Applied Economics, 2004, **36**, 1399–1408

Routledge
Taylor & Francis Group

The evolution of income inequality in the European Union during the period 1993–1996

SANTIAGO ÁLVAREZ-GARCÍA, JUAN PRIETO-RODRÍGUEZ and RAFAEL SALAS*‡

Instituto de Estudios Fiscales y Universidad de Oviedo and ‡*Instituto de Estudios Fiscales y Universidad Complutense de Madrid, Campus de Somosaguas, 28223 Madrid, Spain*

The objective of this work is to analyse the income inequality in the 15 EU countries during the convergence process to the Monetary Union, using the information contained in the European Community Household Panel, corresponding to the four first waves. Using the inverse second order stochastic dominance concept, an ordering of these countries has been carried out. Furthermore, this ranking allows one to determine if the differences among EU country members have increased or decreased during this particular period. Whether the inequality of income has diminished within and between countries over time was studied. Gini's generalized family indices proposed by Donaldson and Weymark (*Journal of Economic Theory* **22**: 67–86, 1980 and **29**: 353–8, 1983) and Yitzhaki (*International Economic Review* **24**: 617–28, 1983) have been used. This allows one to test the sensitivity of the results obtained to different degrees of inequality aversion and to different equivalence scales, taking into account household sizes.

I. INTRODUCTION

The main objective of this study is to analyse the inequality in the income distribution in the UE country members in the period 1993–1996. This period coincides with the convergence process to the Monetary Union. Using the second-order inverse stochastic dominance concept, a robust ordering of these countries has been carried out according to the inequality ranking. Furthermore, this ranking allows one to determine if the differences among the inequality within the EU country members have increased or decreased during this period.

Besides, the temporary evolution of income inequality has also been analysed within each country. Finally, the study explores whether there has been a process of real income convergence among the EU countries' income in this crucial period, by checking the evolution of the between-countries income inequality in this period.

To achieve these goals, the S-Gini generalized family indices proposed by Donaldson and Weymark (1980 and 1983) and Yitzhaki (1983) together with a parametric form for the equivalence scales (Coulter *et al.*, 1992) have been used. This has enabled the sensitivity of the results to be tested to different degrees of inequality aversion and to different equivalence scales, taking into account household sizes and composition.

The information contained in the European Community Household Panel (ECHP) has been used. This survey contains data on individuals and households for 15 European countries, with four waves currently available (1994–1997). The information is homogeneous across countries, as the questionnaire is similar and the elaboration process of

*Corresponding author. E-mail: R.Salas@ccee.ucm.es

Applied Economics ISSN 0003–6846 print/ISSN 1466–4283 online
http://www.tandf.co.uk/journals
DOI: 10.1080/0003684042000206997

the survey is co-ordinated by EUROSTAT. Hence, this database has the advantage that the methodology is common to all the countries analysed, making comparisons reliable.[1]

II. THE MEASUREMENT OF INCOME INEQUALITY

The following framework will be presented, where one can analyse inequality evolution in a robust way. To do so a setting is built up in which one can make sensitivity analysis with respect to the inequality index and to the equivalence scale. A very natural way to do so is to use a class of parametric equivalence scales as in Coulter *et al*. (1992). Following this study, the equivalent income, Y^e, is define as the household income, Y, divided by the adult-equivalent scale h^α,

$$Y^e = \frac{Y}{h^\alpha}$$

where h is the household size and α ranks from zero to one. Parameter α can be interpreted as a measure of economies of scales within the household.

Using different equivalent scale parameters, i.e. α, the extended S-Gini coefficients proposed by Kakwani (1980), Donaldson and Weymark (1980, 1983) and Yitzhaki (1983) have been computed and defined as:

$$G(v) = 1 - v(v-1)\int_0^1 (1-p)^{v-2} L(p)dp \quad v > 1$$

where $L(p)$ is the Lorenz curve for any percentile p, and v is the normative inequality aversion parameter. Note that for $v = 2$, the Gini standard coefficient is obtained.

Muliere and Scarcini (1989) perceived an important dominance property of this class of indices. Given two distributions A and B with the same means, if a distribution A *inverse stochastic dominates* B at order n, then $G_A(v) \leq G_B(v)$ for any $v \geq n-1$.[2]

Definition: A distribution A *dominates* B according to $G(v)$ for $v \in [v^*, v^{**}]$, denoted as $A \succcurlyeq_G^{v^*, v^{**}} B$, if and only if $G_A(v) \leq G_B(v)$ for all $v \in [v^*, v^{**}]$. This property is going to be checked for a set of $G(v)$ indices across countries.

Definition of *relative inverse stochastic dominance* RISD criterion: Given two distributions A and B defined on a non-negative random variable X with finite expectation. The distribution A *n-degree relative indirect stochastic dominates* B, $A \succcurlyeq_{RISD}^{n} B$ will be written for any integer $n \geq 1$, if and only if $\tilde{A} \succcurlyeq_{ISD}^{n} \tilde{B}$, where $\tilde{A}$ and $\tilde{B}$ are the distributions A and B normalized by their means $\mu(A)$ and $\mu(B)$, respectively.

An important property arises. Given two distributions A and B, with different means, if a distribution A *relative inverse stochastic dominates* B at order n, then $G_A(v) \leq G_B(v)$ for any $v \geq n-1$.

III. EMPIRICAL RESULTS

Data

This section, computing the indices presented above, analyses income inequality across EU countries using the ECHP panel. Given the nature of the study, it has mainly used household information and the size of sample varies across countries and along the waves. Actually, Austria, Finland and Sweden were not present in the first wave (ECHP-94), which contains information on 1993 income. Moreover, Luxembourg was not included in the sample in the fourth wave (ECHP-97) with 1996 income information. The households' sample composition for each country and each year is presented in Table A1, provided in the Appendix.

Nevertheless, the ECHP is a very rich source of information and, for every household, it provides information on personal characteristics of all members older than 16 years old (age, education, work experience, personal income, etc.) and information on household structure, sources of household income (referred to the previous year), number of small children, accommodation, etc.

The following sections describe the main results that are obtained using this survey.

[1] There is a previous research on poverty and social exclusion (EUROSTAT, 2000) that compares inequality across the EU members using this data set. However, they concentrate on only one wave of this panel (1996) and exclude Sweden and Finland. They focus on one inequality index (the standard Gini coefficient) and on one equivalence scale (the corresponding OECD one).

[2] Inverse n-degree stochastic dominance introduced by Muliere and Scarsini (1989) has appealing properties in terms of consistency with very general class of the Yaari rank-dependent Social Welfare Functions. See for instance Zoli (1999) and Aaberge (2001) theorems on *n-degree inverse stochastic (welfare) dominance*. Given two distributions F and G defined over a non-negative random variable X with finite expectations. The distribution F *n-degree indirect stochastic dominates* G, denoted as $F \succcurlyeq_{ISD}^{n} G$, for any integer $n \geq 1$, if and only if $F_n^{-1}(p) \leq G_n^{-1}(p)$ for all $p \in [0, 1]$. Define $\boldsymbol{F}_{\boldsymbol{n}}^{-I}(\boldsymbol{p})$ as the nth degree inverse distribution function, for $n = 1$, as:

$$F_1^{-1}(p) = F^{-1}(p) = \inf\{X : F(X) \geq p\}\, p \in [0, 1]$$

and for $n \in \{2, 3, \ldots\}$as:

$$F_n^{-1}(p) = \int_o^p F_{n-1}^{-1}(u)du, \quad p \in [0, 1]$$

General overview

In this subsection, a general overview is presented of the results on income inequality in the European Union countries during the convergence to the Monetary Union process (1993–1996). Since a robust answer to what happened with income distributions during these four years is needed, different S-Gini coefficients have been computed, instead of drawing a conclusion based only on one arbitrary inequality index. Besides, comparisons have been made across countries and, simultaneously, along the four available waves of the ECHP data set. Furthermore, population-weighted between-groups S-Gini indices have been computed to test spatial convergence across countries during this period.

The dominance properties of these comparisons have been checked for the S-Gini ranking v from 1.5 to 7. This can be interpreted in terms of more robust conclusions in the analysis. Most of the relevant indices used in the literature are somehow connected to these dominance properties.

The main proposal when testing thess dominance properties was reached by ranking the countries according to the S-Gini coefficients from v equal to 1.5 to v equal to 7.0, in order to compare the different degrees of income inequality. One has to take into account that when computing S-Gini indices, the higher v value, the higher sensitivity is given to the income in the lower tail of the distribution. In fact, Cowell and Flachaire (2001) show that inequality measurement can be dramatically affected by the extreme values when there is high sensitivity to lower income values.[3] This may imply statistical inference problems due to unrepresentative lower values of income. Ranging v values from 1.5 to 7 is an alternative method to deal with the problems of contaminated data to that proposed by Cowell and Victoria-Feser (1996).

At the same time, the study has tried to analyse the sensitivity of the inequality ranking to the equivalence scales. To achieve this goal the equivalent scale defined in Section II is used following Coulter *et al*. (1992). All observations are weighted according to the number of persons in the household.

Table 1 presents the Gini standard coefficient (v=2) for α equal to 0.5 for all the countries with at least three observations in the sample.[4] Broadly speaking, one can classify countries into five different groups according to the income inequality. Sorted in ascending order with respect to the Gini inequality coefficients, Denmark is the first group in the ranking: no other country presents a lower Gini coefficient during this period and it remains the most income equitable country. The second group is composed of the

Table 1. *Equality rankings (according to Gini coefficient, $\alpha = 0.5$)*

Ranking 1993		Ranking 1996		Inequality trend
1	Denmark	1	Denmark	(+)
2	Netherlands	2	Germany	(−−)
3	Germany	3	Austria**	(−−)
4	Austria**	4	Netherlands	(+)
5	Luxembourg*	5	Luxembourg*	(−−)
6	UK	6	France	(−)
7	Ireland	7	Italy	(−)
8	Italy	8	Belgium	(−)
9	France	9	UK	(+)
10	Spain	10	Ireland	(++)
11	Belgium	11	Spain	(=)
12	Greece	12	Greece	(−)
13	Portugal	13	Portugal	(−−)

Luxembourg*, 1993–1995.
Austria**, 1994–1996.

Netherlands, Germany, Austria and Luxembourg: they have swapped their positions in the inequality ranking among them. UK, Ireland, Belgium, France, Italy and Spain constitute the third group, meanwhile Greece and Portugal are the fourth and fifth groups since they remain the most inequitable countries.

The last column in Table 1 shows the trend observed for each country income inequality. A tendency to increase Gini inequality during the period has been observed in Denmark, the Netherlands, the UK and Ireland, and a tendency to reduce inequality in Portugal, Germany, Austria, Luxembourg, France, Italy, Belgium and Greece. Spain seems to remain unchanged over the period.

The aim of the rest of this paper is to check the robustness of these results by computing the values for different v and α. The following sections analyse first the difference in the inequalities among countries for each period. Then, they proceed to study the difference in inequality for each country along the whole period. Finally, the convergence process is explored in real equivalent income among countries, by studying the between-groups inequality indices in the period.

Robust within-countries inequality comparisons

Starting from the computed indices, a ranking of inequality in the income distribution has been carried out, based on the dominance properties for the S-Gini index. This ranking, for each year, is presented graphically in Fig. 1. Dotted lines delimit countries with lower values of the Gini indices only for some values of v, but not for all of them. This means that it is impossible to establish a stochastically dominating ranking among this set of countries; that is

[3] It can be noticed that, in the extreme case, as v tends to infinity, the S-Gini converges to $1 - (Y^{MIN}/\overline{Y})$. Obviously, this index is very much dependent on the minimum level of income, which maybe statistically unreliable.
[4] Hence, Finland and Sweden are not included since they are observed only twice and once respectively.

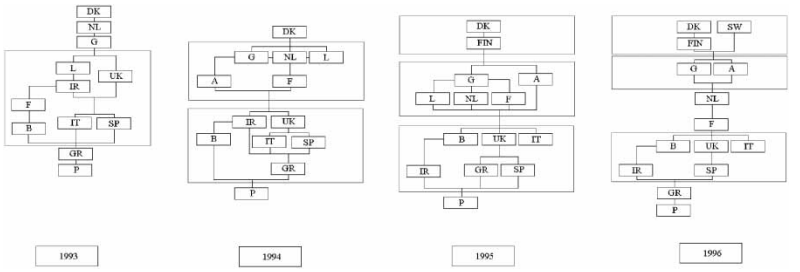

Fig. 1. *Inequality ranking (1993–1996); $\alpha = 0.50$*

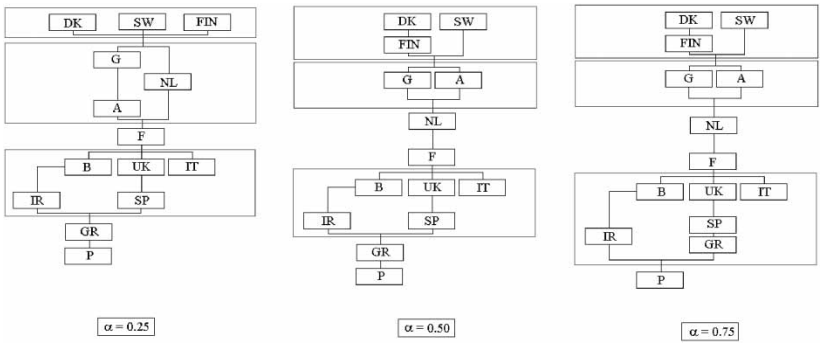

Fig. 2. *Inequality ranking 1996 ($\alpha = 0.25, 0.50, 0.75$)*

to say, they are non-comparable according to this criterion. Obviously, the ranking is not constant over time and some important differences can be observed comparing different years. However, four substantial groups of European Union countries can be detected. A first group would be composed of Denmark, Sweden and Finland, that is, those countries with the smallest degree of inequality. A second group would be formed by Germany, Austria, the Netherlands and France. This group of intermediate inequality countries included Luxembourg until 1995, last year in which it appears in the Panel. Belgium, the UK, Italy, Ireland and Spain would constitute the third group, with a higher inequality degree than the two previous sets of countries. Finally, Greece and Portugal present the highest degree of inequality in the income distribution and could be considered the elements of the fourth and last set of countries.

Since Fig. 1 displays inequality rankings using equivalence scales computed with α equal to 0.5, furthermore the influence that different equivalence scales could have on these results should be analysed. In order to do this, Fig. 2 represents inequality rankings in 1996-income distribution, using three different equivalence scales. The main conclusion of this figure is the robustness of the results, since significant variations were not observed when changing the equivalence scale. Indeed, there are only two minor differences. On the one hand, if one increases α from 0.5 to 0.75, Greece stops being dominated by Ireland and,

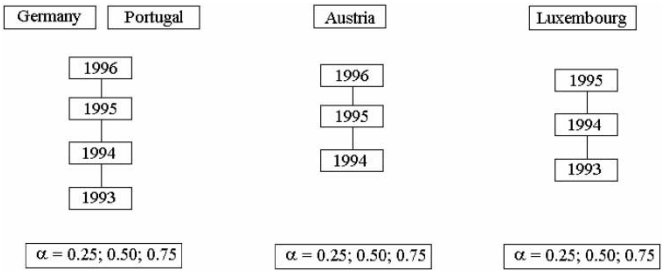

Fig. 3. *Countries where inequality has monotonically decreased during period 1993–1996*

hence, it enlarges Belgium, the UK, Spain, Italy and Ireland group. On the other hand, when one decreases α from 0.5 to 0.25, Finland stops being dominated by Denmark and, at the same time, the Netherlands gets dominated by Austria and Germany.

Moreover, Figs 3 to 6 display the dominance analysis of inequality evolution inside each country. According to these Figs, we can, again, distinguish four groups. A first set of countries where inequality has monotonically decreased during the whole period in an unequivocal way, since this result does not depend on the equivalence scale or the elected v. This group is formed by Germany, Luxembourg, Portugal and Austria and it is represented in Fig. 3.

A second set of countries, outlined by Fig. 4, is composed of Belgium, Italy, France and Greece. This group

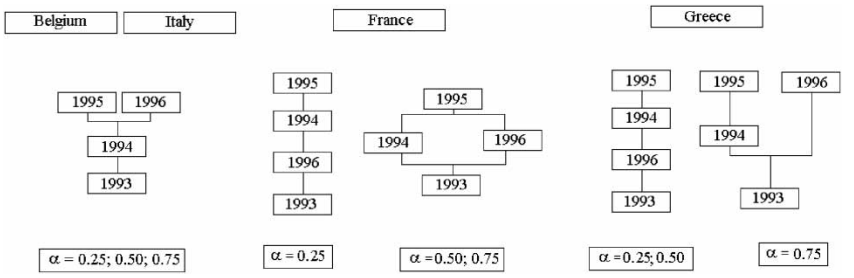

Fig. 4. *Countries where inequality has non-monotonically decreased during period 1993–1996*

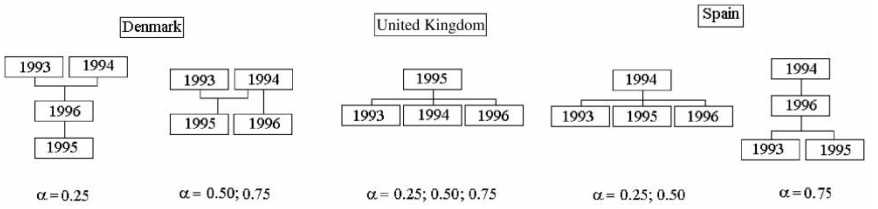

Fig. 5. *Countries where inequality has ambiguously changed during period 1993–1996*

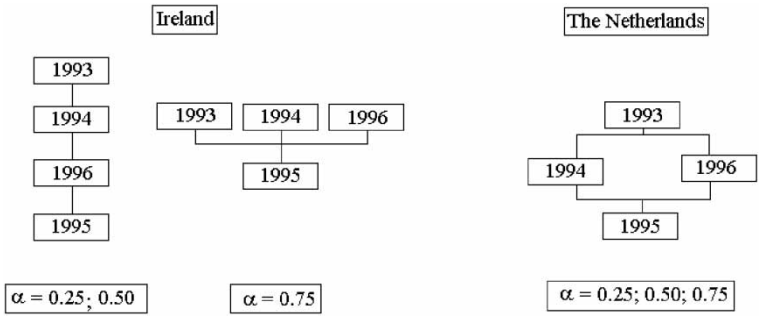

Fig. 6. *Countries where inequality has non-monotonically increased during period 1993–1996*

is characterized by a decrease in income inequality with regard to the initial situation (year 1993). However, this result is not conclusive as it is for the previous set of countries, since the improvement in the income distribution has mainly taken place until 1995, these countries presenting a probable increase in inequality in 1996.

A third group of countries (Denmark, the UK and Spain) is involved in an ambiguous change in inequality during the analysed period, as can be observed in Fig. 5. For instance, Danish income distribution has been more equitable during 1993 and 1994 but 1996 is not dominated by 1993 for α equal or greater than 0.5, meaning that these two distributions are not comparable and that it is not possible to make any settlement about them. Moreover, the UK 1995 income distribution dominates the other three years' distributions (for any α) but 1993 and 1996 are not directly comparable. The Spanish case is more complex since the lowest inequality level takes place in 1994, but one gets different results for the three other years, depending on the equivalence scale. For α lower or equal to 0.5, 1996 income dominates 1995 and 1993 income distributions, while for α equal to 0.75 they are not comparable.

Finally, Ireland and the Netherlands present a non-monotonic increment in income inequality during this period, as it is shown in Fig. 6, and they represent the fourth set of countries.

Evolution of between-countries equality (convergence)

The evolution of the between-countries income inequality existing in this period has been studied in order to explore whether there has been a process of real income convergence among the EU countries (Salas, 2002). The exchange rates have been used as a homogenization criterion to compare income levels in the different countries.

To do this, population-weighted between-groups S-Gini inequality indices are computed for the 11 countries that have been present in all the periods (four waves) in the ECHP. Two important issues arise. First, the population of a country is taken into consideration in the weights

Table 2. *Between-countries income inequality*

	$\alpha = 0.25$				$\alpha = 0.50$				$\alpha = 0.75$				$\alpha = 1$			
	1993	1994	1995	1996	1993	1994	1995	1996	1993	1994	1995	1996	1993	1994	1995	1996
$v = 1.5$	0.2314	0.2177	0.2309	0.2159	0.2298	0.2209	0.2344	0.2212	0.2344	0.2259	0.2394	0.2264	0.2408	0.2308	0.2434	0.2315
$v = 2$	0.3092	0.3023	0.3203	0.3018	0.3193	0.3104	0.3283	0.3102	0.3294	0.3184	0.3363	0.3185	0.3393	0.3261	0.3441	0.3265
$v = 3$	0.3962	0.3942	0.4129	0.3922	0.4135	0.4062	0.4237	0.4044	0.4277	0.4180	0.4353	0.4165	0.4415	0.4293	0.4497	0.4281
$v = 4$	0.4616	0.4605	0.4765	0.4565	0.4791	0.4744	0.4883	0.4707	0.4951	0.4881	0.5017	0.4846	0.5107	0.5013	0.5192	0.4981
$v = 5$	0.5116	0.5116	0.5242	0.5055	0.5289	0.5263	0.5363	0.5205	0.5454	0.5407	0.5504	0.5353	0.5616	0.5547	0.5682	0.5496
$v = 6$	0.5500	0.5509	0.5602	0.5428	0.5668	0.5657	0.5722	0.5581	0.5833	0.5802	0.5865	0.5731	0.5994	0.5943	0.6033	0.5876
$v = 7$	0.5799	0.5815	0.5878	0.5717	0.5963	0.5961	0.5997	0.5868	0.6124	0.6104	0.6139	0.6017	0.6281	0.6242	0.6294	0.6160

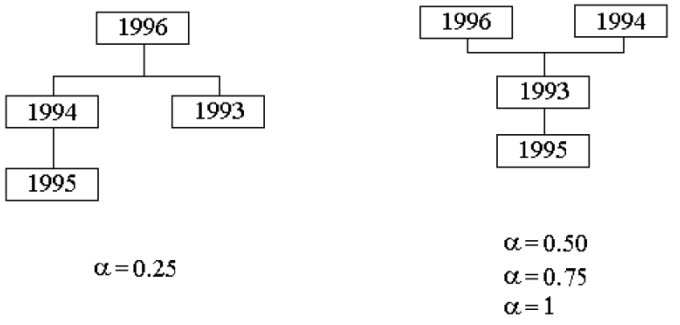

Fig. 7. *Between-countries inequality (base on exchange rates homogenization)*

of the indices and second, equivalence scales are considered when computing the equivalent income. The latter point suggests that more robust analysis can be made, in comparison with the usual aggregate-based per capita convergence studies, since changes in the equivalent scale can be implemented. Traditional per capita results coincide with the particular $\alpha = 1$ case. All the computed indices are displayed in Table 2.

Table 2 summarized information contained in Fig. 7. As it can be observed in this graphic analysis of income dominance, between-countries income inequality has decreased during this period since 1996 income distribution is not dominated by other years' distributions and it strictly dominates 1993 income distribution. This implies that there has been a convergence in real income during these years. This result can be considered more robust than the usual aggregate-based per capita convergence since this measure is based on the actual household structure and it takes into account the equivalence scales.

IV. CONCLUSIONS

Using the generalized family of Gini indices proposed by Donaldson and Weymark (1980 and 1983) and Yitzhaki (1983) the income inequality across EU countries has been analysed. The main purpose of computing these indices was to check the dominance properties for the S-Gini (ranking v from 1.5 to 7), in order to classify the countries according to income inequality. This can be interpreted in terms of more robust conclusions in the analysis. At the same time, the study has tried to analyse the sensitivity of this inequality ranking to the equivalence scales. To achieve this goal, the household income has been divided by an adult-equivalent scale h^{α}. The α values ranking from 0.25 to 0.75 have been taken.

To carry out this analysis, the information contained in the European Community Household Panel (ECHP) has been used and it was found that countries can be classified into four different groups. A first group would be composed of Denmark, Sweden and Finland, that is, those countries with the smallest degree of inequality. Germany, Austria, the Netherlands and France would form a second group. This group of intermediate inequality countries included Luxembourg till 1995, the last year in which it appears in the Panel. Belgium, the UK, Italy, Ireland and Spain constitute a third group, with a higher inequality degree. Finally, Greece and Portugal are the elements of the fourth and last set of countries and they have the highest degree of inequality in the income distribution.

Furthermore, it has been detected that differences among inequality within the EU country members have been reduced during this period, that is, real convergence in income equality was found during this period. Even more, the temporary evolution of income inequality within each country has also been analysed finding that there is no unique pattern to describe it. However, more than a half of the counties in the sample have experienced an increase in their income equality and only two have increased their inequality during this period.

Finally, the evolution of the between-countries income inequality in this period has been studied in order to explore whether there has been a process of real income convergence among the EU countries. The exchange rates have been used as a homogenization criterion to compare income levels of different countries and it was found that between-countries income inequality has decreased. This implies that there has been a convergence in real income during these years; along with the convergence process in income equality pointed out above. This result can be considered more robust than the usual aggregate-based per

capita convergence since this measure is based on the actual household structure and it takes into account the equivalence scales.

ACKNOWLEDGEMENTS

This paper has benefited from support of the European Communities TMR network *Living Standards, Inequality and Taxation* [Contract #ERBFMRXCT980248], the Spanish Ministry of Education [Project #PB98-0546-C0202], the Spanish Ministry of Science and Technology [Project #SEC2003-08397] and Fundación BBVA. The usual disclaimer applies.

REFERENCES

Aaberge, R. (2001) Ranking intersecting Lorenz curves, *mimeo*, presented at the Third Annual Workshop of the Living Standard, Inequality and Taxation Network, Universidad Carlos III, Colmenarejo, Madrid.

Coulter, F. A., Cowell, F. A. and Jenkins, S. P., (1992) Difference in needs and assessment of income distributions, *Bulletin of Economic Research*, **44**, 77–124.

Cowell, F. A. and Flachaire, E. (2001) Sensitivity of inequality measures to extreme values, Distributional Analysis Discussion Paper, 60, STICERD, LSE.

Cowell, F. A. and Victoria-Feser, M. P. (1996) Poverty measurement with contaminated data: a robust approach, *European Economic Review*, **40**, 1761–71.

Donaldson, D. and Weymark, J. A. (1980) A single parameter generalization of the Gini index and inequality, *Journal of Economic Theory*, **22**, 67–86.

Donaldson, D. and Weymark, J. A. (1983) Ethical flexible indices for income distributions in the continuum, *Journal of Economic Theory*, **29**, 353–58.

EUROSTAT (2000) *European Social Statistics. Income Poverty and Social Exclusion*, Luxembourg.

Kakwani, N. C. (1980) On a class of poverty measures, *Econometrica*, **48**, 437–46.

Muliere, P. and Scarsini, M. (1989) A note on stochastic dominance and inequality measures, *Journal of Economic Theory*, **49**, 314–23.

Salas, R. (2002) Multilevel interterritorial convergence and additive multidimensional inequality decomposition, *Social Choice and Welfare*, **19**, 201–18.

Yitzhaki, S. (1983) On an extension of the Gini inequality index, *International Economic Review*, **24**, 617–28.

Zoli, C. (1999) Intersecting generalized Lorenz curves and the Gini index, *Social Choice and Welfare*, **16**, 183–96.

APPENDIX

Table A1. *Households' sample composition in the ECHP (94–97)*

Households' composition											
	Years	1 member	2 members	3 members	4 members	5 members	6 members	7 members	More than 7 members	Number of households	Number of individuals
Denmark	1993	1212	1170	461	484	115	34	5	1	3482	7693
	1994	1104	1075	435	449	123	30	6	1	3223	7200
	1995	1035	969	401	401	115	26	7	1	2955	6568
	1996	921	915	382	379	107	32	8	1	2745	6204
The Netherlands	1993	1326	1794	699	942	337	67	18	4	5187	13 029
	1994	1319	1749	717	918	321	67	14	5	5110	12 791
	1995	1370	1773	687	929	331	76	11	2	5179	12 897
	1996	1299	1778	657	915	319	68	10	3	5049	12 584
Belgium	1993	841	1037	662	625	237	63	18	7	3490	9149
	1994	828	982	628	601	240	63	15	9	3366	8839
	1995	794	960	572	577	221	62	13	11	3210	8398
	1996	762	918	525	548	204	57	14	11	3039	7916
Luxembourg	1993	228	275	184	192	97	24	8	3	1011	2087
	1994	210	271	170	190	87	25	7	2	962	2672
	1995	205	259	168	181	90	23	5	2	933	2590
France	1993	1911	2277	1231	1219	483	159	30	34	7344	18 916
	1994	1690	2092	1191	1093	462	135	30	29	6722	17 408
	1995	1665	2094	1142	1077	434	135	29	24	6600	16 985
	1996	1594	1971	1053	981	412	113	31	21	6176	15 758
Ireland	1993	532	873	644	765	627	325	138	144	4048	14 585
	1994	501	818	543	708	514	270	132	98	3584	12 577
	1995	475	739	504	592	450	234	96	83	3173	10 887
	1996	453	707	476	531	415	210	83	70	2945	9952

Italy	1993	1047	1525	1717	1847	683	220	55	21	7115	21 934
	1994	1060	1591	1717	1809	680	197	56	18	7128	21 757
	1995	1101	1622	1730	1771	661	178	51	18	7132	21 506
	1996	1045	1567	1655	1624	597	154	54	17	6713	20 074
Greece	1993	911	1485	1069	1383	426	184	54	11	5523	16 321
	1994	863	1442	1033	1257	394	166	53	12	5220	15 309
	1995	827	1325	973	1196	384	145	46	11	4907	14 384
	1996	751	1271	955	1073	358	138	45	13	4604	13 491
Spain	1993	1004	1670	1484	1764	811	305	104	64	7206	23 025
	1994	924	1539	1332	1588	717	270	104	48	6522	20 708
	1995	873	1550	1284	1510	670	246	89	45	6267	19 712
	1996	802	1435	1213	1398	612	219	70	45	5794	18 167
Portugal	1993	762	1338	1079	1007	403	178	55	59	4881	14 706
	1994	763	1352	1097	995	404	184	59	62	4916	14 826
	1995	739	1328	1119	985	384	172	56	67	4850	14 627
	1996	740	1318	1104	980	382	154	63	61	4802	14 428
Germany	1993	1333	1963	1330	1092	355	85	32	17	6207	16 284
	1994	1355	1989	1334	1164	356	85	36	17	6336	16 682
	1995	1375	1999	1285	1133	335	83	34	15	6259	16 304
	1996	1345	2035	1239	1101	326	73	30	14	6163	15 942
UK	1993	1335	1665	901	802	313	78	25	7	5126	12 844
	1994	1312	1690	866	753	307	71	24	9	5032	12 508
	1995	1272	1699	855	775	303	69	25	13	5011	12 547
	1996	1241	1704	855	774	295	73	16	7	4965	12 397
Austria	1994	731	1008	559	599	275	123	53	32	3380	9579
	1995	725	985	538	588	266	113	46	30	3291	9248
	1996	708	944	511	575	231	105	45	23	3142	8733
Finland	1995	851	1343	743	754	323	87	29	9	4139	11 214
	1996	941	1321	713	696	311	88	26	12	4108	10 890
Sweden	1996	1957	2000	750	810	277	71	17	9	5891	13 453

Table A2. *Inequality S-Gini indices (v=2.0) for different equivalence scales*

	Gini $v=2.0$ $\alpha=0.25$				Gini $v=2.0$ $\alpha=0.50$				Gini $v=2.0$ $\alpha=0.75$			
Years	1993	1994	1995	1996	1993	1994	1995	1996	1993	1994	1995	1996
Germany	0.2717	0.2700	0.2646	0.2561	0.2735	0.2684	0.2636	0.2544	0.2899	0.2807	0.2764	0.2671
Austria	n.a.	0.2857	0.2754	0.2652	n.a.	0.2786	0.2670	0.2570	n.a.	0.2877	0.2749	0.2655
Belgium	0.3441	0.3379	0.3132	0.3155	0.3407	0.3315	0.3078	0.3079	0.3486	0.3371	0.3156	0.3134
Denmark	0.2286	0.2310	0.2399	0.2383	0.2143	0.2156	0.2231	0.2226	0.2176	0.2173	0.2232	0.2251
Spain	0.3444	0.3345	0.3444	0.3471	0.3396	0.3278	0.3387	0.3402	0.3433	0.3303	0.3419	0.3417
Finland	n.a.	n.a.	0.2398	0.2446	n.a.	n.a.	0.2329	0.2365	n.a.	n.a.	0.2413	0.2444
France	0.3328	0.2884	0.2867	0.2906	0.3299	0.2852	0.2818	0.2851	0.3392	0.2947	0.2898	0.2931
Greece	0.3695	0.3533	0.3430	0.3550	0.3656	0.3476	0.3391	0.3497	0.3685	0.3491	0.3429	0.3515
The Netherlands	0.2479	0.2703	0.2741	0.2593	0.2526	0.2746	0.2782	0.2624	0.2715	0.2929	0.2962	0.2801
Ireland	0.3175	0.3259	0.3388	0.3330	0.3127	0.3216	0.3346	0.3290	0.3191	0.3277	0.3404	0.3352
Italy	0.3282	0.3191	0.3069	0.3093	0.3275	0.3165	0.3061	0.3068	0.3353	0.3228	0.3145	0.3135
Luxembourg	0.3054	0.2829	0.2800	n.a.	0.3044	0.2817	0.2788	n.a.	0.3168	0.2947	0.2916	n.a.
Portugal	0.3967	0.3773	0.3708	0.3676	0.3907	0.3713	0.3650	0.3624	0.3916	0.3722	0.3663	0.3642
UK	0.3122	0.3139	0.3049	0.3172	0.3118	0.3142	0.3063	0.3178	0.3223	0.3250	0.3183	0.3286
Sweden	n.a.	n.a.	n.a.	0.2292	n.a.	n.a.	n.a.	0.2229	n.a.	n.a.	n.a.	0.2335