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Earnings Inquality, Unemployment and Income Distribution in the OECD

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I. INTRODUCTION[1]

Inequalities in earnings distribution have greatly increased in some OECD countries since the beginning of the 1970's. This is particularly true for the Anglo-Saxon countries. As a result, an important series of research papers on the topic have been written with the aim of explaining the underlying causes of this process. Other OECD countries have not experienced as large an increase in earnings inequality distribution, especially so in Europe with the exception of the United Kingdom. Higher unemployment levels than in America have, nevertheless, been a feature of the European scene during the last decade. Concerning income distribution, the 1980´s brought about in some countries a reversal of the decreases in inequality and poverty levels, which had been a characteristic feature of the post-war period.

The fundamental economic causes of these phenomena, their possible interaction and their consequences for income distribution have given rise to numerous debates. A socio-economic situation of rapid technological progress and an intense globalisation of the world's economy have stimulated this growing discussion in academic and political circles. The most appropriate employment-generating measures have been discussed in this context.

One of the hypotheses which has received the most attention is the possible trade-off between earnings inequalities and unemployment. It suggests that the higher unemployment rates experienced by some European countries could be a result of the inflexibility of their labour markets, conceived and directed by outdated institutions not in tune with the many pressures exerted by today's ever more competitive economy. The success of some countries in reducing unemployment since the end of the 1980's -particularly so the US- would thus be somehow connected to the greater flexibility of their labour markets thus enabling them to adjust their markets through slower earnings growth and widening salary differentials amongst the various groups of workers.

[1] We would like to thank Mercedes Sastre and Alberto Vaquero for research assistance and Fundación Argentaria for financial support. This paper summarises a part of a larger research that can be seen in Ruiz-Huerta et al. (1999).

According to the trade-off hypothesis, lower salaries and higher differentials, on the one hand, and higher and more persistent unemployment levels, on the other, would therefore be the respective responses of two different labour market models to the recent structural changes in production. These changes have worked against the interests of less skilled and experienced workers by reducing demand for them in comparison to those who are more qualified and adaptable to the new labour markets requirements.

Although highly suggestive, the trade-off hypothesis is too simplistic to account for and describe the enormous complexity of the relations among unemployment, income inequality, and the legal and institutional traits of the various labour markets. Modifications in labour supply and the capacity to adapt to new market conditions can attenuate and even eliminate the trend towards greater earnings disparities produced by changes on the demand side. Institutional factors (formal education**,** job creation policies, permanent training programs, etc.) could play a significant role in altering the available labour supply and hence mitigate the current trend in earnings differentials. Furthermore, the analysis of unemployment in the OEDC countries makes it difficult to conclude that greater regulation in the labour market or the role attributed to specific institutions unequivocally lead to higher unemployment rates.

The questions above have given rise to a growing research work in recent years. Most of the authors have opted to take an international point of view comparing the experiences of various countries. This has been the case for two reasons: the increasing accessibility of homogenous data on income and the labour markets, as well as the very nature of the hypotheses themselves which suggest the convenience of analysing and comparing the national responses in employment and salaries to a series of changes in production that have affected all the OECD countries in a similar fashion.

This paper will try to elucidate to what degree disposable income distribution in some OECD countries has been affected by the labour market changes described using data from the Luxembourg Income Study (LIS). Three questions require a detailed analysis. Firstly, how has income distribution evolved in the countries under study? The first section describes the inequality trends derived from the best micro-data available on disposable income to carry out international comparisons from the LIS database. Secondly, what effects have the changes in earnings inequality had on the above trends?

The links between earnings inequality as well as primary income inequality (which includes income from work and capital) and disposable income distribution must be examined to answer this question. And lastly, what has been the distributive impact of unemployment with regard to greater inequality and/or higher poverty levels? Aspects such as social security coverage rates and how unemployment affects households are relevant factors for understanding the effects of such a phenomenon in the various countries considered.

2.- INCOME INEQUALITY IN THE OECD: LEVELS AND TRENDS

a) Methodology and Data

The income distribution analysis undertaken in this section is based on the *Luxembourg Income Study* (LIS) database. International comparisons on family income distribution have been made easier during the last decade by the creation, progressive expansion and improvement of this income micro-database containing comparable data, which currently includes about twenty-five countries[2].

The comparisons presented below refer to the distribution of *equivalent disposable monetary household income* which includes all income obtained by families from any source (work, property, capital, private transfers, social security benefits, etc.) net of all tax and social security contributions due. Although other, and possibly better, indicators may exist on the economic situation of households than disposable monetary income, it is thought this variable can provide an adequate basis for making comparisons among the countries selected. This kind of comparison would be more difficult using wider definitions of the notion of 'income'.

Family income has been adjusted to take into account differences in the sizes of households. The equivalence scale of parameter E=0.5 has been used to this effect. Thus, equivalent disposable income for each household is obtained dividing total income

[2] Atkinson, Smeeding and Rainwater's (1995) paper on income distribution in the OECD countries gives a clear idea on the interesting possibilities of comparative analyses offered by the LIS.

by the number of members to the power of this parameter. That is to say:

$$Y_i^e = \frac{Y_i}{t_i^E}$$

Where Y_i equals the total income of the i-th household, t_i is the size of the household and Y_i^e represents its equivalent income. The choice of E= 0.5 is an intermediate adjustment between the two extreme options provided by E=0 (which would mean not taking household size into account) and E=1 (which would mean opting for the household's per capita income when making comparisons). The reliability of the findings have been checked using two other equivalence scales; E=0.25 and E=0.75. These three parameters give a fair idea of the variability of the indices obtained within a reasonable range of E values, given the non-monotonic relation between the value of E and that of the majority of known inequality indices[3]. Lastly, it must be mentioned that the inequality measures have been calculated using two alternative weightings in the observations: one the same for all households and another as a function of the number of household members in each household. The latter is used in the tables presented in this section. Thus, these refer to individuals and not households, except when otherwise indicated.

Table 1
Sources of Data Used in the International Comparisons

Country / Years	Survey Title	Type of Data
Australia (1981, 1985, 1989)	Income and Housing Survey	Transversal Survey
Belgium (1985, 1988, 1992)	Household Living Conditions	Longitudinal Survey
Canada (1981, 1987, 1991, 1994)	Consumer Finances Survey	Transversal Survey
France (1979, 1984)	French Income Tax Survey	Tax Data
France (1984, 1989)	Family Budget Survey	Transversal Survey
Germany (1978, 1983)	Family Budget Survey	Transversal Survey
Germany (1984, 1989, 1994)	German Socio-Economic Panel	Longitudinal Survey
Italy (1986, 1991)	Bank of Italy Income Survey	Transversal Survey
Spain (1980/81, 1990/91)	Family Budget Survey	Transversal Survey
Sweden (1981, 1987, 1992)	Income Distribution Survey	Survey and Tax Data
UK (1979, 1986, 1991)	Family Budget Survey	Transversal Survey
US (1979, 1986, 1991, 1994)	Continuous Population Survey	Transversal Survey

Source: Compiled by authors' from LIS documentation

Table 1 shows the different sources utilised for each country and year along with the

[3] See Buhman et. al. (1988) and Coulter (1992) for a detailed discussion on this question. Both papers show that inequality indices tend to reach their maximum values with extreme parameters (a 'U-

type of data. The wish to cover the greatest possible time-span has made it necessary to use two different data sources, which are not strictly comparable with the rest, for France and Germany. Thus, a rupture in the series has been produced in 1983-1984 for both countries. This does not mean, however, that the trends in the periods before and after the change of sources cannot be known. The German data for 1994 must be interpreted taking into account that they refer to the country as a whole after reunification. Contrary to what was the case for unemployment and earnings inequality, the difficulty of obtaining comparable periodical income surveys prevents a more continuous tracking of the trends.

The Gini coefficient along with top limit distance measurements of the various deciles will mainly be used to measure inequality. Although other indices with better properties exist from a theoretical point of view, these measures have the advantage of not being so sensitive as the others to international differences in trustworthiness of the data at the distribution limits, or the treatment given to very high or extremely low incomes in all surveys[4]. The reliability of the main conclusions has, nevertheless, been checked calculating other alternative inequality indices.

b) Main Results

Some conclusions can be reached regarding the different patterns of disposable income distribution in the ten countries under study at around 1990 (Table 2). The Gini Indices included in the last column clearly show the significant differences in inequality, which existed within the group of countries considered. Sweden, Belgium and Germany have the lowest levels of inequality; all of them with indices below 0.25. Canada, Italy, France, Australia and Spain find themselves in an intermediate position with coefficients of around 0.30. The two countries which show the highest levels of inequality are the United Kingdom and the United States, with coefficients of around 0.34, a result which

relation' between the parameter's value and the inequality index's).

[4] Top income above a certain limit is made equivalent to a maximum limit in most countries to prevent the possible identification of top income earners. Likewise, differences exist in the treatment of negative or very low income in the various surveys. These could affect the value of the indices most sensitive to inequality at the lower end of the distribution scale with high parameters.

coincides with other recent studies on the same period[5]. The use of other equivalence scales or other inequality indices does not substantially alter the situation reflected in Table 2, although the order of some countries' position is interchanged[6].

If we focus our attention on the D9/D1 coefficient, which shows the distance between households situated in the 10th and 90th percentiles, the previous classification of countries into three groups can be maintained almost intact. This measure places the non-European countries in a worse position than when the Gini Index is utilised. Thus, Canada and Australia have higher values than Italy and France, Australia than Spain, and the United States than the United Kingdom. This is mainly due to the different structure of income distribution at the lower end of the distribution scale. The distance between families located in the top end of the first and middle deciles tends to be greater in non-European countries. This distance reaches a stunningly high level in the United States. Germany, Sweden and Belgium find themselves at the opposite extreme with average family incomes only 70% higher than those received by households in the 10th percentile of the distribution scale.

Table 2
Differences in Disposable Income Inequality Levels around 1990

Country / Year	D9/D1	D9/D5	D5/D1	Gini Index
Sweden 1992	2.78	1.59	1.74	0.22935
Belgium 1992	2.80	1.63	1.72	0.23002
Germany 1989	2.94	1.70	1.73	0.24774
Canada 1991	3.87	1.83	2.11	0.28496
Italy 1991	3.76	1.86	2.02	0.29028
France 1989	3.55	1.82	1.95	0.29246
Australia 1989	4.21	1.94	2.17	0.30543
Spain 1990	3.97	1.98	2.01	0.30616
United States 1991	5.59	2.06	2.71	0.33723
United Kingdom 1991	4.67	2.06	2.26	0.34037

Note: Countries ordered from lowest to highest Gini Index value

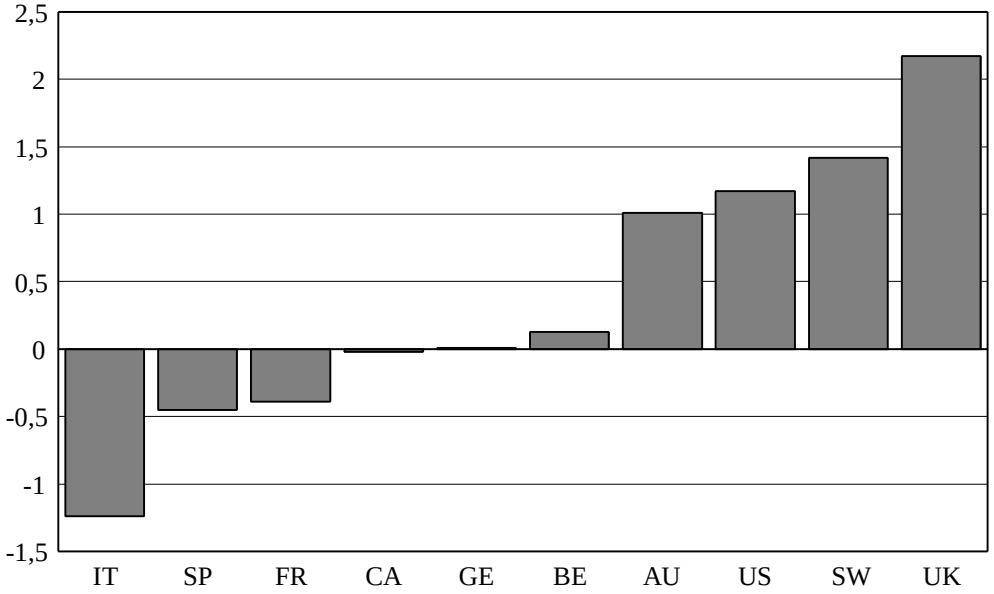
[5] See Atkinson, Smeeding and Rainwater (1995) and Bradshaw and Chen (1997).
[6] Sweden and Belgium with the Theil Index (c=1), for example. If the Theil Index (c=0) is employed, the US shows a higher level of inequality than the UK, Australia a higher level than Spain, and Sweden and Belgium higher levels than Germany. With regard to equivalence scales, the indices obtained tend to be slightly higher when the E=0.25 or E=0.75 parameters are applied. Neither the order of countries nor the trends are appreciably altered, however.

Source: Authors' calculations from LIS data.

These differences in the share of disposable income show the situation after a decade of intense changes in some countries. The 1980's were a decade generally characterised by the slowdown or rupture of the trend towards a slow but continuous reduction of income inequality in the entire Western World. Nevertheless, the rupture was in no way general nor, as will be seen, has it had the same effects in all the developed countries. Figure 1 shows the main results of the calculations carried out with the available data on the ten countries under study. The average annual rate of change in the Gini Index has been calculated throughout the period due to the differences in the time intervals for which information is available on the different countries.

As can be seen focusing on the last column, the greatest increase in disposable income inequality occurred in the United Kingdom between 1979 and 1991. The Gini Index rose at a rate slightly above 2% per annum during this time period. Sweden follows the United Kingdom with an annual increase of 1.4%, the United States (1.2% per annum) and Australia (1% per annum). In other countries the Gini Index has remained relatively stable (Canada, Germany and Belgium) or has fallen slightly (France and Spain). The only country was it seems to have fallen significantly is Italy (at a rate of 1.24% per annum).

Figure 1
Average Annual Change in the Gini Index of some Countries



Source: Authors' calculations from LIS micro-data.

The changes in disposable income inequality obtained from the LIS data paints a picture which, in general terms, corresponds to the available evidence from other recent national and comparative studies which, in some cases, contain data for longer time periods. Atkinson, Smeeding and Rainwater (1995) includes an interesting review of national research papers which have been published. According to these, Australia, the UK, Sweden and the US suffered increases in inequality between 1980 and 1990. Italy followed the opposite trend, with some cyclical variations in the inequality indices. Belgium suffered a slight increase between 1985 and 1992, as did Germany between 1983 and 1990. Income distribution shows no changes in France during the first half of the decade, nor for Canada during the whole decade.

A more recent work by Gottschalk and Smeeding (1997b) reviews distribution trends between 1985 and 1995. According to these authors, the largest increases in inequality happened, in this order, to: the UK (1979-1993), Sweden (1979-1989), Denmark (1981-1990), Australia (1981-1989), the Netherlands (1979-1994) and the US (1979-1993). All these countries had average annual changes in inequality above 1%. Germany (1979-1995), France (1979-1989) and Norway (1979-1992) suffered very slight increases in inequality below 0.5% per year. Distribution remained stable in Canada, France and Finland, whereas, in Italy (1979-1991), it evolved towards lower levels of inequality.

Lastly, Atkinson (1997) exhaustively reviewed the available evidence on poverty and inequality trends in Belgium, France, Ireland, Italy and the UK. None of the reports mentioned previously offer temporal series for Spain. Nevertheless, the reduction of inequality during the 1980's in Spain is a conclusion around which the research papers published in recent years coincide despite their varying perspectives and methodological criteria[7].

3.- FACTOR INCOME AND DISPOSABLE INCOME INEQUALITY

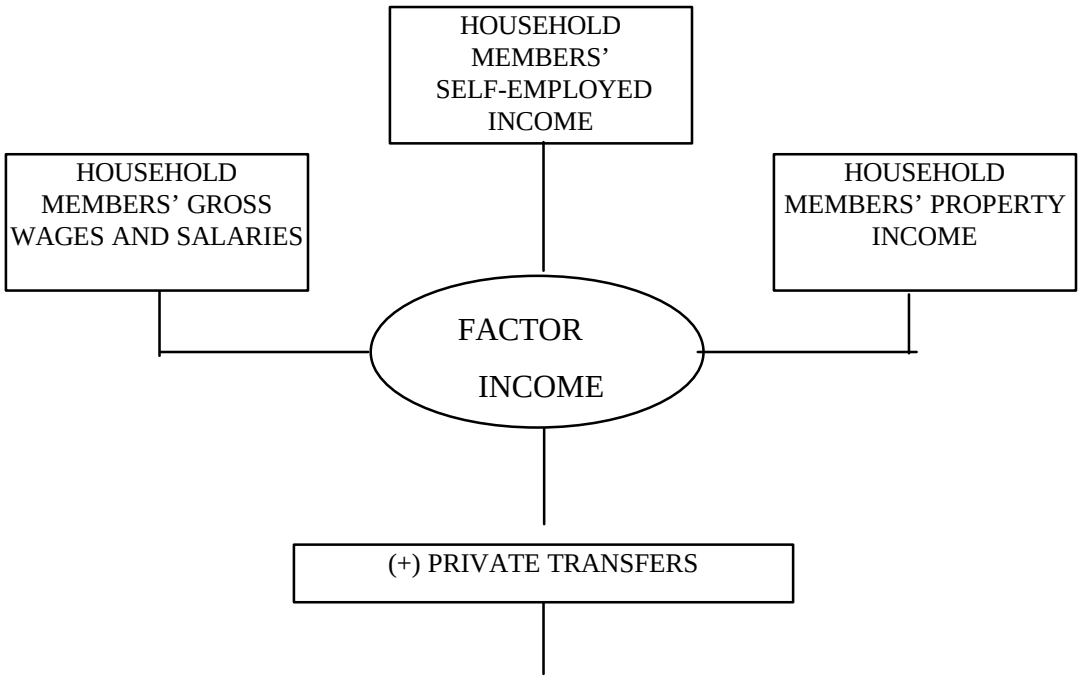
[7] See Ayala, Martínez and Ruiz-Huerta (1996), INE (1996) and Del Río and Ruiz-Castillo (1996).

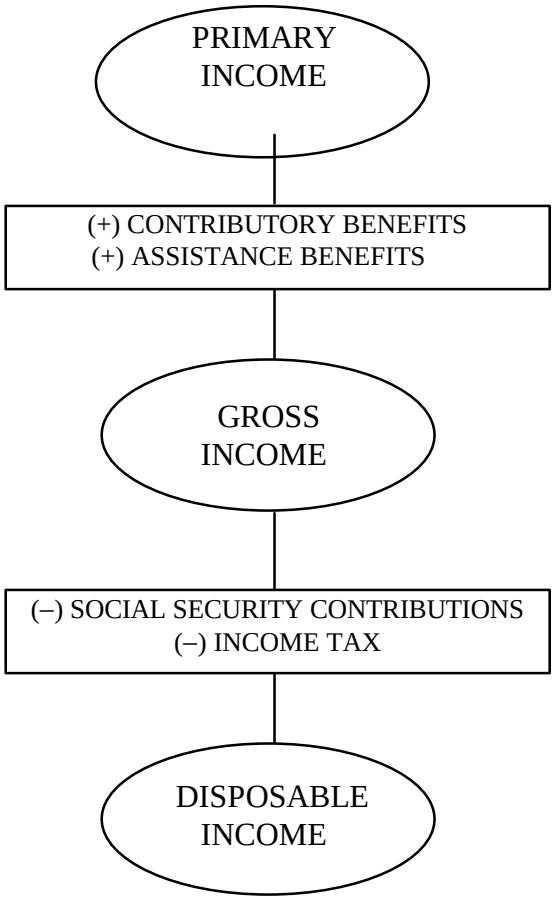
Using micro-data contained in the LIS database, the previous sub-section has shown how various countries suffered significant increases in income inequality among households throughout the 1980's and first half of the 1990's. Earnings inequality also increased in most of the Western world in the same time period. An attempt will now be made to answer some questions, which the existence of both these phenomena poses. In particular, what relation is there between the growing dispersion of earnings and data regarding income distribution? To what degree are other factors relevant? Have the changes in tax distribution and welfare benefit payments had any relevance?

a) Earnings, factor income and disposable income distribution

Before analysing the data, it's worth underlining the reasons why there is no direct relation between earnings inequality and disposable income inequality. Firstly, the approach adopted for this analysis is based on total household income, which is obtained adding up the contributions made by the various members that constitute a household. The relation between inequality in individual earnings and inequality in

FIGURE 2
HOUSEHOLD DISPOSABLE INCOME





Household earnings are affected by variables like the distribution of salary earners within the household or the correlation of earnings obtained by both spouses. It can thus be difficult to foresee what effect an increase in individual male wage dispersion accompanied by the entry of women to the labour market could have on household disposable income. In a similar fashion, the consequences of an increase in earnings inequality coupled with an increase in employment levels would also be difficult to predict.

Besides the existence of a trade-off between earnings inequality and unemployment, it should not be forgotten that what can really create a social problem are the effects that these phenomena have on the distribution of disposable income. The approach adopted means that it is not earnings inequality in itself that is of interest, but how it can influence the share-out of salaried income among the different households.

Apart from salaried income, household members also receive income from other private sources such as self-employment (whose importance varies in different countries

and at different times), capital revenues and property income. All of these together make up the *factor income* entering into households, the first element shown in the disposable income diagram. Private transfers (pension funds, unrequited payments *between households, etc.) must be added to this sum to obtain a household's primary income. Primary income* constitutes the sum of income entering into the household before tax and social transfers. The distribution of primary income depends on both earnings differentials and the way its other components are distributed amongst households. An increase in wage dispersion tied with a decrease in non-salary income inequality, for instance, could result in no change in the distribution of household primary income.

Whatever the changes may be in the distribution of primary income, inequality in household income is strongly influenced by the social security benefits received and the amount of taxes due. *Disposable income*, the main variable in our analysis, is obtained by adding together primary income and any social security benefits received (*gross income*) and then subtracting the amount of taxes plus social security contributions that may be due by the household. The redistributing role played by social security benefit must be underlined. It constitutes the main source of income for specific groups of households, such as those in which no one works or those whose main breadwinner is unemployed. Benefits also have a potentially important impact on the income levels of many other groups, including the low-paid workers and single-parent families.

All of the above underline the fact that there are many more factors to take into account when examining income distribution trends than just earnings inequality or unemployment. The joint influence of all these different elements should be used to characterise the different social models and their results *vis a vis* income distribution. This, in fact, is the ultimate goal of the analyses carried out in this paper.

The earnings inequality trends suggested by the micro-data of the countries under study will now be looked into briefly. Attention will be focused on male breadwinners between the ages of 25 and 54, as they constitute the most homogenous and stable group of salaried workers. The data on this group can thus be easily compared[8].

[8] However, the impossibility of clearly identifying salaried workers in older UK surveys has meant that

Table 3 shows the basic indicators used to measure earnings inequality in the sample of countries under study. The order of countries according to levels of earnings inequality coincides almost completely with that seen in the OECD Report. Earnings inequality is greatest in the United States (with a difference between the extreme deciles D9/D1 close to 5), followed by Canada, the United Kingdom, Spain, France Sweden, Australia, Germany, Italy and Belgium. Despite the fact that the data used is more homogenous than in the OECD report, it must be noted, however, that the inequality levels are not totally comparable from one country to another. This is particularly true for Spain, France, Belgium and Italy whose data only refer to net salaries. This would presumably result in lower levels of inequality than for gross salaries.

Table 3
Basic earnings inequality indicators[(1)] in some OECD countries
(heads of households between the ages of 25 and 54[(2)])

Country	Year	Coefficients between decile limits			Gini Index
		D9/D1	D9/D5	D5/D1	
Australia	1981	2,48	1,56	1,59	0,21159
	1985	2,49	1,58	1,58	0,21933
	1989	2,59	1,61	1,60	0,22688
Belgium	1988	2,17	1,73	1,25	0,16434
	1992	2,06	1,56	1,31	0,17031
Canada	1981	2,77	1,59	1,74	0,22345
	1987	3,45	1,64	2,11	0,27055
	1991	3,83	1,70	2,25	0,28735
	1994	3,68	1,67	2,20	0,27919
France	1984	2,77	1,82	1,52	0,24845
	1989	2,90	1,92	1,51	0,26142
Germany	1984	2,45	1,68	1,46	0,21497
	1989	2,47	1,69	1,46	0,23511
	1994	2,99	1,73	1,72	0,24321
Italy	1986	2,34	1,56	1,50	0,20378
	1991	2,17	1,55	1,40	0,18531
Spain	1980	2,98	1,72	1,73	0,25927
	1990	3,04	1,73	1,75	0,26301
Sweden	1981	2,06	1,52	1,36	0,18533
	1992	2,62	1,65	1,59	0,23140
United Kingdom	1979	2,45	1,58	1,55	..
	1986	2,87	1,73	1,66	..

the *Employment Outlook 1996* (OECD, 1996a) results on income inequality in a much wider group (all males) have been used. Difficulties in identifying salaried workers also occur in the data concerning Sweden in 1987 and Belgium in 1985. The analysis has therefore been carried out on the two countries discarding those years.

	1991	3,17	1,83	1,73	..
United States	1979	3,75	1,67	2,25	0,27690
	1986	4,59	1,94	2,37	0,32358
	1991	4,93	1,87	2,64	0,31658
	1994	5,00	2,03	2,46	0,34757

Notes: (1) Gross salaries except for Belgium, Spain, France and Italy. (2) In the case of the UK, males of all ages.
Sources: Authors' calculations from LIS micro-data.

The most interesting aspect of the findings concerns inequality trends. The estimated indices show that the countries which have suffered the largest earnings inequality increases are United States, United Kingdom, Canada and Sweden. Moderate increases are also noted for Australia and Germany, while very slight reductions are observed for Belgium and, somewhat more, for Italy. In Spain, income distribution hardly changed at all for this particular group of salaried workers.

Some discrepancies exist in the results for Sweden, Germany, Canada and Australia when these results are compared with the OECD Report. There it is suggested that the 1980's ended without a clear increase in earnings inequality in Australia and Sweden, and that the increases were to be found at the beginning of the 1990's. These results suggest, however, that earnings inequality among main breadwinners in both countries had started to increase at an earlier date. Concerning Canada, both these results and the OECD Report coincide in signalling a reduction in earnings inequality in the early 1990's, but disagree as to the amount it had increased in previous years. The increase registered using the LIS data is greater than that seen in the OECD report. These results obtained for the three countries are more coherent with the results of other recent comparative studies noting that their earnings inequality levels increased in the 1980's, particularly so in Canada[9]. With regard to Germany, the Socio-Economic Panel data, on which the figures in Table 3 are based, does not corroborate the reduction in earnings inequality noted in the OECD Report. This data suggests that a moderate increase occurred which was later exacerbated after the reunification process in the early 1990's. In any case, it must be underlined that the increase is more appreciable when measured by the Gini Index, an indicator not calculated in the OECD report. Likewise, it must be said that the German results for the early 1990's are not comparable with the results

[9] See the review of the results on earnings inequalities offered by Gottschalk and Smeeding (1997).

offered in the OECD report, which only refer to the old Federal Republic.

The greatest increases in earnings inequality were suffered by the United States, the United Kingdom, Canada (until 1991) and Sweden. The first two of which would fit into the Anglo-Saxon labour market model, while Canada, as has been seen, is difficult to cubbyhole into either of the two principal models (the Anglo-Saxon and European models).

The links between earnings inequality and the changes suffered by primary and disposable household income can be examined through the indices, based on the Gini Index, which appear in Table 4. The differences observed between the third and fourth columns must be attributed to the double impact of adding up all the income derived from private sources and the fact that joint household income is considered instead of a subgroup of individual income earners.

Table 4
Recent trends in earnings, primary income and disposable income inequality in some countries (Indices with a base of 100 for first year of available data)

Country	Years	Earnings inequality [2]	Inequality in family income [3]	
			Primary income	Disposable income
Italy	1986	100	100	100
	1991	91	95	94
Spain	1980/81	100	100	100
	1990/91	101	102	95
France	1979	100	100	100
	1984	105|100	114|100	99|100
	1989	105	102	96
Canada	1981	100	100	100
	1987	121	104	99
	1991	128	110	100
	1994	125	114	100
Germany	1984	100	100	100
	1989	109	98	99
	1994	113	107	102
Belgium	1985	..	..	97
	1988	100	100	100
	1992	104	107	98
Australia	1981	100	100	100
	1985	104	106	104
	1989	107	108	108
United States	1979	100	100	100
	1986	117	107	111
	1991	114	109	111
	1994	125	115	117
Sweden	1981	100	100	100

	1987	..	106	111
	1992	125	113	115
United	1979	100	100	100
Kingdom	1986	117	120	112
	1991	129	121	127

Notes: (..) Data not available. (|) Methodological rupture in the series. (1) The inequality indicator used in this table is the Gini Index, except for UK data that uses D9/D1. (2) Earnings inequality refers to male main breadwinners between the ages of 25 and 54. (3) Equivalent household income (E=0,5). Primary income includes all income from private sources (work income, capital revenue and private transfers) entering into the household before tax and transfers.
Source: Authors' calculations from LIS micro-data.

The large increases in earnings inequality in Sweden, the United Kingdom, the United States and, to a lesser degree, Canada are mirrored by the clear growth in primary income inequality. The growth in primary income inequality in these countries, however, is less marked than earnings inequality growth and does not always match its pace. Both Belgium and Australia suffered more moderate increases in both types of inequality. It is interesting to note that, barring Italy and Germany in the first sub-period, private income is distributed in a less egalitarian manner at the beginning of the 1990's than in the early 1980's. This type of inequality growth has had scarce impact on countries like Spain, but was above ten percentage points in Canada (1981-1994), the US (1979-1994), Sweden (1981-1992) and the UK (1979-1991).

It can thus be affirmed that those countries that suffered larger increases in earnings disparities also suffered clear increases in household primary income. The absence of coincidence in the pace and magnitude of these two growth rates is due to a series of factors whose importance it is impossible to uncover without a more comprehensive analysis. As has been mentioned above, inequality trends in primary household income depend not only on variations in earnings inequality but also on changes in households structures, the number of income earners in the household and the distribution of other kinds of work and capital income, none of which is subject to independent analysis in this paper.

In any case, the generalised increase in the levels of inequality in household primary income is a relevant fact that shows the potential effect changes in earnings distribution and other sources of private income have on overall income distribution. In all cases bar Italy's, inequality increases of a different magnitude would have been

produced in the absence of taxes and transfers. Income distribution has, nevertheless, not evolved towards greater inequality in a generalised manner as has been seen in the first section. The varying impact that changes in primary income have had on disposable income inequality in the countries considered can be observed by comparing the figures in the last two columns of the table.

Four of the ten countries under study (UK, US, Sweden, and Australia) suffered disposable income inequality increases of a similar order to primary income inequality increases. Changes in disposable income in the UK greatly surpassed the changes registered for private income in the second sub-period. In Canada, on the other hand, the strong growth in earnings and primary income inequality is not mirrored by a similar increase in household income inequality. In fact, the information contained in the LIS database points towards complete stability with regard the inequality measures throughout the thirteen years under study. As will be seen shortly, changes in the re-distributive effects of government policies can account for this stability almost completely. Likewise, the levels of inequality in France and Germany have been reduced slightly or have suffered little changes despite the fact that wage disparities in both countries have risen to a certain degree. Earnings and primary income inequality in Spain have remained stable or increased slightly in the 1980's, a time when disposable income differences among households were being reduced.

Earnings inequality seems to have played a relevant role in the changes observed concerning disposable income distribution. The discrepancies observed among the figures for the various countries, however, point towards the need of analysing the impact of other factors more closely. This is particularly true for the role played by government policies, a topic to be examined in the following section.

b) The Role Played by Taxes and Social Transfers

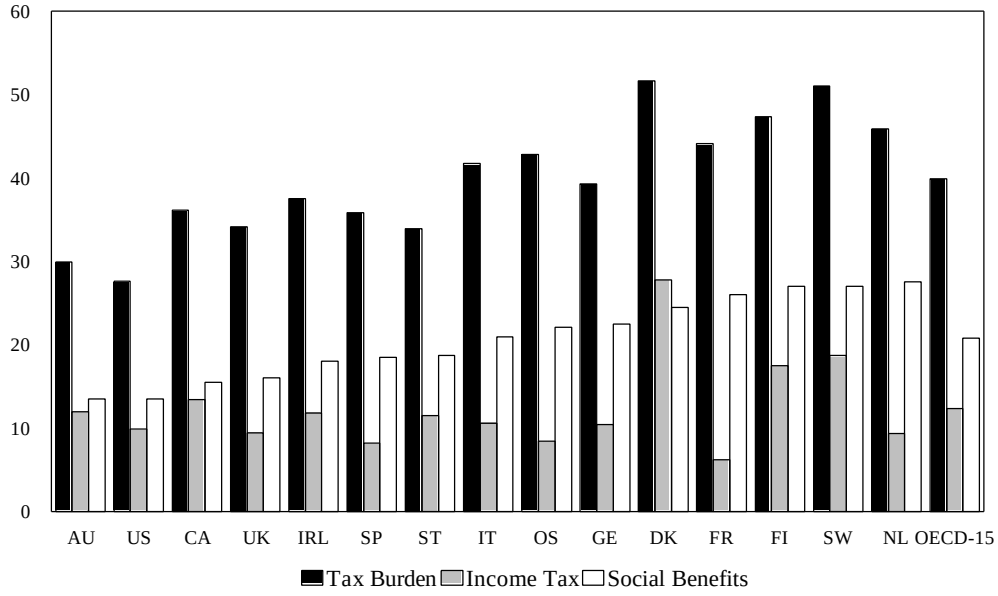
Direct taxation and, particularly, social security benefits received by households have a levelling effect on market-generated income in all the countries under study. The level by which inequality levels are reduced by this type of program depends not only on the size of the public sector but also on the way social programs are designed. The Central and Northern European countries have traditionally had more far-reaching

redistributing policies than either the Southern European or Anglo-Saxon countries. It is thus to be expected that the redistributing impact of taxes and benefits be greater in the former countries than in the latter.

The latest information, available for the mid 1990's, reveals notable differences in tax burden and social security benefit expenditure in the main OECD countries (Figure 3). With regard to taxation, a well-differentiated pattern according to the weight of tax revenue over GDP can be easily observed. In tune with the traditional stereotypes, the Nordic countries have the highest indicators (around 50% of GDP), followed by another group of countries that includes Austria, France, the Netherlands and Italy, whose figures are also noticeably above the average. The rest of the countries, including Spain, can be found in an intermediate group with figures of between 30% to 40% of GDP; except for Australia and the United States with figures below 30% of GDP.

Although the weight of tax revenues as a function of GDP could be a clue towards understanding the incidence of taxation in redistributing wealth, by itself it does not constitute a guarantee of greater progressiveness. The final effect of taxation on disposable income would surely be different in countries where the weight of indirect taxation is higher than in others that place greater emphasis on direct taxation. The countries under study do, as a matter of fact, have notable variations in their tax structures. The most visible difference can be found, for instance, in the different weight placed on personal income tax over GDP. If this indicator were considered, Denmark, Sweden and Finland would still be placed in the first group of countries with a figure above 15% of GDP. Many other countries, however, would interchange positions in other groups. The United States, for example, though in the group with values below 10%, would have an indicator higher than a large number of EU countries including Spain. Especially remarkable is the case of France, which shows an indicator very low.

Figure 3
Differences in tax burden and social benefits spending in the OECD
(Percentages over GDP, 1994)



Source: Author's calculations from *OECD in Figures* and *National Accounts* (OCDE).

Hasty conclusions, however, should not be drawn on the basis of this last indicator. It is necessary to complete the information offered by it with other more informative variables as to the progressiveness of taxation such as personal allowances or tax rate structures. If minimum tax rates as a function of income were considered, for instance, the EU would have an average figure above the OECD average rate, whereas just the contrary would be the case for the US (OECD, 1996b). If top tax rates are considered, the average EU figure is significantly above the OECD average rate, and the US top rate would be considerably lower. The same would be true when the differences between top tax rates and minimum rates are examined.

The existence of distinct groups of countries is even clearer when social benefits expenditure as a function of GDP is considered. The highest figures (close to or above 25% of GDP) correspond to the Netherlands, the Nordic countries and France, while the lowest values (below 15% of GDP) correspond to Australia and the United States.

Given the existence of such circumstances, it seems necessary to study the impact that the previously mentioned differences have on disposable income distribution. Special

emphasis should be placed on the changes in the redistributing impact of taxes and welfare benefits in the various countries throughout the period under study. In many countries significant social spending and financing system reforms were added to the intense transformations experienced by the labour markets in the 1980's and 1990's. These could have reduced or increased the redistributing capacity of the tax system and, therefore, have affected disposable income inequality trends either positively or negatively.

Tax burden rose significantly in Spain and Italy between 1980 and 1995. It also rose in Canada, though more moderately, while remaining relatively stable in Germany, France, Australia and the US. Tax burden in Sweden rose in the second half of the 1980's and fell again in the early 1990's. An appreciable fall in tax burden can be observed for the UK during the second half of the 1980's. Concerning spending on social benefits, it tended to increase in all countries, though less so in countries which already had high expenditure levels in the 1980's. Canada and the US behaved differently throughout the 1980's. Social security spending hardly rose at all in the US, whereas in Canada it rose by almost five points. There was an also cutback on social benefits spending in the UK during the second half of the 1980's. This period can thus be seen as the time when the greatest reduction in the redistributing components of the UK's budget occurred.

To analyse the effects of taxation and benefit payments on the various countries during the years considered, the inequality indices of family income distribution before tax and benefit payments (gross income) have been compared with the indices after tax and benefit payments (disposable income). This exercise offers a first approach to understanding the redistributing impact of government policies[10]. The true effect of such policies could only be estimated through a general equilibrium model that allowed the indirect and dynamic effects of tax burden and public expenditure (for example, their effects on job vacancies and savings rates) to be evaluated. An analysis of this kind is clearly outside the scope of this paper.

[10] The Spanish figures have been calculated only after benefits, as the *Family Budget Survey* does not contain sufficient information to know the exact amount of direct taxation paid by households.

The first two columns of Table 5 show inequality indices 'before' and 'after' taxes and benefit payments in the various countries and the years for which information is available. The third column contains the reformulated Reynolds-Smolensky Index (RS*), which is defined as the difference between the Gini Index for income before tax and benefit payments (G_x) and the Gini Index for disposable income (G_y):

$$RS^* = G_x - G_y$$

The last column shows the percentage reduction in inequality as a consequence of the taxes paid and benefits received by households. As can be seen, great differences are registered with regard to the redistributing effect of the twofold action of taxes and benefits payments. France, Germany, Belgium and Sweden all have higher values than the non-European countries as well as the UK, Spain and Italy.

Different trends have, likewise, been observed for the 1980's and early 1990's. The redistributing effect has remained relatively stable in Italy, Germany, the US and Australia, although a slight increasing trend can be noted for the first two countries. In Spain, France, Belgium and Canada the percentage inequality reduction produced by the fiscal system has tended to rise in the period under study. Lastly, both the UK and Sweden showed contrasting behaviour in the two sub-periods considered. The reduction in the redistributive effect of taxes and benefit payments in the UK between 1986 and 1991 is especially significant. This fact explains the rise in inequality seen in the country just when the pace of growth in primary income inequality was being reduced.

Table 5
Evolution of the redistributive effect of taxes and social transfers

Country	Years	Gini before	Gini after	RS* Index	% Inequality Reduction
Italy	1986	0.4299	0.3095	0.1204	-28.0
	1991	0.4092	0.2903	0.1190	-29.1
Spain	1980/81	0.4200	0.3207	0.0992	-23.6
	1990/91	0.4306	0.3062	0.1245	-28.9
France	1979	0.4595	0.2967	0.1628	-35.4
	1984	0.5262	0.2954	0.2311	-43.9
	'	0.4802	0.3032	0.1770	-36.9
	1989	0.4898	0.2925	0.1973	-40.3
Canada	1981	0.3757	0.2858	0.0899	-23.9

	1987	0.3918	0.2834	0.1084	-27.7
	1991	0.4123	0.2850	0.1273	-30.9
	1994	0.4266	0.2852	0.1414	-33.1
Germany	1984	0.4295	0.2498	0.1798	-41.9
	1989	0.4231	0.2474	0.1757	-41.5
	1994	0.4576	0.2549	0.2026	-44.3
Belgium	1985	..	0.2279	..	..
	1988	0.4288	0.2352	0.1936	-45.2
	1992	0.4589	0.2300	0.2289	-49.9
Australia	1981	0.3996	0.2825	0.1171	-29.3
	1985	0.4237	0.2937	0.1300	-30.7
	1989	0.4337	0.3054	0.1283	-29.6
United	1979	0.4101	0.3042	0.1059	-25.8
States	1986	0.4386	0.3365	0.1021	-23.3
	1991	0.4454	0.3372	0.1081	-24.3
	1994	0.4724	0.3575	0.1149	-24.3
Sweden	1981	0.4132	0.1984	0.2148	-52.0
	1987	0.4371	0.2201	0.2170	-49.6
	1992	0.4683	0.2293	0.2389	-51.0
United	1979	0.4040	0.2701	0.1339	-33.1
Kingdom	1986	0.4850	0.3039	0.1811	-37.3
	1991	0.4877	0.3404	0.1473	-30.2

Source: Authors' calculations from LIS micro-data.

A look to the redistributive role played by taxation and benefits payments linked to the variations in primary and disposable income would complete the picture on the role played by fiscal policies in the countries under study during the last fifteen years. Belgium, France, Germany, Canada and Spain would comprise a first group of countries, characterised by relative stability in disposable income distribution. This was achieved by an intensification of the redistributive effects of taxation and benefits payments that have managed to counteract the rise in primary income inequality, to a certain degree, in all four countries. This is particularly true for Canada.

It is important to underline that the intensification of the redistributing effect in these countries could well have been produced by their respective tax systems' automatic response to progressive rises in primary income inequality or, alternatively, to tax and social security benefit reforms.

In the particular case of Spain, the increased redistributive capacity of taxation and benefit payments has enabled a slight rise in primary income inequality to coexist with an equally modest fall in the Gini Index on disposable income inequality. Recent studies on the incidence of benefit payments expenditure have confirmed the ever more

important role played by social benefit payment programs as a factor for reducing inequality. This has come about in a context characterised by the late development and modernisation of the Welfare State[11].

In Australia, the US and Sweden, the inequality increases in primary income were matched by increases of a similar magnitude of disposable income. In the United States, probably the country where this topic has been most widely studied, the general conclusion is that the tax and benefit reforms put into effect during the 1980's have reduced the system's progressiveness. Nevertheless, these factors by themselves are relatively unimportant to explain inequality increases when compared to the rise in earnings inequality. A comparison with Canada is interesting in this context. Canada suffered similar increases in earnings and primary income inequality, but an expansion of benefit payments expenditure and its government programs' capacity to redistribute income has meant that it ended the decade without significant rises in inequality[12].

Lastly, we shall focus on the UK, a country that seems to have gone through two clearly differentiated periods. Between 1979 and 1986, primary income inequality increased dramatically and was only moderated to a slight degree by taxation and social transfers. Consequently, disposable income inequality also increased during this period. Between 1986 and 1991, it continued growing significantly, but no similar trend is noted with regard primary income distribution. The increase in disposable income inequality during the second period can only be put down to a reduction in the tax and benefit systems' redistributive capacity. This only lead to a 30% reduction in the 1991 Gini Index, whereas a decade before it had been a 37%.

This picture is coherent with the analyses carried out by Atkinson (1993) and Jenkins (1995) on the decomposition of inequality in the UK. Atkinson showed how the inequality increases after 1986 came about as a result of changes in tax and public spending policies. The fall in the basic state pension contributed to increase the levels of

[11] See Gimeno (1993, 1996), Estruch (1995) and Molina and Jaén (1994).

[12] Gottschalk and Smeeding (1997), Blackburn and Bloom (1991), Card and Freeman (1993), Gottschalk (1993) and Fritzell (1992) underline the increase in the redistributive capacity of the Canadian tax system during the 1980's as well as the different roles played by the benefit payment

inequality suffered by pensioners in the second half of the 1980's. Likewise, the Supplementary Benefit reforms to poor households in 1988, replacing Supplementary Benefit for Income Support, reduced the amount of benefit given to people of working age without family responsibilities. The theoretical rationale behind such a reform was to increase job-seeking incentives.

The importance of these reforms in the UK, which have intensified the trends in the distribution of household primary income, seems to be clear. Clear reductions in the redistributing effect of the tax and benefit systems are not so noticeable in Sweden, the US, and Australia. However, the taxation and benefit payment systems in these countries have not served to moderate growing income inequality to a significant degree. In the case of Sweden, a country with highly developed social protection programs, this fact can only be explained by the regressive reforms put into effect which have seriously undermined its tax and benefit systems' capacity to respond automatically to increases in inequality.

4.- UNEMPLOYMENT, INEQUALITY AND POVERTY

The relationship between unemployment and income distribution has given rise to numerous studies in recent years. This has been especially true since the notion became widespread that the new phase of growth could be characterised by unemployment rates above those normally seen in the post-war decades.

The problem has been traditionally tackled from a macro-economic perspective, as part of studies focusing on expansion and recession cycles and their effects on inequality and poverty. The debate on whether inflation or unemployment is the cruellest toll paid by the poor is well known in this context. The comparisons of historical series carried out by many authors have, however, not reached definitive conclusions[13]. The foreseeable effect of a rise in unemployment is generally an increase in poverty levels because unemployment tends to affect the less skilled and the low-paid. These segments

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systems in Canada and the US during the 1980's.

[13] Starting by the groundbreaking work on the redistributing effects of the economic cycle written by Blinder and Esaki (1978).

are the first to be forced out of the labour market in times of economic crisis. In principle, unemployment means a drastic reduction in income for the segments affected by it which can be offset through the benefit payments made by social security systems. The impact on inequality is more ambiguous. Times of economic expansion bring with them the incorporation of many unemployed workers to the labour market. Yet, the salary increases enjoyed by other groups of workers, the evolution of profits and other capital income can also produce an increase in income differentials at the top end of the earnings distribution scale. Historical series in some countries tend to corroborate the negative relationships between unemployment and inequality and, especially so, poverty. In others', however, the compensating role played by social security benefits or changes in the composition of unemployment appear to dilute the effects of unemployment (Björklund, 1991).

It is even more difficult to foresee how variations in different countries' unemployment rates registered at a specific time can affect inequality and poverty levels. Apart from discrepancies in overall rates of unemployment, which at times can be structural, there are also other significant differences in its composition by sex, age, duration, and social transfers coverage and intensity. The question as to what level of inequality some European countries would have if they had a lower unemployment rate (say the same as the US's) is difficult to answer seriously with the analytical instruments at our disposal today. Simulating a new income distribution in which some of those actually unemployed would have jobs is necessary. This exercise would require not only deciding on which individuals would find employment in the new situation but also estimating the salaries they would earn. The development of micro-simulation models seen in recent years could, perhaps, one day allow this type of analysis to be carried out more rigorously.

Relevant information on the links among unemployment, inequality and poverty for some of the countries under study will be presented below. Unfortunately, the data on the employment situation of the interviewees in some of the surveys do not allow for a separate analysis on the unemployed in all countries. In Sweden and Italy, for example, the classifications utilised impede the consistent identification of those individuals who are unemployed. In Germany, the UK and France it is only possible to identify the unemployed in one of the years under consideration. There is no variable in the Canadian

and US data for 1979 and 1981 to identify the unemployed. The analyses of these two countries must thus forcibly commence in the middle 1980's, a time when most of the inequality increases in the US had already occurred.

It is also necessary to take into account that the data on the work situation of those interviewed generally refers to the moment when the interviews were made, whilst the information on income is measured on an annual basis. Therefore, those who had been unemployed during the 12 months prior to the interview but working when it was carried out are not considered as unemployed. In a similar fashion, those unemployed during the interview could have received earnings from work in the preceding months. All of this can be potentially problematical for those countries where unemployment tends to be short-term. This data is the best presently available to analyse the economic situation of the unemployed as long as comparable longitudinal data does not become available.

The general unemployment and inequality trends are reviewed in the first section. The remaining sections are dedicated to comprehensively analysing the situation of the unemployed in those countries for which information is available as well as the contribution of unemployment to the levels of inequality and poverty observed.

d) Unemployment and Income Distribution: Main Trends

The basic data on inequality, poverty and unemployment trends in the countries and periods under study are presented in Table 6. The inequality data are ordered by the size of the changes analysed above. The poverty indices refer to the percentage of the population with disposable income levels below a specific percentage of the national average (the poverty threshold). This approach is in tune with the methodology adopted by the EU to put together statistics on poverty. Two different poverty thresholds have been used; defined as 40% and 50% of each country's average equivalent income in the years under consideration. The equivalence scale is the same as the one applied to the analysis on inequality, (E = 0.5), though the results' reliability has also been checked with two other scales (E = 0.75 and E = 0.25).

The first column of the table shows the unemployment rates for the years in

which observations on inequality and poverty are available. It should be remembered that unemployment tended to rise in all countries in the first half of the 1980's, fall in the second half of the same decade and rose again, though for a shorter period of time, in the early 1990's. Unfortunately, information on income distribution during the different moments of the economic cycle is unavailable in many countries. The two observations for Italy refer to an unemployment reduction phase, whereas for Spain there is no trustworthy information on poverty and inequality levels in the mid 1980's.

Table 6
Unemployment, Inequality and Poverty in some Countries

Country	Year	Unemployment rate	Gini Index	Poverty Indices [3]	
				Threshold=40%	Threshold=50%
Italy	1986	9.9	0.3095	8.3	15.1
	1991	8.6	0.2903	6.7	14.9
Spain [2]	1980/81	12.2	0.3207	10.2	18.1
	1990/91	16.5	0.3062	8.1	15.8
France	1979	6.2[1]	0.2967	6.7	12.7
	1984|	9.7	0.2954	5.9|	11.8|
	1984	‘	0.3032	9.6	14.4
	1989	9.3	0.2925	7.2	12.4
Canada	1981	7.6	0.2858	9.2	15.4
	1987	8.8	0.2834	8.5	14.4
	1991	10.4	0.2850	8.5	14.4
	1994	10.4	0.2852	8.5	14.4
Germany	1978	3.2[1]	0.2659	4.7	9.6
	1983|	7.9	0.2607|	4.0|	9.4|
	1984	7.9	0.2498	4.1	8.8
	1989	6.9	0.2477	4.1	8.4
	1994	9.6	0.2549	5.0	9.6
Belgium	1985	12.4	0.2279	2.6	6.2
	1988	10.4	0.2352	2.7	6.6
	1992	10.4	0.2300	3.3	7.8
Australia	1981	5.7	0.2825	8.1	15.4
	1985	8.1	0.2937	8.3	16.3
	1989	6.1	0.3054	9.5	16.9
U. States	1979	7.2[1]	0.3042	12.1	18.4
	1986	7.0	0.3365	15.4	21.8
	1991	6.8	0.3372	14.8	21.9
	1994	6.1	0.3575	16.0	23.6
Sweden	1981	2.5	0.1984	3.3	6.0
	1987	2.1	0.2201	4.7	8.2
	1992	5.3	0.2294	4.6	7.7
UK	1979	5.3[1]	0.2701	5.7	13.4
	1986	11.0	0.3039	6.4	14.8
	1991	8.2	0.3404	12.4	22.3

Notes: (1) 1980. **(2)**The unemployment rates shown for Spain are weighted averages of the unemployment rates during the two years each survey was carried out (both Family Budget Surveys were carried out between 1 April of one year and 31 April of the following year). **(3)** The poverty indices shown indicate the percentage of individuals in households whose equivalent disposable income (E=0.5)

are below 40% (first column) and 50% (second column) of average disposable income.
Source: The data used for unemployment come from OCDE, *Economic Outlook*. The rest of the data are authors' calculations from LIS micro-data.

Despite the above-mentioned limitations, Table 6 clearly reveals the lack of a clear connection between unemployment and inequality or poverty levels. The largest increase in poverty in the UK occurred during the second half of the 1980's, a period characterised by a clear reduction in the unemployment figures[14]. Inequality also grew consistently throughout the period under study without any apparent relation with the cyclical unemployment rate variations. The inequality increases seen in Sweden and the US bear no relation to the evolution of the unemployment rates, whereas in countries like France, Canada and Spain unemployment rates tended to rise without any significant changes in income distribution.

The lack of change seen in income distribution for Canada and continental Europe throughout a period characterised by radical changes in the labour market suggest the convenience of turning round the question on the relationship between unemployment and inequality. Going back to the possible trade-off between these phenomena with regard to their overall redistributing effects, to what degree have countries with lower poverty and inequality growth obtained worse results in the fight against unemployment? In other words, to what extent have countries that benefited from an increase in employment levels suffered the cost of growing income inequality? The US is, without a doubt, the paradigm of success in the reduction of unemployment rates thanks to the rapid pace of job creation in recent years coupled with the worst results concerning income distribution among all the countries under study. Income inequality has increased and has closely followed the pattern set by growing wage dispersion. The US poverty figures have, likewise, worsened in the last few five-year periods. The US is suffering significantly higher inequality and poverty levels than the other countries in the mid 1990's, a situation which was not so evident in the early 1980's.

[14] The difference in the pace of poverty growth during the two sub-periods is reduced somewhat when an equivalence scale with a parameter above E = 0.5 is used. Using E = 0.75, a parameter which requires greater total income levels for numerous families, the growth in the poverty figures during the two halves of the 1980's are more similar.

Similar developments were seen in the UK, albeit with less spectacular results in job creation. In any case, the reduction of the UK unemployment rate was notable in the second half of the 1980's and after the economic crisis of the early 1990's. Inequality in the UK, however, rose at a very fast pace between 1979 and 1991. The pace of growth was higher than in the other countries. The same can be said for the UK's poverty indices, particularly in the 1980's. As a result, the UK registered poverty levels just slightly below the US levels at the beginning of the 1990's.

The third country which stands out for the growth in inequality it has experienced is Sweden. The country has a series of specific traits related to the peculiar Scandinavian post-war labour market and welfare models. Some of the fundamental features of the 'Swedish model' in the decades prior to the 1980's included: wide-ranging social protection networks, generous social services, full employment and a very centralised collective bargaining system. At the beginning of the period analysed by this study, Sweden had inequality and poverty indices that were clearly lower than those of the other European countries did. These levels reflected the effects of a relatively compressed pay structure, a very progressive tax system with a significant redistributing impact and a universal, though *workfare* based, benefit system with high earnings replacement rates.

The economic and social achievements of the Swedish model suffered a certain degree of deterioration throughout the 1980's and early 1990's. Some of the symptoms were lower rates of economic growth (visible since the 1970's), an increase in wage disparities, growing inequality in income distribution (since the early 1980's) and a clear rise in unemployment. The analyses carried out to explain the causes and interrelations among these processes tended to underline the role played by the worsening of industrial relations between workers and employers. This lead to the abandonment of the egalitarian pay-setting process in the 1983 tax reforms, the drastic cut in income tax rates in 1991 and, finally, the reduction in replacement rates and duration of many social benefits in the early 1990's.

The negative impact of the previously mentioned institutional changes on income distribution together with the strong recession suffered by the Swedish economy between

1991 to 1994 could be greater than suggested by the 1992 inequality and poverty indices as the tax reforms had yet to produce their main effects in that year. Earnings inequality had, nevertheless, already increased notably during the 1980's, and had negatively affected overall income distribution.

The most outstanding feature in Canada's case is, undoubtedly, the stability enjoyed by its inequality and poverty level figures in recent years when compared with the developments seen in its neighbour, the US. Concerning unemployment, on the other hand, the differential with the United States rose throughout the 1980's, even though its cyclical development has been very similar in both countries. Canada presently has an unemployment rate just below the European average. Australia can be found in an intermediate position between Canada and the United States with regard to inequality and poverty trends as well as the evolution of unemployment. As was previously seen, Australia has suffered a smaller increase in primary income inequality than the other two countries, but this has lead to significant changes in disposable income distribution and, to a lesser degree, to higher levels of poverty.

The continental European countries (Belgium, Spain, France, Italy and Germany) did not suffer notable increases in poverty or inequality levels despite the moderate increases in earnings and primary income inequality registered for most of them. All of them had unemployment rates above 10% in the mid 1990's along with a greater resistance to falls than in the Anglo-Saxon countries. The institutional frameworks and the social protection systems of these countries seem to have played an important role in both limiting the growth of inequality among those in work and compensating for the negative effects of unemployment on poverty levels. In cases like Spain's, other additional factors must be taken into account. As will be seen below, these include factors such as the late and massive incorporation of women into the labour market or the concentration of unemployment on women and the young.

b) How Unemployment Affects Households

The impact of unemployment on inequality and poverty depends, to a great extent, on how unemployment affects the different members of a household. Table 7 shows information on the distribution of the household role played by the unemployed.

The roles are divided into head of household, spouse and other members (mainly children) by the countries and years for which information is available in the surveys comprising the LIS database.

The data included in the table show that between a third and a half of all those unemployed in any one moment are main breadwinners. There are, however, significant differences according to the country and time considered. Spain is the country that stands out for having the lowest percentage of unemployed breadwinners (32.1% in 1980/1981 and 27.7% ten years later). United Kingdom (51.5%) and Germany (50.1%) are situated at the other extreme, together with Canada in the 1990's.

Table 7
Distribution of the Unemployment within the Household (%)

Country	Year	Household role		
		Head of Household	Spouse	Other members
U. Kingdom	1991	51.5	12.6	35.9
Germany	1984	50.1	31.2	18.7
Canada	1987	40.9	26.3	32.8
	1991	50.4	18.6	31.0
	1994	50.0	21.4	28.6
France	1989	48.5	34.3	17.2
United States	1986	41.8	19.9	38.3
	1991	46.2	17.8	36.0
	1994	42.4	17.0	40.6
Australia	1985	38.1	22.4	39.5
	1989	42.4	21.7	35.9
Belgium	1988	36.5	36.9	26.6
	1992	34.0	43.8	22.2
Spain	1980	32.1	3.8	64.1
	1990	27.7	18.2	54.3

Note: Countries ordered by percentage of unemployed main breadwinners in the last available period.
Source: Own research with LIS micro-data.

Unemployment among 'spouses' and 'other members' –mainly adult children– also varies from country to country. Belgium, France and Germany are the three countries with the highest percentage of 'spouses' amongst the unemployed. Spain, on the other hand, has the highest concentration of unemployed 'other members'. Its figures are much higher than other countries' (54.1% in 1980 and 54.3% in 1990). It must be pointed out, however, that the increase in unemployment suffered by Spain between 1980 and 1990 seems to have hit 'spouses' especially hard; from less than 4% of the

unemployed in 1980, they constituted more than 18% in 1990. This latter figure is comparable with those of other countries. Thus, the distinctive features of the Spanish situation seem to be the massive incorporation of women into the labour market in the 1980's (and its effects on unemployment rates and composition) as well as the importance on the overall unemployment rate of young people still living with their parents.

Thus, the countries with the highest unemployment rates are not necessarily those with the highest percentage of households headed by an unemployed person. In fact, this percentage fluctuates between 3% in the US in 1994 to 8% in Canada in 1987 (see Table 9 below). In 1990/1991, a person who was unemployed headed 5.5% of Spanish households. This figure is only 0.4% higher than in 1980/1981 and is similar to the figures registered for Belgium and the United Kingdom, both with much lower unemployment rates.

These differences must be taken into account when evaluating the impact of a specific unemployment rate on overall inequality and poverty levels. The economic situation of unemployed spouses and children basically depends on the income received by other members of the household in which they live. Thus, it is probable that their concentration in the lower deciles is less significant than in the case of unemployed breadwinners. This issue will be examined in the following section.

c) The Distribution of Unemployment by Income Levels

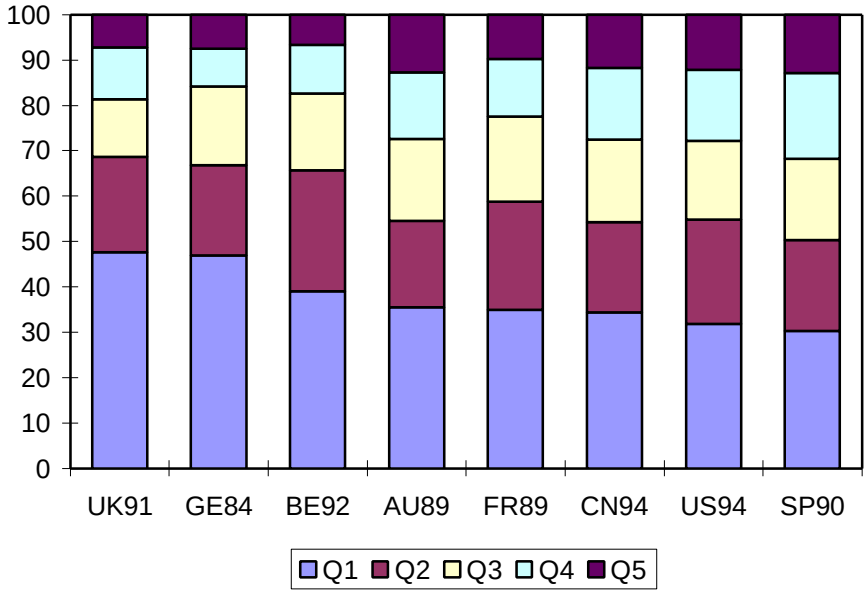
The position of an unemployed individual in the income scale depends on a series of complex factors. Some of them are how long he/she has been unemployed, his/her right to receive unemployment and other benefits, the amount and duration of benefit payments and, of course, the work situation and income earned by other household members. We can expect a lower concentration of the unemployed, as a group in the lower income levels when compared to households whose main income earner is unemployed.

Figures 4 and 5 confirm that the above statement is correct in all the countries under consideration. The first graph shows the distribution of unemployed individuals

over 16 years of age by income quintiles according to the equivalent disposable income of the household they belong to. The second graph is also ordered in the same way, but it refers only to the people living in households whose main breadwinner is unemployed. The data corresponds to periods in or around 1990, except for Germany, where data in which the unemployed can be clearly identified is only available for 1984.

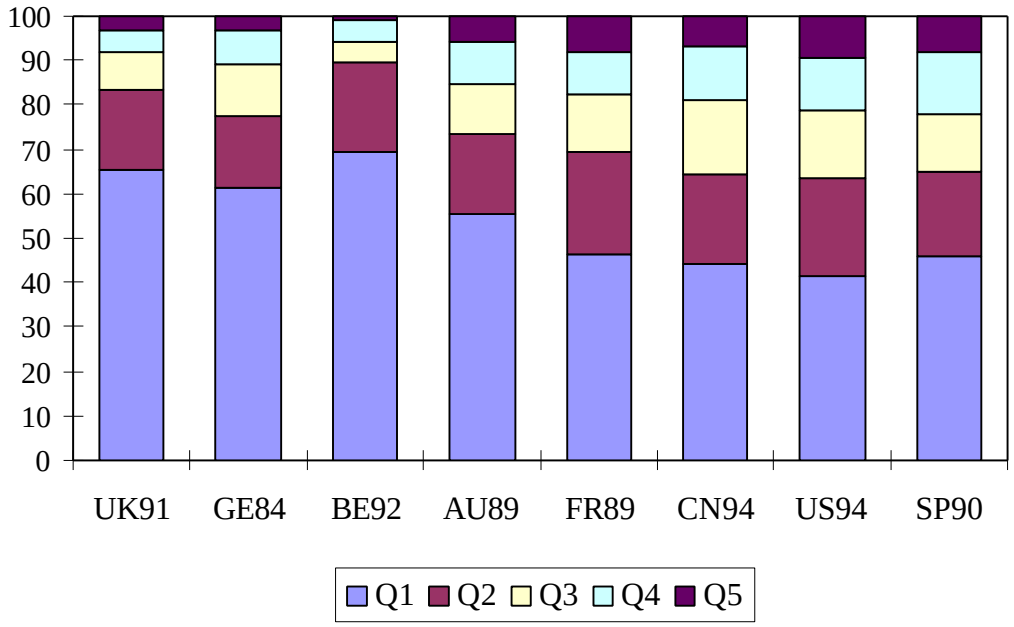
Both graphs show that the unemployed and households headed by an unemployed are over represented in the lowest income quintile. This is especially true for latter. Between 30% and 48% of unemployed individuals belong to households whose equivalent disposable income is situated in the lowest quintile of the distribution scale. The rest are shared out in decreasing proportions among the following four quintiles. Concerning the people who live in households whose main breadwinner is unemployed, it can be seen that between 40% and 70% are found in the lowest income quintile, whilst very few (especially in Belgium, Germany and the UK) are to be found in the top income quintile.

FIGURE 4
DISTRIBUTION BY INCOME QUINTILES OF THE UNEMPLOYED POPULATION



Source: Authors' calculations from LIS micro-data.

FIGURE 5
DISTRIBUTION BY INCOME QUINTILES OF THE POPULATION LIVING IN HOUSEHOLDS HEADED BY AN UNEMPLOYED PERSON



Source: Authors' calculations from LIS micro-data.

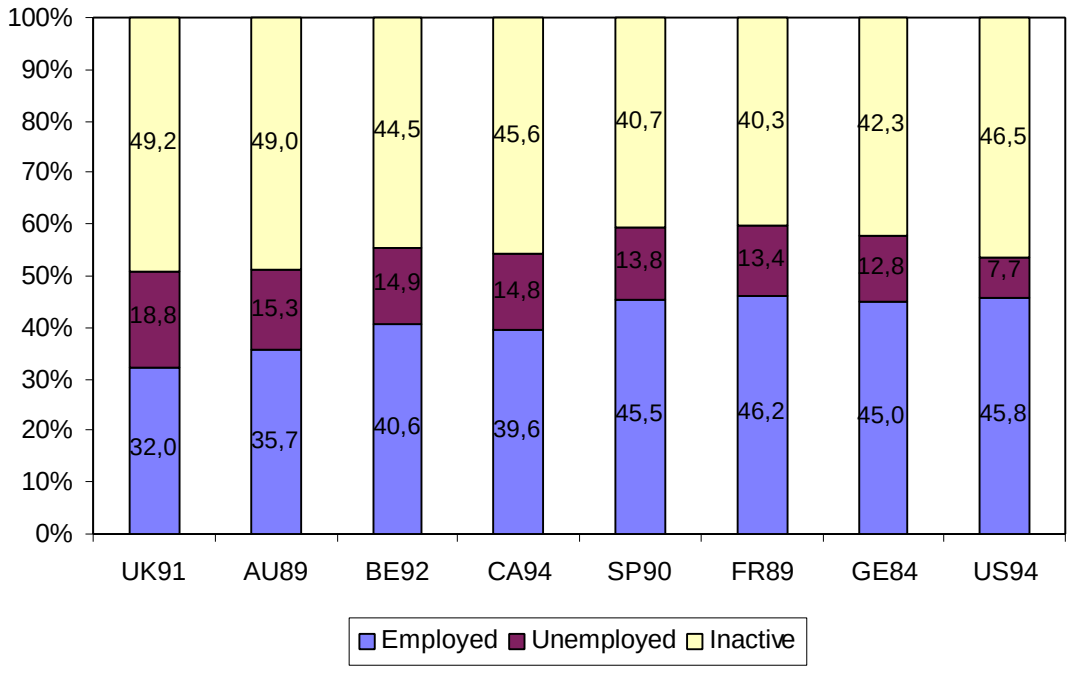
Considering either the situation of unemployed individuals or households headed by an unemployed breadwinner, the concentrations in the lowest income quintile is clearly higher in the UK, Germany and Belgium, than in the US, Canada or Spain. These differences are a result of other groups' relative position in the income scale, among other factors. This can be observed more distinctly studying the composition of the top and bottom income quintiles whilst taking into account the employment situation of the head of the household (Figures 6 and 7).

The top quintile shows a clear preponderance of people in employment. Between 80% and 90% of the population situated in this income group belongs to a household whose main breadwinner is currently in work. Households headed by an inactive person account for between 7% and 20% depending on the country. The highest percentages are observed for Spain and France, and the lowest in Australia and the UK. Unemployed people are, in general, very scarce in the top quintile. This is especially true for Belgium, the UK and Germany.

The composition of the bottom quintile, grouping together the 20% of the

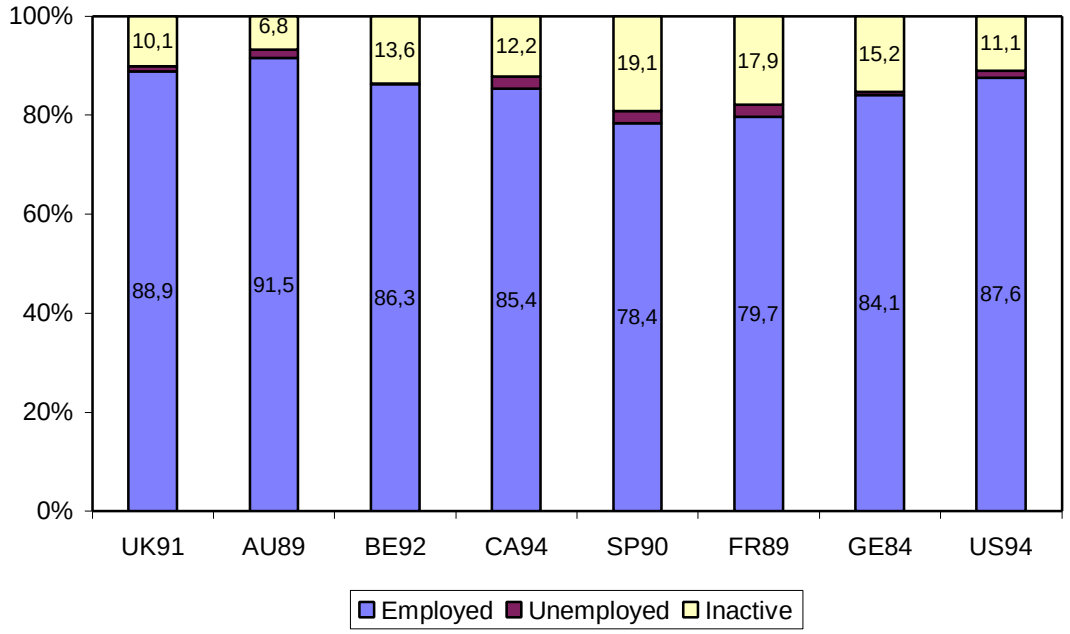
population with the lowest income levels, is markedly different. There is a greater preponderance of unemployed and inactive people. On average, 45% of the people included in this quintile live in households headed by an inactive head, 40% in households headed by someone in employment and 15% in households headed by someone who is unemployed. Spain, France, Germany and the US all have a slightly higher percentage of unemployed people. With the exception of the US, these countries also have a lower percentage of inactive people. Inactive people and those in employment have somewhat more weight in the lowest income segment of the US, whilst it has a slightly lower percentage of unemployed people. As will be seen below, this does not mean, however, that their economic situation is more favourable seeing as the US registers particularly high poverty levels in all social groups.

FIGURE 6
COMPOSITION OF THE BOTTOM QUINTILE (%)



Source: Authors' calculations from LIS micro-data.

FIGURE 7
COMPOSITION OF THE TOP QUINTILE (%)



Source: Authors' calculations from LIS micro-data.

Australia and the UK are the two countries with the highest percentage of households headed by inactive people in the bottom quintile. At the same time, both also have the lowest percentage of households headed by employed people. In the UK, there is also a notable presence of households headed by an unemployed breadwinner. Thus, in the UK, the fact of being unemployed clearly increases the likelihood of forming part of the poorest 20% of the population.

Two fundamental conclusions can be reached from the above analysis. Firstly, the fact of being unemployed does not entail as great a risk of ending up in the lower income levels as living in a household headed by an unemployed person. As a matter of fact, the analyses that follow will focus on households whose breadwinner is unemployed rather on unemployed people who live in households headed by an employed or retired person. This does not mean, however, that unemployment is a socially irrelevant problem when it affects the 'spouses' or 'children' of people in employment. It means that the group comprised of households headed by unemployed people is the one which best reflects the problems created by insufficient income which, in specific situations, can be produced by unemployment.

Secondly, the clear preponderance of unemployed and inactive people in the bottom income quintile of all the countries under study is striking. Their weight within the quintile is much higher than what their demographic weight would suggest. Along with the unemployed and the inactive, there are also a significant percentage of people in employment, though under represented with regard to their demographic weight. Having a job does not always ensure a comfortable position within the income scale, especially so in the countries which register the highest earnings inequality levels.

d) Unemployment and Poverty: The Role of Social Protection

Households whose main breadwinner is unemployed have the highest risk of suffering poverty in all the countries under consideration. Social protection mechanisms, which foresee the provision of various income support benefits, are a key element when assessing the economic situation of this group. These mechanisms can produce significant differences in the poverty levels observed for the various countries. Both these issues will be looked at in this section.

The analysis of the specific poverty rates suffered by households whose head is unemployed, presented in Table 8, confirms that these are more prone to suffering poverty. The first relevant fact that the figures in the Table show is that households headed by an unemployed person have much higher poverty rates than the population as a whole in all the countries considered. Nevertheless, significant differences exist among the countries as can be seen by comparing the situations in Belgium, France or Germany with those in either the US or the UK (Figure 8).

The largest differences are observed when the lower poverty threshold is utilised. Less than 7% of households whose breadwinner is unemployed are below the poverty level in Belgium. The indices are also below 20% in France and Germany. In the US[15]

[15] The reason why the US registers such high levels of poverty among this group despite a lower relative concentration of unemployed individuals in the bottom quintile can be better understood if we note that the US has the highest overall poverty rates taking the 40% threshold. With this threshold, approximately 15% of the population is below the poverty line. In other words the first decile and the

and Australia, on the contrary, the poverty indices are above 30%. The UK figure reaches 53.4%. Canada and Spain find themselves in an intermediate position.

Table 8
General Poverty Indices and Poverty Indices of Households with an Unemployed Head

Country	Year	Threshold = 40% of average		Threshold = 50% of average	
		All Households	Unemployed Breadwinner	All Households	Unemployed Breadwinner
Belgium	1985	2.6	6.4	6.2	23.7
	1988	2.7	6.0	6.6	27.8
	1992	3.3	5.9	7.8	34.2
France	1989	7.2	18.5	12.4	34.3
Germany	1984	4.1	19.5	8.8	35.4
Canada	1987	8.5	27.1	14.4	38.6
	1991	8.5	16.8	14.4	26.4
	1994	8.5	23.0	14.5	36.0
Spain	1980/81	10.2	24.7	18.1	41.7
	1990/91	8.1	25.5	15.8	39.5
Australia	1981	8.1	29.2	15.4	44.6
	1985	8.3	24.8	16.3	47.9
	1989	9.5	33.2	16.9	50.2
United States	1986	15.4	35.3	21.8	46.5
	1991	14.8	30.9	21.9	39.3
	1994	16.0	38.2	23.6	48.3
UK	1991	12.4	53.4	22.3	68.2

Notes: The poverty index measures the percentage of people whose income is below the threshold. The countries are ordered from lowest to highest poverty index for the last date when data is available and using the 40% threshold.
Source: Authors' calculations from LIS micro-data.

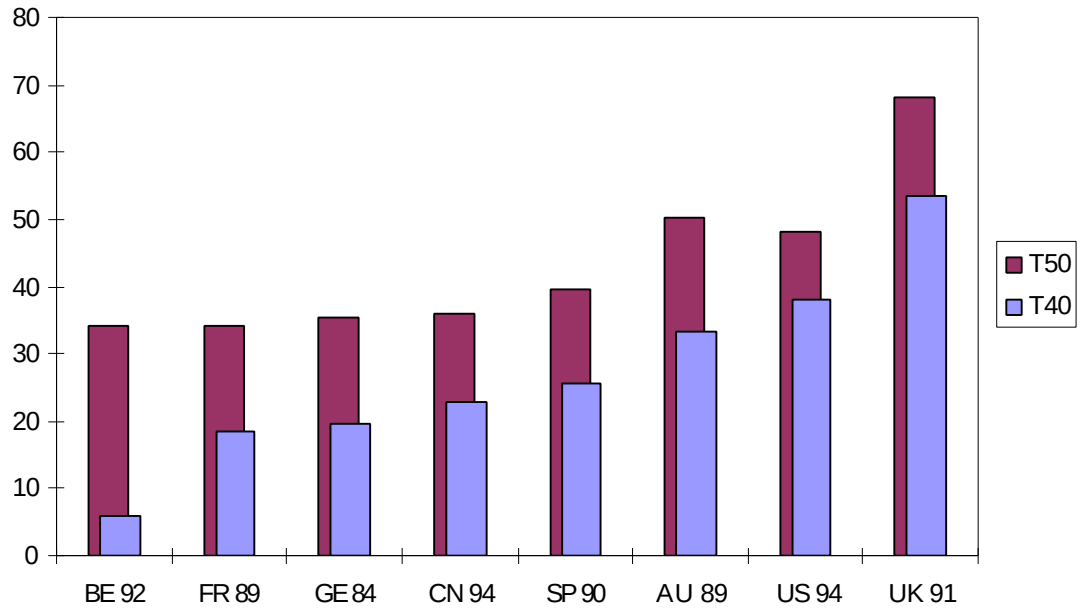
When the 50% threshold is used, the order of countries remains the same, but the poverty level differences between Belgium, France and Germany and the other countries are reduced somewhat. In the three countries mentioned above, there is a high percentage of households headed by an unemployed breadwinner with income levels of between 40% to 50% of the average. This is particularly true for Belgium in the last year considered. The UK still has the highest poverty index, with a percentage of 68.2%.

Temporal trends are only visible in some of the countries under study. Among

first half of the second decile have income below the lower poverty threshold considered. This is a situation that is noticeably different from those of the other countries.

these, the improvement in the position of households whose main breadwinner is unemployed in the US and Canada seen in 1991 is worthy of note. This improvement, however, was short-lived. It soon worsened again in the early 1990's. The stability of this particular group's poverty indices in Spain contrasts with the reduction in overall poverty levels. Lastly, poverty levels in Belgium have increased continuously if the 50% threshold is considered. This is not the case when the 40% threshold is used.

Figure 8
Poverty Indices of the Population Living in Households with an Unemployed Head (%)



Source: Authors' calculations from LIS micro-data.

To what degree are the differences highlighted above a result of the different levels of social benefit coverage provided by the various countries? Previous sections data showed how the unemployment benefit replacement rate varied significantly in the OECD countries. These rates were below 30% in the US and the UK, while they were above 60% in Spain and Sweden. Given that social security benefits are a crucial source of income for households whose main breadwinner is unemployed, it would be expected that their efficacy in reducing poverty is greater in those countries providing wider and more generous levels of social protection.

It is possible to analyse the amounts of the various types of benefits received by households whose main breadwinner is unemployed from the data included in the LIS

surveys. Table 9 contains information on coverage levels of contributory unemployment benefit, income support (for unemployment or other causes) and general social benefits whether they are contributory or not. The coverage levels are examined through two indicators: the percentage of households receiving a particular kind of benefit and the percentage contributed by the various benefits received to the disposable income of households with an unemployed head.

Table 9
Coverage of different kinds of social security benefits to households with an unemployed head

Country	Year	% Households with an unemployed head	% Households entitled to benefit			% of disposable income		
			CUB	IS	SB	CUB	IS	SB
Germany	1984	3.9	45.8	48.6	90.0	11.8	17.8	39.3
Australia	1981	3.6	58.5	N/A	83.4	19.2	N/A	28.7
	1985	3.7	61.4	N/A	87.2	25.5	N/A	38.1
	1989	5.1	49.8	18.9	78.1	18.0	5.5	30.4
Belgium	1985	5.5	93.2	7.6	98.0	58.5	1.1	76.6
	1988	5.2	96.4	10.6	99.6	59.3	1.2	79.5
	1992	4.3	90.6	5.1	96.4	64.1	1.8	85.1
	1981	4.7	59.8	48.2	94.8	14.3	6.4	23.6
Canada	1987	8.0	64.7	45.8	96.7	16.6	5.7	27.8
	1994	6.6	53.3	33.5	95.5	14.9	9.9	31.8
	1980	5.1	N/A	N/A	65.1	N/A	N/A	42.3
Spain	1990	5.5	70.7	7.7	78.6	25.9	3.6	35.6
	1986	3.4	35.1	35.6	66.0	3.9	7.2	14.8
U.States	1991	4.5	42.5	31.2	71.1	6.4	5.0	15.3
	1994	3.1	32.2	38.0	72.1	4.3	6.7	16.7
France	1989	5.6	77.7	35.1	92.1	48.1	5.7	70.3
Italy	1991	1.1	25.3	N/A	27.5	18.5	N/A	24.0
UK	1991	5.0	21.0	72.5	92.7	6.3	41.9	58.2

Notes: CUB= Contributory unemployment benefit. IS= Income support (of any type). SB= Social benefits (contributory or not). N/A= Data not available.
Source: Authors' calculations from LIS micro-data.

Focusing on contributory unemployment benefit, it can be observed that the UK (21%) and the US (32%) have the lowest coverage levels. Germany, Australia and Canada have intermediate coverage levels situated between 45% and 55%. Spain (70%), France (77.7%) and Belgium (90.6%) have coverage levels significantly above the average levels.

One reason which could account for these discrepancies are the ways the different social protection systems are set up. Some systems like the British rely more on means-tested benefits than others. The data on income support benefits justify this view.

This kind of benefit includes all benefits which are granted only after a potential claimant's financial means and income are tested, whether or not the benefits have to do with unemployment. This sort of benefit in Spain would include unemployment subsidies (sometimes granted after the claimants' contributory benefit has been exhausted) and other benefits like the guaranteed minimum income (*renta mínima garantizada)*. The British *Income Support*, the German *Sozialhilfe* and the American *AFDC* are other important benefits of this kind.

The table shows that the coverage of means-tested income support benefits is very variable. Less than 10% of households whose main breadwinner is unemployed receive this kind of benefit in Belgium and Spain. In Australia, less than 20% do. On the other hand, they are very generalised in Canada, Germany, France and the US with figures of between 30% and 50% of households receiving them. They have an overwhelming presence in the UK, where 72.5% of households with unemployed breadwinners receive some sort of mean-tested income support benefit.

The analysis of the income percentages derived from both kinds of benefit leads to the same order in general terms. Almost 42% of the income entering UK households headed by an unemployed breadwinner comes from income support benefits. This figure contrasts strongly with those for other countries. On the other hand, this group in the UK only receives 6.3% of its income from contributory unemployment benefit, a figure that is only lower in the US. The other two countries where the weight of income support benefits is higher than contributory benefits in households with an unemployed breadwinner, without reaching the British extremes, are Germany and the US. Belgium must be highlighted among the countries that place more emphasis on contributory benefits. More than 64.1% of the income entering Belgian households with an unemployed main breadwinner comes from contributory benefits and only 1.8% from income support benefits. In Spain, a fourth of these households' income is obtained from contributory benefits, and only 3.6% comes from means-tested benefits.

The last column of each sub-heading offers the same sort of information on social benefits of *any kind*. It underlines to what degree benefit spending in each country helps to top up the income of households with unemployed breadwinners. More than 90% of these households in Belgium, Canada, France, Germany and the UK receive income

derived from some sort of social benefit. The percentage is lower (between 72% and 79%) in the remaining countries. The importance of benefit income in disposable income for this group is least in the US (16.7%) and most in Belgium (85.1%). With the exception of the UK and France, with 58.2% and 70.3% respectively, these households obtain between 30% and 40% of their disposable income from benefit payments in the remaining countries.

Concerning temporal trends, its worth highlighting that the years when contributory benefit coverage was higher in Australia, Canada and the US were also the years which registered the lowest poverty levels in these three countries. As a general rule, it can be said that contributory benefits are clearly more generous than income support benefits.

What effect has all of the above on the differences observed in poverty rates among the households whose main breadwinner is unemployed? The efficacy of benefit payments in reducing poverty has, by necessity, to be different in the UK, a country with a strong dependence on income support, from France, where a high level of contributory benefit coverage is combined with a wide range of means-tested benefits. Great differences in the poverty levels of these two countries have, as a matter of fact, been already seen. Up to what point can these differences be attributed to the benefits received by households with an unemployed breadwinner in the various countries?

Table 10 offers a quantification of the poverty reducing role played by the social benefits (contributory or not) received by households with an unemployed breadwinner. The figures correspond to the last year for which data is available. Poverty indices 'before' and 'after' receiving benefits are compared, thus obtaining the poverty level percentage reductions which can be attributed to social benefits. The poverty thresholds have been recalculated using income distribution without social benefits when estimating the poverty rates 'before' social benefits. In this way, the poverty indices would correspond to a hypothetical income distribution in which no household received any sort of social benefit payments[69].

[69] If the previous two poverty thresholds were used to calculate the 'before' and 'after' rates, the poverty

Table 10
Poverty indices of the population living in households headed by an unemployed 'before' and 'after' social security transfers

Country/Year	Poverty Threshold = 40%			Poverty Threshold = 50%		
	Poverty 'before'	Poverty 'after'	% reduction	Poverty 'before'	Poverty 'after'	% reduction
Belgium (1992)	85.6	5.9	93.1	86.9	34.2	60.6
France (1989)	67.8	18.5	72.7	74.5	34.3	54.0
Germany (1984)	42.8	19.5	54.4	53.6	35.4	33.9
Canada (1994)	44.4	23.0	48.2	51.7	36.0	30.4
Spain (1990/91)	44.0	25.5	42.0	50.5	39.5	21.8
Australia (1989)	55.1	33.2	39.7	63.1	50.2	20.4
U. States (1994)	46.0	38.2	17.0	53.2	48.3	9.2
U. Kingdom (1991)	77.7	53.4	31.3	81.4	68.2	16.2

Notes: Countries ordered from lowest to highest poverty index using the 40% of average salaries poverty threshold for the group of unemployed people in the last date for which information is available. To obtain the poverty index 'without benefits', benefits were subtracted from disposable income and new poverty thresholds and poverty rates were calculated. The latter correspond to income distribution before benefit payments.
Source: Authors' calculations from LIS micro-data.

The main conclusions confirm the results suggested in the previous analysis. Social benefits play a limited role in reducing poverty among households headed by an unemployed breadwinner in the UK and, particularly so, in the US. The difference between the poverty levels among the unemployed in both countries is due to the fact that the poverty rate 'before' benefits is much lower in the US than in the UK. An 81.4% of UK households headed by an unemployed person are considered to be poor before receiving any benefits, and 68.2% continue being poor 'after' receiving them despite more than 70% of households receiving some sort of income support. France and Belgium are at the opposite extreme. In these two countries, social security benefits substantially reduce the poverty levels suffered by this kind of household. Social

reduction attributable to social benefits would be somewhat over-estimated. The conclusions on the differences among countries would, however, remain the same.

protection in Australia and Spain produce a 40% reduction at the lowest poverty threshold, a percentage reduction slightly below Canada's and Germany's.

The differences in the design and the coverage levels of social security benefits almost completely explain the different levels of poverty registered for households headed by an unemployed person in the countries studied. As a matter of fact, the way the countries are ordered by poverty levels in this group is the reverse of the one obtained when the relative size of social benefits' levelling effects were examined. The only exception to this rule is the UK, where there are higher poverty rates than in the US despite the higher level of social protection received by its unemployed.

e) The Contribution of Unemployment to Poverty and Inequality

The previous sections have confirmed that households headed by an unemployed person tend to be concentrated in the lowest income levels in all the countries under study. These households also suffer much higher poverty indices than the population as a whole. Previous results have also demonstrated the role played by the social security systems in the various countries in reducing poverty, which almost wholly explains the differences observed in the incidence of poverty in these kinds of households. This is especially true when the poverty threshold considered is 40% of average income.

What then is the overall contribution of unemployment to poverty and inequality in the various countries? The contribution that households whose head is unemployed make to poverty and inequality levels depends not only of the incidence of poverty and inequality on them, but also on the size of this group in relation to the overall population. Furthermore, it depends on the relations between this groups' income, poverty and inequality indices and the corresponding indices of the other groups.

The contribution made to poverty is easy to calculate with the index utilised. It is sufficient to take into account that the overall poverty index (IP) can be expressed as a weighted sum of the specific indices of each group (IP_k). The weight of each group is given by each group's size relative to the overall population n_k/n. Thus:

$$IP = \sum_{i=1}^{k} \frac{n_k}{n} IP_k$$

The relative contribution of each group *k* to the overall poverty index will be the result of the coefficient of its weighted poverty index and the index of the population as a whole. It is simple to see that this relative contribution represents the proportion of poor people belonging to group *k*. The absolute contribution to poverty can be calculated applying the above-mentioned proportions to the overall poverty index and it will indicate the percentage of the overall population that can be considered to be poor and belongs to group *k*.

Table 11 shows the relative contribution to poverty (for the 40% of average income poverty threshold) made by households headed by employed people, unemployed people and inactive people. Likewise, Figure 9 shows the absolute contribution made by the group of households headed by unemployed breadwinners to poverty levels in each country. The 40% poverty threshold has been chosen because it shows low relative incomes more unequivocally. Besides, the conclusions reached when using the 50% threshold did not change substantially.

Table 11
Relative contribution to poverty according to the employment situation of the head of the household
(Poverty threshold = 40% of average income)

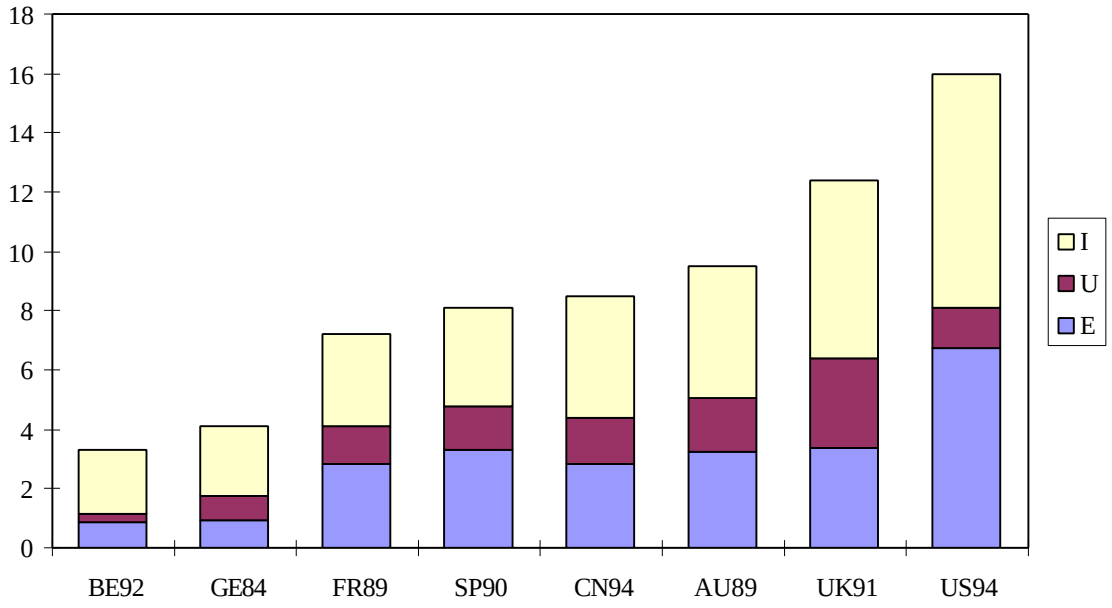
Country/Year	Employed	Unemployed	Inactive	Total
Belgium 1992	26.6	7.6	65.8	100 (3.3)
Germany 1984	22.8	19.8	57.4	100 (4.1)
France 1989	39.6	17.6	42.8	100 (7.2)
Spain 1990/91	40.6	18.9	40.5	100 (8.1)
Canada 1994	33.0	18.3	48.7	100 (8.5)
Australia 1989	33.8	19.4	46.8	100 (9.5)
U. Kingdom 1991	27.1	24.7	48.2	100 (12.4)
U. States 1994	42.3	8.4	49.3	100 (16.0)

Note: Countries ordered from lowest to highest poverty indices with the 40% poverty threshold. (Index presented between brackets in last column).
Source: Authors' calculations from LIS micro-data

The relative contribution made to overall poverty by households headed by an unemployed person lies between 17% and 20%. These figures represent between a sixth and a fifth of the population of poor people. The UK figure is clearly above these as 25% of people below the poverty threshold belong to households whose main breadwinner is unemployed. Belgium (7.6%) and the US (8.4%) are below the average figure. In the first case, due to the low poverty index among the unemployed and, in the second, to the combination effect of having a smaller group belonging to households headed by an unemployed and the high poverty levels seen in the other population groups.

The relative weight of those in employment within the population of the poor is highest in the US. It is followed by Spain, whilst Germany has the lowest figure. In Germany and Belgium, on the contrary, the relative weight of inactive people within the population of the poor is higher than in the other countries (close to 75% in Belgium).

Figure 9
Absolute contribution to poverty according to the employment situation of the head of the household



Note: I: Inactive; U: Unemployed; E: Employed
Source: Authors' calculations from LIS micro-data

If the absolute contributions of each group to poverty are considered (Figure 9), then the most outstanding feature is, undoubtedly, the high percentage of the population living in households whose main breadwinner is working and yet find themselves below the poverty line in the US. The contribution of unemployment to the poverty index in the US is lesser than in other countries. Those in employment, however, have more weight in contributing to the poverty index than in any other country. The unemployed and the inactive contribute clearly to the high poverty rate observed for the UK. Unemployment has an especially high impact on the overall poverty rates in this country.

Calculating the contribution to overall inequality made by households whose main breadwinners are unemployed is somewhat more complicated. This contribution depends on internal inequality within the group, its relations with internal inequality within other groups as well as the relative income levels of the groups. Fortunately, some inequality indices, like the Theil index, are additively decomposable by population sub-groups. This means that overall inequality can be expressed by the sum of 'intra-group' and 'inter-group' inequality. The first component is a lineal combination of the inequality indices of the *k* groups which make up the population. This component can be interpreted as the level of inequality that would exist in the population if the different groups had the same average income, but that the internal inequality within each group had remained unchanged. The second component represents the inequality that would exist if inequality within each group were to be eliminated. That is to say, if all the members in a specific group had an income identical to the group's average income.

In formal terms, this could be expressed as:

$$ID = \sum_{i=1}^{k} w_k ID_k + B$$

Where ID is the decomposable inequality index, the first sum represents inequality within the groups and B the inter-group component. The constants w_k are the weights attributed to each specific inequality index when calculating the first sum.

The Theil index for c=1 has been chosen for decomposing as it is the only one, along with the Theil index with the c=0 parameter, that enables inequality within groups

to be expressed as a weighted average of the internal inequality within each group. Thus, the contribution made by households headed by an unemployed person to overall inequality is calculated by its participation in inequality within the groups plus a non-decomposable component of its contribution to inequality among the groups.

The decomposition of the index T_1 can be carried out with the following formula:

$$T_1 = \sum_{i=1}^{k} r_k T_{1_k} + \sum_{i=1}^{k} r_k \mathrm{Ln}\left(\frac{m_k}{m}\right)$$

Where r_k represents the relative contribution of group k to overall income, T_{1k} the group's inequality index, and m_k and m are the average income of group k and overall average income respectively.

Table 12 contains the necessary information for decomposing T_1 in the countries and most recent dates for which information is available. The third, fourth and fifth columns show, respectively, relative population (that is to say, percentage of people who live in households of each type), relative income (the coefficient between the group's average income and the national mean) and each group's specific inequality index. The product of the first two columns, expressed as a percentage, determine the weighting applied to each specific index to calculate inequality between groups.

Table 12
Relative population, relative income and inequality
by the employment situation of the head of the household

Country/Year	Employment Situation	Relative population (%)	Relative income (%)	Inequality T_1
Belgium 1992	Employed	71,5	108,3	0,06788
	Unemployed	4,3	61,5	0,06453
	Inactive	24,2	82,4	0,12938
	Total	100,0	100,0	0,09013
Germany1984	Employed	71,0	107,3	0,08842
	Unemployed	4,2	63,7	0,09712
	Inactive	24,9	85,2	0,15553
	Total	100,0	100,0	0,11072
Canada 1994	Employed	68,0	111,0	0,11494
	Unemployed	6,7	71,7	0,15831
	Inactive	25,3	78,0	0,14735
	Total	100,0	100,0	0,13703
France 1989	Employed	69,8	107,6	0,14014
	Unemployed	5,8	72,1	0,18440
	Inactive	24,4	84,9	0,18254

	Total	100,0	100,0	0,15818
	Employed	73,7	111,4	0,12532
	Unemployed	5,6	62,7	0,21047
Australia 1989	Inactive	20,7	69,5	0,19584
	Total	100,0	100,0	0,15829
	Employed	66,7	107,6	0,15171
Spain	Unemployed	6,0	71,4	0,21000
1990/91	Inactive	27,3	87,8	0,17317
	Total	100,0	100,0	0,16593
	Employed	69,4	114,8	0,18356
	Unemployed	5,7	50,7	0,21539
UK 1991	Inactive	24,9	70,3	0,18902
	Total	100,0	100,3	0,21352
	Employed	73,1	110,8	0,18039
	Unemployed	3,5	68,0	0,30279
US 1994	Inactive	23,4	71,1	0,27618
	Total	100,0	100,0	0,21621

Note: Countries ordered from lowest to highest level of inequality by T_1 (index in brackets in last column).
Source: Authors' calculations from LIS micro-data.

Table 13 shows the main results in percentage terms, while the absolute contribution to inequality are reflected in Figure 10. These last two show the decomposition of the value of T_1 obtained for the inequality components within the three groups studied and inequality between groups for each country. As can be seen in Table 13, inequality within groups accounts for the greater part of inequality in all countries with percentages above 90% in Canada, the US, Germany, France and Spain. In the latter two countries, inequalities between groups are responsible for a very small part of the overall index, below 5%. The small differences (in comparative terms) among the average incomes of households headed by an unemployed people, unemployed people and those who are inactive (see Table 12) are at the root of this result. On the contrary, inequalities among the three groups are greater in Belgium, Australia and, above all, the UK. In the latter, the inter-group component accounts for 13.2% of the overall inequality index.

Table 13
Decomposition of inequality according to the employment situation of the head of the household (%)

Country/Year	Inequality within groups (%)				Inequality between groups (%)	Total inequality (%) (T_1)
	Employed	Unemploy.	Inactive	Total		
Belgium 1992	58.3	1.9	28.7	88.8	11.2	100.0 (0.09013)
Germany 1984	60.8	2.3	29.8	92.9	7.1	100.0 (0.11072)

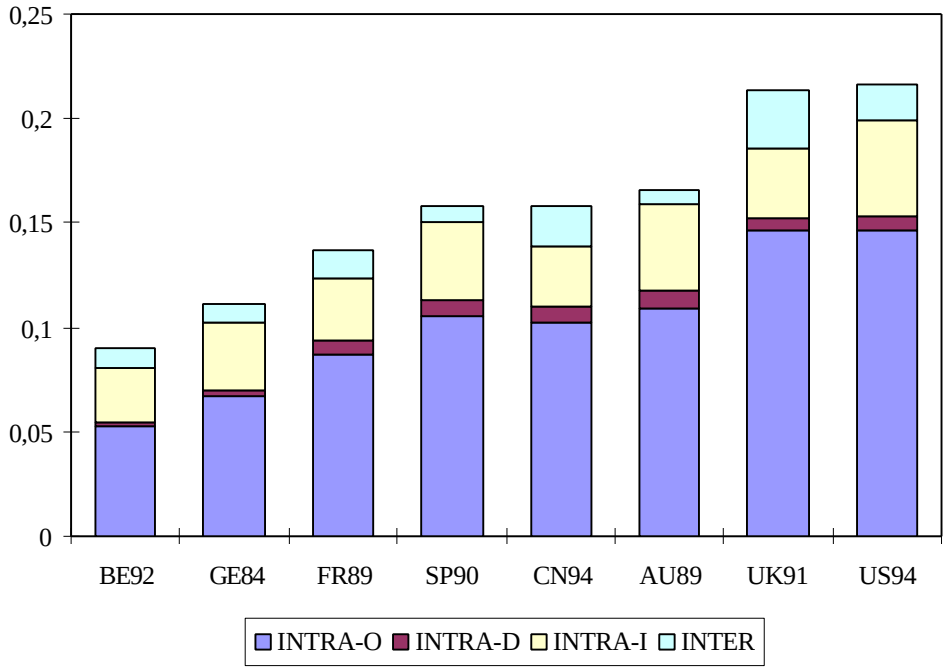
Canada 1994	63.3	5.6	21.2	90.1	9.9	100.0 (0.13703)
France 1989	66.5	4.9	23.9	95.3	4.7	100.0 (0.15818)
Australia 1989	65.0	4.6	17.8	87.5	12.5	100.0 (0.15829)
Spain 1990/91	65.6	5.4	25.0	96.0	4.0	100.0 (0.16593)
UK 1991	68.4	2.9	15.5	86.8	13.2	100.0 (0.21352)
US 1994	67.6	3.3	21.2	92.1	7.9	100.0 (0.21621)

Note: Countries ordered from lowest to highest level of inequality according to T_1 (index between brackets in the last column).
Source: Authors' calculations from LIS micro-data.

Various interesting conclusions can be reached examining the breakdown of inequality within the three kinds of household groups, shown in the first part of the table. Firstly, inequality within the group of households headed by an unemployed person contributes relatively little, as was to be expected, to overall inequality in all the countries. Belgium has the lowest figure at 2%, whilst the highest figures can be seen for Canada and Spain (between 5% and 6%). Inequality amongst households headed by an inactive person accounts for between 15% and 30% of overall inequality. Spain, Belgium and Germany all have values above 25%. The major contribution to overall inequality in all countries is made by inequality within households headed by someone in employment. The order of the countries coincides almost completely with the order obtained when examining the T_1 values of the overall population.

Thus, the greatest contribution to overall inequality by households headed by a person who is employed occurs in France, the US and the UK. These three countries, along with Canada and Spain, register the highest levels in earnings inequality. The lowest contributions to overall inequality are observed for Belgium and Germany, both of which also have the lowest levels of wage dispersion.

Figure 10
Decomposition of inequality by employment situation of the head of the household (Inequality Index = T_1)



Source: Authors' calculations from LIS micro-data.

Figure 10 shows the absolute contributions made to the T_1 index by internal inequality within each group and inequalities among the different groups. If it is examined and compared with Figure 9, some very important overall results come to light. The first of these is that unemployment contributes more to poverty than to inequality in both absolute and relative terms. This conclusion has already been tentatively pointed to at the beginning of this analysis. Those who live in households headed by an unemployed person are over-represented among the lowest income levels in all countries. People in this group represent almost 25% of the UK population. The contribution to inequality made by the differences among the unemployed is limited, and their contribution to overall indices is almost negligible in countries like Belgium and Germany with very egalitarian earnings distributions.

Neither can the high inequality levels observed for the UK and the US be attributed to this group. These indices are strongly conditioned by the great differences existing within the group of households headed by someone in employment. In Britain,

the greater weight of inequality among the groups is also a contributing factor. In France or Spain, both with an intermediate level of inequality, neither inequality among the unemployed nor inequalities among the various groups have an important impact on the inequality index chosen.

To sum up, neither the elimination of inequality among the unemployed nor erasing inequalities among the different groups would appreciably alter the order of the countries vis a vis inequality levels or the overall inequality levels noted. It is the differences among those in employment and, to a certain extent, among those who are inactive which can account for inequality in disposable income in all the countries under study. In a similar manner, the international disparities in inequality levels among the population in employment are behind the different overall results concerning income distribution.

5.- CONCLUSIONS

The purpose of this paper was to examine the changes of income inequality and poverty in ten OECD countries caused by earnings inequality and unemployment. We have confirmed the existence of an important relationship between the evolution of earnings inequality and disposable income through different analyses on how earnings, primary income and disposable income are shared out. Nevertheless, the effect of earnings inequality is mostly compensated for by the levelling action of government redistributive programs which account for the stability or improvement of income distribution and poverty levels in Canada and most of the continental European countries.

The influence of unemployment on income distribution is less clear, at least working from the estimates carried out in this paper. How unemployment affects families along with the different levels of coverage and generosity in social benefits paid to households headed by an unemployed person are two of the factors which can explain the impact of unemployment on earnings distribution. They are particularly relevant for some countries, like Spain, where there is a high percentage of women and the young amongst the unemployed. In any case, it seems clear that the unemployed are one of the high-risk groups regarding the chances of suffering poverty. The decomposition analysis

carried out in this paper has shown the scarce contribution made by unemployment to overall inequality. The reduced income differences among the unemployed as well as between them and other groups are the reasons that back this conclusion. Income differences among those in employment and, to a lesser extent, among the inactive population can account for the greater part of the inequality levels observed in the various countries.

The analysis of changes in disposable income distribution in various countries throughout the 1980's and 1990's shows the distributive consequences of the different social models more clearly than only comparing their labour markets. This leads to consider government intervention more closely, and how its regulatory and spending functions can influence income inequality in the developed world. The debate on flexibility should, therefore, not be simplified to the necessity of reducing government intervention in all cases. Reforms of government programs and regulations which have a negative impact on employment are, undoubtedly, necessary. But it makes no sense to demand an across-the-board reduction of all governmental intervention in the labour market. Favouring job creation policies and promoting greater co-ordination in the collective bargaining process are not exactly measures conducive to greater degrees of flexibility, yet they could influence earnings distribution and employment positively. Similarly, dismantling social protection programs makes no sense because they have shown themselves to be efficient in attenuating the negative impact of the recent labour market changes on inequality and poverty.

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