

Public transfers to the poor: is Europe really much more generous than the United States?

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Abstract Fighting poverty is an important concern in most societies. This usually involves transferring resources to the poor. There exists a widespread view that European countries are much more generous to the poor than the United States. We study whether this is really the case. First, we argue that using data on aggregate spending does not allow us to conclude who the final recipients of social expenditure are. We then analyze microeconomic evidence from the Current Population Survey and the European Community Household Panel and find mixed results. In particular, when the concept of relative poverty is used, we find that every individual below the poverty line receives an average transfer in the United States that is 45% higher than in the European Union. When the old are excluded from the sample, this difference is reduced to 14%.

Keywords Poverty · Public transfers · Redistribution · Welfare state

JEL Classification H51 · H53 · I38

1 Introduction

Fighting poverty is an important concern in most societies. The common view in many countries is that the government should lead the fight against poverty by raising the earning power of those at the bottom of income distribution. The most direct way of achieving this is by just making transfers to this segment of the population. These transfers can be monetary transfers or in-kind transfers, such as free public

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education or free access to health services. However, it seems that there is a large degree of heterogeneity across countries regarding the size of the transfers to the poor, even within developed countries. In particular, it seems that there are large differences between the members states of the European Union and the United States.¹ Conventional wisdom is that transfers to the poor are much higher in Europe than in the United States.² The purpose of this paper is precisely to study whether this is really the case. To put it succinctly, we want to compare government generosity towards the poor in the United States with that in Europe.

A first approach to studying this issue consists of comparing total expenditure on social protection. However, as will be seen below, we cannot identify who are the final recipients of social expenditure using aggregate data only. A second approach that has been extensively used in the literature consists of studying the effect of government intervention in removing people from poverty. This is typically done by computing poverty rates before and after taxes and transfers. The main conclusion from this literature is that the United States is much less effective than the European countries in reducing relative poverty.³ This is a very interesting approach. However, most taxes and transfers are not intended to remove individuals from poverty. Consider the case of pensions. With this approach most elderly individuals are considered as individuals that are not poor because of government intervention. But without Social Security many individuals would have saved part of their income for old age.⁴

Our approach is different. We start with the aggregate data on social expenditure as defined by the OECD and try to identify who are the final recipients of this expenditure using information from micro data. That is, we try to identify who are the final recipients of public transfers.⁵ In particular, we use data from the European Community Household Panel (ECHP) for the European Union and from the Current Population Survey (CPS) for the United States, respectively. The standard definition of relative poverty is used to identify poor households in each country. Two definitions of public transfers are considered. The first one only includes cash and near-cash transfers as food stamps. The second one also includes the monetary value of health transfers. We add health transfers as excluding health transfers would mean excluding a sizable fraction of total expenditure on social protection.⁶ Furthermore, we believe that they can have a large impact in terms of removing individuals from poverty. Using the first definition, average cash transfers per poor person are found to be slightly higher in the United States than in Europe (\$2,265 in the United States and \$2,106 in Europe). The differences become much larger when an imputation of the value of

¹Throughout this paper when we talk about the European Union or simply Europe we always refer to the EU-15, that is: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom.

²See, for example, Alesina and Glaeser (2004) or Alesina et al. (2001).

³See the works by Atkinson et al. (1996), Jäntti and Danziger (2000), Heady et al. (2001), Smeeding et al. (2002), Alesina and Glaeser (2004), and Smeeding (2006) among others.

⁴See the discussion in Jäntti and Danziger (2000, pp. 349–351).

⁵See Page (1983) for some early evidence for the USA.

⁶In 2001 expenditure on health protection represented 25% of total expenditure on social protection in Europe, and 42% in the United States. See OECD (2006).

health transfers is included. The average transfer per poor person rises to \$5,463 in the United States compared to \$3,757 in Europe. The reason for this is that, as we will see below, health transfers in the United States are more concentrated in the bottom part of the income distribution than in Europe. To confirm this evidence, we also analyze how public transfers are distributed across income quintiles. We see that, once health transfers are included, all quintiles get more transfers in the European Union than in the United States, except for the first quintile. That is to say, even when the average value of public transfers is higher in Europe, the distribution of transfers is more progressive in the United States. The value of per capita transfers received by the bottom quintile in the United States is 19% higher than in the European Union.

Clearly, the fact that the poor get a higher value of transfers in the United States does not imply that they are better off than in Europe. Per capita GDP in the United States is higher than that of Europe, so even though transfers per poor individual are higher in the United States, when we divide them by per capita income the value of transfers to the poor is very similar in Europe and the United States.⁷ Moreover, one possible explanation for the higher transfers in the United States would be simply that health care is more expensive in the United States, as several authors have repeatedly pointed out.⁸ If this is the case, a large part of the difference between the United States and Europe will be offset by the differences in prices.

There are some previous studies comparing poverty rates in different European countries and the United States, although not directly focused on the role of governmental transfers to alleviate poverty. Smeeding et al. (2002) employ the Luxembourg Income Study (LIS) database. The LIS contains comparable income data for twenty-five countries, covering the period 1967 to 1997. They use the LIS to compare the US with several European countries. They conclude that the US has one of the highest poverty rates of all the countries participating in the LIS project, both using relative and absolute poverty levels. However, this database has some limitations. It does not include some countries of the European Union, such as Portugal. Furthermore, it is net income in some countries, while it is gross income in others.

The structure of the paper is as follows. Section 2 reviews the evidence on aggregate government spending. Section 3 describes the way we use micro data to construct poverty rates after transfers. We also describe how we calculate the imputed value of health transfers. Section 4 presents the main results of the paper. Section 5 discusses several extensions of our approach. Finally, Sect. 6 presents our conclusions.

2 Preliminary evidence: aggregate government spending

This section begins by showing data on expenditure in social protection collected by the OECD. Broadly speaking, by social protection we refer to four big programs: support for retired people, income support for working-age population, health care, and other services such as child care.⁹ In the first column of Table 1, we present

⁷This is discussed in Sect. 5.

⁸See, for example, Anderson et al. (2003) and Peterson and Burton (2008).

⁹The OECD considers nine categories of Social Expenditure: Old age, survivors, incapacity, health, family, active labor market programs (ALMP), unemployment, housing, and "other."

Table 1 Macroeconomic evidence

Country	Expenditure in social protection ^a	Net public social expenditure ^a	Means-tested programs ^b	GDP per capita ^c	Per capita social expenditure ^d
Austria	26.1	21.2	1.60	31,518	8,022
Belgium	26.5	22.9	0.97	30,167	7,966
Denmark	27.6	20.4	0.83	30,462	8,505
Finland	22.5	19.9	2.57	27,722	6,361
France	28.7	25.8	3.35	27,429	8,148
Germany	27.3	26.4	2.70	28,599	7,527
Greece	21.3	–	1.75	22,573	4,362
Ireland	15.9	14.0	3.99	34,469	5,444
Italy	24.2	22.0	1.14	27,168	6,646
Luxembourg	22.2	–	0.66	60,510	12,362
The Netherlands	20.7	18.3	2.36	31,738	6,571
Portugal	23.5	21.2	2.12	18,812	4,141
Spain	20.3	17.6	2.56	24,776	5,039
Sweden	31.3	24.6	0.95	30,097	9,234
UK	20.6	19.9	3.28	29,320	6,191
EU-15	24.5	22.5 ^e	2.51	27,834	6,830
United States	16.2	17.6	5.04	37,445	6,007

^aPercentage of GDP in 2003. *Source*: OECD Social Expenditure Database (www.oecd.org/els/social/expenditure)

^bPercentage of GDP. For Europe, authors' calculations using 2003 data from Eurostat (2008). For the US, 2002 data. *Source*: Congressional Research Service (2004)

^c2003 data. GDP per capita at current prices and current PPPs (US dollars). *Source*: OECD

^d2003 data. Data are per capita at current prices and current PPPs (US dollars). *Source*: OECD Social Expenditure Database

^eAverage for 13 countries

2003 data.¹⁰ The share of GDP that goes to public social expenditure in the European Union ranges from 15.9 in Ireland to 31.3 in Sweden with a mean value of 24.5.¹¹ Since the corresponding figure in the United States is 16.2, we see that the average share in the European Union is 51% higher than in the United States. In the European Union, only Ireland has a lower share than the United States. The last column of Table 1 presents social expenditure per capita. Only four countries in the European Union spend less in per capita terms than the United States. These countries are Ireland, Spain, Greece, and Portugal. However, even though this evidence seems pretty clear, there are two caveats that we should consider.

¹⁰See OECD (2007).

¹¹This and all the remaining figures for the European Union are weighted sums of individual country data, where the weights correspond to the relative population of each country.

Firstly, the above data reflect gross public social expenditure. In most countries cash transfers are taxable income, meaning that the size of pre-tax transfers does not correctly capture the impact that public transfers have on individual well-being. Building upon the work by Adema and Ladaique (2005) the OECD has started to report data of net expenditure. We present these data in the second column of Table 1. For example, while net social expenditure in Denmark represents 20.4% of GDP, the gross figure is 27.6%. On average, Danish families finally enjoy only around 3/4 of gross transfers. The average value of the share of net transfers for the 13 European countries in the sample is 22.5%, while the gross figure is 24.5%. This means a reduction of 8%. The United States represents the only exception to this general pattern, since net social expenditure is higher than gross social expenditure: 17.6% of GDP versus 16.2%, a 9% increase. The reason for this increase is the existence of programs like the Earned Income Tax Credit (EITC). In the United States gross public expenditure underestimates public social effort. If net instead of gross transfers are considered, the gap between the United States and the European Union narrows considerably. From 51% with gross expenditure, it becomes 28% with net expenditure.

Secondly, aggregate data do not tell us anything about who are the final recipients of social expenditure. In the European countries most public programs are not directly targeted towards the poor. For instance, although most public pension systems produce some redistribution, pension benefits are strongly linked to past contributions, meaning that replacement rates are roughly constant in many countries, at least up to a certain level of previous contributions.¹² One possible approach would be to consider only transfers that are intended to remove people from poverty. However, it is difficult to compare Europe with the United States using this approach, as in Europe those kinds of transfers represent a small fraction of total transfers. In the United States, on the contrary, there are many public programs that are demographically targeted to groups where the poor are disproportionately represented, such as the elderly or the disabled. These programs are labeled as “welfare” programs. In fact, in the United States the word “welfare” is used as synonymous of “public assistance,” and typically refers to programs that provide basic support to low-income families. These programs are means-tested, which means that eligibility is determined solely or partially on the basis of low income.¹³ Other entitlement programs such as Social Security or unemployment insurance are not considered “welfare” programs. Thus, for the United States we could, in principle, distinguish between transfers that focus

¹²See Whitehouse (2003) for data on replacement rates of public pension systems in several OECD countries.

¹³There are more than 80 governmental programs in the United States providing cash and non-cash aid, primarily to persons with limited income. These programs include TANF (Temporary Assistance to Needy Families), Medicaid, SSI (Supplemental Security Income), Food Stamps, EITC (Earned Income Tax Credit), and Pell Grants. See Moffit (2003) for a detailed description of the main means-tested programs in the United States.

mainly on the poor and transfers that are universalistic.¹⁴ In 2002, the United States spent slightly more than 5% of GDP on income-tested programs.¹⁵

In Europe things are different. Most welfare programs are universalistic, so that entitlements are available to everyone regardless of income. Consequently, virtually all Europeans have universal health care, or universal access to free pre-school. In fact, only a small fraction of public transfers is means-tested. In Column 3 of Table 1, we present evidence on the proportion of GDP that represents social expenditure in means-tested programs. All European countries spend a lower fraction of GDP than the United States. The fraction goes from 0.66% in Luxembourg to 3.99% in Ireland. The average value for the European Union is 2.5%. To put it in another way, 90% of social expenditure in the European Union is not means-tested. The lion's share of social expenditure is not directly targeted to the poor, although this does not mean either that the poor are not the main recipients of social expenditure.

Now consider the following back-of-the-envelope calculation. We divide the population into five quintiles, according to income, and assume that all non means-tested social expenditure is divided evenly among the five quintiles.¹⁶ Regarding means-tested social expenditure, let us assume that everything goes to the first quintile (the bottom quintile). According to this, the European poor defined as the bottom 20% of the population get $2.5\% + 4.4\%$ (one fifth of non means-tested expenditure) = 6.9% of GDP, while in the United States they get $5.0\% + 2.2\% = 7.2\%$. Taking into account total expenditure in social protection and total population, per capita social expenditure would be distributed very differently in Europe and the United States. In Europe the value of per capita social transfers is \$6,830 (see the last column of Table 1). If the first quintile gets 6.9% of GDP while the other four quintiles get 4.4% of GDP, average transfers would be \$9,618 for the first quintile, and \$6,134 for the other four quintiles. In the United States the value of per capita transfers is \$6,007. The first quintile gets 7.2% of GDP while the other four quintiles get 2.2%. In terms of per capita transfers per quintile, the numbers would be \$13,515 for the bottom quintile, and \$4,130 for the other four quintiles.¹⁷ Although these are very rough measures of how much transfer the poor get, they illustrate how misleading aggregate figures can be. In fact, the main conclusion derived from this section is that the analysis of aggregate data does not clarify who the final recipients of social expenditure are. Microeconomic data needs to be used to get better information.

¹⁴This is not completely correct, since Social Security benefits are calculated according to a formula that benefits lower-income workers. This means that at least some part of the Social Security payments could also be seen as "welfare" payments.

¹⁵The total figure was \$522.2 billion, \$373.2 billion in Federal funds and \$149 billion in State and local funds. The largest programs were Medicaid (\$258 billion), Supplemental Security Income (\$38 billion), Earned Income Tax Credit (\$28 billion), Food Stamps (\$24 billion), Low-Income Housing Assistance (\$18.5 billion), Temporary Assistance for Needy Families (\$13 billion), and Federal Pell Grants (\$11 billion). See Congressional Research Service (2004).

¹⁶This seems to be a very strong assumption. However, in Sect. 4 we will see that maybe it is not that strong.

¹⁷In 2003, total population in the EU-15 and in the United States were 381,980,470 and 290,796,000, respectively.

3 Micro data and methodology

Two alternative approaches are used to study the distributional effects of public transfers in Europe and the United States. In the first one, we follow the standard procedure in cross-country poverty studies by defining a poverty line for each country as a fraction of median income in the country. Thus, the population of each country is divided into two disjoint groups, those below and those above the poverty line. Then, we compute how social expenditure is allocated between these two groups both for Europe and the United States. The reason for using a relative measure of poverty, or relative deprivation, is that individuals sometimes think of themselves as poor when they compare themselves with their neighbors. They care not only about their absolute income, but also about relative income.

In the second approach, instead of dividing the population into just two groups, we study the size of public transfers received by households at different percentiles of the income distribution. In particular, we divide the population into five quintiles. By analyzing the value of transfers received by quintiles, we have an alternative perspective of the problem. In fact, we could simply assume that the poor are those households in the bottom quintile, namely the 20% households with less income in each country.¹⁸ This approach is interesting because it allows us to study how public transfers are allocated among the different levels of income in the society. This tells us about the degree of progressivity of transfers.

The definition of income used throughout the paper corresponds to disposable cash income, that is, market income minus direct income and payroll taxes plus cash and near-cash transfers, like food stamps and housing allowances.¹⁹ This is the most widely used definition in studies of poverty since it is the one that corresponds best to disposable income in the household.²⁰ Micro data from the European Community Household Panel (ECHP) and the Current Population Survey (CPS) is used to compute household income. The ECHP is a standardized multi-purpose annual longitudinal survey carried out at the level of the European Union. It is centrally designed and coordinated by the Statistical Office of the European Communities (Eurostat), and covers demographics, labor force behavior, income, health, education and training, housing, migration, etc. The ECHP started in 1994. Here we will use the last wave, 2001, where all income data correspond to the year 2000. Sample sizes for each country are presented in Table A.1 in Appendix A.

The CPS is a monthly survey of about 50,000 households carried out in the United States by the Bureau of the Census for the Bureau of Labor Statistics. It has been conducted for more than 50 years. It is the primary source of information on the labor force characteristics of the United States population. Estimates obtained from the CPS include employment, unemployment, earnings, hours of work, and other indicators. In particular the March CPS surveys provide detailed information on household income and we use the March 2001 wave in this study.

¹⁸Feldstein (1998) suggested this as a possible definition of poverty.

¹⁹Market income in the United States includes employer contributions for health insurance. As Garfinkel et al. (2006) point out, the inclusion of employer-provided health insurance increases income inequality, since the very poor receive very little of it.

²⁰See Smeeding (2006).

Our definition of disposable income relies heavily on the information that can be obtained from the ECHP. Comparing the ECHP with the CPS, we see that the former has less detailed information regarding the different sources of income. What we do is to extract the best information we can get from the ECHP and then we use the CPS to match the definition of income constructed with the ECHP. See Appendix A for details.

As is standard in the literature, we use the household as the unit for income aggregation and the person as the unit of analysis. We use equivalence scales to make comparisons between households of different size. Equivalence scales are used to adjust household income for differences in needs regarding household composition. The equivalence scale that we use is the square root of household size. According to this scale the poverty line for a household of 4 persons is twice as high as the poverty line for a household with only one person. Individual income is then estimated by pooling the income of all persons in the household and using the equivalence scale to get the equivalent income of each individual.²¹ We are assuming, therefore, that income within the household is shared equally among its members.

Finally, to make all monetary variables comparable across countries, we use the OECD purchasing power parity (PPP) exchange rates to convert all variables into US dollars.²² This means that all data on income and transfers corresponding to different countries have been adjusted so that they correspond to the same purchasing power.

As we said above, we use relative poverty in our first approach, where the poverty line for each country is defined as a fraction of median income. The poor are all individuals living in households with income below the poverty line. As is standard in many cross-national studies on poverty, we will fix the poverty line at 50% of national median adjusted income.²³

3.1 Public transfers in cash

We consider cash transfers from the government. In particular public cash transfers include pension payments, unemployment benefits, welfare transfers, public grants for education, etc. All of them are net of taxes, as all income data in the ECHP are net of taxes.²⁴ There are some problems with the treatment of pensions. In particular the ECHP does not make a distinction between pension benefits that come from public sources and pensions from private plans. Although in most European countries the fraction of income that the elderly get from private pensions is rather small, there are some exceptions, such as in the Netherlands and the United Kingdom.²⁵ This means that public pension payments, and as a consequence cash transfers, are slightly overstated in the European countries.

²¹Table A.1 in Appendix A presents some descriptive statistics by country.

²²See <http://www.oecd.org/std/prices-ppp>.

²³There are many other possibilities. For example, Eurostat recommends setting the threshold at 60 percent of median income, while in the United States the poverty line is close to 40 percent of median household income. See Smeeding et al. (2002).

²⁴We give detailed information on the construction of these variables in Appendix A.

²⁵In the Netherlands, 37% of total income for couples aged 60 or more comes from private pensions. In the UK this figure is 26.5%. See Disney and Johnson (2001).

3.2 In-kind health transfers

If we only took cash transfers into account, we would be excluding a sizable fraction of what is considered as public expenditure on social protection. Roughly speaking, six out of the nine categories of the OECD classification correspond to cash transfers.²⁶ These six categories comprise 69% of total expenditure on social protection in the European Union, and 57% in the United States, in 2001. By including health transfers, we are considering up to 95% of total expenditure on social protection in the European Union and 99% in the United States, as reported by the OECD.

Although in-kind transfers such as health transfers are generally less effective than cash transfers in increasing the welfare of the household, we think that not including them would produce a distorted picture of the comparison between Europe and the United States. The situation in Europe can be described as universal coverage, with unlimited benefits including payments for doctors' fees, hospitalization expenses, and drugs. Some countries finance health care basically out of taxation, while others rely on compulsory social insurance, or on a combination of both. The existence of health insurance at the national level implies that families do not need to set some money aside to pay for private health insurance and, thus, they can spend that money on other goods or services.

The description of the health care system in the United States is very different from Europe. The United States lacks a national health insurance program. Instead, most individuals have employment-based health insurance. In 2003 this was the case for 243.3 million people, 60.4% of the population. Another 76.8 million people (26.6% of the total population) were covered by government health insurance programs. Of these, 39.5 million (13.7%) were covered by Medicare, 35.6 million (12.4%) by Medicaid and 10 million (3.5%) by military health care.²⁷ Medicare is a national health insurance program that is basically designed for old people and for individuals with disabilities. Medicaid is a means-tested transfer program that funds medical assistance to low-income people with certain specific characteristics: the aged, the blind, the disabled, pregnant women, and children.²⁸ In the year of reference, 2000, total public health expenditure in the United States was 592.4 billion dollars, 5.9% of GDP, of which 216.9 billion went on Medicare (36.6% of total expenditure) and 188.3 billion on Medicaid (31.8%). Finally, an estimated 15.6% of the population, representing 45 million people, had no health insurance in 2003.

Our objective is to obtain an imputation of the value of the health transfers households get. Again the problem we find is that, while the CPS has information about the cash value of health transfers, the ECHP lacks this information. In particular, the CPS contains information about the "Market value of Medicare" and "Market value of Medicaid." The market value of Medicare and Medicaid, also called insurance value, equals the average cost to the government of providing medical services to

²⁶These six OECD categories are: old age, survivors, incapacity, family, unemployment, and "other."

²⁷Some individuals are covered by both Medicare and Medicaid. For data on Medicare and Medicaid, see the web page of the Centers for Medicare and Medicaid Services at: <http://www.cms.hhs.gov>.

²⁸However, according to Feldstein (2005), more than half of Medicaid outlays are for nursing home care for the very elderly rather than care for low income people.

persons within a specific risk class. As an example, the risk classes are the elderly and the disabled for Medicare.

Due to this shortcoming in the ECHP, we need to devise our own estimation method. We do it as follows. For the European Union, we have OECD data on per capita public health expenditure.²⁹ However, it is widely known that expenditure on health is not homogeneous across age groups, rather it is typically skewed towards the old. This amounts to saying that in Europe risk classes are well approximated simply by age. Then, we use age profiles of health care expenditure constructed by the OECD.³⁰ These age profiles divide the population of each country into 20 age groups, ranging from individuals under 5 up to individuals 95 and older. The information provided by these profiles consists of per capita public health care expenditure for each age group as a percentage of GDP per capita. Appendix B briefly summarizes how both sources of information are combined to calculate the monetary value of per capita health transfers. Here we present a simple example to illustrate our method. Suppose that there are only two age groups, called “young” and “old,” respectively. The young are 2/3 of the total population. Per capita health expenditure is \$2,000 and the age profile is (0.02, 0.04), that is, average health expenditure per young (resp. old) individual is 2% (resp. 4%) of GDP per capita. Then, to each young (resp. old) individual we will impute the amount e_Y (resp. e_O), so that:

$$\frac{2}{3}e_Y + \frac{1}{3}e_O = 2,000, \quad (1)$$

$$e_O = 2e_Y. \quad (2)$$

We get $e_Y = 1,500$ and $e_O = 3,000$.

In the case of the United States, we believe that the above procedure would not be appropriate. We believe that using only age could not be a good approximation of the risk classes to compute the insurance value of health transfers. This could work for Medicare, but not for Medicaid since it is a means-tested program. Moreover, as we discussed above, health insurance is not universal. Therefore, we start by imputing to every individual in the sample a value of public health transfers equal to the corresponding market values of Medicare and Medicaid. The problem with this approach is that it understates the value of health transfers in the United States. The average value of the sum of the market value of Medicare and Medicaid in the CPS is \$945.7, while the value of per capita public health transfers in the United States computed by the OECD for the year 2000 is \$1,997.³¹ Since the per capita difference is \$1,051.3,

²⁹See OECD (2006).

³⁰The primary data to construct these profiles comes from the AGIR data set (Pellikaan and Westerhout 2005, based on EPC 2001), and final profiles were constructed by Oliveira Martins et al. (2006). We thank Joaquim Oliveira Martins (OECD) for sending us the profiles.

³¹In the CPS average market values per recipient of Medicare and Medicaid are \$4,951 and \$2,562, respectively. However, the calculations made by the CMS about average benefits per enrollee are \$5,400 and \$4,400, respectively. This means that one reason for the large discrepancy above could be that Medicaid transfers are largely understated in the sample.

The fact that the market value of Medicare and Medicaid seems to be underreported in the CPS is closely related with the observation that health insurance coverage in the CPS is also underreported, as

this approach would be taking into account less than half of total health expenditure. What we propose to do is to supplement this procedure using the age profile for the United States constructed by the OECD. In particular, we distribute the above difference (\$1,069.3) across the individuals in the sample using the age profile.³²

We close this section by commenting briefly on the quality of reported transfers in the two surveys by comparing them with the aggregate data collected by the OECD. When we include health transfers, the average value of transfers in the household surveys are \$4,470 in Europe and \$4,120 in the United States. The last column of Table 1 shows that the average value of per capita social expenditure calculated by the OECD is \$6,830 for Europe and \$6,007 for the United States. The main reason for the discrepancies could be underreporting in the households. Another reason is that the values obtained from the surveys are in net terms, while per capita social expenditure is in gross terms. In any case, we see that the proportion of transfers captured by the two surveys is roughly similar. In the case of Europe, we capture a 65% (4,470/6,830) while we capture a 68% (4,120/6,007) in the United States.

4 Main results

We start by computing relative poverty rates for all countries in the European Union and for the United States in 2000 using disposable income.³³ Recall that income is always after tax and after cash transfers. We also compute an index of poverty for the European Union as a whole. This index is a weighted average of the 15 countries, where the weights correspond to the relative population of each country. We present these results in Table 2. Column 2 presents the poverty rate for each country. The poverty rate in the European Union is 8.8%, compared to 17% in the United States. The fact that the rate of relative poverty is higher in the United States has been extensively documented in the literature on cross-country comparisons of poverty rates.³⁴ All European countries have a lower rate of relative poverty than the United States. It is remarkable how countries in the European Union are split into two groups: in the first group of countries (Greece, Italy, Spain, Portugal, Ireland, and the UK) the poverty rate is above 11%. In all other countries (Sweden, France, Belgium, Austria, the Netherlands, Luxembourg, Denmark, Germany, and Finland), the poverty rate is always below 7.5%.

Columns 3 and 4 report the value of mean cash transfers to those below and to those above the poverty line. All values in Columns 3 and 4 are in PPP adjusted US dollars, so that we can compare across countries. In the European Union cash transfers to the poor range from \$1,167 in Italy to \$4,180 in Belgium, with an average

has been already noticed by DeNavas-Walt et al. (2004). They find that the CPS underreports Medicare and Medicaid coverage when compared with enrollment data from the Centers for Medicare and Medicaid Services (CMS).

³²It would be desirable to use health-specific PPPs to compare the monetary value of health transfers among countries. Although there is an ongoing joint project between the OECD and Eurostat to build health-specific PPPs, they are not available yet.

³³The precise definition of disposable income in both surveys is provided in Appendix A.

³⁴See, for example, the recent work by Smeeding (2006).

Table 2 Relative poverty

	Poverty rate	Transfers do not include health services			Transfers include health services		
		Mean transfers to the poor	Mean transfers to the non-poor	Ratio	Mean transfers to the poor	Mean transfers to the non-poor	Ratio
		(3)	(4)	(4)/(3)	(6)	(7)	(7)/(6)
Austria	7.1	3007	3873	1.29	5801	5992	1.03
Belgium	5.1	4180	3340	0.80	6859	5187	0.76
Denmark	5.6	3472	2922	0.84	5894	4855	0.82
Finland	5.9	2323	2558	1.10	3522	3882	1.10
France	7.5	2513	3389	1.35	4638	5266	1.14
Germany	5.8	2848	3181	1.12	4903	5314	1.08
Greece	11.5	1379	1925	1.40	2548	2756	1.08
Ireland	11.2	3336	1810	0.54	5150	3072	0.60
Italy	12.3	1167	2520	2.16	2594	4017	1.55
Luxemb	6.3	2854	5242	1.84	4770	7547	1.58
Netherl	6.2	1566	3084	1.97	2755	4578	1.66
Portugal	12.4	1319	1721	1.30	2673	2778	1.04
Spain	11.1	1605	2321	1.45	2780	3411	1.23
Sweden	4.9	2493	3543	1.42	4153	5496	1.32
UK	11.0	2590	2651	1.02	4195	4131	0.98
EU	8.8	2106	2875	1.36	3757	4539	1.21
US	17.0	2265	2072	0.92	5463	3823	0.70

value of \$2,106. Transfers to those above the poverty line go from \$1,721 in Portugal to \$5,242 in Luxembourg. The average for the European Union is \$2,875. All European countries except for Belgium, Denmark, and Ireland give more transfers to those above the poverty line than to those below. This trend is confirmed by the fact that in the European Union every individual above the poverty line receives, on average, a transfer that is 36% higher than the average transfer received by each poor individual. The obvious explanation is that pensions account for a large fraction of cash transfers. In Column 5 we compute the ratio between the values in Columns 4 and 3. The ratio shows how progressive cash transfers are. The lower the ratio, the more progressive the transfer system is. In Europe, Italy is the most regressive country with a ratio of 2.16, while Ireland is the most progressive, with a value of 0.54.

In the United States, cash transfers to the poor are \$2,265, slightly above the average in the European Union, and \$2,072 to the non-poor, significantly lower than in Europe.

In Columns 6–8, we add the monetary value of health transfers and observe that things change dramatically. In Europe, the average transfer to the poor rises to \$3,757, while in the United States it rises to \$5,463, 45% higher than in Europe. The reason for this change, compared to Columns 3 and 4, is that in the United States health transfers are more progressive than in Europe, basically because of the existence of

Table 3 Cash transfers by income quintiles

	All	Average transfers					Percentage of total transfers				
		1stQ	2ndQ	3rdQ	4thQ	5thQ	1stQ	2ndQ	3rdQ	4thQ	5thQ
Austria	3811	3728	3969	3860	3365	4133	19.57	20.87	20.23	17.66	21.68
Belgium	3383	4824	3892	2817	2376	3004	28.58	23.01	16.62	14.06	17.73
Denmark	2953	4926	3623	2410	1793	2006	33.37	24.57	16.39	12.11	13.56
Finland	2544	3191	3016	2340	2151	2021	25.12	23.68	18.46	16.88	15.87
France	3323	2846	3328	3008	2887	4547	17.15	20.01	18.11	17.37	27.36
Germany	3162	3218	3125	3031	3005	3432	20.37	19.76	19.17	19.01	21.69
Greece	1862	1475	1860	1744	1766	2469	15.99	19.82	18.72	18.95	26.51
Ireland	1981	3342	2003	1627	1647	1280	33.85	20.18	16.48	16.61	12.89
Italy	2353	1354	2165	2619	2517	3113	11.51	18.39	22.28	21.38	26.44
Luxemb	5093	4051	5318	6472	5146	4477	15.92	20.93	25.37	20.21	17.57
Netherl	2990	2734	2965	2395	2594	4264	18.29	19.83	16.05	17.32	28.51
Portugal	1671	1473	1539	1228	1402	2714	17.64	18.42	14.69	16.78	32.46
Spain	2241	2049	2277	2107	2242	2533	18.29	20.32	18.81	20.00	22.58
Sweden	3491	3992	3738	3459	3058	3206	22.91	21.38	19.84	17.53	18.34
UK	2644	3352	3285	2429	1942	2212	25.38	24.84	18.37	14.69	16.73
EU	2807	2755	2911	2653	2519	3195	19.66	20.73	18.91	17.95	22.75
US	2105	2293	2202	2032	1670	2328	21.79	20.93	19.30	15.87	22.11

Medicare and Medicaid. Regarding transfers to the non-poor, it is just the opposite. In Europe they are on average \$4,539, while in the United States they amount to \$3,823.

In the last column, we compute the ratio between the values in Columns 7 and 6. We still observe that transfers are more regressive in Europe. Only in Ireland is this ratio lower than in the United States.

In Tables 3 and 4, we present the relationship between the level of transfers and the income of the recipient. We perform the following to build Tables 3 and 4. We classify all individuals in the sample according to disposable income and divide the population of each country into five income groups or quintiles. Thus, the first quintile comprises all the individuals in the bottom 20% of the distribution. Following a suggestion by Feldstein (1998), we could consider the first quintile to represent poor individuals. Then, we calculate average transfers received by each of the five quintiles. The exercise is repeated twice. Table 3 only considers monetary transfers, whereas in Table 4 we also include the imputed value of health transfers. In the second column of Table 3, we write average cash transfers across all individuals in the sample. Average transfers are \$2,105 in the United States and \$2,807 in the European Union, i.e. 33% higher. In Columns 3–7, we calculate average transfers for the five quintiles. In Columns 8–12, we calculate the share of each quintile over the total value of cash transfers. It is very surprising to see that in most countries the pattern is quite odd. In nine European countries and also in the United States the share of the top quintile is higher than the share of the bottom quintile. When we compare the European Union as a whole with the United States, we find a similar pattern on both

Table 4 Cash plus health transfers by income quintiles

	All	Average transfers					Percentage of total transfers				
		1stQ	2ndQ	3rdQ	4thQ	5thQ	1stQ	2ndQ	3rdQ	4thQ	5thQ
Austria	5978	6362	6117	5866	5299	6246	21.29	20.50	19.60	17.73	20.89
Belgium	5273	7377	5884	4491	3931	4676	28.04	22.33	17.00	14.93	17.71
Denmark	4913	7548	5537	4176	3513	3786	30.73	22.56	17.07	14.26	15.38
Finland	3861	4592	4359	3587	3427	3337	23.82	22.55	18.65	17.72	17.26
France	5219	4878	5294	4829	4651	6443	18.72	20.26	18.51	17.82	24.69
Germany	5291	5359	5243	5108	5112	5632	20.28	19.81	19.31	19.33	21.28
Greece	2732	2566	2774	2561	2537	3224	18.96	20.15	18.74	18.55	23.60
Ireland	3304	5143	3249	2825	2848	2451	31.22	19.62	17.15	17.21	14.80
Italy	3842	2824	3696	4148	3962	4579	14.71	19.24	21.61	20.62	23.82
Luxemb	7373	6157	7647	8990	7395	6679	16.71	20.79	24.34	20.06	18.10
Netherl	4465	4192	4492	3773	4027	5842	18.78	20.12	16.93	18.00	26.16
Portugal	2765	2831	2693	2227	2381	3692	20.50	19.49	16.10	17.22	26.69
Spain	3341	3303	3448	3163	3269	3523	19.78	20.64	18.95	19.56	21.07
Sweden	5430	6107	5735	5342	4886	5080	22.53	21.09	19.69	18.00	18.69
UK	4139	5113	4935	3852	3273	3519	24.73	23.83	18.61	15.81	17.00
EU	4470	4558	4629	4261	4088	4814	20.42	20.70	19.07	18.28	21.53
US	4102	5422	4421	3827	3070	3770	26.44	21.56	18.65	14.97	18.38

sides of the Atlantic. We could say that cash transfers are roughly constant across quintiles.

In Table 4, we add the imputed value of health transfers. In Column 2, we see that average transfers are still higher in Europe. They amount to \$4,470, compared to \$4,102 in the United States. In Columns 3–7, we calculate the value of average transfers by quintiles and in Columns 8–12 we calculate the share of the total pie that goes to each quintile. Comparing by quintiles, average transfers are 19% higher in the United States than in Europe for the bottom quintile, but the pattern reverses for the other four quintiles. In particular, average transfers for the bottom quintile in the European Union amount to \$4,558, while in the United States they are \$5,422. The biggest differences are for the fourth and the top quintile. Transfers are 33% higher in Europe for the fourth quintile and 28% for the top quintile.

Figure 1 illustrates the results from Tables 3 and 4. The dotted lines represent average cash transfers per quintile. It seems as if the line corresponding to the European Union were just a parallel shift upwards of the line corresponding to the United States. Bold lines are used to represent the average value of the sum of cash transfers and health transfers that each of the five quintiles receives. For the European Union, the general impression is that the picture is quite similar to the one we obtained with cash transfers only. All income groups get more transfers, but the increase is more or less the same for all of them. In the United States, on the contrary, we see that public health transfers are strongly progressive, since they are heavily concentrated at the bottom of the distribution.

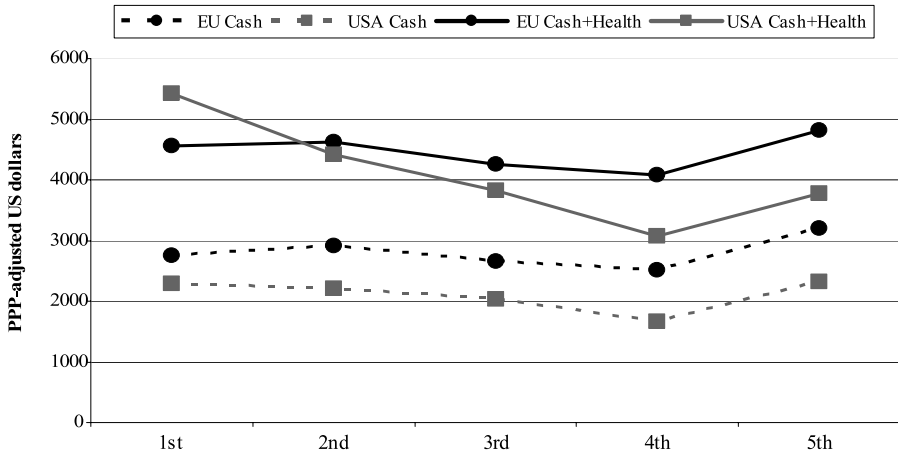


Fig. 1 Transfers by quintiles (with and without health transfers)

5 Discussion

It could be the case that the results in Sect. 4 are highly dependent on the choice of 2000 as the reference year. We chose 2000 because the last wave of the ECHP is 2001, and this corresponds to 2000 data. What we can do is to repeat the exercise with a different reference year. The first wave of the ECHP in which we have data for the 15 countries of the European Union is the 1997 wave, with data corresponding to 1996. Therefore, we repeated all our calculations using 1996 as the reference year. We found very similar results. We will briefly comment on them here.³⁵ The poverty rate in Europe in 1996 was 9.1% and 17.7% in the United States. Mean monetary and health transfers to the poor in 1996 are 60% higher in the United States, compared to 45% in 2000 (see Table 2, Column 6). Regarding average monetary and health transfers by quintiles, we find that they are 27% and 5% higher in the United States for the bottom quintile and the second quintile, respectively, while they are 7%, 19% and 28% higher in Europe for the third, fourth and fifth quintile, respectively.

The second test consists of repeating the exercise for the reference year 2000, while eliminating all households where the head is 65 or older. The reason for this is that it has been argued that in many countries transfers are not targeted to the poor, but to the old. We will now review the most important changes with respect to the results in Sect. 4. The results are gathered in Tables 5, 6, and 7. Now average transfers both to the poor and to the non-poor are much lower, which is in accordance with the view that most transfers have the old as their target. The main change observed here is that the United States gives less transfers in cash than Europe both to the poor (\$1,268 versus \$1,487) and to the non-poor (\$1,023 versus \$1,607).³⁶ When health transfers are added, the picture changes and the results are similar to those obtained for the

³⁵The results are available from the authors upon request.

³⁶When all households were included in the analysis we found that average transfers to the poor were larger in the US than in Europe (see Sect. 4).

Table 5 Relative poverty

	Poverty rate	Household head younger than 65					
		Transfers do not include health services			Transfers include health services		
		Mean transfers to the poor	Mean transfers to the non-poor	Ratio (4)/(3)	Mean transfers to the poor	Mean transfers to the non-poor	Ratio (7)/(6)
	(3)	(4)	(4)/(3)	(6)	(7)	(7)/(6)	
Austria	6.7	2053	2573	1.25	3585	4273	1.19
Belgium	5.9	3506	1939	0.55	4959	3311	0.67
Denmark	5.0	2376	1878	0.79	3853	3514	0.91
Finland	6.7	2037	1715	0.84	2973	2811	0.95
France	8.2	1747	1703	0.97	3100	3126	1.01
Germany	6.2	2555	1864	0.73	4209	3619	0.86
Greece	13.1	534	1037	1.94	1211	1710	1.41
Ireland	11.9	2203	1157	0.53	3275	2236	0.68
Italy	13.8	499	1467	2.94	1620	2722	1.68
Luxemb	7.6	2449	3306	1.35	4026	5153	1.28
Netherl	7.3	1468	1502	1.02	2538	2706	1.07
Portugal	12.4	555	1049	1.89	1352	1914	1.42
Spain	12.6	851	1221	1.43	1654	2101	1.27
Sweden	6.2	2216	2225	1.00	3530	3715	1.05
UK	13.1	2010	1420	0.71	3177	2626	0.83
EU	9.9	1487	1607	1.08	2664	2950	1.11
US	17.9	1268	1023	0.81	3036	2058	0.68

whole population. In the United States transfers per poor person are larger than in Europe, whereas transfers to the non-poor are larger in Europe than in the US. In Tables 6 and 7, we present transfers per income quintiles. Once health transfers are introduced, we observe that the bottom quintile gets similar transfers in the United States and in Europe. All quintiles except the bottom are better treated in Europe.

We perform a third extension that consists of comparing the United States with an average of the nine European countries considered in Smeeding (2006). The idea is that this might be the group of European countries that is most comparable to the United States. This group of countries comprises Austria, Belgium, Finland, Germany, Ireland, Italy, the Netherlands, Sweden, and the United Kingdom. Our main results do not change greatly. Now cash transfers per poor individual amount to \$2,364, compared to \$2,265 in the United States. For the EU-15, the value was \$2,106. Adding the value of health transfers the United States is still ahead, although the difference is slightly narrower. For the EU-9, per capita transfers for individuals below the poverty line amount to \$4,096, while in the United States they are \$5,463, still 33% higher. We also find that when we consider the reduced version of the European Union, average transfers to individuals above the poverty line are slightly lower. The average value of cash transfers is \$2,905, while it is \$2,875 for the EU-15 and \$2,072

Table 6 Cash transfers by income quintiles

	All	Household head younger than 65									
		Average transfers					Percentage of total transfers				
		1stQ	2ndQ	3rdQ	4thQ	5thQ	1stQ	2ndQ	3rdQ	4thQ	5thQ
Austria	2538	2341	2628	2713	2449	2559	18.49	20.67	21.39	19.29	20.16
Belgium	2031	3134	1888	1596	1453	2084	30.89	18.59	15.74	14.26	20.52
Denmark	1902	3075	2198	1689	1293	1256	32.33	23.18	17.69	13.61	13.19
Finland	1736	2387	2087	1545	1371	1289	27.56	24.02	17.82	15.78	14.82
France	1706	1782	1740	1456	1406	2148	20.90	20.39	17.09	16.45	25.17
Germany	1907	2387	1758	1754	1730	1904	25.07	18.43	18.41	18.14	19.95
Greece	972	597	701	889	1050	1622	12.29	14.44	18.34	21.57	33.36
Ireland	1282	2015	1337	1090	1120	845	31.49	20.86	17.02	17.47	13.16
Italy	1333	534	997	1395	1668	2073	8.03	14.93	20.96	25.00	31.08
Luxemb	3241	2954	3097	3610	3316	3230	18.24	19.17	22.26	20.43	19.90
Netherl	1500	1762	1379	1294	1323	1741	23.54	18.37	17.29	17.60	23.21
Portugal	987	642	777	783	863	1872	13.00	15.75	15.88	17.47	37.90
Spain	1174	749	986	1167	1455	1515	12.77	16.79	19.88	24.78	25.78
Sweden	2224	2757	2195	2045	2188	1937	24.79	19.76	18.41	19.64	17.40
UK	1497	2218	1610	1361	1138	1157	29.66	21.50	18.23	15.17	15.45
EU	1595	1721	1502	1474	1491	1786	21.61	18.83	18.50	18.68	22.38
US	1067	1236	925	904	909	1360	23.17	17.34	16.95	17.04	25.50

for the United States. Adding health, the values are \$4,622, \$4,539, and \$3,823 for the EU-9, EU-15, and the United States, respectively.

Our fourth extension has to do with the fact that the results in Tables 2, 3, 4, 5, 6, and 7 refer to average transfers per individual. However, the United States has per capita income that is higher than that of all European countries but Luxembourg. For example, in 2003, GDP per capita in the United States was 34.5% higher than the average of the European Union (see Table 1). Then, what we can do is to calculate the ratio of per capita transfers to the poor and non-poor over the average income in the sample. We will do this for the numbers in Table 2. In particular, average income in the reference year 2000 was \$10,982 in Europe and \$17,616 in the United States. The value of per capita monetary and health transfers was \$3,757 for the poor and \$4,539 for the non-poor in Europe, and \$5,463 for the poor and \$3,823 for the non-poor in the United States. Computing the ratios over average income results in the numbers 0.34 and 0.41 in Europe for the poor and non-poor respectively, while the corresponding numbers for the United States are 0.31 and 0.22. The numbers are quite similar for the poor, but differences are huge for the non-poor.

Finally, we want to comment briefly on employer-provided health premiums in the United States. Several authors have repeatedly pointed out that the United States

Table 7 Cash plus health transfers by income quintiles

	All	Household head younger than 65									
		Average transfers					Percentage of total transfers				
		1stQ	2ndQ	3rdQ	4thQ	5thQ	1stQ	2ndQ	3rdQ	4thQ	5thQ
Austria	4227	3875	4252	4407	4171	4431	18.38	20.08	20.86	19.73	20.96
Belgium	3409	4529	3220	2923	2808	3563	26.60	18.89	17.18	16.42	20.91
Denmark	3531	4660	3845	3295	2904	2948	26.40	21.85	18.60	16.47	16.68
Finland	2821	3374	3133	2595	2508	2496	23.98	22.19	18.41	17.75	17.67
France	3124	3078	3128	2840	2863	3710	19.72	20.02	18.20	18.31	23.75
Germany	3656	4029	3382	3480	3536	3854	22.07	18.50	19.04	19.33	21.06
Greece	1645	1277	1357	1563	1725	2303	15.54	16.50	19.04	20.94	27.99
Ireland	2359	3077	2391	2167	2217	1944	26.13	20.26	18.38	18.78	16.45
Italy	2570	1652	2181	2649	2965	3405	12.88	16.94	20.64	23.06	26.48
Luxemb	5068	4579	4787	5510	5212	5252	18.08	18.95	21.73	20.54	20.70
Netherl	2694	2871	2500	2454	2570	3073	21.36	18.54	18.26	19.04	22.81
Portugal	1845	1455	1634	1656	1721	2757	15.77	17.72	17.97	18.65	29.88
Spain	2045	1539	1836	2059	2378	2411	15.07	17.95	20.14	23.27	23.57
Sweden	3704	4074	3552	3491	3795	3608	22.00	19.20	18.87	20.47	19.46
UK	2698	3402	2841	2570	2332	2345	25.23	21.05	19.09	17.25	17.38
EU	2922	2963	2782	2792	2857	3215	20.30	19.04	19.13	19.53	22.00
US	2233	2955	2129	1934	1846	2302	26.47	19.07	17.32	16.53	20.61

spends much more in health care than what the official estimates suggest.³⁷ The reason is that employer-paid health insurance premiums are not included in employee gross income. According to the estimates of the United States government, the employer-paid health insurance premiums amount to \$331.4 billion in 2000 (\$1,174 per capita), and its exclusion from employee taxable income reduced income tax liability by \$76.5 billion (\$272 per capita).³⁸ The CPS includes information on the employer contribution for health insurance and the per capita contribution in the sample is \$808 (69% of the official figure). If we compute the implicit health transfer each person receives by multiplying the employer contribution for health insurance by the marginal tax rate, which is also reported in the CPS, we obtain a per capita health transfer of \$124 (46% of the official figure). Given that our estimate is quite small compared to the official figure and due to the difficulty of assigning the difference to particular households, we have decided not to include this implicit transfer in our measure of health transfers. However, as an illustration we have checked that including the implicit transfer due to the employer contribution for health insurance re-

³⁷See, for example, Woolhandler and Himmelstein (2002), Sheils and Haught (2004) and Burman et al. (2008).

³⁸This number comes from "Analytical Perspectives: Budget of the United States Government, Fiscal Year 2002," Office of Management and Budget.

ported in the CPS, the average transfer to the poor and the non-poor in the US change to \$5,488 and \$3,990, respectively. The original values are \$5,463 and \$3,823.

6 Conclusions

In this paper we have studied transfers to the poor in the European Union and in the United States. First, we have seen that studies that use aggregate data only cannot properly address this issue. Second, we have analyzed micro data including an imputation of the monetary value of health transfers and we do not find large differences between Europe and the United States.

We agree that our approach has many shortcomings. However, most of them arise from the lack of available information in the ECHP. We think that a better approach would need more detailed information on the different types of public transfers. In particular, the possibility of distinguishing between “welfare” and “non-welfare” transfers would prove very interesting. Another shortcoming of this paper is the fact that we focus on one particular year. We recognize that the ideal measure of poverty in a country should be based on lifetime income. The reason is that we could thus avoid the problem of having households that are only temporarily below the poverty line. We would also have to calculate the discounted value of all net transfers received, where we should be aware of all the contributions paid in order to get those transfers. Obviously this way of dealing with the problem of poverty would be much more demanding in terms of the data that would be needed.

Finally, it could be argued that what is interesting is not to compare the size of transfers to the poor across countries, but the extent to which these transfers help to raise families above the poverty line. We agree that this last issue is important, but we argue that the effect of transfers on poverty depends crucially on how those transfers are distributed among the poor. As Hoynes et al. (2006) notice, there are means-tested programs in the United States that have a deep impact on the well-being of the poor, the EITC for example, but have little impact on the poverty rate, because they occur at income levels that are substantially below the poverty line.

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Appendix A

Here we give detailed information on the construction of all relevant income variables, both for the European Union and the United States.

A.1 European Union

All information for the countries in the European Union comes from the ECHP. We use the 2001 wave, where all income information corresponds to the year 2000. All variables are after tax. Our definition of *disposable income* corresponds to total net household income. This is the variable called *hi100* in the ECHP. This variable *hi100* includes all monetary transfers. *Monetary transfers* (variable *hi130* in the ECHP) includes unemployment benefits (*hi131*), retirement and survivors pensions (*hi132*), family related allowances (*hi133*), sickness/invalidity benefits (*hi134*), education-related allowances (*hi135*) and any other benefits (*hi136*). For France and Finland monetary transfers (*hi130*) are pre-tax. For these two countries, therefore, we multiply the values in the sample by the net/gross factor (*hi020*).

A.2 United States

For the United States all data are from the March 2001 wave of the CPS. As opposed to the ECHP, in the CPS all household income variables are stated before taxes. To make the analysis comparable to that of the ECHP, we have to subtract the value of all taxes paid by the household. We define gross before transfers household income gy^1 as:

$$\begin{aligned} gy^1 = & hwsval + hseval + hfrval + hprivpen \\ & + hintval + hdivval + hrntval + hcsval \\ & + halmval + hfinval + hoival, \end{aligned} \quad (3)$$

where, according to the notation of the CPS, *hswval* are wages and salaries, *hseval* is self-employment income, *hfrval* is farm self-employment income, *hprivpen* are private retirement pensions,³⁹ *hintval* are interest payments, *hdivval* are dividend payments, *hrntval* are rental payments, *hcsval* are child support payments, *halmval* are alimony payments, *hfinval* are financial assistance payments and *hoival* is other income.

Since public transfers in the CPS are also before taxes, we must convert them into after tax transfers as well. Gross household income after cash transfers is:

$$gy^2 = htotval + hfdval, \quad (4)$$

where *htotval* is total household income and *hfdval* is the value of all food stamps received during the year. Gross social transfers in the CPS are defined as:

$$\begin{aligned} gy^2 - gy^1 = & hucval + hwcval + hssval + hssival + hpawval + hvetval \\ & + hsurval + hdisval + hpubpen + hedval + hfdval, \end{aligned} \quad (5)$$

³⁹We consider as private pensions company or union pension, regular payments from annuities or paid insurance policies and regular payments from an IRA, Keogh, or 401(k) plan.

where $hucval$ is unemployment compensation, $hwcval$ is worker's compensation, $hssval$ are Social Security payments, $hssival$ are Supplemental Security benefits, $hpawval$ is public assistance, $hvetval$ is veterans' payments, $hsurval$ is survivor benefits, $hdisval$ is disability benefits, $hpubpen$ are public retirement pensions,⁴⁰ and $hedval$ is educational assistance.

We calculate total taxes t paid by the household as:

$$t = fed_tax + statetax + fica + fed_ret - eit_cred, \quad (6)$$

where fed_tax is federal income tax liability, $statetax$ is state income tax liability, $fica$ is Social Security retirement payroll deduction, fed_ret is federal retirement payroll deduction and eit_cred is the amount corresponding to the Earn Income Tax Credit.

Different social transfers are subject to very different tax liabilities. We have to take this fact into account to calculate the value of household income before transfers and the value of social transfers received by the household, net of taxes. We distinguish between two groups of transfers:

(i) Social Security payments

According to US law, the fiscal treatment of Social Security payments depends on two factors: whether it is the only source of income or not, and what the total income value of the tax filer is. In particular, Social Security payments are exempt from taxation if:

1. The person has no other income.
2. The person files a federal tax return as an "individual" and her combined income is smaller than \$25,000.⁴¹
3. The person files a joint return and total combined income is smaller than \$32,000.

Half of the Social Security payments are tax exempt and half are taxable in the following cases:

1. The person files a federal tax return as an "individual" and her combined income is between \$25,000 and \$34,000.
2. The person files a joint return and total combined income is between \$32,000 and \$44,000.

Finally, 15% of the Social Security payments are tax exempt and 85% are taxable in the following cases:

1. The person files a federal tax return as an "individual" and her combined income is larger than \$34,000.
2. The person files a joint return and combined income is larger than \$44,000.

(ii) All other social transfers

All remaining social transfers can be split into two categories according to whether they pay or they do not pay taxes. Transfers that do not pay taxes are: worker's com-

⁴⁰We consider as public pensions federal government retirement, US military retirement, state or local government retirement and US railroad retirement.

⁴¹The combined income is the sum of the adjusted gross income plus one-half of the Social Security benefits.

pensation, Supplemental Security benefits, public assistance, veterans' payments, educational assistance and food stamps. Transfers that pay income tax are: unemployment compensation, survivor benefits, disability benefits, and private retirement pensions. We then define taxable income as:

$$\text{Taxable income} = gy^1 + \text{Gross taxable transfers.} \quad (7)$$

We calculate the average tax rate for each household as:

$$ATR = \frac{\text{Total taxes paid}}{\text{Taxable income}}. \quad (8)$$

We define before transfers household income (net of taxes) y^1 as:

$$y^1 = gy^1 \times (1 - ATR). \quad (9)$$

To get our definition of disposable income that we call y^2 we need to add employer-provided health insurance which is non-taxable and all monetary transfers. The value of *monetary transfers*, net of taxes is

$$\text{Social transfers} = \text{Gross taxable transfers} \times (1 - ATR) + \text{Tax exempt transfers.} \quad (10)$$

Then we have that *disposable income* is

$$y^2 = y^1 + \text{hemcontrb} + \text{Social transfers}, \quad (11)$$

where *hemcontrb* represents the value of employer-provided health insurance. Notice that total taxes paid can be negative due to the existence of the Earn Income Tax Credit (EITC) program. If that is the case we set the value of the average tax rate equal to zero and all negative taxes are considered as a social transfer.

In Table A.1 we provide information on sample sizes together with some descriptive statistics on equivalent income, which is the measure of income we use throughout the paper.

Appendix B: Calculation of the monetary value of health transfers

Suppose that for a given country the age profile is:

$$(a_{0-4}, a_{5-9}, a_{10-14}, \dots, a_{95+}), \quad (12)$$

where a_{0-4} represents the percentage of GDP per capita spent by the government on each individual in the age group 0–4, etc. We first normalize this vector by dividing all components by a_{0-4} . We get a normalized vector as follows:

$$(1, b_{5-9}, b_{10-14}, \dots, b_{95+}) \equiv \left(\frac{a_{0-4}}{a_{0-4}}, \frac{a_{5-9}}{a_{0-4}}, \frac{a_{10-14}}{a_{0-4}}, \dots, \frac{a_{95+}}{a_{0-4}} \right). \quad (13)$$

Our next task is to determine the per capita expenditure that we are going to attribute to every individual within each of the age groups. To do it, we call c the value that

Table A.1 Descriptive statistics

	Sample size	Equivalent income		
		10th percentile	Median	90th percentile
Austria	6,859	10,168	18,950	32,648
Belgium	5,888	10,846	19,673	34,790
Denmark	5,130	11,281	19,713	31,034
Finland	7,480	9,299	16,613	28,331
France	13,090	8,950	17,058	30,857
Germany	13,733	10,387	17,676	29,942
Greece	11,208	4,892	11,139	22,677
Ireland	5,558	7,723	17,674	32,094
Italy	15,979	6,296	13,926	25,690
Luxemb	6,306	15,544	27,717	50,072
Netherl	12,027	10,261	17,144	28,970
Portugal	13,237	4,111	9,315	20,260
Spain	14,270	6,204	13,606	26,781
Sweden	12,045	10,102	16,915	27,251
UK	11,862	8,744	18,966	35,597
EU-15	154,672	7,218	16,173	30,318
US	127,843	9,247	24,615	51,537

we are going to impute to each individual in the group 0–4 in a given country. This value must satisfy:

$$\frac{1}{n} (c \times n_{0-4} + (c \times b_{5-9}) \times n_{5-9} + \dots + (c \times b_{95+}) \times n_{95+}) = d, \quad (14)$$

where n is the total number of individuals in the sample, n_h is the number of individuals in the sample with age h , and d is per capita health expenditure. Clearly, the only unknown in the above equation is c , which is easily solved. Finally, the imputed values of health transfers for individuals across age groups will be $c, c \times b_{5-9}, \dots, c \times b_{95+}$.

References

- Adema, W., & Ladaïque, M. (2005). Net social expenditure, 2005 edition: more comprehensive measures of social support. OECD Social, Employment and Migration Working Papers No. 29.
- Alesina, A., & Glaeser, E. (2004). *Fighting poverty in the United States and Europe: a world of difference*. London: Oxford University Press.
- Alesina, A., Glaeser, E., & Sacerdote, B. (2001). Why doesn't the United States have a European-style welfare state? *Brookings papers on economic activity* (pp. 187–278).
- Anderson, G., Reinhardt, U., Hussey, P., & Petrosyan, V. (2003). It's the prices, stupid: why the United States is so different from other countries. *Health Affairs*, 22(3), 89–105.
- Atkinson, A. B., Rainwater, L., & Smeeding, T. M. (1996). *Income distribution in OECD countries*. Paris: OECD.

- Burman, L., Geissler, Ch., & Toder, E. (2008). How big are total individual tax expenditures, and who benefits from them? *American Economic Review*, 98(2), 79–83.
- Congressional Research Service (2004). *Green book, committee on ways and means*.
- DeNavas-Walt, C., Proctor, B., & Mills, R. (2004). *Income, poverty, and health insurance coverage in the United States: 2003* (US Census Bureau, Current Population Reports, P60-226). US Government Printing Office. Washington, DC.
- Disney, R., & Johnson, P. (2001). *Pension systems and retirement incomes across OECD countries*. Cheltenham Glos: Edward Elgar.
- EPC, Economic Policy Committee (2001). *Budgetary challenges posed by ageing populations: the impact of public spending on pensions, health and long-term care for the elderly and possible indicators of the long-term sustainability of public finances*. European Commission.
- Eurostat (2008). *European social statistics: social protection*. Expenditures and receipts. Data 1995–2005.
- Feldstein, M. (1998). *Income inequality and poverty*. NBER Working Paper 6770.
- Feldstein, M. (2005). Rethinking social insurance. *American Economic Review*, 95(1), 1–24.
- Garfinkel, I., Rainwater, L., & Smeeding, T. (2006). A re-examination of welfare states and inequality in rich nations: how in-kind transfers and indirect taxes change the story. *Journal of Policy Analysis and Management*, 25(4), 897–919.
- Heady, C., Mitrakos, T., & Tsakloglou, P. (2001). The distributional impact of social transfers in the EU: evidence from the ECHP. *Fiscal Studies*, 22, 547–565.
- Hoynes, H. W., Page, M. E., & Stevens, A. H. (2006). Poverty in America: trends and explanations. *Journal of Economic Perspectives*, 20(1), 47–68.
- Jäntti, M., & Danziger, S. (2000). Income poverty in advanced countries. In A. B. Atkinson & F. Bourguignon (Eds.), *Handbook of income distribution* (pp. 309–378). Amsterdam: Elsevier, Chap. 6.
- Moffit, R. A. (2003). *Means-tested transfer programs in the United States*. Chicago: University of Chicago Press.
- OECD (2006). *OECD health data 2006*.
- OECD (2007). *Social expenditure database*. www.oecd.org/els/social/expenditure.
- Oliveira Martins, J., de la Maisonneuve, Ch., & Bjørnerud, S. (2006). *Projecting OECD health and long-term care expenditures: what are the main drivers?* OECD Economics Department Working Paper 477.
- Page, B. (1983). *Who gets what from government*. Berkeley: University of California Press.
- Pellikaan, F., & Westerhout, E. (2005). *Alternative scenarios for health, life expectancy and social expenditure: the influence of living longer in better health on health care and pension expenditures and government finances in the EU*. European Network of Economic Policy Research Institutes (ENEPRI) Research Report No. 8.
- Peterson, Ch., & Burton, R. (2008). *The US health care spending: comparison with other OECD countries*. New York: Nova Science Publishers.
- Sheils, J., & Haught, R. (2004). The cost of tax-exempt health benefits in 2004. *Health Affairs, Data Watch, W4*, 106–112.
- Smeeding, T. L. (2006). Poor people in rich countries: the United States in comparative perspective. *Journal of Economic Perspectives*, 20(1), 69–90.
- Smeeding, T., Rainwater, L., & Burtless, G. (2002). United States poverty in a cross-national context. In S. Danziger & H. Haveman (Eds.), *Understanding poverty* (pp. 162–189). New York/Cambridge: Russell Sage Foundation/Harvard University Press, Chap. 5.
- Whitehouse, E. (2003). *The value of pension entitlements: a model of nine*. OECD countries. OECD Social, Employment, and Migration Working Papers 9, OECD.
- Woolhandler, S., & Himmelstein, D. (2002). Paying for national health insurance-and not getting it. *Health Affairs*, 21(4), 88–98.