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FLOWENLA Discussion Paper

Welfare magnets in Europe and the costs of a harmonised social assistance

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ABSTRACT

The enlargement of the European Union is expected to pose severe tensions among the member States. While a mobile and young labour force is highly desirable, the *excessive* welfare take up normally found among migrants could put a significant pressure on the European welfare systems, especially when the destination country is chosen according to its welfare generosity. On the basis of the European Community Household Panel (ECHP), we apply an empirical model of migration decisions. Consistently with the evidence presented in Borjas (1999), we find that the generosity of the country specific welfare system has a significant impact on migration decisions. We can also confirm, with some exceptions, that migrants move where the unemployment rate is low and wages are high. Moving on from the first set of results we perform an interesting policy exercise: the implementation of a harmonised Minimum Income (MI) across the EU. This institution could be able to eliminate such distortions in the migration flows. Under different scenarios both on taxation and on MI levels, we perform a costs and benefits analysis from which we can define winners and losers of such a notable reform. ...and the winners are: Finland, Greece, Portugal, Spain, Sweden and the UK. Losers: Austria, Belgium, France, Germany, Luxembourg and the Netherlands. While Italy seems to draw.

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1 Introduction

The enlargement of the European Union, which will take place in the near future, is expected to induce a sharp increase in migration from Eastern European countries. The effects of such an increase in migration flows into the Union have been recently analysed by academics as well as policy makers. Among other considerations, much concern has risen about the impact of larger migration on the welfare state institutions of Member Countries. On the one hand it is expected that the enlargement, involving countries with younger and growing populations, will alleviate the financial pressure currently experienced by many Member Countries' public pension systems. On the other hand, however, it has also been documented¹ that migrants typically use the welfare state more than native citizens and therefore increase pressure on its sustainability. If the latter is true – i.e. if migrants actually use the welfare state more intensively than their native counterparts – one would also expect migrants to choose their destination country on the basis, among other things, of the generosity of its welfare system. In other words, differences in welfare systems across Member States would in turn affect the distribution of migration flows from outside the Union.

This is potentially a very important issue, especially because an efficient distribution of migration flows into the Union would be extremely beneficial for European labour markets. Contrary to the United States, European workers are extremely immobile and this makes it difficult for European economies to adjust to asymmetric changes in labour demand. This is particularly true after the introduction of the Euro that eliminated exchange rates, an instrument that has been normally used in the past for stabilizing the economy after an asymmetric shock. Almost by definition, migrants are a very mobile form of labour and can be very important in counterbalancing the low mobility of native workers in Member Countries, as long as they move into countries and/or regions where labour is scarce. High wages and high employment probabilities, rather than the generosity of welfare provisions, should therefore be the determinants of migration flows.

Put in other words, to the extent that migrants from eastern Europe choose their destination on the basis of the generosity of welfare, the potential beneficial effects of acquiring a more mobile labour force from abroad into the Union will be lost. Moreover the distribution of the costs (in terms of higher social expenditure) of the expected larger migration flows will be unevenly distributed to the expenses of countries and regions where financial pressure on welfare is already high.

¹Boeri et al. (2000).

Some evidence has already been produced for the United States² to document the fact that migrants into the US do actually self-select themselves into states that offer higher social transfers. A similar study for Europe has never been produced, mainly because of the scarcity of cross-country comparable data on migration flows and welfare provision. This paper aims at exploring the empirical evidence on these issues in Europe exploiting the possibilities offered by the recent European Community Household Panel (ECHP). Particular attention will be paid to migrants from eastern Europe, although, as we shall see later on, more and better data should be made available to this end.

The empirical analysis of the ECHP will actually show that migrants into the European Union choose their destination on the basis, among other things, of the generosity of welfare and of social assistance in particular. The paper moves on from this result to argue that, if it is true that differences in the generosity of welfare across Member Countries affect the distribution of migration flows, there is then scope for claiming more harmonization in welfare policies within the Union. A first attempt in this direction would be the creation of a European-wide safety net: a last resort income benefit that would be paid to any resident in the Union whose income, adjusted by household size and purchasing power, falls below a certain poverty threshold. Almost all Member States already offer some sort of minimum income scheme – with the notable exceptions of Greece and Italy – but payments as well as access conditions differ a lot across countries. As discussed earlier, not only may these differences affect negatively the distribution of the welfare costs of migration, but they could also dramatically reduce the potential benefits of migration in terms of labour reallocation. Implementing such an harmonized system of income protection is not going to be easy: Member Countries will have to adjust their existing schemes to the new rule, some of them will have to increase benefits and other will have to reduce them, some countries might not be able to afford a system of this type for many reasons (large income differences, high poverty rates, low levels of taxation, etc.). In other words, there will be losers and winners, and losers will tend to disagree with the proposal. In this paper the overall cost of a European-wide minimum income scheme will be estimated under various assumptions about its generosity. The distribution of costs and benefits among European Member States will also be evaluated in order to understand which countries will mostly benefit from such a reform and where opposition is most likely to arise.

The paper is organised as follows: section 2 briefly describes the data, section 3 presents the empirical model used to identify the effect of welfare generosity on migration flows, section 4 discusses the empirical results, sections 5 and 6 present the methodology

²Borjas (1999).

used to estimate the overall costs and their distribution of a European minimum income scheme, section 7 discusses the results of this last exercise, section 8 concludes.

2 The Data

2.1 The European Community Household Panel

The *European Community Household Panel* is a panel dataset of households that covers all European Countries, although some entered the sample in later years. The ECHP started in 1994 and 6 waves of data have been released so far, covering the period 1994-1999. Identical sampling procedures are applied in all countries and individuals are administered the same set of questions. This makes the data highly comparable across countries.

Respondents to the ECHP questionnaire are also asked various questions about migration and citizenship. In particular the variable used to identify migrants from natives is one in which interviewed individuals indicate their "migration trajectory", i.e. the movements that brought them in the country of present residence from their country of origin. In what follows migrants will be defined as persons, born abroad, who lived in a different country before arriving to the country of present residence. Another important piece of information available from the ECHP is the year of arrival in the current country of residence, which will allow to match to each individual the economic conditions of all possible destination countries at (or around) the time the decision to migrate was taken. However, since data on the macroeconomic conditions of all member countries are not easily available for the very past years, only migrants who arrived in the country of present residence on or after 1970 have been considered. Finally, The ECHP questionnaire also includes questions about the area or country of origin. This variable comes at different levels of disaggregation but, unfortunately, only the most aggregated one is usable because either of missing values or of confidentiality agreements that prevent Eurostat from distributing the raw data. Several countries cannot be included in the analysis because of these data limitations. In particular, the German and Swedish data do not report information about migration trajectory and therefore migrants cannot be identified. Also for confidentiality reasons, the area of origin, even at the most aggregated level is not available for Spain, Netherlands and Finland. Eventually, the sample used for the empirical exercise of sections 3 and 4 consists of 3572 migrants distributed in 10 European Member Countries, according to table 1. Summary statistics are also shown in table 2. Figure 1 shows the distribution of the years of arrivals for each destination.

It is worth mentioning here at least two caveats of this sample. First, it is a known fact that some countries are often used as a port of entry (e.g. Italy, Spain, Greece, etc.) and the final destination of migration might not be the one observed in the data. Keeping this in mind, there is very little we can do about it as the ECHP does not contain questions about the intention to leave the country in the future. We can simply argue that many immigrants, especially from outside the Union who only transit in one country with the intention to move to another one are likely to do this illegally and then try and register legally in the country of final destination. Our is a sample of legally registered individuals and therefore is likely to capture immigrants who have reached their final destination. Illegal immigrants are not included in the analysis and this is also a drawback of the data. The second caveat concerns the representativeness of the sample. First, some countries that are known to have large foreign population, like Germany, are not included in the analysis and this might bias the results. Second, in the ECHP samples are generated for each country separately and are therefore representative of each country separately. In order to generate a representative sample of migrants in the entire Union, sample weights have been used to account for differences in the size of the foreign population in each member country.

2.2 OECD Replacement Rates

Data on welfare generosity are obtained from the *OECD Data-base on Benefit Entitlements and Replacement Rates*, which has been normally used in the literature to describe the generosity as well as other characteristics of welfare systems in OECD countries. Specifically, the figures included in this database are computed as the ratio of income out of work, i.e. from welfare benefits, and income in work, i.e. some measure of the average wage, produced at various durations of unemployment and for various family types. These ratios are usually called replacement rates. The OECD produces these figures comparing the average wage in the manufacturing sector (what is usually called the wage of the "average production worker") and the average amount of benefits a typical worker with these earnings is entitled to, at various durations of unemployment. Two main versions of the OECD Data-base on Benefit Entitlements and Replacement Rates exist. The first one contains gross replacement rates, i.e. computed without considering taxation of benefits, which are indeed taxed in many OECD countries. Gross replacement rates are available since the 60s and are reported in figure 2 starting from 1970, the earliest migration year in our sample of ECHP migrants. These numbers are computed averaging replacement rates at two income levels (at average wage and at $2/3$ of the average wage) and for 3 family types (single, couple with dependent spouse,

couple with working spouse). The distinction between unemployment benefits (UB) and social assistance (SA) is based on unemployment duration: UB replacement rates refer to benefits received in the first 3 months of unemployment, where in most countries transfers at this duration mainly come from unemployment insurance; SA replacement rates are computed as the average rates after 36 months of unemployment, when in most countries entitlement to UB has expired and only social assistance benefits (family benefits, housing benefits, invalidity benefits, minimum income schemes) are available. Figure 2 confirms what is a well known fact, that welfare institutions vary considerably across countries but very little over time.

The second version of the OECD Data-base on Benefit Entitlements and Replacement Rates contains net replacement rates but only covers the year 1995, 1997 and 1999. The data are reported in figure 3 as averages over two income levels (the average wage and 2/3 of the average wage). The family types are also changed: net replacement rates are available for 4 family types, singles, couples with children, couples without children and lone parents. These figures show patterns similar to those of the gross numbers, with low time-variation but large cross-sectional differences. Moreover, there also seem to be large variation across family types. The choice of the replacement rates to be used in the empirical analysis will, then, impose a trade-off between time-coverage and the type of variation that can be exploited. When gross replacement rates are used most of the effects are identified using variation across countries on the largest sample of all migrants who arrived in their destination country on or after 1970. When net replacement rates are used, the identification comes from variation across countries and family types, however, only a restricted sample of migrants who arrived in their destination country on or after 1995 can be used.

3 An empirical model of migration choice

In this section we borrow heavily from McFadden (1974) and Maddala (1983) to describe an empirical structural model of the choice of destination of migration. It is therefore assumed that individuals have already decided to migrate and the only decision to be made concerns the country of destination.

Suppose each individual i is faced with D alternative destination countries and utility obtainable from migrating into country d is:

$$U(x_{id}, z_i) = V(x_{id}, z_i) + \eta_i \tag{1}$$

where $V(x_{id})$ is a deterministic function of a set of intrinsic characteristics of country

d (possibly varying across individuals), x_{id} (i.e. prevailing unemployment rate, average wages for one's industry of specialisation, etc.) and a set of idiosyncratic socio-economic characteristics of individual i , z_i (age, education, etc.). η_i is a random component of utility for individual i .

Individual i will, therefore, choose destination d if:

$$U(x_{id}, z_i) > U(x_{ik}, z_i) \text{ for all } k \neq d \quad (2)$$

Assuming that the random utility component η_i has the type I extreme-value distribution³, then the probability that individual i chooses destination d can be rewritten as⁴:

$$\Pr \{V(x_{id}, z_i) + \eta_i \geq V(x_{ik}, z_i) + \eta_i \text{ for all } k \neq d\} = \frac{e^{V(x_{id}, z_i)}}{\sum_{d=1}^D e^{V(x_{id}, z_i)}} = P_{id} \quad (3)$$

Equation (3) clearly indicates that the identification in this model comes from comparing the same individual faced with different alternative destinations. However, since each individual i is only observed taking one destination d , all individual characteristics that do not vary across alternative destinations (age, education, etc.) are collinear and fall out of the probability P_{id} . To see this suppose:

$$V(x_d, z_i) = \beta' x_{id} + \alpha'_i z_i \quad (4)$$

Then:

$$P_{id} = \frac{e^{\beta' x_{id}} e^{\alpha'_i z_i}}{\sum_{d=1}^D e^{\beta' x_{id}} e^{\alpha'_i z_i}} \quad (5)$$

Clearly, if the α 's are constant across alternatives one would not be able to estimate them and control for individual specific characteristics. The solution taken here is the one first suggested by McFadden (1974), to allow the α 's to vary across alternatives:

$$P_{id} = \frac{e^{\beta' x_{id}} e^{\alpha'_d z_i}}{\sum_{d=1}^D e^{\beta' x_{id}} e^{\alpha'_d z_i}} \quad (6)$$

³A random variable η_i has the type I extreme-value (or log Weibull) distribution if:

$$\Pr \{\eta_i \leq \eta\} = \exp[-e^{-\eta}]$$

⁴This specification satisfies the property of independence from irrelevant alternatives (see Maddala (1983)).

Operationally, this is done by interacting all individual characteristics with destination country dummies, the implicit assumption being that individual characteristics might have differential impacts in different countries, e.g. being a woman in Spain is different from being a woman in Denmark.

The log-likelihood function for a sample of N migrants facing D destinations can then be written as:

$$L(\beta) = \sum_{i=1}^N \sum_{d=1}^D f_{id} \log P_{id}(\beta) \quad (7)$$

where $f_{id} = 1$ if individual i chooses destination d and zero otherwise.

4 Welfare generosity and the choice of migration

The model described in equation (7) is estimated under various specifications of the utility function (4). Initially we simply want to replicate the known result that employment possibilities and wages are the main determinants of the decision to migrate. In order to test this hypotheses, the set of destination attributes, x_{id} , includes the unemployment rate and the average real wage in each destination country d in the year individual i settled into his/her country of current residence. The set of individual characteristics z_i includes age, a gender dummy, a dummy for marital status (1 for couples and 0 for singles), two education dummies (secondary and tertiary education), household size and number of children in the household. These individual controls, interacted with destination countries will be included in all the estimations described in this section. It must be noted here that all these individual characteristics are recorded at the time of the interview and not at the time of arrival. However, to our purpose it is not clear which of the two would be preferable: individuals might choose a country in which graduates earn a lot even if they are not graduate yet but are planning to take a degree there, or, alternatively, they can choose to go to a country where family benefits are very generous because they are planning to have a big family but they haven't got one yet. The choice to use variables recorded at the time of the survey has merely been driven by convenience: reconstructing the same variables at the time of arrival in the country could have been possible for some of them (age, children, marital status) but not for others (education), therefore, for the sake of harmonisation, it has been decided to keep them as recorded in the ECHP at the time of the surveys.

Results are shown in the first column of table 3 and indeed confirm that migrants tend to go into countries with lower unemployment rates and higher real wages. A

set of destination country dummies has also been added to the matrix of destination attributes, x_{id} , in order to control for other country-specific factors that might affect the choice of the destination (strictness of migration laws, networks of migrants already present in the country, etc.⁵).

In order to test whether migrants are more likely to move into countries with more generous welfare systems, the set of destination attributes, x_{id} , is extended with the OECD measures of replacement rates for unemployment benefits and social assistance at the time the individual arrived in the destination country. All estimates in table 3 are produced using gross replacement rates for the period 1970-1995. Results for the entire sample are reported in the second column and confirm the idea that welfare generosity attracts migrants. Additionally, results seem to indicate a stronger effect of the generosity of social assistance rather than unemployment benefit, which might reflect the fact that in most countries a certain contribution record is needed in order to become eligible to UB, while social assistance is mostly means-tested. The main results are confirmed when the sample is restricted to migrants from outside the EU only (column 3), although the effect of the unemployment rate disappear.

The last two columns of table 3 try and identify differential effects for migrants from Eastern European countries by interacting the measures of welfare generosity with 2 dummies, one which takes value 1 if the migrant comes from Eastern Europe and one which takes value 1 in all other cases. Results in column 4 suggest that migrants from Eastern Europe seem to be less sensitive to the generosity of welfare and much more attracted by countries with good economic conditions. In fact, the effect of the unemployment rate is negative and large for this group of migrants compared to a marginally (at the 10% level) significant positive effect for all other migrants. Eastern European citizens are also 5 times more sensitive to real wages, thus moving into countries that guarantee the best earning opportunities (which are also likely to be those with lower unemployment). On the other hand, the generosity of the unemployment benefit and the social assistance systems is found to have a positive effect on the decision to migrate for all migrants but those from eastern Europe. For this latter group the effect of social assistance is not significant and that of the unemployment benefit is oddly positive but only marginally significant. The last column of table 3 replicates the same estimates excluding migrants from inside the EU, thus comparing migrants from Eastern Europe to all other migrants from outside the Union. Results are similar.

In table 4, the estimates are replicated using net replacement rates. As already men-

⁵Country-dummies control for all these factors as long as they are constant over-time. More data about strictness of migration laws and social networks are being collected and will be included in a newer version of the paper.

tioned, this restricts the sample to migrants who moved into their destination country only very recently, i.e. on or after 1995. In order to exploit the variation across family types, each individual in the sample has been associated with the replacement rates corresponding to his/her family type in his/her country of destination at the time of arrival. This allows to exploit all the dimensions of the variation of replacement rates: over time, across countries and across family types. There might be an issue about whether migrants are affected by the generosity of welfare relative to the family they have at the time of arrival or later in life, i.e. one might migrate single but intend to have a large family and for this reason choose a country which generously assists numerous families. Not being able to find a strong theoretical argument in favour of using family types at the time of arrival versus at the time of the survey, we have chosen to use the latter ones not to make additional transformations to the original data (in order to reconstruct family characteristics at the time of arrival). Moreover, since the estimation is now performed on the restricted sample of migrants arrived on or after 1995, the year of arrival and the survey are very close to each other thus family types at these two dates must be very similar.

Results in table 4 again suggest that there indeed is an effect of welfare generosity on the choice of the destination country and that this effect is somewhat weaker for migrants from Eastern Europe, particularly for unemployment benefit. This last set of estimates also point to a strong and relatively stable effect (across various groups of migrants) of social assistance.

All in all, this empirical analysis indicates that indeed countries with a more generous welfare state attract more migrants, that this effect is somewhat weaker for migrants from Eastern Europe than for migrants from other European countries or from outside the EU and that general social assistance appears to be more important than unemployment benefit in driving migration decisions.

5 How to compute the costs of a European-wide minimum income

Given the analysis in the previous sections, a natural way to avoid the distortion due to the presence of European Welfare Magnets would be to establish a European Minimum Income (MI). A scheme by which every household in the EU would be guaranteed such a level of income identical in purchasing power and equalised for family type across the Union. This scheme is intended to substitute most of the existing welfare transfers to low income households.

Based on the ECHP, 1999 wave, we investigate the cost and the *feasibility* of a homogenous MI across the EU, and we analyse the consequences of various levels of Minimum Income under different tax systems.

Once we have defined the level of MI⁶, we compute the number of eligible households (by country and in the EU as a whole) and the cost of such a welfare system.

The computation of the country and EU wide cost is performed as follows. We set the MI at a given level and for those below that level we guarantee that the difference will be compensated via general taxation either country specific or at a supranational level (EU).

The total cost (TC) (or expenditure) for a generic country d is computed according to⁷:

$$TC_d = \sum_{h=1}^{H_d} w_h (e_h MI - I_h) 1(I_h < e_h MI), \quad \text{for each } d \quad (8)$$

where $1(\cdot)$ is an indicator function, equals to 1 when the condition between brackets is satisfied and 0 otherwise.

TC is Total Cost or Expenditure;

$h = 1, 2, \dots, H$ is the household;

$d = 1, 2, \dots, D$ is Country;

MI is Minimum Income at PPP;

e is the equivalence coefficient;

I is household Income (PPP) excluding welfare transfers;

w is Household weight, adjusted to report the sample to the actual population.

The definition of household income we use is: total net⁸ household income from all sources excluding total social transfer but pensions⁹. The European MI is set at PPP, to avoid differences in the purchasing power across countries, and following an equivalisation scale provided by the OECD and available in the dataset.

⁶In the paper we will employ three different MI levels defined on a monthly base at PPP. In table 5, we convert such values in euros by country.

⁷The EU aggregate cost is simply found by summing over d .

⁸The gross figure is not available in the data. Furthermore, there are not strong theoretical reasons (for this particular work) in favour of the gross instead of the net figure. Though we are performing our analysis under different scenarios of taxation, it is not straightforward to advocate the use of the gross figure since the actual tax system obviously is not only related to the MI scheme, but to several categories of public expenditure.

⁹Total social transfers include: unemployment benefits, family related allowances, sickness/invalidity benefits, education related allowances, any other personal benefit, social assistance and housing allowance. We have excluded any sort of pensions' benefits because of the peculiar nature of such schemes.

In table 5 the various MI levels are converted in euros by country in order to give a better idea of what those MI are.

6 How to finance a European minimum income

Once we have computed the costs of the introduction of the MI both at a country specific level and on aggregate, we have to propose how to finance it. The first two ways we propose as benchmarks fall in the class of Lump-sum taxes on Households, undifferentiated among household types¹⁰ one with an identical (at PPP) tax across the EU and the other arising from an autarchical system¹¹. We also propose a proportional tax version of the EU and self financing schemes¹².

6.1 Country specific lump sum tax

In this section we will provide the simple tools to perform a costs and benefits analysis under a self financing scheme, where in the class of lump sum tax regime each country has to balance its expenditure via general taxation. We define tax payers as those households whose income exceeds by at least 20% the appropriate MI¹³. For a particular d country the household tax t_d is:

$$t_d = \frac{TC_d}{N.ofHouseholds_d|(I_{hd} > e_{hd}((1.2)MI))} = \frac{\sum_{h=1}^{H_d} w_h(e_h MI - I_h)1(I_h < e_h MI)}{\sum_{h=1}^{H_d} w_h 1(I_h > e_h((1.2)MI))}. \quad (9)$$

Where all variables and indexes have the same meaning as above.

6.2 A European lump sum tax

A EU lump sum tax (t), on those households whose income exceeds the appropriate MI by at least 20%, is computed according to:

¹⁰In fact, such a distinction is not required for the purposes of this work, while a future (more equity oriented) version of the paper will include this feature.

¹¹Though self financing schemes are distortive with respect to the issue we are analyzing, they provide useful insights and will be here presented for comparative scopes. The more eligible households there are the more the tax payer has to pay, therefore it is rational to move in a country where ceteris paribus there are fewer households in need.

¹²A future version of the paper will also include a progressive tax scheme.

¹³This adjustment has been made in order to avoid odd results for those households at the margin.

$$t = \frac{TC}{N.ofHouseholds|(I_{hd} > e_{hd}((1.2)MI))} = \frac{\sum_{d=1}^D \sum_{h=1}^{H_d} w_{hd}(e_{hd}MI - I_{hd})1(I_{hd} < e_{hd}MI)}{\sum_{d=1}^D \sum_{h=1}^{H_d} w_{hd}1(I_{hd} > e_{hd}((1.2)MI))} \quad (10)$$

In this case what we propose is a centralized tax system where rich countries are going to bear the cost of the new welfare scheme as a sort of solidarity transfer across the EU. This system would imply a central authority able to withdraw from every country and to redistribute to the poor ones. The political feasibility of such a tax scheme is in itself an important issue, but it seems quite a natural development of the European Union working as a unique body.

6.3 Country specific proportional tax rate

In this case we propose a proportional tax scheme where each country has to finance its own expenditure arising from the MI scheme. Again the selection rule for tax payers is to exceed by at least 20% the specific MI. The tax rate can be therefore found as τ_d :

$$\tau_d = \frac{TC_d}{Aggregate\ Income_d|(I_h > e_h(1.2)MI)} = \frac{\sum_{h=1}^{H_d} w_h(e_hMI - I_h)1(I_h < e_hMI)}{\sum_{h=1}^{H_d} w_h1(I_h > e_h(1.2)MI)I_h} \quad (11)$$

for each country d . As we will see this could implies quite odd tax rates, greater than 1, for some country at high level of MI. However we should not worry at all since this happens for very high (and probably unreasonable) values of the MI.

6.4 A European proportional tax rate

In order to derive a homogenous EU tax rate we just have to sum aggregate cost and aggregate income over countries, as follows:

$$\tau = \frac{TC}{Aggregate\ Income |(I_h > e_h(1.2)MI)} = \frac{\sum_{d=1}^D \sum_{h=1}^{H_d} w_{hd}(e_{hd}MI - I_{hd})1(I_{hd} < e_{hd}MI)}{\sum_{d=1}^D \sum_{h=1}^{H_d} w_{hd}1(I_{hd} > e_{hd}(1.2)MI)I_{hd}}. \quad (12)$$

Obviously if we want this taxation scheme not to be distortive we have to apply such a tax rate on household incomes computed at PPP.

6.5 Gains

We define as gains the difference between what a country receives from a centralised system, TC_d throughout the paper, and the tax bill it has to pay. Therefore gains (G)

for a generic country d are:

$$G_d^{LP} = \text{Total Cost}_d\text{-Lump Sum Tax Bill}_d = \sum_{h=1}^{H_d} w_h(e_h MI - I_h)1(I_h < e_h MI) - t\left(\sum_{h=1}^{H_d} w_h 1(I_h > e_h((1.2)MI))\right), \text{ for each country } d. \quad (13)$$

In case of a lump sum regime, where t is the European lump sum tax. While for a proportional system, Gains (G_d^P) for a d country are computed as follows:

$$G_d^P = \text{Total Cost}_d\text{-Proportional Tax Bill}_d = \sum_{h=1}^{H_d} w_h(e_h MI - I_h)1(I_h < e_h MI) - \tau \sum_{h=1}^{H_d} w_h 1(I_h > e_h(1.2)MI)I_h, \text{ for each country } d. \quad (14)$$

τ being the EU tax rate. Both measures will be presented in the next sections. Net donors, G smaller than 0, are therefore losers, while net recipients, G greater than 0, are winners of our policy exercises.

7 Recipients, Costs, Winners and Losers

In this section, we will discuss various features of such a *dramatic* welfare reform¹⁴. In figure 4, we plot the number of eligible households, as well as the related costs¹⁵, versus different levels of the MI. At a fairly low MI threshold we have about 15 millions households on MI with an aggregate cost of 56 billions of euros. However, this constitutes a lower bound, a more sensible level would be an MI of about 600, in this case the number of recipients raises to 44 millions with a total expenditure of 227 billions of euros. When we allow for an overly generous welfare scheme setting the MI to 1000¹⁶, we get a total

¹⁴Whenever we fix a value for the MI we refer to monthly amounts at PPP for a single member household. Most of our discussion will be devoted to the European Minimum Income (monthly) fixed at 608.5 at PPP for single member households, which we believe to be a more sensible level compared the two extremes we have introduced for comparative purposes. This is the average of EU minimum income schemes of which we have record, see Kazepov and Sabatinelli (2001).

¹⁵Costs and gains, unless otherwise stated, are in annual terms throughout the paper.

¹⁶The last figure is representative of an overly generous MI, since the most generous MI, of which we have record, is the Danish one set at 832 (at PPP) for single without children (see Kazepov and Sabatinelli, 2001).

of almost 90 million recipients (more than half of the households in the EU) facing an aggregate cost of 750 billions of euros. Those figures, per se, are not extremely meaningful, but if we compare those figures with some data drawn from the OECD Social Expenditure Database we can get a better feeling of what this radical reform would imply. Figure 4, is again a good starting point for a more detailed picture. The ratio between the aggregate expenditure implied by our new scheme and the actual one¹⁷ on household related benefits, ranges from a low 6 percent to a maximum (MI=1000) of 79 percent.

In figure 5 we present recipients by country for different MI levels. If we consider the mid MI level (MI=608.5) we can see that the countries with the largest number of eligible households are by far Germany, UK, Italy, France and Spain, but those are also the populous ones (also in terms of households). However if we refer to figure 6, where we replicate the above chart in per households terms (those top 5 positions are now occupied by Portugal, Greece, Spain, Finland and Ireland).

On the cost (expenditure) side we can look at figures 7 and 8, where we break the total cost by country. Absolute values again place the UK, Germany, Italy, France and Spain in the top 5 positions, but if we dig a bit deeper we realise that as far as the per household costs are concerned those top of the table positions pertain to Ireland, Portugal, Finland, Spain and Sweden (when we fix the MI at 608.5 per month). Another way to look at the same issue (table 6) is to consider the annual lump sum tax each taxpayer (household) has to pay in order to balance the country specific expenditure. Those latter figures basically confirm what said in the previous paragraph, but for Sweden now replaced by Greece, the reason being fewer taxpayers in the Mediterranean country (almost half).

Having investigated costs and benefits, we will try to answer the *painful* question: who are the losers and winners of such a dramatic welfare reform? Clearly this issue can only be analyzed when we consider a centralized tax system where all tax payers face an identical tax across the EU, both lump sum and proportional.

Going through figure 9 and 10 and referring to the summary table (table 7) we are able to say that: Finland, Greece, Ireland, Portugal, Spain and Sweden are definitely going to win under any scenarios considered in this exercise, the UK is likely to be among the countries who will gain from such a reform¹⁸ While we expect to find in this

¹⁷Those figures refer to the 1998 OECD Social Expenditure database. We define social expenditure as the sum of the following categories: disability cash benefits, occupational injury and disease, sickness benefits, services for elderly and disabled, family cash benefits and services, unemployment, housing and other contingencies.

¹⁸The UK is among the losers only under a proportional tax regime for the highest (unrealistic) value

category the Mediterranean countries the presence of the others could seem surprising, however if we look at the household income distributions for such countries¹⁹ we can clearly understand their location. A possible explanation being the diffused presence of single member household (students) and lone parents in those countries. Among the losers: Austria, Belgium, Denmark, France, Germany and Luxembourg. Borderline cases are Italy and the Netherlands. The Netherlands seem to be likely to be net *donors* for average and high levels of the MI under both regimes, being confined to win only for low levels of the MI. A more cumbersome case is that of Italy, it appears three times in both categories, furthermore, for the mid MI, ranks among the losers under a lump-sum system and among the winners in the other case. However, a proportional tax scheme seems favorable to this nation.

Countries seem to rank consistently across regimes and for different MI levels as we can see from table 8, where we present pairwise (rank) correlations under all considered scenarios.

8 Conclusions

There is much concern about the enlargement of the EU. Many member States fear that this will imply a massive migration from Eastern European countries posing an enormous pressure on the respective welfare systems. Those worries are partly supported by the evidence on welfare take up by migrants. On the other hand, a more mobile and younger labour force could be extremely beneficial both on the efficient allocation of a scarce resource and for the sustainability of the public pension schemes. However, if migrants move not only according to labour market conditions but also driven by the generosity of country specific welfare systems the beneficial effect of such mobile workforce would almost disappear. Nevertheless, if we are able to build an homogeneous European wide Minimum Income scheme, this would mitigate or eliminate such distortions. The first part of the paper is devoted to the analysis of the migration decision with respect to labour market conditions and welfare provisions. Applying the so called McFadden logit to the European case we find convincing evidence of the existence of European welfare magnets. The empirical analysis of the ECHP shows that migrants into the European Union choose their destination on the basis, among other things, of the generosity of welfare and of social assistance in particular. Fairly consistent results are also found for the unemployment rate, having a negative effect on the migration decision, and for the

of the MI.

¹⁹Available from the authors on request.

wage levels (when we consider gross replacement rates, table 3). We then move forward performing a set of interesting exercises, where we propose an harmonised Minimum Income system for the EU as a whole. Under various hypotheses both on taxation and MI thresholds we compute costs and benefits of such a scheme. On the expenditure side, we can say that for realistic values of the MI such a system would not undermine the financial stability of the EU. When compared with current expenditure²⁰ on welfare provisions *substitutable* with the new system, we find that those ratios (figure, 4) do not appear to be of any concern ranging from a low 6 to a maximum of 79 percent, being our *preferred* scenario at a 24 percent. However, we want to stress the fact that actual social expenditure and the ones implied by *our* exercises are not at all perfect substitute in many respects.

Following our analysis we are also able to define winners and losers arising from the introduction of such a welfare institution. Obviously, this is fundamental in determining the political feasibility of an harmonised European minimum income. Winner is a country who is going to be a net recipient, while a loser is a net *donor*.

In our simple exercises we identify as winners (table, 7): Finland, Greece, Portugal, Spain, Sweden and the UK²¹. Losers are: Austria, Belgium, France, Germany, Luxembourg and the Netherlands²². The only country for which we are not able to say much is Italy, being ranked among the losers for the smallest values of the MI and among the winners for the top one, with a *disappointing* inconsistency for average scenarios. The bottom line being that winners will always win, while losers will always lose and their ordering is quite persistent (table, 8) as the spearman rank correlation confirms. Is this a feasible reform? On the aggregate cost side, bearing in mind the many caveats involved in comparing our scheme with the actual social expenditure (figure, 4), it seems perfectly feasible. However, as all major changes, it has to encounter a positive political climate and furthermore it has to be designed taking into account the complexity of the actual welfare systems across the EU.

²⁰Though we have to bear in mind that the two terms of the ratio are not strictly comparable.

²¹Though the latter is a loser under an *unrealistic* scenario.

²²The latter being among the losers on four out of six scenarios, and always in the most sensible ones.

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Figures and Tables

Figure 1: Distribution of year of arrival by destination country

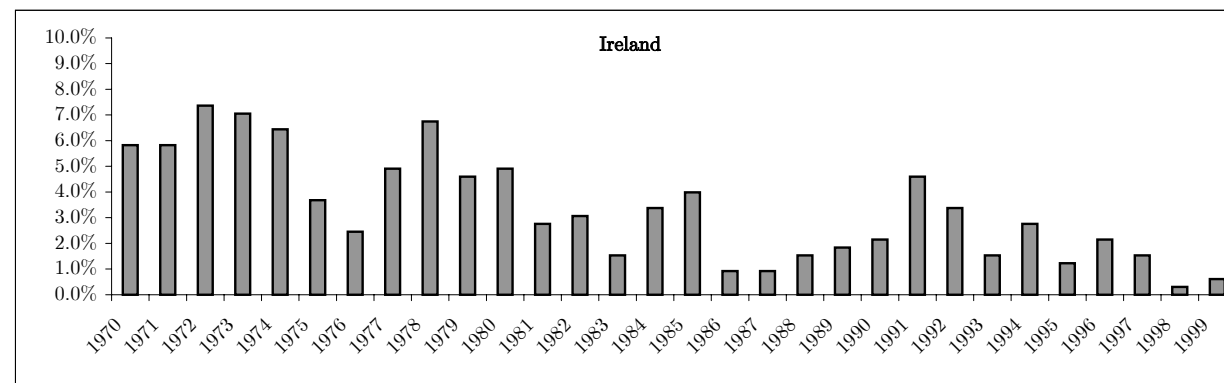
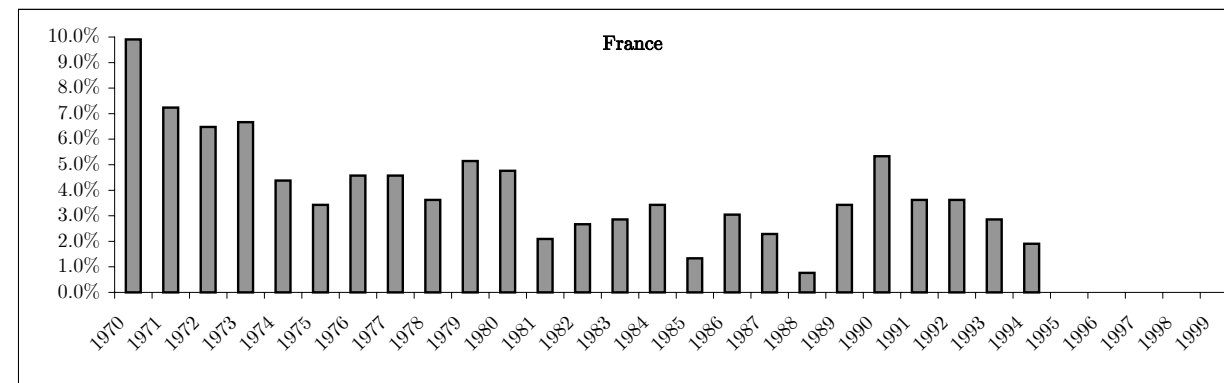
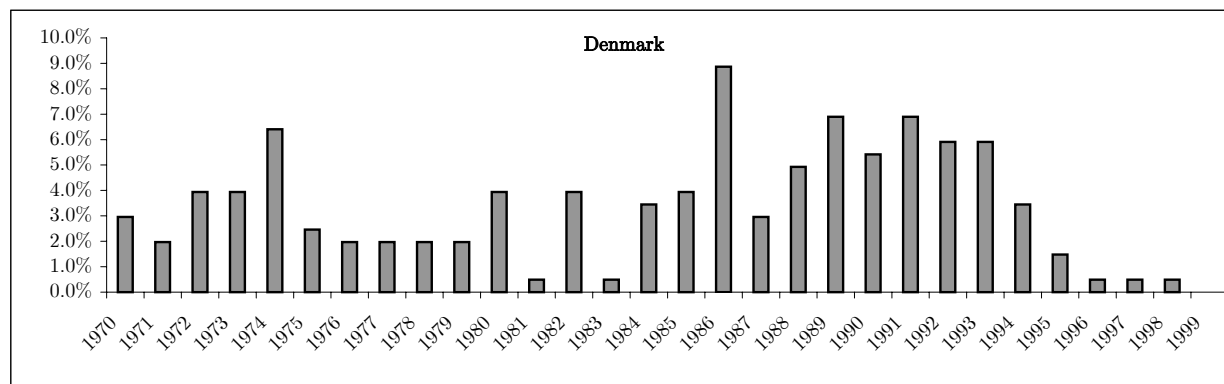
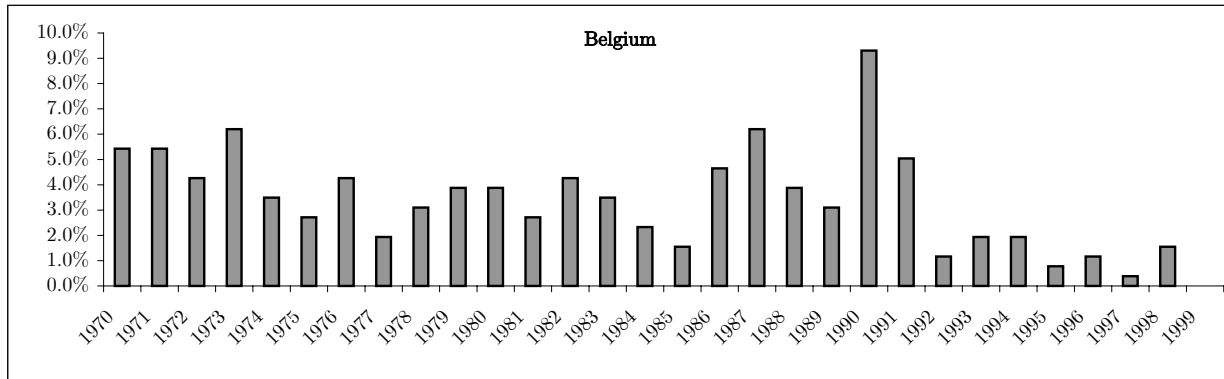
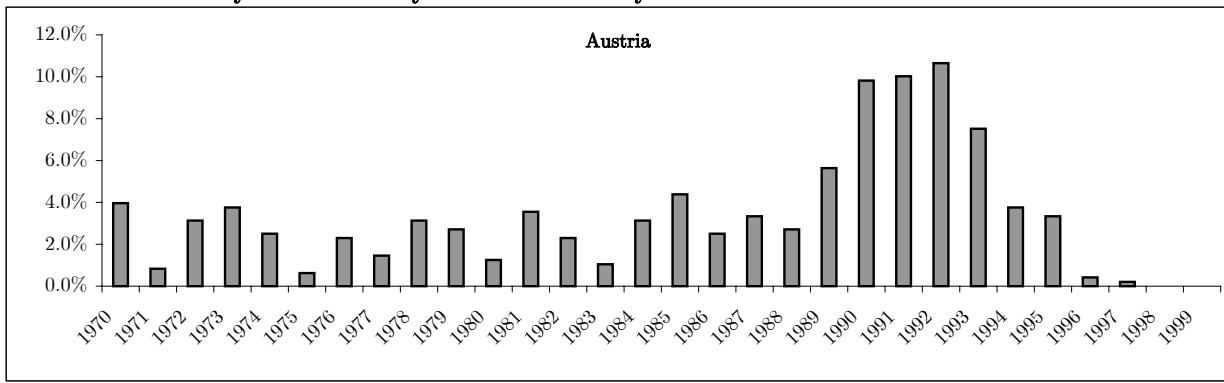


Figure 1: Distribution of year of arrival by destination country (continued)

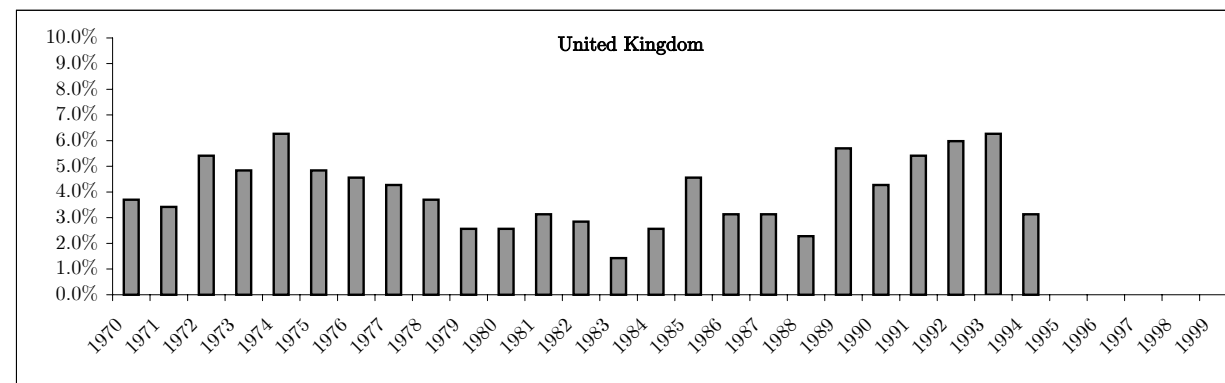
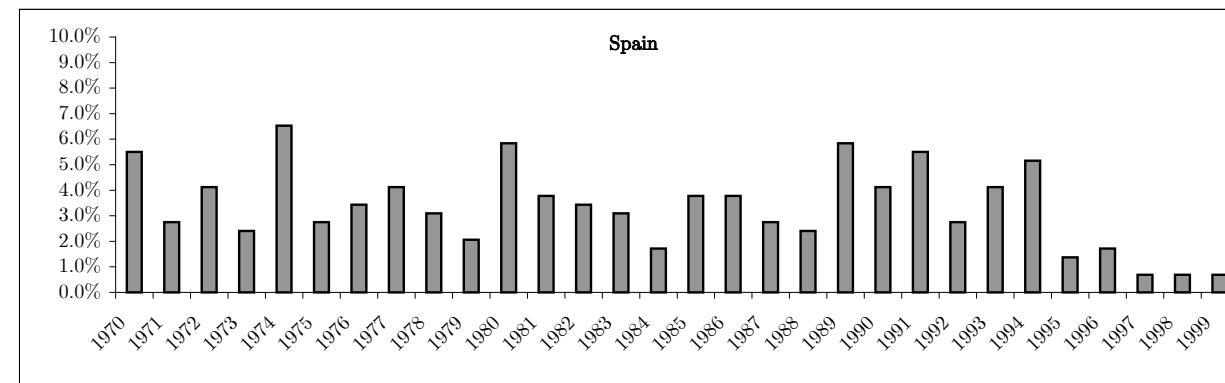
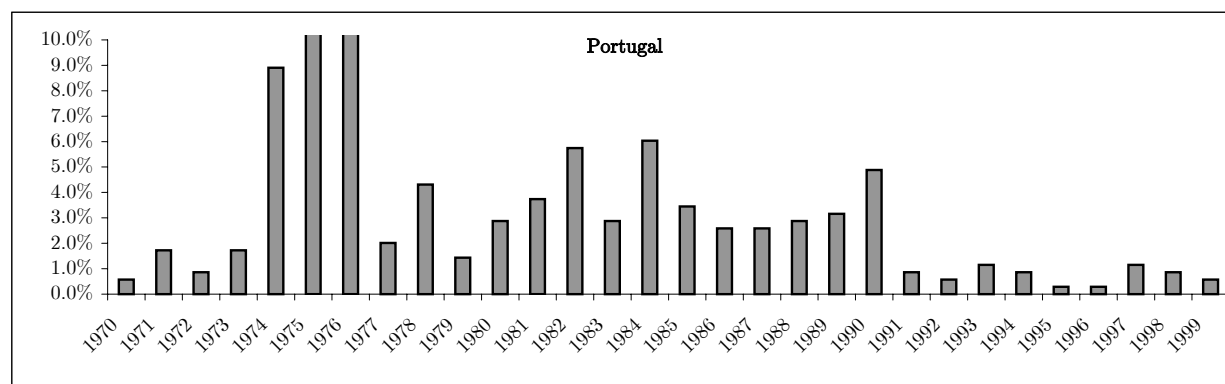
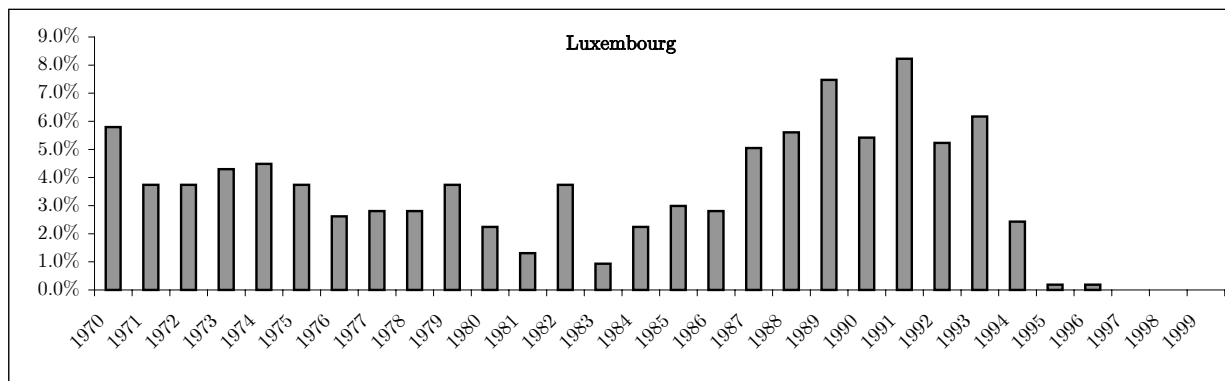
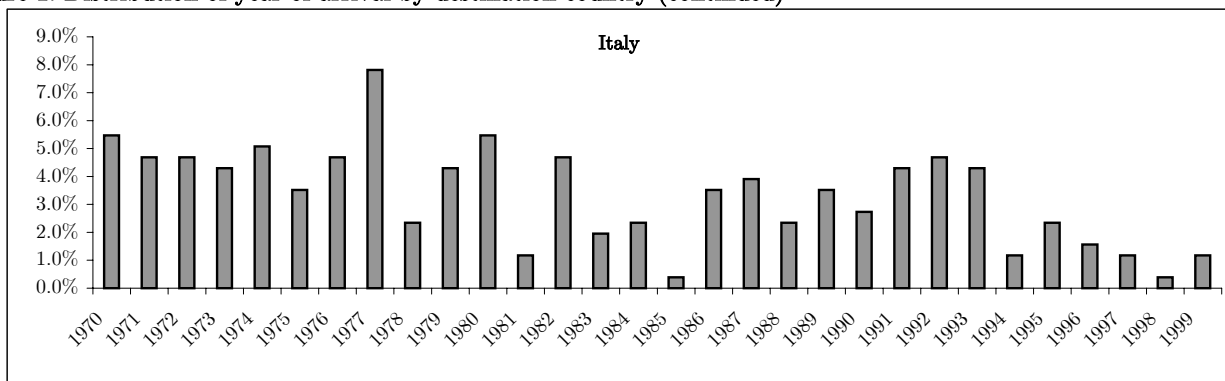


Figure 2: Gross replacement rates in European Countries

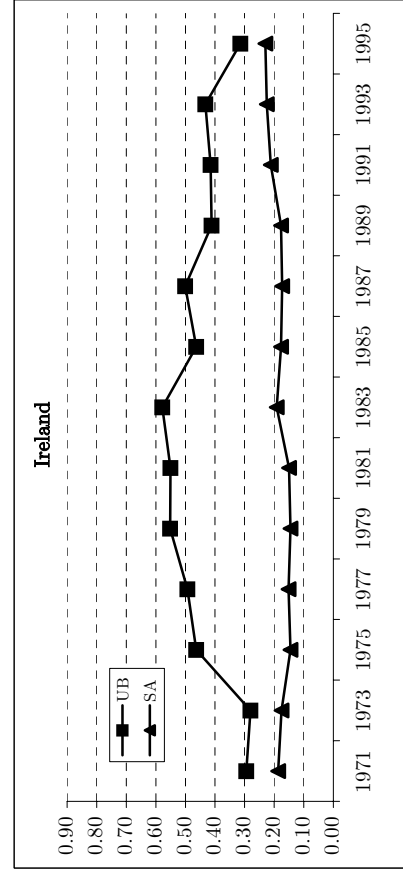
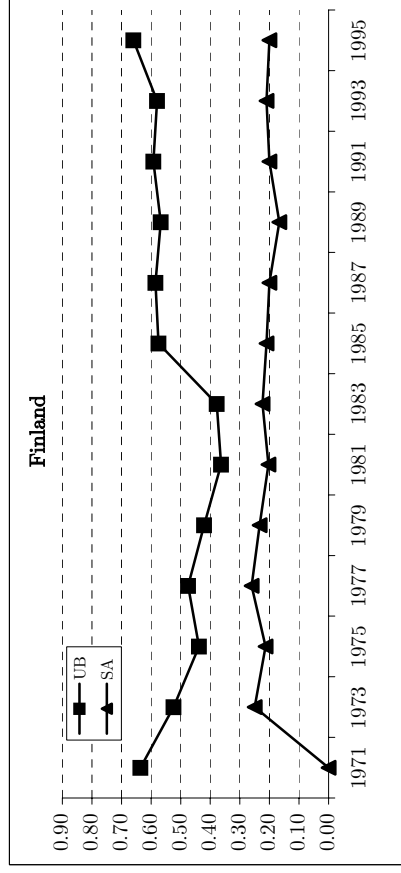
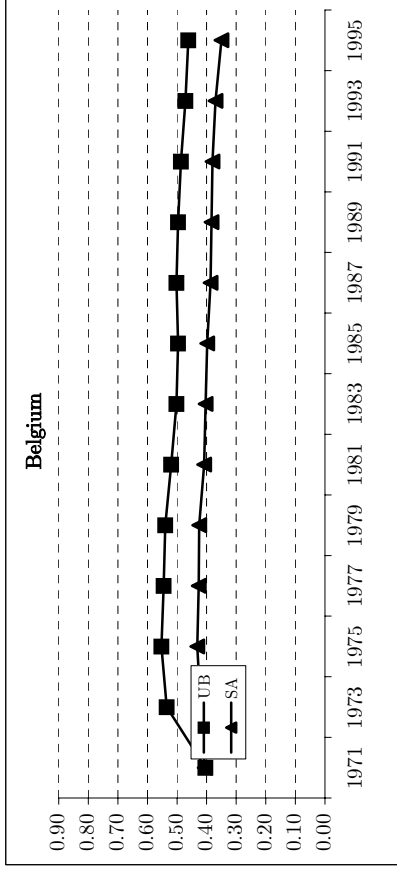
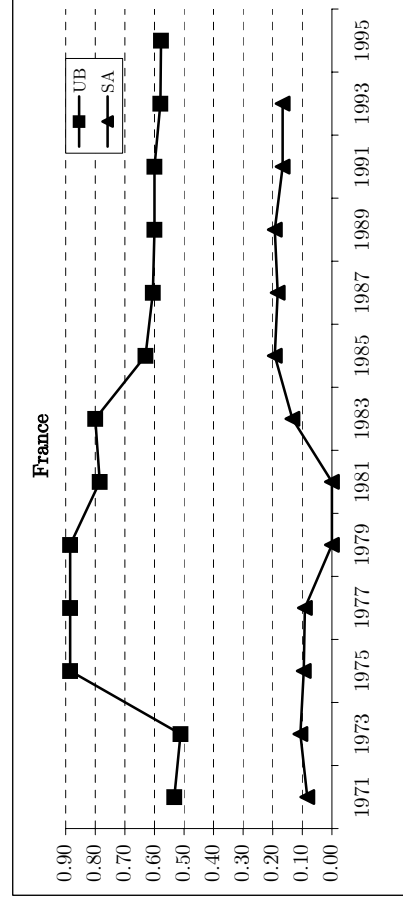
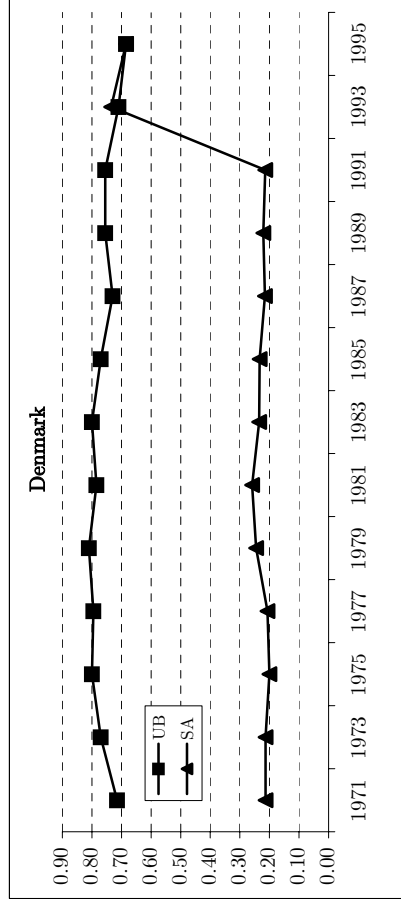
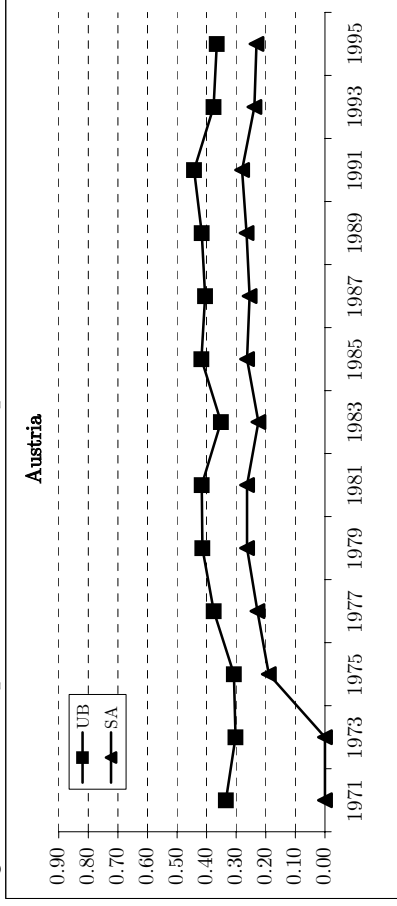
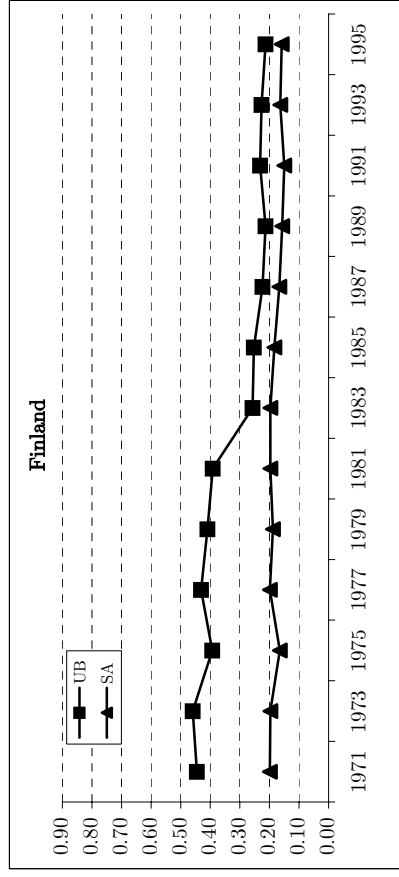
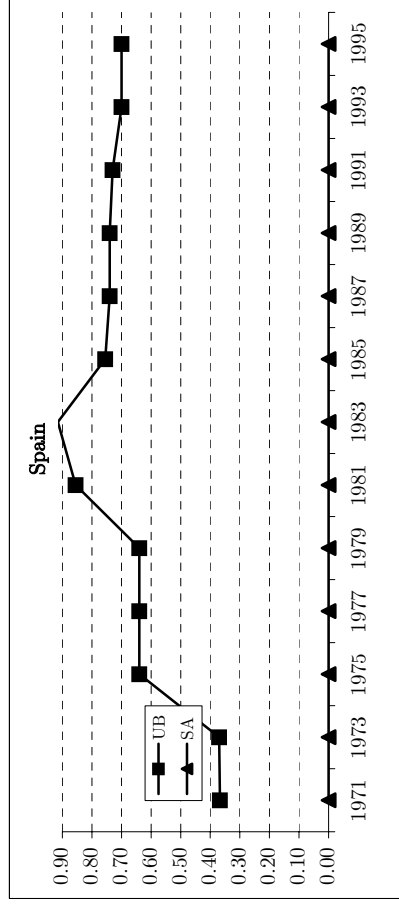
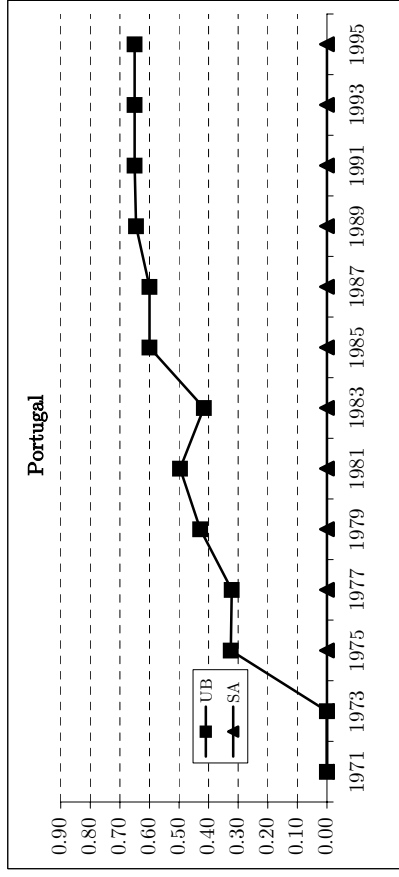
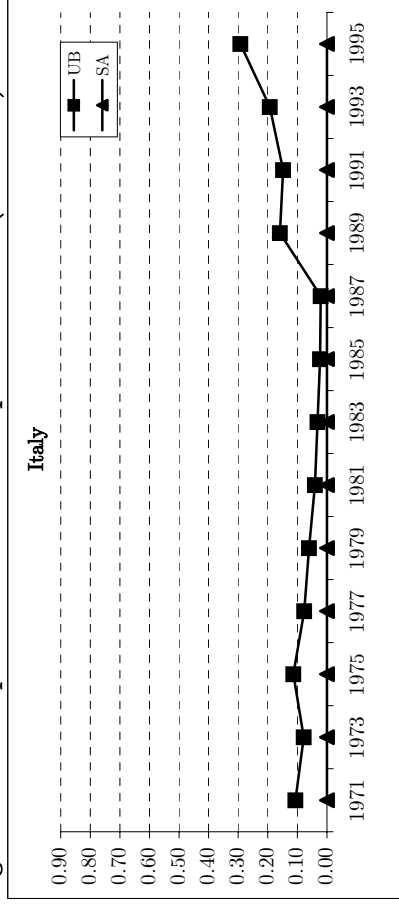


Figure 2: Gross replacement rates in European Countries (continued)



Source: OECD Data-base on Benefit Entitlements and Replacement Rates

Figure 3: Net Replacement Rates by family types

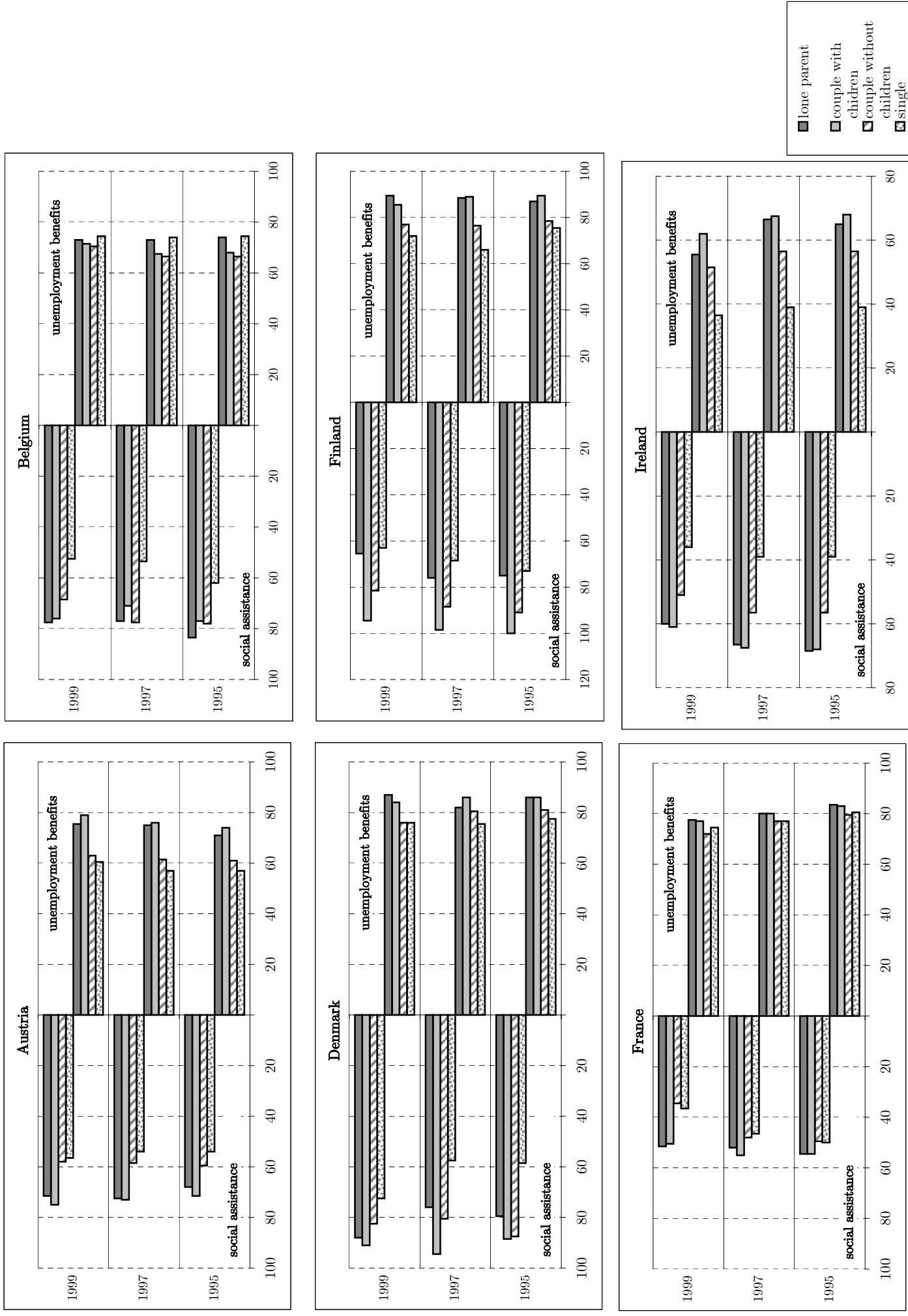
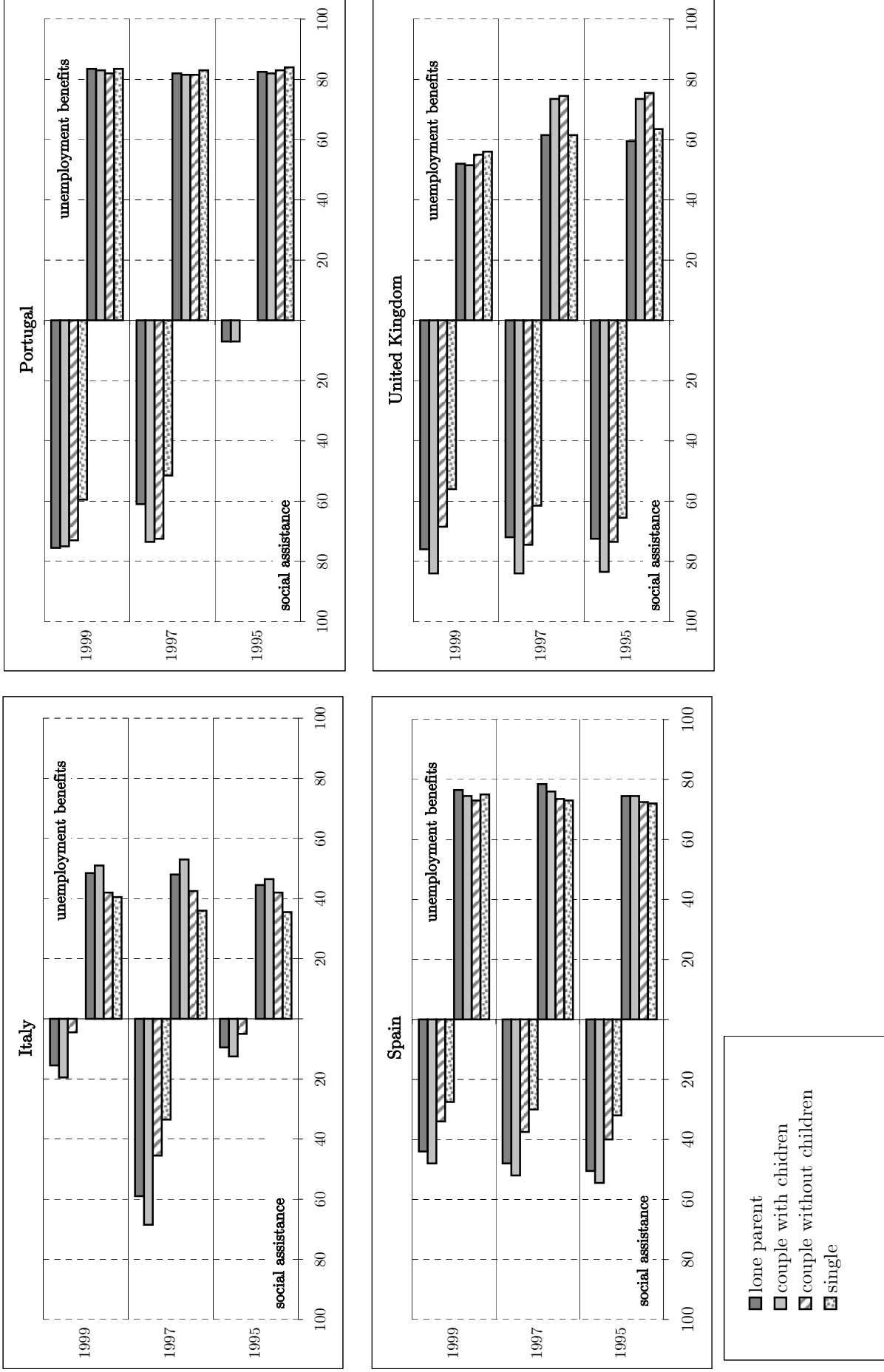


Figure 3: Net Replacement Rates by family types (continued)



Source: OECD Data-base on Benefit Entitlements and Replacement Rates

Table 1: Migrants in the European Union

country of current residence	Area of origin							Total
	European Community	Other European countries	Africa	America	Asia	Australia, Oceania	Others	
Austria	79 <i>0.16</i>	350 <i>0.73</i>	9 <i>0.02</i>	9 <i>0.02</i>	32 <i>0.07</i>	0 <i>0.00</i>	0 <i>0.00</i>	479 <i>1.00</i>
Belgium	131 <i>0.51</i>	42 <i>0.16</i>	64 <i>0.25</i>	10 <i>0.04</i>	11 <i>0.04</i>	0 <i>0.00</i>	0 <i>0.00</i>	258 <i>1.00</i>
Denmark	48 <i>0.24</i>	50 <i>0.25</i>	15 <i>0.07</i>	15 <i>0.07</i>	75 <i>0.37</i>	0 <i>0.00</i>	0 <i>0.00</i>	203 <i>1.00</i>
France	175 <i>0.33</i>	49 <i>0.09</i>	230 <i>0.44</i>	12 <i>0.02</i>	59 <i>0.11</i>	0 <i>0.00</i>	0 <i>0.00</i>	525 <i>1.00</i>
Ireland	286 <i>0.88</i>	3 <i>0.01</i>	5 <i>0.02</i>	17 <i>0.05</i>	8 <i>0.02</i>	7 <i>0.02</i>	0 <i>0.00</i>	326 <i>1.00</i>
Italy	83 <i>0.32</i>	86 <i>0.34</i>	36 <i>0.14</i>	36 <i>0.14</i>	8 <i>0.03</i>	5 <i>0.02</i>	2 <i>0.01</i>	256 <i>1.00</i>
Luxembourg	458 <i>0.86</i>	33 <i>0.06</i>	30 <i>0.06</i>	7 <i>0.01</i>	7 <i>0.01</i>	0 <i>0.00</i>	0 <i>0.00</i>	535 <i>1.00</i>
Portugal	99 <i>0.28</i>	3 <i>0.01</i>	194 <i>0.56</i>	49 <i>0.14</i>	3 <i>0.01</i>	0 <i>0.00</i>	0 <i>0.00</i>	348 <i>1.00</i>
Spain	121 <i>0.42</i>	27 <i>0.09</i>	34 <i>0.12</i>	105 <i>0.36</i>	3 <i>0.01</i>	1 <i>0.00</i>	0 <i>0.00</i>	291 <i>1.00</i>
UK	70 <i>0.20</i>	15 <i>0.04</i>	71 <i>0.20</i>	24 <i>0.07</i>	154 <i>0.44</i>	16 <i>0.05</i>	1 <i>0.00</i>	351 <i>1.00</i>
Total	1550 <i>0.43</i>	658 <i>0.18</i>	688 <i>0.19</i>	284 <i>0.08</i>	360 <i>0.10</i>	29 <i>0.01</i>	3 <i>0.00</i>	3572 <i>1.00</i>

Source: ECHP, 1999

Table 2: Summary Statistics

Area of Origin	age	male	couple	secondary education	tertiary education	household size	number of kids
European Community	34.75 (13.694)	0.44 (0.496)	0.64 (0.479)	0.40 (0.490)	0.23 (0.421)	3.46 (1.487)	0.73 (1.016)
Other European Countries	33.65 (11.767)	0.46 (0.499)	0.73 (0.444)	0.37 (0.484)	0.19 (0.393)	3.63 (1.451)	0.80 (1.059)
Africa	35.51 (12.313)	0.50 (0.500)	0.68 (0.465)	0.30 (0.458)	0.20 (0.398)	4.09 (2.092)	1.10 (1.444)
America	31.86 (11.521)	0.44 (0.498)	0.58 (0.494)	0.37 (0.483)	0.33 (0.470)	3.53 (1.311)	0.64 (0.865)
Asia	36.32 (13.629)	0.44 (0.498)	0.73 (0.446)	0.34 (0.473)	0.24 (0.430)	3.83 (1.851)	1.09 (1.396)
Australia, Oceania	30.82 (12.169)	0.61 (0.497)	0.57 (0.504)	0.29 (0.460)	0.43 (0.504)	3.18 (1.307)	0.39 (0.629)
Others	42.00 (5.000)	0.33 (0.577)	1.00 (0.000)	0.67 (0.577)	0.33 (0.577)	4.00 (0.000)	1.67 (0.577)
Total	34.57 (12.847)	0.46 (0.498)	0.67 (0.469)	0.36 (0.480)	0.23 (0.419)	3.68 (1.675)	0.86 (1.177)

Source: ECHP, 1999

Table 3: The effect of welfare generosity on the destination of migrants (GROSS replacement rates)

	All persons [1]	All persons [2]	Only migrants from outside the EU [3]	Differential effects [4]		Differential Effects [5]	
				Migrants from Eastern Europe	All other migrants	Migrants from Eastern Europe	All other migrants
unemployment rate	-3.192** (1.278)	-2.768** (1.294)	1.083 (1.653)	-51.756*** (3.213)	3.206** (1.369)	-44.117*** (3.474)	10.980*** (1.824)
log total compensation per employee	2.771*** (0.418)	2.718*** (0.420)	5.142*** (0.546)	5.463*** (0.542)	1.663*** (0.433)	7.259*** (0.650)	2.998*** (0.573)
replacement rate for unemployment insurance		46.436** (20.809)	56.934** (25.666)	-59.320* (32.427)	46.576** (21.357)	-38.616 (35.389)	66.217** (26.621)
replacement rate for social assistance		123.077*** (35.717)	90.943** (41.703)	15.365 (55.519)	115.060*** (38.975)	23.014 (58.334)	61.143 (48.034)
Destination country dummies	yes	yes	yes		yes		yes
Individual characteristics	yes	yes	yes		yes		yes
Individuals	2821	2821	1831		2821		1831
Observations	25389	25389	16479		25389		16479

Standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 4: The effect of welfare generosity on the destination of migrants (NET replacement rates)

	All persons [1]	All persons [2]	Only migrants from outside the EU [3]	Differential effects [4]		Differential Effects [5]	
				Migrants from Eastern Europe	All other migrants	Migrants from Eastern Europe	All other migrants
unemployment rate	6.409* (3.742)	4.301 (3.835)	15.677*** (5.030)	-33.592*** (5.506)	12.608*** (3.964)	-17.802*** (6.697)	29.589*** (5.443)
log total compensation per employee	-0.675 (1.459)	-1.955 (1.483)	-2.135 (1.952)	0.105 (1.652)	-2.227 (1.507)	0.552 (2.128)	-3.799* (2.023)
replacement rate for unemployment insurance		3.513** (1.508)	5.529*** (1.950)	0.001 (1.840)	3.675** (1.606)	2.510 (2.251)	4.990** (2.201)
replacement rate for social assistance		2.181*** (0.544)	2.259*** (0.721)	2.656*** (0.727)	2.114*** (0.560)	2.778*** (0.872)	2.520*** (0.756)
Destination country dummies	yes	yes	yes		yes		yes
Individual characteristics	yes	yes	yes		yes		yes
Individuals	763	763	540		763		540
Observations	6867	6867	4860		6867		4860

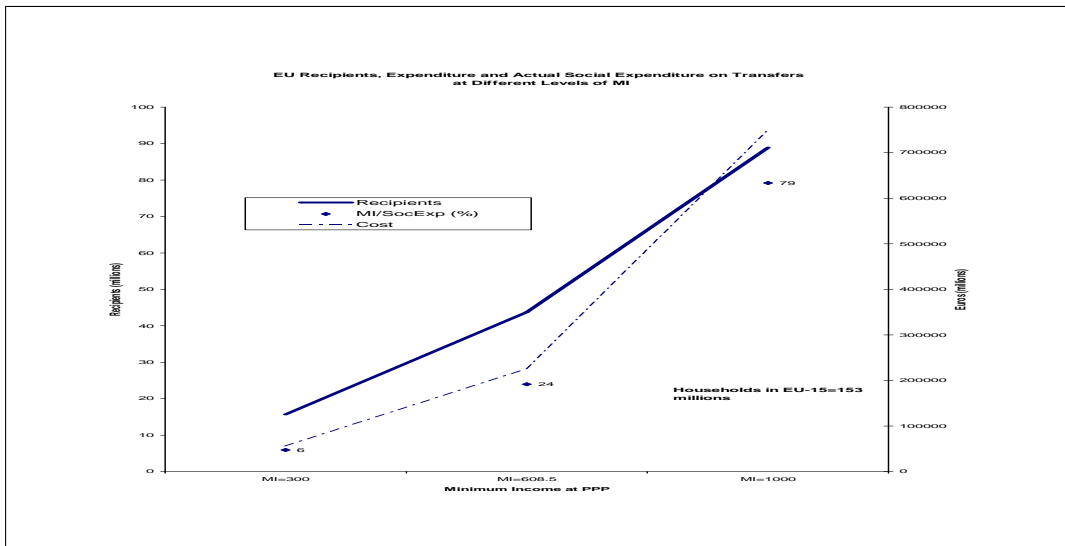
Standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 5: Conversion table from PPP to euros

Minimum Income Levels for a Single Member Household (in euros)			
Country	MI=300	MI=608.5	MI=1000
Denmark	365	740	1216
Netherlands	291	590	969
Belgium	307	622	1023
France	316	640	1052
Ireland	310	629	1033
Italy	260	526	865
Greece	236	478	785
Spain	248	504	828
Portugal	219	444	729
Austria	304	616	1013
Finland	359	728	1197
Sweden	376	763	1255
Germany	313	634	1042
Luxembourg	293	594	976
United Kingdom	335	679	1116

Figure 4: Costs and recipients



Figures on the MI/SocExp series are the percentage values of the ratio.

Figure 5: Recipients by country

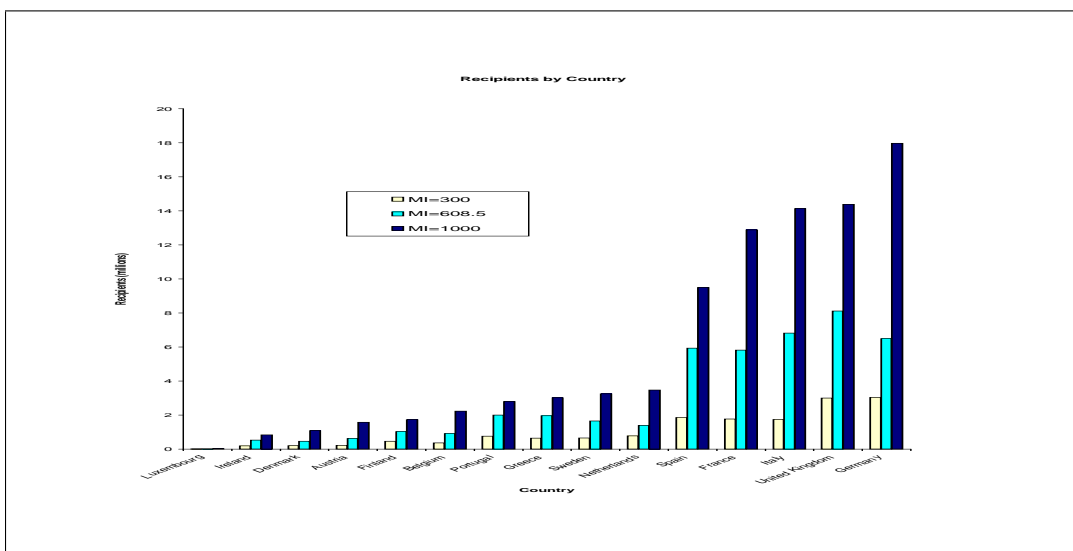


Figure 6: Recipient to household ratios

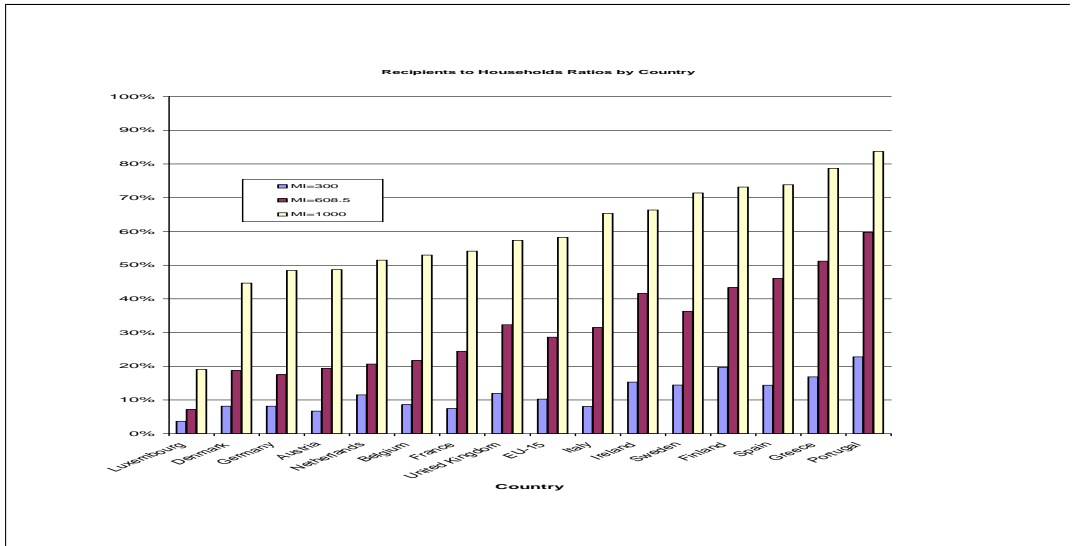


Figure 7: Costs by country

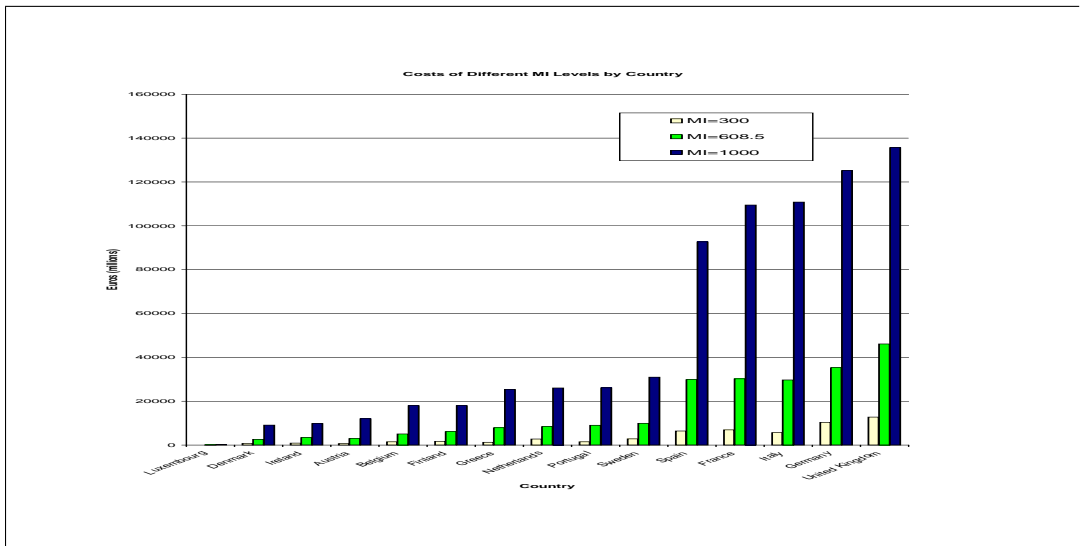


Figure 8: Cost per Household

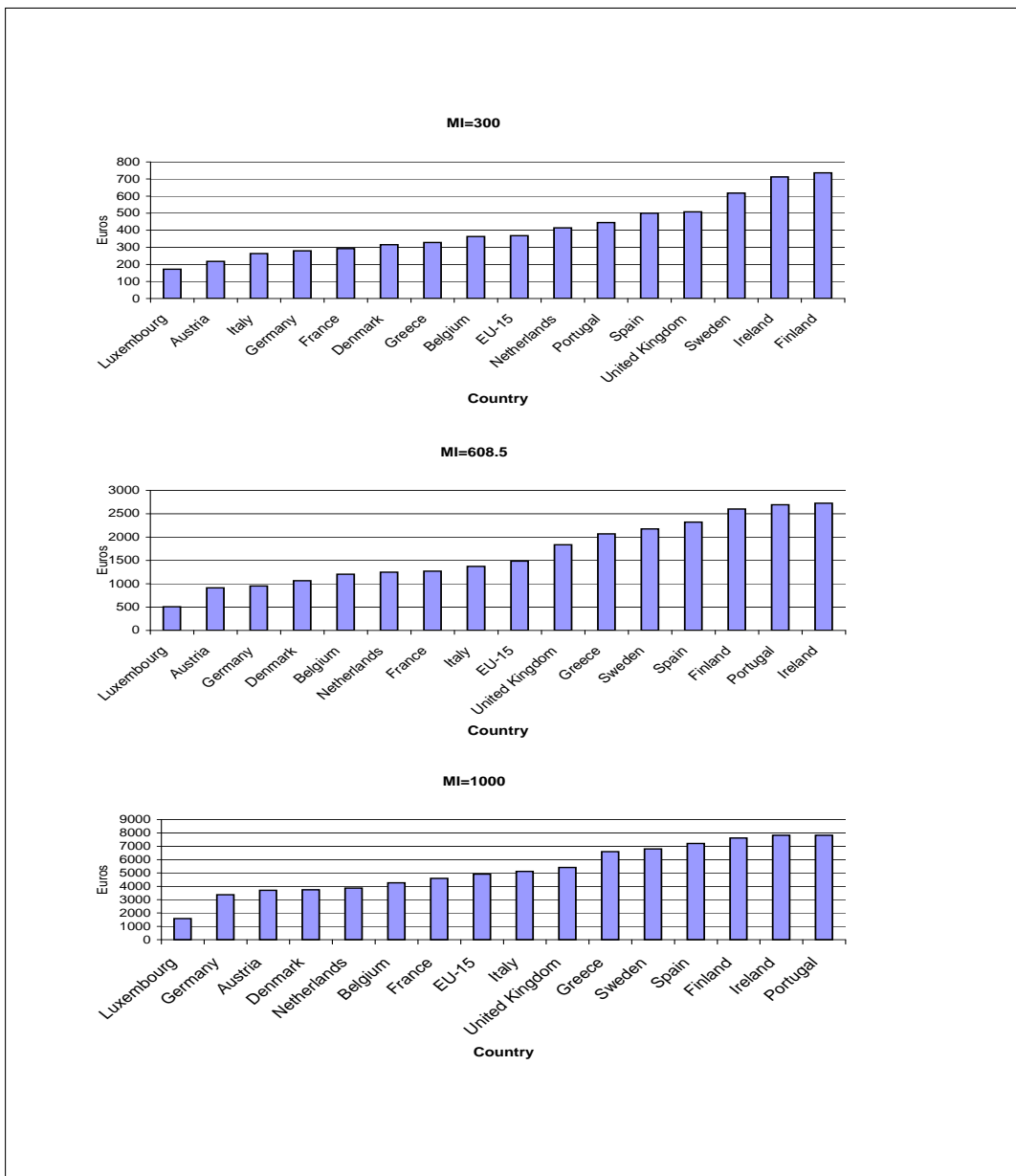


Table 6: Lump sum taxes and proportional tax rates

Financing the New Welfare Scheme (<i>yearly figures in euros</i>)									
Country	<i>MI=300^{a)}</i>			<i>MI=608.5^{a)}</i>			<i>MI=1000^{a)}</i>		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Denmark	348.4	513.9	1.1	1474.0	2979.1	4	9011.0	21083.9	20
Netherlands	476.3	409.6	2.0	1765.5	2374.4	6	10855.1	16804.2	33
Belgium	402.1	432.4	1.5	1741.5	2506.7	5	13174.0	17740.6	30
France	322.1	444.7	1.2	1908.5	2577.8	5	13974.1	18243.5	33
Ireland	880.6	436.7	3.2	5440.8	2531.2	15	34747.7	17914.0	73
Italy	294.4	365.6	1.5	2391.9	2119.6	9	23497.3	15000.6	69
Greece	422.4	331.8	2.5	5414.6	1923.5	23	47423.9	13613.3	147
Spain	616.0	350.0	3.1	5437.9	2028.9	19	41259.4	14359.0	113
Portugal	641.5	308.2	4.0	9022.2	1786.3	38	69372.9	12642.1	204
Austria	236.5	428.2	0.9	1294.2	2482.2	4	10214.3	17567.2	26
Finland	953.2	506.0	4.1	5720.7	2933.1	18	46840.9	20758.1	113
Sweden	734.9	530.3	3.3	4177.8	3074.3	14	43879.0	21757.1	111
Germany	311.9	440.5	1.2	1279.1	2553.3	4	9528.0	18070.1	25
Luxembourg	178.8	412.6	0.5	562.5	2391.5	1	2218.6	16925.6	5
United Kingdom	591.5	471.6	2.2	3092.8	2734.1	9	17038.9	19349.5	39
EU 15	422.2		1.7	2395.5		8	16939.9		43

Notes: (1) Lump sum tax, self financing system; (2) Lump sum tax, EU level at PPP. (3) Proportional tax rate (%), country specific entries refer to a self financing system. EU tax rate computed on PPP amounts.

a): Monthly amount for single member household.

Figure 9: Gain per household, lump-sum tax regime

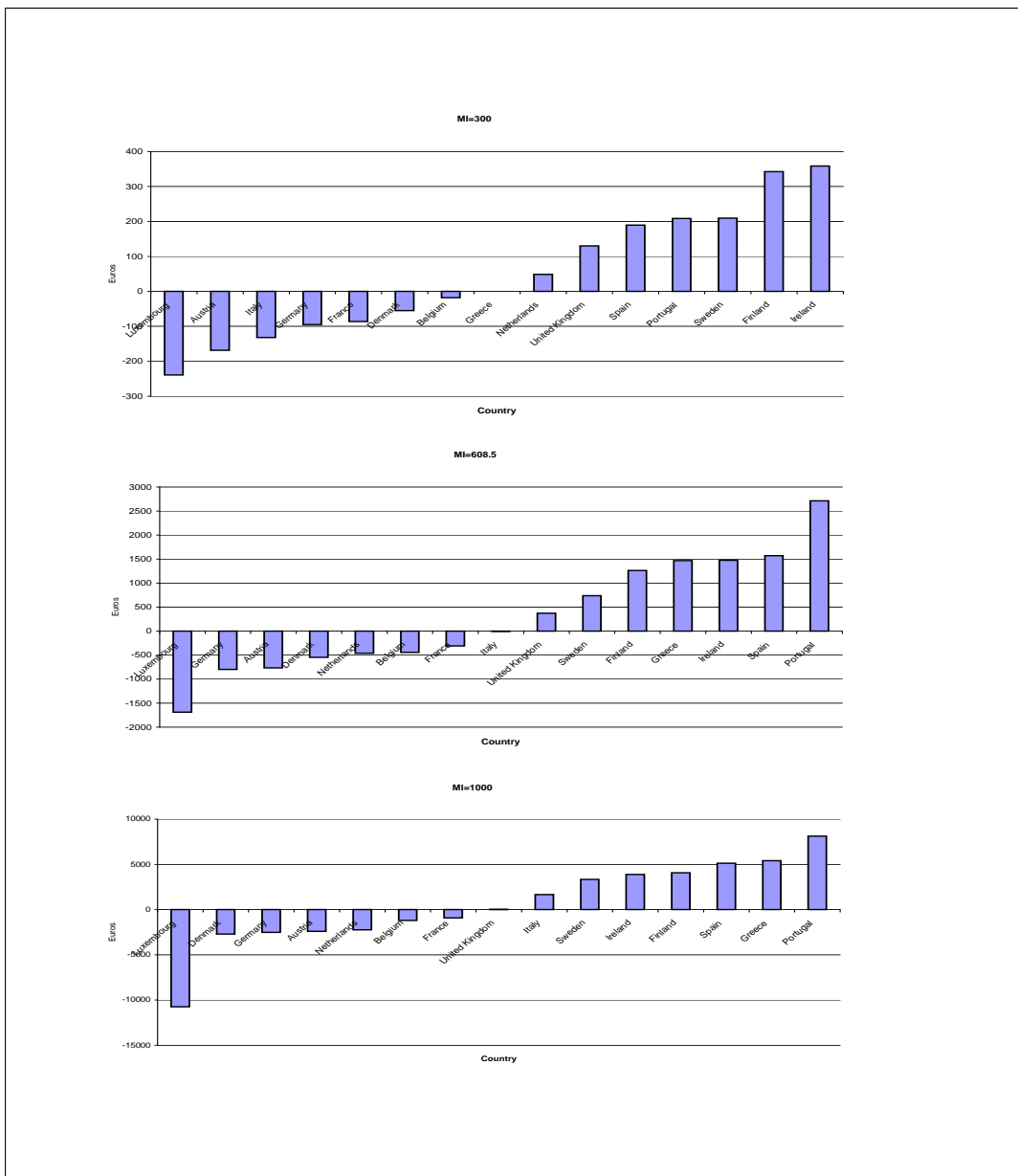


Figure 10: Gain per household, proportional tax regime



Table 7: Winners and Losers

Winners and Losers						
Country	<i>Lump Sum Regime</i>			<i>Proportional Regime</i>		
	MI=300	MI=608.5	MI=1000	MI=300	MI=608.5	MI=1000
Denmark	L(10)	L(12)	L(14)	L(13)	L(14)	L(14)
Netherlands	W(7)	L(11)	L(11)	W(8)	L(9)	L(9)
Belgium	L(9)	L(10)	L(10)	L(10)	L(11)	L(11)
France	L(11)	L(9)	L(9)	L(11)	L(10)	L(10)
Ireland	W(1)	W(3)	W(5)	W(3)	W(5)	W(6)
Italy	L(13)	L(8)	W(7)	L(9)	W(7)	W(7)
Greece	W(8)	W(4)	W(2)	W(6)	W(2)	W(2)
Spain	W(5)	W(2)	W(3)	W(4)	W(3)	W(3)
Portugal	W(4)	W(1)	W(1)	W(2)	W(1)	W(1)
Austria	L(14)	L(13)	L(12)	L(14)	L(13)	L(13)
Finland	W(2)	W(5)	W(4)	W(1)	W(4)	W(4)
Sweden	W(3)	W(6)	W(6)	W(5)	W(6)	W(5)
Germany	L(12)	L(14)	L(13)	L(12)	L(12)	L(12)
Luxembourg	L(15)	L(15)	L(15)	L(15)	L(15)	L(15)
United Kingdom	W(6)	W(7)	W(8)	W(7)	W(8)	L(7)

Note: W-winner, L-loser. Between brackets country rank by column based on annual gain per household (PPP). (1) First of the winners, (15) Last of the losers.

Table 8: Rank correlation

Country Pairwise Spearman Rank Correlation of the Gains						
	LS	LS	LS	P	P	P
	(MI=300)	(MI=608.5)	(MI=1000)	(MI=300)	(MI=608.5)	(MI=1000)
LS (MI=300)	1					
LS (MI=608.5)	.8*	1				
LS (MI=1000)	.71*	.96*	1			
P (MI=300)	.92*	.92*	.9*	1		
P (MI=608.5)	.74*	.95*	.98*	.92*	1	
P (MI=1000)	.73*	.94*	.98*	.92*	.99*	1

Note: LS, lump sum. P, proportional. One asterisk denotes at least 95% of rejection of the null of independence.