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The Distributional Impact of Social Transfers in the European Union: Evidence from the ECHP

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Abstract

Social transfers vary enormously across the European Union, as has been demonstrated in earlier research. This paper analyses the comparative effects of these transfers on inequality and poverty, using consistent household data. The analysis shows that the distributional impact of these transfers is greater in countries that spend a higher proportion of their GDP on them, but that there are other important determinants, including the extent of means testing, the distribution of funds between different types of transfer and the degree of targeting for each transfer. It also shows that effective targeting can be achieved without high levels of means testing.

JEL classification: I38, H55.

I. INTRODUCTION

The purpose of this paper is to examine the distributional effects of social transfers in Member States of the European Union, in order to identify differences between countries in the extent to which transfers reduce poverty and inequality, and to relate those differences to characteristics of the social programmes, such as their share of GDP and the degree of targeting that they

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employ. This analysis will allow the debates on welfare reform that are taking place in many European countries to be informed by a cross-national perspective.

Comparisons are often made between the social transfer systems in different countries (see Eardley et al. (1996), for example), but these are usually conducted in broad terms, such as their method of administration, share of GDP or extent of means testing. Studies that directly compare the effects of the transfers on the overall distribution of income are much harder to find. One example (Atkinson, Rainwater and Smeeding, 1996, ch. 7) shows why this might be so: the national data-sets that have been available typically do not provide data that are fully comparable across countries. This difficulty has recently been substantially reduced for EU countries by the establishment of the European Community Household Panel (ECHP) survey, which uses a common questionnaire to collect data from households in almost all Member States on a consistent basis. It is the availability of this new data source that makes the present paper possible.[1]

Of course, as Atkinson (1995) argues in his discussion of means testing, poverty reduction and income redistribution are not the only purposes of social transfer systems. Other purposes include the provision of insurance that the private sector is unwilling to provide (such as unemployment insurance) and redistribution of family income through time (such as child benefits and retirement pensions), motivated by a combination of market imperfection and individuals' short-sighted behaviour. Of course, such insurance and forced saving reduce poverty and inequality at any point in time, even if they do not significantly redistribute lifetime incomes. However, a large part of the expenditure is intended for households that are not poor, and so the analysis presented below is not a full comparative evaluation of the social transfer systems of EU countries. Nonetheless, poverty reduction is a major aim of such transfer systems, and their impact on the overall income distribution is an important aspect of their effects. These are, therefore, aspects of the social transfer system that require a full analysis in order to provide a sound basis for policy.

In order to provide a basis for the main analysis, Section II provides basic information on the social protection expenditure patterns of all 15 EU countries. Section III briefly describes the ECHP data and the methodology for estimating the distributional effects of cash transfer payments. Section IV presents the effects of social transfers on the overall distribution of income, while Section V considers their effect on poverty. Section VI concludes by summarising the results and discussing their implications.

[1]The data used here are from wave 2 of the survey and were provided to us by Eurostat.

II. SOCIAL EXPENDITURE PATTERNS IN THE EU

The purpose of this section is to outline the broad characteristics of the social transfer expenditures, referred to by Eurostat as 'expenditures on social protection', in terms of factors that can be expected to affect their distributional impact: the share of transfer expenditure in GDP, the proportion of it that is means-tested and its distribution between different types of benefit.

Table 1 reports the share of expenditure in GDP, the percentage that is means-tested and the split between transfers in cash and in kind.[2] This is a picture of great diversity: the share of social protection expenditure in GDP varies from 16.9 per cent for Portugal to 37.6 per cent for Sweden; the percentage that is means-tested ranges from 0.9 in Greece to 39.9 in Ireland; the ratio of cash to kind is as low as 1.6 for Sweden but as high as 10.6 for Greece. The main analysis in this paper relates to cash transfers, and so it is interesting to note that the degree of variability for cash transfers is not as large as for total expenditure. The same countries show generally high or generally low cash expenditure as did for total expenditure, but there are several changes in relative position.

TABLE 1

Expenditures on Social Protection in EU Member States, 1991

	Total expenditure (% of GDP)	*Percentage means-tested*	*Cash (% of GDP)*	*In kind (% of GDP)*	*Ratio of cash to kind*
Austria	27.3	6.0	—	—	—
Belgium	27.6	2.9	19.9	6.3	3.1
Denmark	30.7	7.0	19.1	10.8	1.8
Finland	31.1	2.0	19.4	10.8	1.8
France	28.5	9.7	19.5	7.5	2.6
Germany	27.0	11.8	16.6	7.8	2.1
Greece	20.2	0.9	17.3	1.6	10.6
Ireland	20.9	39.9	13.0	6.9	1.9
Italy	24.6	8.8	16.8	6.5	2.6
Luxembourg	27.6	—	19.5	7.0	2.8
Netherlands	32.5	11.8	24.6	6.4	3.8
Portugal	16.9	4.6	10.5	5.5	1.9
Spain	21.7	8.1	15.5	5.3	2.9
Sweden	37.6	6.7	22.7	13.9	1.6
UK	24.7	30.9	15.7	7.9	2.0

Notes: Cash and kind do not sum to total because total includes administrative costs and 'other current expenditure'. '—' indicates that data are not available.
Sources: Eurostat (1994); Eardley et al. (1996); authors' calculations.

[2]The data refer to 1991, the latest year for which data are available on a consistent basis for so many EU Member States.

If the degree to which the expenditures are targeted on the poor were the same in each country, we would expect Sweden and the Netherlands to be more effective at countering poverty than Portugal, Greece, Ireland and Spain, with the other countries somewhere in between. However, the data on means testing in Table 1 suggest that the expenditures are not all equally targeted. Greece, Finland, Belgium and Portugal spend less than 5 per cent of their social transfers on means-tested benefits, while Ireland and the UK spend more than 30 per cent. These figures should be interpreted with care, as means testing is not the same as targeting. For example, spending on single mothers could be well targeted if they are a poor group, even if the money is not explicitly means-tested. However, the large differences in the use of means testing warn that it is not sufficient to look only at the share of social transfer expenditure in GDP to judge its distributional effect. One aspect of social transfer expenditure that affects its targeting is its distribution by type of benefit, and this is reported in Table 2. This shows that most countries spend the largest share of their social transfer budgets on the old, in the form of old-age and survivors' benefits.[3] The next highest share is generally sickness, invalidity and injury benefits.[4] In contrast, the relative importance of the other benefits varies considerably between countries: Ireland, Sweden, Austria, Finland, Denmark and the UK spend quite heavily on the family, and Spain, Ireland, Denmark and Belgium spend substantial amounts on the unemployed. Only the Nordic countries and Ireland devote much expenditure to maternity, while the UK, Ireland, France and Denmark are the only countries with significant housing expenditure. Placing expenditures are relatively high in Denmark, Finland, Portugal, Ireland and Germany but, as they are normally provided in kind rather than cash, they would not influence the measured distribution of income.

In considering the distributional implications of the figures presented in Table 2, it is useful to distinguish between three basic ways in which a benefit can be related to income: (i) it can be earnings-related, so that recipients in higher income deciles generally receive higher benefits; (ii) it can be flat-rate, so that recipients in all income deciles receive the same amounts; or (iii) it can be means-tested, so that recipients in lower income deciles receive larger amounts. However, the distributional impact will also be affected by the proportion of people in each decile who are to be eligible for the benefit. For example, a flat-rate payment for children could result in larger payments to lower deciles if families with several children are more likely to be poor than the rest of the population.

Economic theory would suggest that, given the choice, people with higher earnings will want to make larger insurance provisions for these earnings and

[3]Countries differ in how they categorise benefits between old-age and survivors'.
[4]Here, also, countries differ in how they categorise these benefits.

TABLE 2

Percentage Allocation of Social Protection Benefits by Type (in Cash + in Kind), 1991

	Sickness	*Invalidity*	*Injury*	*Old-age*	*Survivors'*	*Maternity*	*Family*	*Placing*[a]	*Unemployed*	*Housing*	*Miscellaneous*
Austria[b]	25.5	10.1	0.0	34.1	10.3	0.0	12.9	0.0	5.3	0.4	1.4
Belgium	23.7	9.0	2.1	33.1	10.9	0.9	7.6	1.5	9.7	0.0	1.5
Denmark	19.7	8.6	0.8	35.6	0.1	1.7	10.1	4.8	11.6	2.3	4.6
Finland	24.8	13.8	1.8	30.5	3.9	2.5	10.7	3.5	5.6	0.9	2.0
France	26.4	6.0	2.1	36.6	7.5	1.5	8.1	1.1	6.2	2.9	1.5
Germany	28.7	9.0	3.1	29.4	11.6	0.9	8.1	2.2	3.6	0.7	2.7
Greece	9.4	10.2	0.1	59.4	10.3	0.7	1.1	0.0	3.0	0.7	5.1
Ireland	28.7	6.4	0.5	21.6	6.6	2.2	15.2	2.3	11.3	3.3	1.9
Italy	24.5	6.6	2.3	49.8	10.7	0.5	3.7	0.1	1.7	0.0	0.0
Luxembourg	24.0	11.7	3.1	32.5	16.2	1.5	9.6	0.2	0.7	0.2	0.3
Netherlands	21.5	23.0	0.0	31.6	5.4	0.4	8.1	0.0	8.3	1.1	0.6
Portugal	27.2	12.2	2.9	32.1	7.0	0.9	5.0	2.5	2.3	0.0	7.8
Spain	26.0	8.6	2.3	31.2	9.8	0.9	0.7	0.8	17.5	0.6	1.3
Sweden	32.8	0.0	2.3	40.8	0.0	3.4	13.1	0.0	6.9	0.0	0.7
UK	21.1	12.3	0.4	40.0	1.4	1.0	10.0	1.5	5.2	5.4	1.6

[a]'Placing' means finding work, including vocational guidance and mobility.
[b]The data for Austria are for 1994, and the definitions of the types of benefit may be different.
Sources: Eurostat (1994 and 1997); authors' calculations.

save more for retirement. If governments respond to these wishes in the design of their social insurance schemes, we would expect the benefits to the old, the sick and disabled, and the unemployed to be earnings-related, and this is the case in many EU countries. On this basis, Table 2 suggests that a substantial majority of transfer expenditures will be earnings-related. This limits their redistributive impact but does not eliminate it, as people in these groups tend (perhaps temporarily) to have lower incomes than the rest of the population. However, the premiss is not entirely true. The UK, for example, has made the main benefits in these categories flat-rate and provided means-tested supplements to those at particular risk of poverty. This is an extreme example, but some other EU countries have flat-rate benefits for some of these categories, and Eardley et al. (1996) report a large number of means-tested supplements to the main benefits. It is particularly common for benefits to the unemployed to become means-tested after a certain period. Thus, these categories of benefit are likely to have a redistributive effect, which will differ between countries because of differences in the income-relatedness of the benefit payments and (possibly) the income positions of the recipients.

The benefits that are more obviously redistributive are family benefits and housing benefits. Housing benefits are typically means-tested and family benefits are usually flat-rate, but many countries have a means-tested supplement.[5] In addition, families with several children are typically low in the (equivalised) income distribution. Table 2 shows that these more redistributive benefits generally constitute a rather small part of total expenditure on social transfers but that they play a larger part in Ireland, the UK, Austria, Sweden, Denmark and Finland.

Overall, this discussion of the data in Tables 1 and 2 shows that there are a number of factors that affect the distributional impact of social transfers and that these differ substantially between EU countries. However, data in this form are not sufficient to draw clear conclusions as to the relative redistributive impact of these transfers in the different countries. It is therefore necessary to look at household-level data, and this is where the ECHP becomes important.

III. DATA AND METHODOLOGY

The ECHP is the first attempt to monitor the living standards of the citizens of the EU in a consistent way. Information for the second wave of the ECHP, which is used in this paper, was collected in 1995. Members of the sampled households were interviewed and detailed information was collected on incomes received in

[5]Eardley et al. (1996) provide a useful list of means-tested benefits in OECD countries.

1994 and a range of socioeconomic characteristics. It is this data-set, which covers 13 Member States,[6] that is used for the purposes of the paper.

Our unit of analysis is the population member and we define the income of each member as the equivalent net disposable household income per capita for the household to which they belong. The equivalence scales we use are the 'modified OECD scales', which assign weights of 1, 0.5 and 0.3 to the household head, each of the remaining adults and each child in the household respectively. They have been used in a number of empirical poverty studies (Hagenaars, de Vos and Zaidi, 1994), and, in comparison with other sets of equivalence scales used in empirical distributional studies, the economies of scale they imply lie somewhere in the middle of the range (Buhmann et al., 1988). We conducted sensitivity analysis which shows that most of the results reported below are robust with respect to the choice of equivalence scales.

The effects of the social transfers are estimated by comparing the distribution of incomes including transfers with two hypothetical distributions: (i) where social transfers are removed and (ii) where social transfers are reduced by 10 per cent. In both cases, it is assumed that no other income changes occur. Distribution (i) is reported only for expositional purposes since, if there were no social transfers, many members of the population would have been forced to make different private arrangements to ensure their survival. Distribution (ii) represents the effects of marginal changes to social transfers and, as such, is not as clearly hypothetical as distribution (i). However, it could still be objected that people would alter other income sources (such as income from employment) if this change occurs. Nonetheless, in the absence of reliable estimates of labour supply responses in all of the countries considered, it represents a reasonable 'first-order' approximation to the distributional effect of a marginal reduction in the transfers. These comparisons are made to examine the distributional effects of all the social transfers lumped together as well as the impact of particular types of transfers.

IV. EFFECTS ON INCOME INEQUALITY

The first question to answer is 'Are social transfers directed primarily to the top, the middle or the bottom of the income distribution?'. An answer to this question is provided in Table 3, with a graphical representation in Figures 1 and 2. For each country, the figures in the first line are the values of the mean social transfers received by the members of each decile, while the figures in the second line are the proportions of the social transfers in the total income of each decile.

[6]Finland and Sweden will join the ECHP in future waves, while the German sample consists of 90 per cent of the interviewed households, randomly selected.

TABLE 3

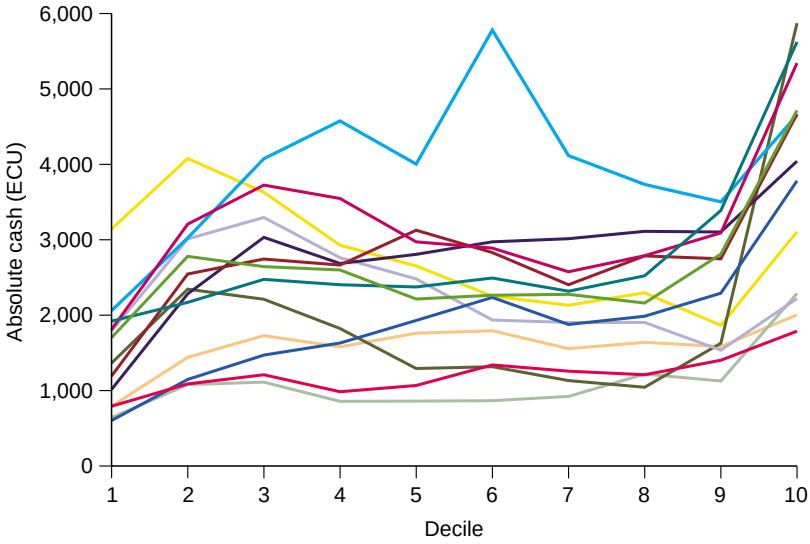
Social Transfers in Cash per Decile in Absolute (1st line) and Relative (2nd line) Terms in 13 EU Member States, 1994

	Decile 1	*Decile 2*	*Decile 3*	*Decile 4*	*Decile 5*	*Decile 6*	*Decile 7*	*Decile 8*	*Decile 9*	*Decile 10*
Austria	1,020	2,283	3,013	2,686	2,783	2,977	3,022	3,133	3,101	4,027
	40.6	*50.1*	*53.5*	*41.4*	*37.5*	*35.7*	*31.5*	*28.6*	*22.8*	*18.3*
Belgium	1,808	3,219	3,706	3,545	2,977	2,899	2,578	2,786	3,084	5,350
	67.9	*70.0*	*63.0*	*52.0*	*38.6*	*33.9*	*26.6*	*25.1*	*23.6*	*25.9*
Denmark	3,151	4,092	3,650	2,946	2,656	2,257	2,150	2,300	1,898	3,108
	67.5	*63.3*	*51.2*	*38.5*	*32.0*	*26.0*	*21.9*	*21.3*	*15.1*	*15.6*
France	1,902	2,169	2,480	2,415	2,372	2,502	2,338	2,523	3,385	5,612
	63.0	*48.3*	*45.3*	*38.3*	*32.4*	*30.6*	*25.0*	*23.1*	*25.4*	*26.1*
Germany	1,189	2,569	2,748	2,659	3,119	2,822	2,403	2,782	2,755	4,659
	47.4	*53.3*	*45.6*	*38.0*	*39.1*	*31.6*	*24.1*	*23.9*	*18.8*	*20.7*
Greece	804	1,094	1,209	977	1,073	1,335	1,261	1,210	1,396	1,789
	58.2	*45.7*	*39.8*	*27.0*	*25.5*	*27.4*	*22.3*	*18.2*	*16.9*	*12.8*
Ireland	1,358	2,345	2,232	1,828	1,292	1,312	1,125	1,049	1,614	5,882
	71.1	*77.5*	*61.5*	*45.3*	*26.4*	*22.3*	*16.0*	*12.2*	*14.6*	*29.8*
Italy	594	1,184	1,500	1,645	1,925	2,237	1,880	1,983	2,288	3,790
	38.3	*38.6*	*39.2*	*36.9*	*36.8*	*36.1*	*26.8*	*24.2*	*23.1*	*24.1*
Luxembourg	2,047	3,011	4,072	4,582	4,012	5,771	4,143	3,727	3,508	4,632
	48.2	*42.7*	*46.5*	*43.9*	*35.5*	*42.7*	*27.9*	*20.8*	*16.1*	*12.1*
Netherlands	1,679	2,794	2,634	2,596	2,215	2,265	2,281	2,179	2,783	4,704
	56.4	*57.5*	*48.6*	*42.8*	*33.5*	*29.9*	*25.8*	*20.4*	*21.9*	*23.1*
Portugal	636	1,060	1,121	869	863	869	924	1,214	1,137	2,262
	59.6	*53.5*	*44.4*	*28.4*	*23.8*	*20.6*	*18.9*	*20.3*	*15.1*	*16.4*
Spain	792	1,439	1,740	1,603	1,765	1,797	1,589	1,644	1,593	2,006
	52.3	*54.9*	*51.2*	*41.6*	*39.3*	*35.2*	*26.9*	*23.2*	*18.3*	*14.3*
UK	1,752	3,000	3,290	2,776	2,494	1,953	1,906	1,904	1,548	2,201
	69.8	*77.1*	*65.0*	*49.3*	*36.9*	*24.9*	*20.7*	*17.5*	*11.4*	*9.5*

Notes: The first line of each pair gives the mean value of cash transfers per capita in ecu per year (in purchasing power parity — PPP — terms). The second line (in italics) gives the cash transfers as a percentage of total decile income.

FIGURE 1

Per Capita Cash Social Transfers



Key: See Figure 2.

FIGURE 2

Income Share of Cash Social Transfers per Decile

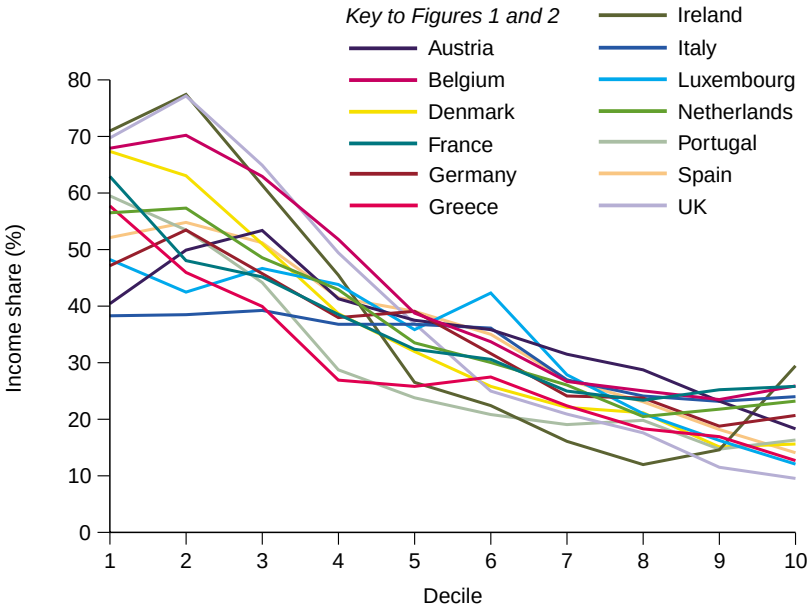


TABLE 4

Distributional Impact of Social Transfers in Cash in 13 EU Member States, 1994

	Atkinson index of inequality (e = 0.5)			*Gini index of inequality*		
	A	B	C	A	B	C
Austria	0.072	68.5	3.6	0.290	37.2	2.1
Belgium	0.070	75.8	5.0	0.287	41.5	2.7
Denmark	0.047	78.7	6.9	0.226	46.0	4.0
France	0.071	68.9	3.3	0.292	36.7	1.8
Germany	0.074	70.8	3.4	0.293	36.9	2.0
Greece	0.098	60.3	3.1	0.341	26.6	1.5
Ireland	0.097	67.3	3.8	0.347	31.8	2.0
Italy	0.084	66.5	1.6	0.312	31.3	1.0
Luxembourg	0.082	66.5	4.1	0.307	34.9	2.3
Netherlands	0.063	75.5	4.2	0.269	40.8	2.3
Portugal	0.114	53.6	2.6	0.371	22.7	1.3
Spain	0.087	67.5	4.2	0.325	34.2	2.2
UK	0.091	69.9	6.1	0.332	35.5	3.2

A: Distribution of disposable income including cash transfers.
B: Proportional decline in inequality due to cash transfers (%).
C: Increase in inequality due to a uniform 10 per cent cut in cash transfers (%).

The picture that emerges from these estimates regarding the absolute value of social transfers per decile in the EU Member States is quite diverse. In most of the countries, the members of the top decile enjoy the highest mean social transfers per capita and these transfers take their lowest values in the bottom decile. In Austria, Greece and Italy, social transfers tend to rise as equivalent income rises, whereas, leaving aside the top decile, the opposite is observed in Denmark, Ireland and the UK. If the two extreme deciles are ignored, no clear association between social transfers and disposable income is observed in the rest of the countries. In contrast, all countries show a clear negative association between disposable income and the share of income due to cash social transfers. The decline in the share of social transfers is steepest in the UK and least pronounced in Italy.

The evidence of Table 3 implies that, since social transfers account for a larger share of the incomes of the poor than of the rich, it is likely that they contribute to a decline in total inequality. The validity of this hypothesis is confirmed in Tables 4 and 5. The first column of Table 4 reports estimates of the Atkinson index (when the value of the inequality-aversion parameter is set at $e = 0.5$) for the distribution of equivalent disposable income per capita. The second column reports the proportional decline between the level of inequality that would have been recorded if there were no social transfers and the current level of inequality. The third column reports the impact that a uniform 10 per

cent cut in social transfers would have on the index. The last three columns of the table repeat the exercise for the Gini index.[7]

The inequality indices highlight similar patterns. Although there exist a few differences in their rankings for columns A, both indices take their lowest values in Denmark and the Netherlands and their highest in the Mediterranean countries, Ireland and the UK. Intermediate levels of inequality are recorded in Austria, Belgium, France, Germany and Luxembourg. Columns B show that both indices suggest that the impact of cash social transfers is most important in Denmark, Belgium and the Netherlands and least so in Portugal and Greece. The estimates reported in columns C of the table suggest that, at the margin, social transfers are most effective in reducing inequality in Denmark and the UK and least so in Portugal and, particularly, Italy.[8]

Comparing these results with Table 1, it is clear that, as one would expect, the countries with transfer systems that are most effective in reducing inequality are those that spend a high proportion of GDP on transfers. However, there is not a perfect correlation: Italy spends more than the UK on cash transfers but is less effective at reducing inequality. It is therefore necessary to look in more detail to understand fully the results in Table 4, which may be driven by the extent to which transfers are targeted towards the poorest segments of the population, in addition to the level of expenditure.

In order to disentangle the corresponding effects, we employ the technique of inequality decomposition by factor component. Following Pyatt, Chen and Fei (1980), if there are K income components and the population is ranked in ascending order according to equivalent income, the Gini index, G, can be written as

$$(1) \qquad G = \sum_{k=1}^{K} \frac{m_k}{m} R_k G_k \ ,$$

where m and m_k denote respectively the mean equivalent income and the mean equivalent income of type k in the population ($k = 1,\ldots,K$), G_k denotes the Gini coefficient for the distribution of income component k and R_k denotes the relative correlation coefficient of component k, which is defined as the ratio of the covariance between this component, y_k, and the rank of total income, r, to the covariance between the component, y_k, and its own rank, r_k; that is,

[7]Details of the Atkinson and Gini indices and other measures of inequality are described in Cowell (2000).

[8]The same exercise was also performed for other values of the inequality-aversion parameter of the Atkinson index as well as for members of the extended Gini family of indices. In most cases, the more sensitive the index to changes at the bottom end of the distribution, the larger the aggregate as well as the marginal impact of social transfers on inequality.

(2) $$R_k = \frac{\text{cov}(y_k, r)}{\text{cov}(y_k, r_k)}.$$

Then, dividing both sides of equation (1) by G, we derive

(3) $$\sum_{k=1}^{K} w_k g_k = 1,$$

where $w_k = m_k/m$ is the share of component k in total income and $g_k = R_k G_k/G$ is the relative concentration coefficient of component k in aggregate inequality.[9] Therefore $w_k g_k$ is the proportional contribution of component k to aggregate inequality. *Ceteris paribus*, an equiproportionate increase in incomes of type k will cause an increase or decline in aggregate inequality if g_k is greater or less than one. Further, using equation (1), we can calculate the elasticity of G with respect to a proportional change in component k:[10]

(4) $$e_k = \frac{dG}{dm_k}\frac{m_k}{G} = w_k g_k - w_k .$$

Estimates of w_k, g_k and e_k are reported in Table 5 for all cash social transfers taken together and for each individual component: pensions, sickness and invalidity benefits, family benefits, unemployment benefits and other benefits. The estimates of the second column show that, in all countries, social transfers mitigate aggregate inequality, since all g_ks are less than one (in all but one case less than 0.5). Nevertheless, a number of cross-country differences are also observed. The most egalitarian distributions of social transfers are recorded in Denmark and the UK, where the relative concentration coefficients, g_k, are negative. At the other extreme, we find Italy, where g_k takes its highest value, 0.716. The differences in w_k and g_k lead naturally to differences in the elasticity of inequality with respect to social transfers, e_k: highest (in absolute terms) in Denmark (–0.361) and the UK (–0.301) and lowest in Italy (–0.075) and Portugal (–0.117). This is consistent with the ranking in Table 4.[11]

The UK's egalitarian distribution of transfers is consistent with its high level of means testing, shown in Table 1, but Denmark's level of means testing is even

[9]Note that a negative R_k means that the respective component is negatively correlated with the rank of total income and, therefore, the resulting negative g_k implies that this component contributes directly to aggregate equality rather than inequality.

[10]Naturally, the sum of these elasticities for all income components is always equal to zero, since an equiproportionate increase of all income components will leave aggregate inequality unaffected.

[11]At first sight, the estimates of e_k in Table 5 may appear to contradict the implied elasticities of the last column of Table 4. However, the former are point elasticities whereas the latter are arc elasticities.

TABLE 5

Contribution of Cash Social Transfers to Total Income and Aggregate Inequality in 13 EU Member States, 1994

	All social transfers			*Pensions*			*Sickness and invalidity benefits*			*Family benefits*			*Unemployment benefits*			*Other benefits*		
	w_k	g_k	e_k	w_k	g_k	e_k	w_k	g_k	e_k	w_k	g_k	e_k	w_k	g_k	e_k	w_k	g_k	e_k
Austria	0.293	0.388	–0.179	0.195	0.627	–0.073	0.013	0.444	–0.007	0.062	–0.229	–0.076	0.014	–0.156	–0.017	0.008	0.255	–0.006
Belgium	0.327	0.255	–0.244	0.189	0.572	–0.081	0.030	0.188	–0.025	0.066	–0.024	–0.068	0.038	–0.658	–0.062	0.004	–1.030	–0.008
Denmark	0.272	–0.329	–0.361	0.109	–0.194	–0.130	0.028	–0.757	–0.050	0.044	0.018	–0.043	0.053	–0.434	–0.076	0.037	–0.650	–0.062
France	0.282	0.458	–0.153	0.184	1.012	0.002	0.017	0.067	–0.015	0.040	–0.523	–0.061	0.021	–0.273	–0.027	0.020	–1.561	–0.052
Germany[a]	0.262	0.362	–0.167	0.190	0.611	–0.074	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0.024	–0.556	–0.038	0.048	–0.162	–0.055
Greece	0.199	0.338	–0.132	0.183	0.396	–0.111	0.006	–0.638	–0.010	0.005	–0.544	–0.008	0.002	0.090	–0.002	0.003	0.366	–0.002
Ireland	0.268	0.307	–0.186	0.149	1.298	0.044	0.019	–0.569	–0.030	0.032	–0.713	–0.055	0.059	–1.211	–0.130	0.010	–0.575	–0.016
Italy	0.265	0.716	–0.075	0.234	0.778	–0.052	0.018	0.140	–0.015	0.004	0.434	–0.002	0.007	0.048	–0.006	0.003	1.220	0.001
Luxembourg	0.252	0.193	–0.203	0.167	0.504	–0.083	0.018	–0.426	–0.025	0.051	–0.279	–0.066	0.004	–0.848	–0.007	0.012	–0.877	–0.023
Portugal	0.205	0.431	–0.117	0.153	0.532	–0.072	0.018	–0.195	–0.021	0.017	0.434	–0.009	0.015	0.175	–0.012	0.003	0.106	–0.002
Netherlands	0.278	0.295	–0.196	0.149	0.858	–0.021	0.044	0.039	–0.042	0.030	–0.640	–0.050	0.030	0.069	–0.028	0.024	–1.273	–0.054
Spain	0.258	0.229	–0.199	0.175	0.427	–0.100	0.039	–0.021	–0.040	0.002	–1.217	–0.004	0.037	–0.347	–0.049	0.005	–0.023	–0.005
UK	0.239	–0.259	–0.301	0.117	0.257	–0.087	0.030	–0.067	–0.032	0.036	–0.683	–0.061	0.005	–0.644	–0.009	0.050	–1.228	–0.112

[a]'Other benefits' for Germany include 'sickness and invalidity benefits' and 'family benefits'.

lower than Italy's, while Ireland is only moderately egalitarian in its distribution of transfers despite its high level of means testing. This suggests that we should turn our attention to another factor that was identified in Section II as affecting targeting: the composition of transfer expenditures.

The most important type of social transfer in cash is pensions, accounting for 15–20 per cent of total household income in most countries. The discussion in Section II suggested that these could well not be redistributive and, indeed, the estimates of g_k, being greater than 1, show that in two countries — Ireland and France — pensions contribute to inequality rather than equality. On the other hand, in Denmark, the corresponding figure is negative. As a result, we observe wide variations in the elasticity of G with respect to pensions: from –0.130 in Denmark and –0.111 in Greece, to 0.044 in Ireland and 0.002 in France.

The income share of cash sickness and invalidity benefits varies from 0.6 per cent in Greece to 4.4 per cent in the Netherlands. In most cases, the corresponding g_ks are negative, and, in all countries, the elasticity of aggregate inequality with respect to sickness and invalidity benefits is negative as well, varying from –0.007 in Austria to –0.050 in Denmark.

The share of family benefits in total household income is extremely low in the Mediterranean EU Member States but quite substantial in Belgium, Austria and Luxembourg. In all but three of the countries (Portugal, Italy and Denmark), the relevant relative concentration coefficients are negative, and the elasticity of G with respect to family benefits varies between –0.002 and –0.009 in the Mediterranean countries and between –0.043 and –0.076 in the rest of the countries under examination.

Naturally, unemployment benefits play an important role where unemployment is high and unemployment compensation relatively generous. For very different reasons, their share in total household income varies from 5.9 per cent in Ireland and 5.3 per cent in Denmark to 0.2 per cent in Greece and 0.4 per cent in Luxembourg. In Ireland, the corresponding elasticity is –0.130, and high (negative) values are also recorded in Denmark, Belgium and Spain.

'Other' benefits (mainly housing benefits and social assistance) play an important role only in the UK, Denmark and, to a lesser extent, the Netherlands and France.[12] In most cases, the relevant g_ks are negative and large in absolute terms. As a consequence, in the above countries, the elasticity of G with respect to these benefits is quite substantial: –0.112 in the UK, –0.062 in Denmark, –0.054 in the Netherlands and –0.052 in France.

The overall picture of the role of different transfers in reducing inequality is as expected from the discussion in Section II. Insurance benefits, particularly pensions, are only weakly redistributive if at all, while benefits targeted at poor

[12]In Table 5, the share of 'other benefits' in total household income appears to be relatively high in Germany too, at 4.8 per cent. However, this figure is not comparable to the rest of the figures in that column, since it contains 'sickness and invalidity' and 'family' as well as 'other' benefits.

groups (family benefits, housing benefits and social assistance) are more strongly redistributive.

It is interesting to note that, in all EU Member States examined in Table 5 apart from the four Mediterranean countries, the combined contribution of the non-pension social transfers in reducing inequality is larger than the corresponding contribution of pensions, despite the fact that, with the exceptions of Denmark and the UK, the combined income share of the non-pension transfers is lower than the share of pensions.

V. EFFECTS ON POVERTY

This section examines the impact of social transfers on poverty. The relevant results are reported in Tables 6 and 7. For the purposes of these tables, we employ the index of Foster, Greer and Thorbecke (1984), which is defined as

$$(5) \qquad F = \frac{1}{n}\sum_{i=1}^{n}\left(\frac{z - x_i}{z}\right)^a ,$$

where z is the poverty line, n the size of the population, x_i a variable that is equal to the equivalent income of the population member if he or she falls below the poverty line and equal to z otherwise, and a is a poverty-aversion parameter. The poverty line is set at 60 per cent of the median equivalent income.[13]

Similarly to Table 4, columns A of Table 6 report estimates of F for the distribution of disposable income for three values of a,[14] while columns B report the proportional decline between the level of poverty with no social transfers and the current level of poverty, and columns C give the effect of a uniform 10 per cent cut in cash social transfers.

The estimates reported in columns B show that social transfers in cash are very important for the alleviation of poverty in all EU Member States. However, since these transfers increase the incomes of many population members who remain below the poverty line even after the transfers, their effectiveness in alleviating poverty appears to increase as the value of a rises. Social transfers appear to be most effective in mitigating poverty in Denmark and the Netherlands and least so in Portugal and Greece. The results in columns C show that the marginal impact appears to be quantitatively most important in Belgium, Denmark, Ireland, the Netherlands and the UK (particularly for a = 2) and least

[13]For many countries, this is a similar value to the traditional half of the mean equivalised income, and it has the advantage of being less susceptible to extreme values. This poverty line has recently been adopted by Eurostat for some of its studies.

[14]A value of 0 corresponds to the headcount ratio, 1 corresponds to the poverty gap and 2 puts particular weight on the very poorest.

TABLE 6

Impact of Cash Transfers on Poverty in 13 EU Member States, 1994

	Foster–Greer–Thorbecke index of poverty								
	a = 0			*a* = 1			*a* = 2		
	A	B	C	A	B	C	A	B	C
Austria	0.170	62.4	14.2	0.054	80.2	11.4	0.026	87.7	10.2
Belgium	0.180	61.0	21.5	0.055	83.2	18.5	0.027	90.6	16.6
Denmark	0.107	72.3	23.0	0.023	90.7	27.0	0.009	95.8	25.9
France	0.158	63.5	15.0	0.040	85.2	18.6	0.017	92.3	18.8
Germany	0.177	56.6	9.8	0.057	79.5	11.1	0.029	87.7	10.1
Greece	0.207	44.0	9.4	0.070	70.8	9.8	0.035	82.7	11.3
Ireland	0.212	50.1	17.0	0.049	83.8	27.1	0.019	92.7	27.0
Italy	0.188	52.7	7.1	0.061	76.3	8.0	0.033	84.9	6.6
Luxembourg	0.143	66.0	13.0	0.041	83.5	12.0	0.020	90.2	11.7
Netherlands	0.099	73.6	24.4	0.032	87.9	14.3	0.017	92.6	11.5
Portugal	0.239	37.7	7.3	0.079	66.9	10.8	0.041	79.2	10.9
Spain	0.188	55.1	10.0	0.053	81.1	14.6	0.025	89.6	13.6
UK	0.204	52.3	17.0	0.053	83.1	23.6	0.022	92.0	23.9

A: Distribution of disposable income including cash transfers.
B: Proportional decline in poverty due to cash transfers (%).
C: Increase in poverty due to a uniform 10 per cent cut in cash transfers (%).

TABLE 7

Impact of Particular Cash Social Transfers on Aggregate Poverty in 13 EU Member States, 1994 (Foster–Greer–Thorbecke index, *a* = 2)

	Pensions		*Sickness and invalidity benefits*		*Family benefits*		*Unemployment benefits*		*Other benefits*	
	A	B	A	B	A	B	A	B	A	B
Austria	83.0	4.0	14.5	0.2	44.4	4.4	17.7	0.9	5.2	0.2
Belgium	85.0	5.9	37.9	1.4	46.0	4.8	48.0	3.3	8.5	0.7
Denmark	91.2	11.8	64.2	2.7	32.6	1.5	66.4	3.8	57.9	6.1
France	88.0	6.4	27.2	1.1	44.9	4.1	31.6	1.7	43.2	4.7
Germany[a]	83.7	4.4	n.a.	n.a.	n.a.	n.a.	31.8	1.7	46.5	3.8
Greece	81.0	9.7	13.5	0.8	7.6	0.6	1.7	0.3	1.9	0.0
Ireland	80.9	5.0	44.1	1.9	55.1	6.0	77.8	12.3	14.1	0.8
Italy	82.6	5.1	20.7	0.6	1.8	0.0	8.5	0.6	2.1	0.0
Luxembourg	86.3	3.2	33.3	0.6	46.5	5.7	8.1	0.6	24.0	1.1
Netherlands	86.9	2.3	62.3	1.7	25.0	2.3	50.0	1.7	51.0	3.4
Portugal	74.5	8.0	20.7	1.2	10.3	0.9	11.6	0.4	3.0	0.2
Spain	84.0	5.2	52.1	3.2	6.0	0.4	48.6	4.4	9.1	0.8
UK	80.5	7.1	38.1	1.1	49.6	4.8	12.3	0.7	71.0	9.0

[a]'Other benefits' for Germany include 'sickness and invalidity benefits' and 'family benefits'.
A: Proportional decline in aggregate poverty due to the benefit (%, *ceteris paribus*).
B: Increase in poverty due to a 10 per cent cut in the benefit (%).

so in three Mediterranean countries — Italy, Portugal and Greece — as well as in Germany and Austria.

These results suggest that, in general, countries that are effective in using social transfers to reduce inequality are also effective in reducing poverty. However, it is interesting to note that Ireland is higher in the order of countries for reducing poverty than it is for reducing inequality, probably due to the high proportion of means testing in Ireland's social transfers.

Table 7 is similar to Table 6, but instead of examining the impact on poverty of all social transfers taken together, it analyses separately the impact of particular types of transfers, when $a = 2$.[15] In all countries, the significance of pensions in alleviating poverty is enormous, while, at the margin, a 10 per cent cut in pensions would have the most adverse impact in Denmark (11.8 per cent) and Greece (9.7 per cent) and the least adverse in the Netherlands (2.3 per cent). For the other transfers, there are important cross-country differences. Sickness and invalidity benefits reduce poverty by over 60 per cent in Denmark and the Netherlands but by less than 25 per cent in Greece, Austria, Italy and Portugal. Family benefits reduce poverty by over 40 per cent in Ireland, the UK, Luxembourg, Belgium, France and Austria but by less than 15 per cent in the four Mediterranean countries. Even more significant cross-country differences are registered regarding the efficacy of unemployment benefits in reducing poverty: poverty declines by 77.8 per cent in Ireland and by 66.4 per cent in Denmark, the declines in the Netherlands, Spain and Belgium exceed 40 per cent, but they are low in the UK, Portugal, Italy, Luxembourg and, especially, Greece. 'Other' benefits play an important role in reducing poverty in France, the Netherlands, Denmark and, particularly, the UK.[16] For all types of benefit, the patterns of results in columns B are similar to those in columns A.

A comparison of these results with those in Table 5 shows that, in general, countries where a particular transfer is effective in reducing inequality are also those in which the same transfer is effective in reducing poverty.

VI. CONCLUSIONS

This paper has examined the impact of cash social transfers on inequality and poverty in 13 EU Member States, using data from the European Community Household Panel. The results show that, at least from a static point of view, these transfers help to reduce both inequality and poverty in all countries, but with significant cross-country differences. The impact on inequality and poverty is most significant in countries that spend a high proportion of their GDP on social transfers, such as Denmark and the Netherlands, and least so in low-

[15]Similar but less pronounced results were obtained when a was set at 0 and 1.

[16]Again, the figure for Germany is not comparable to the rest of the figures in the column, because it contains 'sickness and invalidity' and 'family' as well as 'other' benefits.

spending countries, such as Portugal and Greece. Also, there is a high marginal impact in countries with a high degree of means testing: the UK for both inequality and poverty and Ireland for poverty. However, the example of Denmark shows that transfer payments can be well targeted without extensive means testing.

Within these broad results, there are variations between countries that cannot be explained simply by expenditure levels or the extent of means testing. The distributional and poverty reduction impact depends also on the distribution of funds between different types of transfer and the detailed design of each transfer. The most important type of social transfer is pensions and, in most cases, they make the highest individual contribution to reducing inequality and poverty. Nevertheless, the non-pension social transfers were found to be concentrated towards the bottom of the distribution to a larger extent than pensions and, in all non-Mediterranean countries, the combined contribution of the non-pension social transfers in reducing inequality was found to be larger than the corresponding contribution of pensions.

The findings of the paper are broadly in line with the typology suggested by those authors who identify four types of Welfare State regimes in Europe (Esping-Andersen, 1990; Leibfried, 1993). The 'rudimentary' Mediterranean countries spend little on social protection, which consists mainly of pensions, and the redistributive role of social transfers is small. The 'liberal' regime of the UK and Ireland makes extensive use of means testing and, as a result, these countries' transfers appear to be very effective at the margin, especially for poverty reduction. Denmark and (probably) the Netherlands belong to the 'social-democratic' regime, with a high share of GDP devoted to social protection and the impact of social transfers on inequality and poverty very strong. Finally, the rest of the countries represent the 'corporatist' regime, where the share of social transfers in GDP is relatively high but the aggregate redistributive effects of these transfers are neither as strong as in the countries of the 'social-democratic' regime nor as effective in reducing inequality and poverty at the margin as in the countries of the 'liberal' regime.

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