commission on Social Welfare (p. 296) reports that it did not reach agreement on this issue. Proposals to tax various elements of short-term social welfare (such as disability benefit) or child benefit have also been made from time to time.

Targeting through the tax system is not subject to the non-take-up objection to means-testing. The exact extent of administrative difficulties does, however, have to be established and taken into account. Recent work by Dilnot, Stark and Webb (1987) has illustrated that the effects on incentives can be considerable. Further work on establishing the distributional and incentive effects of using the tax system to target benefits (for example, by taxing disability benefit or child benefit) will be undertaken later. For the moment it is sufficient to note that the analysis of Section IV tends to underestimate the overall poverty reduction efficiency of the tax/transfer system, given the progressivity of the income tax system.

VI INCENTIVE EFFECTS

The existence of social security payments, and the taxes needed to finance them, have an impact on the structure of economic incentives. The basic analysis presented above has not taken into account the effects of these changed incentives on behaviour. How should such effects be taken into account in evaluating the performance of the system?

One framework for taking these incentive effects into account is to regard them as additional costs of poverty reduction. At this stage it may be useful to classify such costs under two headings, each of which will require further empirical investigation. The first set of effects would be those affecting entry to or duration of unemployment. These would be related to the balance between incomes in and out of work, often summarised by replacement ratios.

How important is this cost? This depends on the actual distribution of replacement ratios, and on the strength of the behavioural response to them. Evidence on the first of these factors will soon be available from the ESRI survey. UK evidence has suggested that the hypothetical calculations often used do not represent adequately the great variation between different groups in the population. Nolan (1987) has shown that this may also be the case for Ireland, contrary to the widespread view based in O'Mahony (1983). The implications for incentives of the evidence already presented on non-take-up of Family Income Supplement should also be noted. Prior to the introduction of FIS, employees with large families had been found to face the highest replacement ratios (Buckley, 1985). FIS was intended to reduce the replacement ratio not by cutting benefits, but by raising the net income of employees with large families. But the performance of FIS in reaching its target population must be improved if the intended improvement in incentives is to be achieved.¹¹

Evidence on the responsiveness of behaviour to the incentives summarised by replacement ratios will also be derived from the ESRI Survey, but will require rather more time for analysis. The UK evidence on this topic is summarised by Atkinson and Micklewright (1985) as "mixed", but with agreement among the cross-section studies that there is no firm evidence of a quantitatively large disincentive effect", concurring with Chiplin's (1982) comment that "the general conclusion from cross-section evidence is that unemployment benefit has a significant, but quantitatively small effect on unemployment duration". More recently, increasing attention has been given

11. Blackwell (1988) has recently documented the other side of this coin: employees on FIS, may, if also affected by differential rents and other factors, face very high effective tax rates because of the progressive withdrawal of FIS. This could be described as a "tax trap": it pays to work rather than be unemployed, but after a point, increases in gross wages give no increase, or even a fall, in total net income. The low take-up of FIS limits the number of people actually facing this position.

to the incentive effects on the wives of unemployed men. Time-series studies have also produced mixed results, some of which would suggest rather larger effects (including Hughes and Walsh, 1983). Narendranathan, Nickell and Stern (1985) note the problems faced by time series analysis in disentangling the effects of benefits from a range of highly correlated regressors; this suggests that the inclusion of more recent evidence, when replacement ratios have fallen, will provide interesting results. Narendranathan *et al.*'s longitudinal (panel-based) study, found a smaller, but still significant, effect on unemployment duration than Nickell's (1979) earlier cross-section estimate. The question of the influence of unemployment benefits on unemployment duration in Ireland is best regarded as an open one, pending further research along the lines pursued in the international literature on this topic.

There is, however, another set of additional costs, which is more indirect, but may be more important: the costs arising from the financing of the social security system, both through PRSI and general taxation, including income tax. (See, for example, Honohan and Irvine, 1987.) These financing measures have a broader impact on the labour market, which tend to reduce labour supply, and increase the cost of labour to employers, leading to lower employment and output: poverty would be increased by this mechanism through *involuntary* unemployment, and income/welfare losses would also occur at higher levels of the income distribution.

Setting up a theoretical framework which encompasses all of these factors is relatively simple. The state of the world under the status quo is summarised by listing the income/welfare enjoyed by each family; the state of the world under an alternative policy, incorporating the changes in individual behaviour and labour market consequences can be summarised in a similar way. The two alternatives can then be ranked, on the basis of a social welfare function.

Present practice is very far from this theoretical benchmark. Instead, a policy change is evaluated by examining its effects on supposedly typical households, with limited evidence on the implications for incentives. Atkinson *et al.* (1983) have shown the dangers of this approach in the UK. It was demonstrated that the range of hypothetical family types most commonly used in assessing tax/benefit changes (i.e., those used in the DHSS Tables for this purpose) failed to capture the circumstances of most actual families in ways that would have significant implications from the point of view of taxes and benefits. The essential problem is that there is a very wide range of actual family situations in the population, in terms of variables relevant to the tax/benefit system. No manageable range of hypothetical calculations can take into account the combinations of possibilities representing substantial numbers in the population; nor could they answer many important questions regarding the impact of policy changes on those actually at the top or bottom of the income distribution. These difficulties point strongly towards the advisability

of using detailed information on a large representative sample of actual households as a data base for simulating the effects of policy changes.

The use of the ESRI data base will allow us to move towards the theoretical benchmark described above, in a number of steps. The first step is to simulate the cash or first-round effects of policy changes for the nationally representative sample, and document the actual effects on incentives (marginal tax rates and replacement ratios, for example). This would represent a major step forward from what is currently possible. The second step is to estimate the responses of labour supply to the policy changes. The third step is to estimate the effects of the policy changes taking these behavioural responses into account. International experience has shown that the latter two steps involve considerable difficulties; attempts to incorporate estimated responses in the analysis of tax/transfer policy changes have been particularly scarce. The achievement of each of these steps will, however, represent a major advance from the previous position, towards the theoretical benchmark procedure.

VII CONCLUSIONS

The analysis presented here has outlined a broad picture of the role played by the social welfare system in reducing poverty. The analysis of Sections III and IV showed that while the social welfare system did play a major role in providing income support to persons whose non-social welfare income fell below various poverty lines, a significant number of persons (around 1 in 10) fell below the system's own safety net standard. Further research into the extent and causes of non-take-up of benefits is needed to establish the importance of this phenomenon. Non-take-up was one factor contributing to the finding that the poverty reduction effectiveness of the Irish system was lower than that of several other countries. The poverty reduction efficiency of the Irish system was, on the other hand, relatively high.

The pattern of the poverty reduction efficiency measures highlighted the differentiated nature of the social welfare payment structure in 1987.¹² This emphasises the need to take into account the other objectives the social welfare system is being asked to achieve, such as income redistribution above the poverty line, and the income replacement function. Judgements on the relative importance of these objectives have to be made if one is to be traded off against the other. A comparison of contingency-based payments, means-testing and taxation as methods of targeting payments towards those most in

12. Recent budgets have seen special increases for those on the lowest rates of social welfare payment, tending to reduce the dispersion of payment rates somewhat.

need helped to point up the relative merits and defects of each. A more detailed evaluation of policy proposals for incremental or fundamental reforms will soon be possible, by simulating the cash and incentive effects of policy changes for the ESRI's national representative sample.

REFERENCES

- ABEL-SMITH, B., and P. TOWNSEND, 1965. *The Poor and the Poorest*, London: Bell.
- ATKINSON, A.B., 1969. *Poverty in Britain and the Reform of Social Security*, London: Cambridge University Press.
- ATKINSON, A.B., M.A. KING, and H. SUTHERLAND, 1983. "The Analysis of Personal Taxation and Social Security", *National Institute Economic Review*, No. 106, November.
- ATKINSON, A.B., 1984. *Take-Up of Social Security Benefits*, ESRC Programme on Taxation, Incentives and the Distribution of Income, Discussion Paper No. 65, May.
- ATKINSON, A.B., and J. MICKLEWRIGHT, 1985. *Unemployment Benefits and Unemployment Duration*, London: ST/ICERD, London School of Economics and Political Science.
- BECKERMAN, W., 1979a. "The Impact of Income Maintenance Payments on Poverty in Britain", *Economic Journal*, Vol. 86, June.
- BECKERMAN, W., 1979b. *Poverty and the Impact of Income Maintenance Programmes*, Geneva: ILO.
- BECKERMAN, W., and S. CLARK, 1982. *Poverty and Social Security in Britain Since 1961*, Oxford: Oxford University Press.
- BLACKWELL, J., 1988. "Family Income Support: Policy Options", in B. Reynolds and S. Healy (eds.), *Poverty and Family Income Policy*, Dublin: CMRS.
- BRISTOW, J., 1980. "Economics in *The Economic and Social Review*: A Tenth Anniversary Survey", *The Economic and Social Review*, Special Tenth Anniversary Issue, January 1980, pp. 3-10.
- BUCKLEY, M., 1985. *The Evaluation of Social Welfare Expenditure*. Paper presented at Dublin Economics Workshop Annual Conference, Kenmare.
- CALLAN, T., and B. NOLAN, 1987. "On the Design of a Model for Tax and Transfer Policy Analysis", ESRI Project on Income Distribution, Poverty and Usage of State Services, Working Paper No. 3.
- CALLAN, T., D.F. HANNAN, B. NOLAN, B.J. WHELAN, and S. CREIGHTON, 1988. *Poverty and the Social Welfare System in Ireland: A Report to the Combat Poverty Agency*, Dublin: Combat Poverty Agency.
- CHIPLIN, B., 1982. "Unemployment and the Labour Market", in J. Creedy and B. Thomas (eds.), *The Economics of Labour*, London: Butterworths.
- COMMISSION ON SOCIAL WELFARE, 1986. *Report*, Dublin: Stationery Office.
- COMMISSION ON TAXATION (FIRST REPORT), 1982. *Direct Taxation*, Pl. 617, Dublin: Stationery Office.
- DAVIES, C., and J. RITCHIE, 1988. *Tipping the Balance*, London: Department of Health and Social Security, Research Report No. 16.
- DHSS, 1988. *Households Below Average Income: A Statistical Analysis 1981-1985*, May.
- DILNOT, A.W., J.A. KAY, and C.N. MORRIS, 1984. *The Reform of Social Security*, Institute for Fiscal Studies, Oxford: Oxford University Press.
- DILNOT, A.W., G. STARK, and S. WEBB, 1987. "The Targeting of Benefits: Two Approaches", *Fiscal Studies*, Vol. 8, No. 1.

- HONOHAN, P., and I. IRVING, 1987. "The Marginal Social Cost of Taxation in Ireland", *The Economic and Social Review*, Vol. 19, No. 1, October, pp. 15-42.
- HUGHES, G., and B.M. WALSH, 1983. "Unemployment Duration, Aggregate Demand and Unemployment Insurance: A Study of Irish Live Register Survival Probabilities 1967-78", *The Economic and Social Review*, Vol. 14, No. 2, January, pp. 93-118.
- KEOGH, G., and B.J. WHELAN, 1986. *A Statistical Analysis of the Irish Electoral Register and its Use for Population Estimation and Sample Surveys*, Dublin: ESRI General Research Series, Paper No. 130.
- NARENDRANATHAN, W., S. NICKELL, and J. STERN, 1985. "Unemployment Benefits Revisited", *Economic Journal*, Vol. 95, June, pp. 307-329.
- NICKELL, S., 1979. "The Effects of Unemployment and Related Benefits on the Duration of Unemployment", *Economic Journal*, Vol. 89, March, pp. 34-49.
- NOLAN, B., 1987. "More on Actual Versus Hypothetical Replacement Ratios in Ireland", *The Economic and Social Review*, Vol. 18, No. 3, April, pp. 159-172.
- NOLAN, B., and T. CALLAN, 1988. "The Extent of Poverty in Ireland: How Much do We Know?", *Administration*, Vol. 36, No. 2, pp. 144-164.
- NOLAN, B., and T. CALLAN, 1989a. "Cross-National Poverty Comparisons Using Relative Poverty Lines: An Application and Some Lessons", ESRI Project on Income Distribution, Poverty and Usage of State Services, Working Paper No. 9.
- NOLAN, B., and T. CALLAN, 1989b. "Measuring Trends in Poverty Over Time: Some Robust Results for Ireland, 1980-1987", *The Economic and Social Review*, this issue.
- O'MAHONY, D., 1983. "A Study of Replacement Ratios Among a Sample of Unemployed Workers", *The Economic and Social Review*, Vol. 14, No. 2, January, pp. 77-91.
- WEINBERG, D., 1987. "Filling the 'Poverty Gap', 1979-84", *Journal of Human Resources*, Vol. XXII, No. 4.
- WHELAN, B.J., 1979. "RANSAM: A Random Sample Design for Ireland", *The Economic and Social Review*, Vol. 10, No. 2, pp. 169-174.