

Components of Growth of Income Maintenance Expenditure in Ireland 1951-1979

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Abstract: This paper examines the growth in the share of GDP of four income maintenance programmes (old age pensions, children's allowances, unemployment benefits and sickness cash benefits) for the period 1951-1979 in terms of the influence of three factors – demographic changes, changes in eligibility for benefits and changes in average benefit payments.

I INTRODUCTION

Public social expenditure¹ in Ireland grew from 15.9 per cent of GDP in 1951 to 19.8 per cent in 1970 and to 26.5 per cent in 1979, accounting for over half of the increase in the GDP share of total public expenditure in this period. Expenditure on income maintenance² has been one of the most rapidly expanding components of social expenditure, having more than doubled its share of GDP since 1951 to reach 9.6 per cent in 1979 (see

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1 Public social expenditure is defined as expenditure of public authorities on health, education, housing, social security and welfare.

2 This refers to the category "social security and welfare" in the national accounts. It consists mainly of current transfer payments to households although it also includes some transfers to private non-profit institutions and a small amount of consumption expenditure. (Information supplied by Central Statistics Office.)

Table 1). As may be seen in Table 1, expenditures on health and education also expanded rapidly; these are examined by O'Hagan and Kelly in this issue of the *Review*.

Yet despite this sizeable increase, there has been little detailed analysis of the factors contributing to the growth of income maintenance expenditure.³ This paper examines four major income maintenance programmes (old age pensions, children's allowances, unemployment benefits and sickness cash benefits) in order to assess the relative contributions to expenditure growth in the period 1951 to 1979 of changes in demographic structure, eligibility for benefits and average transfer payments per beneficiary.

Table 1: *Public social expenditure as a percentage of Gross Domestic Product, 1951-1979*

Year	Total social exp.	Income maintenance	Health	Education	Housing
1951	15.9	4.6	3.3	3.1	4.8
1970	19.8	7.6	4.5	5.2	2.5
1979	26.5	9.6	7.3	6.3	3.3

Sources: *National Income and Expenditure*, various issues; Kennedy (1975).

II METHODOLOGY

The analysis utilises the following identity for the GDP share of income maintenance expenditure which was developed by the OECD (1976):

$$E/GDP = (E/B) \times (I/N) \times (B/I) \times (N/GDP)$$

where E = income maintenance expenditure, GDP = Gross Domestic Product, B = number of beneficiaries, I = size of the population relevant to the programme and N = total population. The first and fourth terms of the identity are multiplied to yield one term, referred to as the "transfer ratio", which is the ratio of the average payment per beneficiary to per capita GDP. Using this approach, changes in the share of income maintenance expenditures in GDP can be attributed to the effect of changes in three components — a demographic ratio (I/N), an eligibility ratio (B/I) and a transfer ratio $\left(\frac{E/B}{GDP/N}\right)$. For instance, in the case of old age pensions it is possible to decompose changes in expenditure as a share of GDP into changes in (a) the pro-

3 Geary (1973), O'Hagan and O'Higgins (1973) and Walsh (1974) have analysed economic correlates of the growth of income maintenance expenditure.

portion of elderly people in the population, (b) the proportion of elderly people receiving pensions and (c) the average payment per pensioner relative to per capita GDP. The precise definition of the relevant variables will be discussed below in relation to each of the programmes dealt with in the paper.

Before discussing the empirical findings of the analysis, it is necessary to draw attention to the limitations of the technique outlined above. Changes in income maintenance expenditures may result from a variety of influences, some of a purely automatic nature (i.e., demographic trends) and some of a discretionary nature (i.e., extension of the coverage of programmes).⁴ In the present context it is clear that changes in the eligibility and transfer ratios could result from either automatic or discretionary factors: for instance, while changes in the coverage of schemes are likely to exert a major influence on the number of beneficiaries, other factors such as take-up rates for benefits may also be important. Similarly, average benefit payments may change due to alterations in benefit scales or because of changes in certain characteristics of the beneficiaries, such as the number of dependants. While the analytical procedure used in this paper facilitates a breakdown of the components of change in expenditures, it does not allow for a distinction between automatic and discretionary elements. As such, analysis of the determinants of expenditure change in the sense of the underlying factors affecting eligibility and transfer ratios is beyond the scope of the present study. However, it is hoped that by demonstrating the contribution to expenditure growth of the different components this paper may provide a basis for further study of a more interpretative nature.

A further qualification must be entered concerning the transfer ratio. This provides an indication of the extent to which changes in the expenditure share are due to relative movements in average benefit levels. However, as noted in the OECD study (1976), the ratio is not a particularly appropriate measure of the adequacy or generosity of payments for a variety of reasons. Most important, it does not take account of the dispersion of payments around the average benefit and it relates benefit payments to GDP per capita rather than to the more usual income concepts such as average earnings or disposable income. Table A.1 compares the transfer ratios for the four programmes as calculated in relation to per capita GDP with ratios of average benefits to average earnings. These figures show that the transfer ratio used in the present study is substantially higher in all cases than the ratio to average earnings. However, the crucial point is that, increases in the transfer ratio do in fact reflect increases of a very similar order to those in the ratio to average earnings.

4 For a more extended discussion of this point see Alber (1982) and OECD (1976).

III EMPIRICAL FINDINGS

*Old Age Pensions*⁵

As may be seen from Table 2, expenditure on old age pensions increased its share of GDP by 52.7 per cent between 1951 and 1979. The relevant population in this instance is taken to be the population aged 65 and over and it should be noted that the ratio of this group to the total population has remained very stable during the period under review. Thus, the major part of the increased expenditure is attributable to changes in the eligibility and transfer ratios. The eligibility ratio increased by 24.5 per cent, indicating a substantial rise in the proportion of elderly people receiving pensions. The transfer ratio grew by 22.1 per cent, indicating that the average pension rose by 22.1 per cent more than GDP per capita in this period.

Table 2: *Changes in expenditure on old age pensions, 1951-1979*^a

	Change in share of GDP (E/GDP) ^b	Due to:				
		Demographic changes (I/N)	Eligibility changes (B/I)	Transfer ratio changes (E/B)/(GDP/N)	of which:	
					Relative prices ^c	Real relative benefits
1951-79	1.527	1.004	1.245	1.221	0.870	1.403
1951-59	0.938	1.037	1.016	0.890		
1959-72	1.171	0.998	0.970	1.210		
1972-75	1.430	0.986	1.176	1.233		
1975-79	0.973	0.984	1.075	0.920		

Sources: *National Income and Expenditure, Report of the Department of Social Welfare, Census of Population*, various issues.

- a. Ratio of end-year to initial year.
- b. This column equals the product of the next three columns.
- c. Ratio of private consumption deflator to GDP deflator.

Table 2 also provides a breakdown of expenditure growth into different periods based on an examination of the annual changes in the GDP share. It is clear from this table that the importance of the eligibility and transfer factors has varied considerably over time. Changes in eligibility have only been influential in the period since 1972, reflecting the reduction of the pensionable age by four years between 1973 and 1977. The transfer ratio was the only factor contributing to expenditure growth in the period 1959-

⁵ This category includes contributory old age pensions, non-contributory old age pensions and retirement pensions.

72 and the most important factor in the period 1972-75: the fall in the expenditure share after 1975, however, was largely due to a deterioration in the transfer ratio.

Changes in the transfer ratio can be broken down into relative price developments and changes in real relative benefits by deflating per capita GDP by the GDP deflator, and pension payments by the national accounts implicit private consumption deflator. The relevant data in Table 2 show that movements in real relative benefits account for all of the change in the transfer ratio and that this ratio has actually improved more in real terms than in nominal terms.

Children's Allowances

In the case of this programme the relevant population would be the 0-18 age group since this corresponds to the definition of dependent children operated by the Department of Social Welfare. However, this analysis is based on the 0-19 age group since this is the nearest breakdown available from the census. The beneficiaries are the number of children for whom allowances are paid.

Looking at Table 3, it may be seen that although expenditure on children's allowances increased by almost the same magnitude as old age pensions, the factors affecting growth were very different. Change in the eligibility ratio accounted for most of the increase in the expenditure share. This ratio grew by 183.2 per cent whereas the demographic ratio grew by only 8 per cent and the transfer ratio actually fell by 51.2 per cent. As such, average benefits have not kept pace with the rise in per capita GDP and this is true also in the case of real relative benefits.

Table 3: *Changes in expenditure on children's allowances, 1951-1979^a*

	<i>Change in share of GDP (E/GDP)^b</i>	<i>Due to:</i>			<i>of which:</i>	
		<i>Demographic changes (I/N)</i>	<i>Eligibility changes (B/I)</i>	<i>Transfer ratio changes (E/B)/(GDP/N)</i>	<i>Relative prices^c</i>	<i>Real relative benefits</i>
1951-79	1.494	1.080	2.832	0.488	0.870	0.561
1951-58	2.225	1.045	1.718	1.239		
1958-72	0.619	1.039	1.545	0.386		
1972-74	1.744	0.998	1.018	1.717		
1974-79	0.622	0.996	1.049	0.595		

Sources: *National Income and Expenditure, Report of the Department of Social Welfare, Census of Population*, various issues.

a. See note to Table 2.

b. See note to Table 2.

c. See note to Table 2.

The breakdown of expenditure growth into sub-periods shows that the increase in the expenditure share was confined to the periods 1951-58 and 1972-74. During the earlier period, extension in eligibility was the main factor contributing to growth whereas during the later period improvement in the transfer ratio was much more important. The share of expenditure in GDP fell in the periods 1958-72 and 1974-79 since continued growth in the eligibility ratio was more than offset by a deterioration in the transfer ratio. It is interesting to note that the OECD (1976) found evidence of a similar pattern of interaction between the eligibility and transfer ratios in many countries for the period 1962-72.

*Unemployment Benefits*⁶

In the case of unemployment benefits the demographic ratio (I/N) has been subdivided into the ratio of the labour force to the total population (L/N) and the ratio of the unemployed to the labour force (I/L). This procedure separates changes in the unemployment ratio from changes in the participation rate. A further alteration has been made in the method used to calculate the unemployment rate. The share of unemployment expenditure in GDP tends to vary more than that of other income maintenance expenditures from year to year due to the effect of cyclical elements in the unemployment data, and in order to reduce this effect the unemployment rate is calculated on a three year average level of unemployment. However, this adjustment has not been carried out in the case of the eligibility and transfer ratios since these are unlikely to be affected by cyclical variations.⁷ As such, the expenditure share calculated on the basis of the component ratios is not the recorded figure but a theoretical one which would have obtained had the unemployment rate in any given year been at the average level for the period. A final point to note is that the eligibility ratio is calculated by taking the annual average numbers claiming benefits (unemployment benefit, unemployment assistance and smallholder's unemployment assistance) as a proportion of the numbers out of work in mid-April of each year (taken from the census and from official inter-censal estimates).

As may be seen from Table 4, the share of expenditure on unemployment benefits in GDP increased by a substantial 217.7 per cent in the period 1951-79.⁸ Changes in the eligibility, unemployment and transfer factors

6 This category includes expenditure on unemployment benefit, unemployment assistance, redundancy payments and the portion of pay-related benefit attributed to unemployment.

7 This procedure follows the practice adopted in the OECD (1976) study.

8 This refers to change in the theoretical expenditure ratio. Change in the actual ratio during this period was 202.7 per cent.

contributed in almost equal amounts to this growth: the eligibility ratio increased by 57.8 per cent, the unemployment rate by 54.6 per cent and the transfer ratio by 53.4 per cent.

However, a breakdown of expenditure growth into sub-periods shows that the influence of these three components has varied considerably over time. During the period of expenditure growth from 1951-58, the main factor at work was an increase in the unemployment rate. By contrast, the second growth phase from 1965-76 was characterised by rapid growth in the eligibility and transfer ratios as well as in the unemployment rate. As in the case of old age pensions and children's allowances, the expenditure share of unemployment benefits declined in the second half of the 1970s, as both the transfer ratio and the unemployment rate fell.

Table 4: *Changes in expenditure on unemployment benefits, 1951-1979^a*

	Change in share of GDP (E/GDP) ^b	Due to:					of which:	
		Demographic changes		Eligibility changes (B/I)	Transfer ratio changes (E/B)/(GDP/N)	Relative prices ^d	Real relative benefits	
		Participation rate (L/N)	Unemployment rate (I/L) ^c					
1951-79	3.177	0.849	1.546	1.578	1.534	0.870	1.763	
1951-58	1.523	0.938	1.560	0.897	1.160			
1958-65	0.839	0.974	0.722	1.057	1.129			
1965-76	3.295	0.919	1.568	1.702	1.345			
1976-79	0.755	1.011	0.875	0.978	0.871			

Sources: *National Income and Expenditure, Reports of the Department of Social Welfare, Census of Population, The Trend of Employment and Unemployment*, various years; *Economic Review and Outlook*, Summer 1981.

a. See note to Table 2.

b. This column equals the product of the next four columns.

c. The unemployment rate has been calculated using a three year average for the unemployment data.

d. Ratio of private consumption deflator to GDP deflator.

The rise in the eligibility ratio in the period 1965-76 merits closer examination. The growth of this ratio signifies a substantial increase in the numbers claiming benefits relative to the estimated numbers out of work. It should be noted that the eligibility ratio is only an approximation since the unemployment data refer to one point in each year whereas the beneficiary data are annual averages. Nevertheless, this should not affect long-term growth patterns to any great extent. The ratio has exceeded unity since 1967, although this in itself is not surprising since the official estimates of the numbers out of work apply a more restrictive definition of unemployment than

does the Live Register, from which beneficiary data are taken. Part of the explanation for the rise in the numbers claiming benefits must undoubtedly lie in changes in the scope of the Live Register.⁹ However, examination of the annual changes in the eligibility ratio indicates that deliberate extensions in eligibility cannot account for all of the rise in the ratio. In this context it is worth noting that Walsh (1978) found evidence that improvements in the unemployment compensation schemes may have induced unemployed persons to register for benefits rather than emigrating in search of work. While further investigation of this area is clearly beyond the scope of the present study, the importance of the eligibility factor for expenditure growth indicates the desirability of further research on the subject.

*Sickness Cash Benefits*¹⁰

In this instance, the labour force is taken to be the relevant population for the purposes of calculating the demographic ratio. The eligibility ratio (B/I) has been split in two: the ratio of the insured population to the labour force (S/I) and the ratio of beneficiaries to the insured population (B/S). Since only insured persons are eligible to claim benefits this procedure separates the effect of changes in the scope of the social insurance system from changes in the proportion of insured persons claiming sickness benefits. A problem is posed by the fact that the same person may claim benefits for a number of separate periods during any one year. For the present analysis the number of beneficiaries is taken to be the number receiving benefits on a given day each year.

Sickness cash benefits have increased their share of GDP more than any of the other programmes examined here, growing by 343.4 per cent in the period 1951-79 (see Table 5). Transfer ratio changes and eligibility changes were equally important in this expenditure growth: the transfer ratio increased by 128.7 per cent and the eligibility ratio by 128.4 per cent. As may be seen from Table 5, growth in the beneficiary ratio (i.e., the proportion of the insured population receiving benefits) contributed much more to the overall increase in eligibility than did extension of the social insurance system. Again, it is not possible here to investigate the reasons for this increase in the numbers claiming benefits, although improvements in the sickness compensation schemes, changes in the composition of the labour force and the system of medical control over claims for benefit may have been important factors. (See, for instance, Hughes 1982.) As in the case of the other programmes

9 For instance, the introduction in 1966 of a new method for assessing the means of smallholders increased the numbers eligible to apply for unemployment assistance.

10 This category includes expenditure on disability benefit, invalidity pensions and the portion of pay-related benefit attributed to disability benefit.

examined in this paper, the rise in the transfer ratio for sickness benefits is due to improvement in real relative benefits rather than to relative price movements.

Table 5: *Changes in expenditure on sickness cash benefits, 1951-1979^a*

	Change in share of GDP (E/GDP) ^b	Due to:					of which:	
		Demographic changes (I/N)	Eligibility changes		Transfer ratio changes (E/B)/(GDP/N)	Relative prices ^c	Real relative benefits	
			Insurance ratio (S/I)	Beneficiary ratio (B/S)				
1951-79	4.434	0.849	1.254	1.821	2.287	0.870	2.629	

Sources: *National Income and Expenditure, Reports of the Department of Social Welfare, Census of Population*, various issues; Hughes (1982).

a. See note to Table 2.

b. This column equals the product of the next four columns.

c. See note to Table 2.

Expenditure growth in this case has not been broken down into sub-periods because, unlike the other income maintenance expenditures, the GDP share has increased at a relatively constant rate over the whole period.

IV CONCLUSIONS

In this paper the relative contributions of demographic changes, eligibility changes and changes in average relative benefits to the growth in the GDP share of four major income maintenance expenditures in the period 1951-79 have been distinguished. It is clear that there has been considerable variation between the different programmes with regard to both expenditure growth rates and the factors giving rise to growth.

The expenditure shares of sickness and unemployment benefits have increased much more rapidly than those of old age pensions and children's allowances: the share of sickness benefits in GDP grew by 343.4 per cent and that of unemployment benefits by 217.7 per cent as compared with increases of 52.7 per cent and 49.4 per cent, respectively, in the GDP shares of old age pensions and children's allowances. For sickness benefits, improvement in the transfer ratio was the most important factor contributing to growth, followed by growth in the proportion of the insured population claiming benefits. Extension of the sickness insurance system was found to be less important while the demographic ratio — in this case the participation rate — actu-

ally declined. In the case of unemployment benefits it was found that the unemployment rate, eligibility changes and changes in the transfer ratio contributed in virtually equal measures to expenditure growth. Change in eligibility was the most important factor giving rise to growth in the GDP shares of old age pensions and children's allowances. However, while improvement in the transfer ratio was also important in the case of old age pensions, this ratio declined substantially in the case of child allowances. Demographic changes exerted little influence on either of these programmes. In the case of the transfer ratio it was shown that changes were due to movements in real average benefits relative to real per capita GDP rather than to relative price changes.

It was pointed out that while changes in the demographic ratio have relatively clear causes, it is more difficult to interpret changes in the eligibility and transfer ratios. While this paper has not attempted such an interpretation it does provide an indication of areas in which further research is needed. For instance, it would be of interest to investigate the causes of the growth in the eligibility ratios for unemployment and sickness benefits. It would also be important to find out to what extent growth in the transfer ratio is due to real improvements in standard benefit rates and to what extent it is caused by changes in various characteristics of the beneficiary groups.

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APPENDIX

Table A.1: Ratios of income maintenance benefits to per capita GDP and to average earnings, 1951 and 1979

	Ratio of average benefit to:				Change 1951-1979: ^c	
	Per capita GDP		Average earnings ^a		Ratio to GDP	Ratio to average earnings
	1951	1979	1951	1979		
Old Age Pensions ^b	0.358	0.437	0.145	0.185	1.221	1.276
Children's Allowance	0.048	0.024	0.020	0.010	0.488	0.500
Unemployment benefits ^c	0.325	0.499	0.131	0.211	1.534	1.611
Sickness Cash Benefits ^d	0.258	0.591	0.105	0.251	2.287	2.390

Sources: *National Income and Expenditure, Reports of the Department of Social Welfare, Census of Population, Statistical Abstract of Ireland*, various issues.

- a. Average male earnings in transportable goods industries.
- b. Contributory old age pension, non-contributory old age pension, retirement pension.
- c. Unemployment benefit, unemployment assistance, redundancy payments and portion of pay-related benefit attributed to unemployment.
- d. Disability benefit, invalidity pension and portion of pay-related benefit attributed to disability benefit.
- e. Ratio of end year to initial year.