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Macro Determinants of Individual Income Poverty in 93 Regions of Europe

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Abstract: The analysis of the at-risk-of-poverty determinants can be improved by taking into account factors at macro (regional) level. This hypothesis has already been made in previous research, at country-level, on cross-sectional data. We use longitudinal data in this analysis in order to get more precise estimated parameters, and we test if the regional unemployment rate and the regional GDP affect the individual at-risk-of-poverty status. The countries taken into account are those present in the Statistics on Income and Living Conditions (EU-SILC) dataset.

Key words**:** income poverty, EU-SILC, multilevel models, longitudinal data

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1. Introduction

Tackling poverty by 2010 was one of the European objectives defined by the Lisbon European Council in 2000. Ten years later, 2010 is the European year for combating poverty and social exclusion. Poverty continues therefore to be at the heart of social policy in most European Member States. Ideally, social policies aimed at reducing poverty need to be based on an in-depth understanding of the underlying processes at work. A first step towards such an understanding consists in shedding some light on the main determinants of poverty.

Early descriptive studies have checked for relationships between poverty status and different characteristics taken in turn (Bradshaw, 1999; Bradubury et al., 1999 ; UNICEF, 2000 ; Mejer et al., 2000). This has given some insight on the factors involved, but these studies have only partially allowed to understand how these factors work. Other researches (see for example Cappellari and Jenkins, 2002; Fertig and Tamm, 2007; Brady et al., 2009) have extended this initial approach by reasoning all other things being equal, checking the effect on poverty of factors such as educational attainment, age, employment status, family structure – all of these factors having been calculated at the individual[3] level. Simultaneously another stream of studies (see Moller et al., 2003; Wiepking and Maas, 2005; Brady et al., 2009; Tai and Treas, 2008) has emphasized the analysis of the role of macro characteristics in a cross-national context. These analyses have shown that the macro factors could well have an effect on the poverty probability. Indeed, the generosity of social benefits (and especially of family benefits) proves to have a significant negative effect on the odds of poverty (see Brady et al. 2009, Moller et al. 2003).

For all of these three types of analyses, one major improvement has consisted in taking into account the longitudinal feature of poverty, using panel data[4]. The indicator of persistent poverty[5], for example, allows to figure out whether poverty is a temporary or rather a long-term phenomenon. Furthermore, developments in the econometrics of panel data have allowed researchers to further investigate important topics such as poverty duration or unobserved heterogeneity.

However, to our knowledge, no study has yet dealt simultaneously with all EU-countries, longitudinal data and factors at both individual and macro levels using a relevant specification. Brady et al. (2009) study the effect of macro-determinants on the probability of being poor using a GEE model[6] applied to 15 EU (plus some non-EU) countries but using cross-sectional data. In this paper we will extend this kind of analysis to 93 EU-regions (26 countries) and, contrary to previous work, we will use a longitudinal dataset (EU-SILC 2005 and 2006).

This paper has the following objective: it aims at disentangling the role of micro and macro factors in explaining the poverty status, by using detailed information about different

[3] As the same poverty status is, by the European definition, affected to all individuals belonging to the same household, some authors have defined the factors exclusively at that level (see for example Andriopoulou et al., 2008).

[4] See Ray and Jeandidier (2003) for a comprehensive review of the French literature on this subject.

[5] This indicator belongs to the set of common indicators for the social protection and social inclusion process adopted by the Social Protection Committee in 2006.

[6] A Generalized Estimated Equations model can be used to estimate marginal or population-averaged effects taking into account the dependence among units nested in clusters (Rabe-Hesketh and Skrondal, 2008).

regions in Europe[7]. Indeed, we would like to test if there is a genuine effect of macro factors such as the unemployment rate on the poverty probability, and especially if these factors can affect the impact of individual characteristics such as the education level on this probability.

In Section 2 we present the definition of income poverty that we will apply. In Section 3 we then develop the different econometric methods available to deal with the question and data at hand. Section 4 gives a detailed description of our dataset. The results and comments of our own model are then presented in Section 5. Final conclusions are to be found in Section 6.

2. The definition of income poverty in Europe

In Europe, poverty is officially defined in relative terms, as the percentage of individuals living in a household whose equivalent income is below the poverty threshold. This threshold is defined in each country (equal to 60% of the national median equivalent income), aiming at taking into account the national income inequalities. As a consequence, two countries with very different standards of living (and thus very different median equivalent income and different poverty thresholds) can have the same poverty rate.

Seemingly contradictory results due to this definition do not matter as long as one is aware of the conventions they are based on, and when the at-risk-of-poverty rates are interpreted together with the threshold values. But, in our case, the main objective is to figure out to what extent the poverty status is explained by some macro factors such as the unemployment rate. It is thus necessary, in order to allow that kind of relationship to appear, that the poverty indicator ranks the countries as the macro variables do. As a consequence, we have chosen to keep defining poverty in a relative way (60% of a certain threshold) but to calculate a new threshold, allowing this kind of ranking. With this objective in mind, we calculate a unique European poverty threshold by considering all individuals to belong to a same big country, which is Europe[8].

By doing this, we move away from the official EU-definition of the at-risk-of-poverty status (which is rather a measure of intra-country inequality), and we consider Europe as an integrated entity. In the same spirit, we exclude neither Iceland nor Norway: while not part of the EU-27 in 2009, they could be expected to join.

[7] Indeed it is between regions, and not between individuals, that some variance of macro factors can be found. This is probably also true between countries but because our data is limited with respect to the number of available countries, we prefer the analysis at the regional level.

[8] Using the usual at-risk-of-poverty threshold (which gives similar at-risk-of-poverty rates for countries with very different economic situations) could lead to this kind of situation: the characteristics of the countries would not be relevant to explain their own at-risk-of-poverty rate because the latter is more a measure of income inequalities than a measure of economic performance. In other words, macro economic factors, which can be considered from a theoretical point of view to be associated with poverty, can not be linked with the individual poverty status such as defined when using the official definition. Note that this definition of a European at-risk-of-poverty threshold is supported by Marlier et al. (2007).

We then determine, for each country, the fraction of individuals[9] situated below this new European threshold (see Appendix 1, where these figures can be compared with the official at-risk-of-poverty rates, based on the national thresholds).

3. Methodology

Two major approaches have been used to study the determinants of poverty. One consists in explaining the transitions into and out of poverty (probability of staying poor, and probability of entering poverty). The second approach focuses on the poverty status at a specific point in time.

The first approach takes into account the initial conditions problem[10] by using longitudinal data. This problem refers to the fact that the poverty status during the first period may not be exogenous because of observed and unobserved characteristics, which would affect the probability of being poor afterwards. However, papers running that kind of analysis do not introduce macro factors in the analysis. This is either because they are interested in only one country (see Cappellari and Jenkins, 2002, 2004; Van Kerm, 2004; Buddelmeyer and Verick, 2007; Ayllon, 2008[11]), or because the different countries are treated separately, with as many models as there are countries (Andriopoulou et al., 2008).

On the other hand, some authors estimate the probability of being poor at a specific point in time (see Wiepking and Maas, 2005; Brady et al., 2009; Tai and Treas, 2008). All of these authors use cross-sectional data of 22 countries from the Luxembourg Income Study (LIS) and integrate macro variables in the analysis (such as the unemployment rate or the welfare generosity), stressing that the welfare system could play a role in allowing individuals to escape from poverty[12].

As for our own work, it focuses on the poverty status and integrates macro factors as well. Our method is original in two ways: first, it uses longitudinal data and second, it takes into account the fact that some variability can be found at the regional level. In fact, two reasons have led us to do the analysis at the regional rather than at the country-level: first because the situation the individuals face (in terms of unemployment rate for example) could be very different from one region to another, within the same country, and second because there are more regions than countries (93 versus 26), which is better from a statistical point of view[13].

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[9] These figures concern working age individuals (aged 25-55) because the behaviours and thus the factors at work can be very different for both other groups (children and retired people).

[10] Some authors also control for the retention probability (see for example Cappellari, 2002; Cappellari and Jenkins, 2002, 2004; Ayllon, 2008). The idea is that the probability of being observed during two consecutive years could depend on unobserved characteristics of the individuals that should thus be controlled for.

[11] Other authors have used the same kind of models, on related subjects but not poverty: Stewart and Swaffield (1999) and Cappellari (2004) on earning, Poggi (2007) on social exclusion persistence.

[12] Moller et al. (2003) work on these data as well, but at the macro level. Indeed, they link the national at-risk-of-poverty rate to macro variables such as GDP or the employment rate in the agricultural sector. Their sample is quite small (61 observations, nested in 14 countries).

[13] While having 93 higher-level groups is technically much better than using only 26 higher-level groups, especially as far as variances/covariances estimation is concerned, a problem remains here: regions are nested within countries. This suggests to move from a three-level analysis (observations over time nested within individuals, themselves nested within regions) to a four-level analysis (adding the country-level at the top of the

In other words, we estimate a model of poverty probability, using two years of observations for each individual (in order to increase the estimation accuracy). Some of these individuals live in the same region[14]. From an econometric point of view, this data setup leads to a problem concerning the independence of observations: individuals being observed over two years and/or living in the same region share their own time-invariant characteristics and/or the characteristics of the area and can therefore no longer be considered to be independent. As a consequence, using traditional techniques would give consistent estimates but heavily[15] under-estimated standard errors.

In order to cope with that statistical problem, we have chosen one of the many available techniques: we run a multilevel model, which treats the upper levels (the individuals and the regions here) not as unique entities but as units primarily characterised by factors calculated at their level (e.g. characteristics of the individual, or the unemployment rate of the region). These models explicitly take into account the hierarchical structure of the data, thereby allowing us to analyse — first to measure, then to explain — the fraction of the variability of the poverty rate which is attached to each (nested) level. Contrary to the fixed effects models[16], multilevel models make use of the between variance, and are therefore especially useful when this variance is quite high. Some authors have already stressed that the use of this kind of models would be relevant in this framework (Cappellari and Jenkins 2004; Brady et al. 2009) but they have underlined the complexity of these models, whose convergence status is often out of reach.

The model we estimate is a binary logistic regression, where the probability of being at-risk-of-poverty is explained. This multilevel model takes into account three levels: time (measured in years), individuals and regions. It can be written as follows in its structural form [17]:

$$logit(P_{ijk}) = \beta_{0k} + \beta_{1k}\, x_{1ijk} + \beta_2\, x_{2ijk}$$
$$\beta_{0k} = \gamma_0 + \gamma_1\, z_{0k} + U_{0k}$$
$$\beta_{1k} = \delta_0 + \delta_1\, z_{1k} + U_{1k}$$

hierarchy). But models with four levels and so many observations prove to have convergence problems and can thus not be estimated. We have therefore chosen to restrict our analysis to three levels, and to consider the third as being either the regions (in which case the country variable is introduced in the model as an explanatory variable) or the countries (the regional level being then put aside – see Appendix 2).

[14] Some of them also live in the same household. Ideally, this fact should be taken into account as well, but again it would increase the complexity of the analysis: we would have to deal with 3 sources of non independence of the observations (individuals observed several years, living in the same household, and in the same region). In this paper, we cope with two of them.

[15] According to what Angrist and Pischke (2009) name "the Moulton factor" (p. 310), we calculate to what extent the macro factors regression coefficients would be overestimated by ignoring intraregional correlation. We use the general formula 8.2.5 (ibidem p. 311) which allows for various cluster sizes. With an intra-class correlation coefficient (given by the empty model – see Appendix 6) of 0.551, a (non weighted) average regional sample size of 3206.20 individuals, a (non weighted) variance of regional sample size amounting to 15,550,017.33 and an intra-class correlation of macro factors equal to 1 by definition, we get 66.63. Note that this very large impact of clustering on standard errors is here due to the conjunction of big discrepancies between the size of regions (from 19 to 19941) and a high intra-class correlation coefficient (0.551). Even if the Moulton formula should be considered here only as a very rough approximation (because this formula ignores weighting and repeated observations), it clearly suggests that clustering effects must be taken into account.

[16] Yet these models have a strong advantage: they control for group-invariant factors, measured or unmeasured. But this advantage has a price: the inability to estimate regression coefficients for these group-invariant factors, and thus to allow the analyst to conclude in terms of the effect of these factors.

[17] The notation we use here is the same as Snijders and Bosker's (2004).

where:
i indexes time
j indexes the individuals
k indexes the regions
P_{ijk} is the probability of being at-risk-of-poverty
x_{1ijk} is a vector of independent factors defined at the individual/household level whose effects are assumed to be random
x_{2ijk} is a vector of independent factors defined at the individual/household level whose effects are assumed to be fixed
z_{0k} is a vector of independent factors defined at the regional level, which are supposed to have an impact on the average P_{ijk} in region k
z_{1k} is a vector of independent factors defined at the regional level, which are supposed to moderate the effect of the x_{1ijk} on P_{ijk}
β_{0k} is a random intercept
β_{1k} is a vector of random slopes
β_2 is a vector of fixed slopes
γ_0 measures the average value of P_{ijk} across regions, when each independent variable is 0
γ_1 measures the impact of z_{0k} on P_{ijk}
δ_0 measures the average impact, across regions, of x_{1ijk} on P_{ijk} , when each z_{1k} is 0
δ_1 measures the impact of z_{1k} on the effect of the x_{1ijk} on P_{ijk}
U_{0k} and U_{1k} are error terms assumed to follow a multinormal distribution $\mathbb{N}(0,0;\Omega)$, Ω being the variance-covariance matrix[18].

The reduced form is thus:

$$logit(P_{ijk}) = \gamma_0 + \gamma_1 z_{0k} + \delta_0 x_{1ijk} + \delta_1 z_{1k} x_{1ijk} + \beta_2 x_{2ijk} + U_{0k} + U_{1k} x_{1ijk}$$

This formula refers to a random slope model, meaning that the intercept and at least one of the explanatory variables have a random coefficient.

4. Data

The EU-SILC longitudinal dataset provides information at both individual and household levels and covers at most 5 years (from 2003 to 2007) depending on the country: data are not available for some countries in 2003, 2004 and 2007. Had we used all five waves to calculate the poverty threshold as we define it (i.e. at the European level), it would have increased or decreased over time just because some countries (e.g. Germany) are absent for some years – it means, without any link with the economic situation. As a consequence, we work with data from two waves only, 2005 and 2006, where all 26 countries are present.

The unit of analysis is the individual: as stated by an OECD report (2001), this is the usual choice for poverty analysis with longitudinal data because individuals can be followed

[18] In our main model, we specify an unstructured form of the variance-covariance matrix (allowing covariances between random effects to be non zero) because the covariance between the error terms of the intercept and the number of employed people in the household appears to be highly significant.

over time whereas households cannot[19]. The sample contains 131 891 working age adults (25-55) for the first wave, and 166 379 for the second[20], split between 26 countries (see Appendix 3). These countries[21] are in turn divided into 93 regions (see Appendix 4).

The explanatory variables have been chosen in order to control for different determinants of the poverty status. Some are related to the demographic characteristics of the household [22] (number of children and number of adults), others to the labour market (presence of at least one adult with an upper level of education, number of employed people), others still to the health status (presence[23] of at least one adult with chronic disease, or hampered by illness in his/her daily activities). Two additional variables are measured at the regional level: the GDP and the unemployment rate[24].

Some descriptive statistics, for both the whole sample and each country, can be found in Appendix 5 (but not for each region: as there are 93 regions[25], it proves not to be sensible to show the descriptive statistics for each of them).

Beyond the usual hypotheses concerning all the control variables[26], we make two further ones concerning our variables of interest: first we assume that the negative effect of the level of education on the probability of being at-risk-of-poverty could be weaker in richer areas (where the probability of being poor is quite low, whatever the level of education). Second we assume that the negative effect of the number of employed people in the

[19] As usual, the poverty threshold is calculated at the individual level but the poverty status is defined at the household level.

[20] Note that the sample is not balanced: 41 % of the individuals have only one observation (only 5% in Denmark, up to 59% in Czech Republic).

[21] The latest release of SILC longitudinal data (August 2009) contains only 22 countries, Germany, Ireland, Greece and Denmark being absent. But we wanted both to work on this release, the data of which have been cleared of previous problems, and to keep these four countries in the analysis. We have therefore added to these 22 countries the other 4 from the previous release (March 2009).

[22] All of the explanatory variables, apart from gender and age, are calculated at the household level, because the poverty status is defined at that level.

[23] Several variables have originally been defined at the individual level (e.g. having a chronic disease). In order to have all variables defined at the same (household) level, we have tried to build aggregated variables such as the number of adults in the household suffering from a chronic disease. Unfortunately, this information was available only for one individual per household in the register countries (which use information from administrative datasets when available and interview only one individual per household for the remaining questions to be asked). Keeping this kind of definition would thus have led to a big loss of information. As a consequence, we have defined a much less precise indicator, such as "presence in the household of at least one adult suffering from a chronic disease". Note that even this imprecise indicator could be ill measured in those register countries, as only one household member is interviewed (and the construction of the variable would then only rest on that member). The level of education is defined for all household members aged 16 or more, but the variable contains a lot of missing values in some countries (13% in Portugal, 14% in Spain and up to 16% in the UK in 2005). We have thus adopted the same definition in order to construct a variable at household level.

[24] Unfortunately, we were not able to integrate in our main model potential important macro factors such as the social expenditures (expressed as percentages of the GDP): unemployment compensation, public health expenditures, expenditures with respect to inclusion. Indeed, they are not yet known at regional level.

[25] In fact, 16 countries out of the 26 countries at hand only have one region, either because they are quite small (12 of them), or because the region code is not available in the dataset (4 of them).

[26] Note that income (and thus the poverty status) and individual/household demographic characteristics have not been measured at the same time: income refers to the year prior to the survey, whereas demographic characteristics to the time of the survey. We could have dealt with this by lagging all non-income variables (e.g. demographic characteristics given for year 2006 should be linked to the income declared in 2007), yet at the price of losing some countries since not all of them have available data for 2007.

household on the probability of being at risk of poverty could be attenuated when the unemployment rate is high due to the downward pressure on wages.

5. Results and Comments

The results of the model are shown in Table 1. All our analyses (descriptive and econometric) use weighted data [27].

[27] Moon and Stotsky (1993) state that, if the data come from a stratified and clustered random sampling, it is reasonable to treat the sample as a simple random sample, thus ignoring weights. And Poggi (2007) states that it is more efficient, from an econometrical point of view, not to weigh the data. That way of doing has been adopted by studies on panel data (as stated by Ayllon, 2008, or Andriopoulou et al., 2008). But the question of weighting the data is still open). We have chosen to weigh them, as the SILC dataset is known not to be representative of the population.

Table 1. Probability of being at-risk-of-poverty in 93 European regions. Estimation with a multilevel model[28]

	Parameter estimate		Standard error	Odds Ratios
Variables[29]				
intercept	0,2625		0,3806	
woman	0,01578		0,0139	1,016
age centered (around the average : 41.27)	0,002428	*	0,000848	1,002
age centered squared	0,000453	***	0,000105	1,000
chronic disease in the household	-0,1214	***	0,01692	0,886
activity hampered by disease in the household	0,1612	***	0,01754	1,175
upper education level in the household	-1,5241	***	0,1568	0,218
number of children in the household	0,3555	***	0,01532	1,427
number of children in the household squared	-0,0127	*	0,004298	0,987
number of adults in the household	-0,2607	***	0,02786	0,770
number of adults in the household squared	0,08983	***	0,004659	1,094
number of employed people in the household	-1,2964	***	0,07399	0,274
regional annual GDP per capita (in 10^3 Euros)	-0,04818	***	0,007353	0,953
regional unemployment rate (expressed in %)	0,02103		0,01122	1,021
upper education level * regional GDP per capita	0,02427	**	0,006689	
number of employed people * regional unemployment rate	0,01392	*	0,005996	
wave 2005	-0,2055	***	0,01488	0,814
wave 2006	ref.		ref.	ref.
country BE	-0,3208		0,3616	0,726
country CZ	1,9401	***	0,3278	6,960
country DK	-0,6816		0,4419	0,506
country DE	-0,2740		0,4252	0,760
country EE	3,1916	***	0,4460	24,328
country IE	-0,2453		0,4468	0,782
country EL	0,9511	*	0,3431	2,589
country ES	0,9605	*	0,3115	2,613
country FR	-0,2864		0,3107	0,751
country IT	0,2918		0,3311	1,339
country CY	-0,2265		0,4889	0,797
country LV	3,5168	***	0,4476	33,678
country LT	3,7270	***	0,4445	41,556
country LU	-0,3031		0,7205	0,739
country HU	3,0947	***	0,3581	22,081
country NL	-0,2287		0,4267	0,796
country AT	-0,3297		0,3566	0,719
country PL	2,5769	***	0,3475	13,157
country PT	1,4376	**	0,4321	4,210
country SI	0,1796		0,4516	1,197
country SK	3,2642	***	0,4415	26,160
country FI	-0,5984		0,3536	0,550
country SE	-0,3938		0,4318	0,675
country UK	ref.		ref.	ref.
country IS	-0,4673		0,6692	0,627
country NO	-0,4939		0,4646	0,610
Regional-level error terms variances				
intercept	0,3818		0,08275	
upper education level in the household	0,2077		0,04486	
number of employed people in the household	0,2198		0,03756	
Regional-level error terms covariances				
COV (intercept, upper education level in the household)	-0,04609		0,04281	
COV (intercept, number of employed people in the HH)	-0,2342		0,05093	
COV (upper education level, nb. of employed people in the HH)	-0,0437		0,03109	
Other parameters				
Rho coefficient of AR(1)	0,3138		0,002817	
Residual	0,9936		0,002727	
Fit measure: -2 Log Pseudo Likelihood	1832580			

Source: EU-SILC data, longitudinal file [30], 1.08.2009 UDB release, authors' computations.
Level of significance for independent variable coefficients: *: p-value < 0.05; **: p-value < 0.01; ***: p-value < 0.001

[28] We have used the SAS GLIMMIX command. Useful SAS code examples can be found in Allison (2008) and were kindly given by David Brady.
[29] See appendix 5 for a description of the variables.
[30] 22 countries from this release plus 4 countries from the March release (see above).

Concerning the error terms, SAS/PROC GLIMMIX does not offer a statistical test indicating the level of significance of the variances and covariances of the error terms. But compared to their standard errors, the estimated variances are quite high, which suggests their high level of significance. This in turn justifies on the one hand the choice of the multilevel model, and on the other hand our choice of allowing these variables to have random rather than fixed coefficients. Looking at the empty model (see Appendix 6), we can see that the intra-class correlation (calculated according to the second formula given by Snijders and Bosker, 1999, page 224) is equal to 0.55, meaning that the between-variance is substantial.

Let us examine now the effects of our variables of interest. Recall that our objective is to measure the specific effect of the regional GDP per inhabitant and the regional unemployment rate on the probability of being at-risk-of-poverty. This effect could be either direct or indirect since these macro factors can act through other individual variables on the probability of being poor (such as the education level and the number of employed people in the household).

As expected, the regional GDP per capita has a strong (and highly significant) direct negative effect on the risk of poverty: for individuals living in households where nobody has an upper education level, the odds of being poor (probability of being poor divided by probability of not being poor) decreases by 4.7% (1-0.953=0.047) for an increase of annual GDP per capita by a 1000 Euros. This direct effect is supplemented by an indirect effect: the regional GDP per capita moderates the negative impact of upper education on the poverty risk. In fact, in the average region in terms of GDP per capita (about 24260 Euros/year), the presence of an adult with upper education level decreases the poverty odds by 61% (odds ratio = 0.39[31]). In a rich region such as Luxembourg (GDP per capita = 60150 Euros/year), it decreases the odds by only 6.2%; in a quite disadvantaged region like Estonia (GDP per capita = 14547 Euros/year) it decreases the odds by 69 %.

For individuals living in households without any employed people, an additional percentage point of the regional unemployment rate increases by 2.1% the poverty odds, but this effect is only slightly statistically significant (p-value=6%) ceteris paribus (especially when GDP per capita is controlled for). But there is an indirect effect of the regional unemployment rate on the poverty risk, even if rather small: in the average region in terms of the unemployment rate (unemployment rate = 8.52 %), the presence of an additional employed individual decreases the poverty odds by 69%, when controlling for the number of adults in the household (odds ratio = 0.31[32]). When the unemployment rate is much lower, such as in Ireland (unemployment rate 4.35%), it decreases these odds by 71%, and by 66% when the unemployment rate is quite high (for example in Slovenia - unemployment rate 14.85%).

To summarize, the moderating effect of the regional unemployment rate on the impact on poverty risk of the number of employed people does exist but it is marginal. By contrast, the moderating effect of the regional GDP per capita on the impact on poverty risk of the presence of highly educated people is quite large.

[31] Odds ratio = 0.39 = exp(-1.5241 + 0.02427*24.260)
[32] Odds ratio = 0.31 = exp(-1.2964 + 0.01392*8.52)

Besides and not surprisingly (given the sample size), almost all control variables have an effect on the poverty probability, except for gender[33]: women do not have a higher risk of being poor than men. This can easily be explained by the fact that the poverty status is a household characteristic, which can hardly be influenced by a strictly individual feature[34]. One interesting question is the extent to which these control variables have an impact on the poverty risk (even if our study focuses on the possible impact of macro determinants on the effect some factors of interest can have on the poverty risk):

- if the activity of at least one household member is hampered by disease, the odds of being poor increase by 18%

- controlling for especially the fact that the activity of at least one household member is hampered (or not) by disease, the chronic character of this disease decreases by 11% the odds of being poor (this could be a consequence of the social benefits people with chronic diseases are entitled to)

- the number of children in the household has a slightly concave effect on the odds of being poor: as the number of children increases, the effect of an additional child decreases progressively up to a value (14 children) lying beyond the observed maximum in the sample (12 children). But the effect of each additional child remains substantial. As an example, while a first child increases by 41% the odds of being poor, a fourth child still increases them by 31%

- the number of adults in the household also proves to have a clear non linear effect on the poverty risk: ceteris paribus (and especially when controlling for the number of employed people), the odds of being poor are virtually the same if there are one or two adults in the household, but they increase by 21% with the third adult and by 45% with the fourth one.

6. Conclusion

Analysing the determinants of the monetary poverty probability has already been attempted by many studies. But few of them have simultaneously used panel data, considered factors at the macro level, and used the right techniques to deal with all these elements.

As for our results, they show that both the regional GDP per capita and the regional unemployment rate do have an effect on poverty risk.

[33] Since the poverty status is defined at the household level, it could be considered as irrelevant to introduce variables measured at individual level such as age and gender. We have added these two variables to our model for comparison's sake, as almost all studies do this as well. As far as age is concerned, it could be argued that, even though age is, like gender, a factor measured at the individual level, it might have some signification as an household characteristic: due to frequent endogamy, the age of one adult belonging to the household offers some clue about the age of other adults in the household, at least for non single adult households. With these limitations in mind, we can interpret the (highly significant) quadratic effect of age: ceteris paribus, the poverty risk is first decreasing more than linearly with age, reaching a minimum at age 44, and then increasing more than linearly. For example, at age 25, an additional year results in a decrease of the poverty risk by 1.2%; and at age 50, an additional year of age results in an increase of 1.1%.

[34] This is the very reason why the different common indicators agreed upon in the context of the OMC on Social Protection and Social Inclusion which focus on gender differences are calculated on single person households.

In terms of economic and social policy implications, it means that:

- policies oriented towards higher economic growth rates in disadvantaged European regions are able to alleviate the risk of poverty even if poverty is defined in relative terms

- this kind of economic policies, if successful in its effort to sustain the economic well-being of families in poor regions, will, as a side-effect, diminish the anti-poverty effect of the presence in the household of higher educated people. We suspect that this indirect effect is associated to the choice of defining poverty as a relative concept – a European view, which countries like the US do not share

- as for the regional unemployment rate, its direct positive impact on the poverty risk is essentially a confirmation of what could be expected and of what is already known, even if the weakness of this effect is quite surprising. Still more surprising is the fact that the regional unemployment rate does not moderate to a large extent the impact on the poverty risk of the number of employed people in the household. This implies that policies aimed at combating high regional unemployment rates will, as such, unfortunately not lower to a large extent the regional poverty rates.

However, our analysis faces two types of limitations. The first one results from methodological choices we have made, the second is due to the data.

First, because we needed an indicator differentiating and thus ranking the 93 regions in terms of poverty rates, we have made use of a European poverty threshold, which has proven quite relevant in terms of ability to estimate the econometric model. However, precisely because the European regions are quite dispersed around the average at-risk-of-poverty rate, we were not able to check the consistency of the results in using alternative measures of the European threshold[35] (such as 50% or 70% of the European median equivalent income).

Concerning then the data, and with the results at country-level in mind, we would have liked to test the effect of other macro characteristics at the regional level, such as the expenses in unemployment or social benefits (expressed in percentage of the GDP). But these were not available at the regional level. In future analyses, we would thus be interested in adding some variables of that kind, once they are available. And, as for the regions, the variable defined in the EU-SILC dataset is missing in some countries (even in quite big countries such as Germany and the United Kingdom). In order to keep these countries in the analysis, we have defined each of them as a unique – and quite large – region.

[35] In fact, with a poverty threshold equal to 60% of the European median equivalent income, the at-risk-of-povery rates of the different countries range between 1% and 82% in 2005, and between 2% and 75% in 2006. Changing this threshold for a lower (higher) one would lead to even lower (higher) rates in the richest (poorest) countries, making the analysis impossible to run.

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Appendix 1. At-risk-of-poverty rates of working aged adults (25-55) in Europe

At-risk-of-poverty rates of working age adults (25-55) in Europe (European threshold = 60% of the European median equivalent income)

Country	2005	2006
AT	5	6
BE	6	8
CY	7	6
CZ	42	41
DE	7	6
DK	3	3
EE	70	64
ES	20	19
FI	5	6
FR	8	9
EL	24	26
HU	73	69
IE	8	8
IS	3	3
IT	14	17
LT	79	75
LU	1	2
LV	81	74
NL	6	3
NO	3	3
PL	74	73
PT	42	40
SE	5	5
SI	13	13
SK	77	72
UK	7	8

Source: EU-SILC data, longitudinal file, 1.08.2009 UDB release, authors' computations.

Reading note: with the European poverty threshold calculated for the whole population [36], 5% of individuals aged 25-55 in Austria were at-risk-of-poverty in 2005.

We can notice that the countries face very different situations in terms of the at-risk-of-poverty rate, a conclusion that cannot be drawn from the figures shown in the table below (based on national poverty thresholds).

[36] The European poverty threshold is calculated by taking into account all individuals living in the 26 countries under study. In other words, children and elderly people are not excluded from this calculation, even if they are not kept in the analyses afterwards.

At-risk-of-poverty rates of working aged adults (25-55) in Europe (national thresholds)

Country	2005	2006
AT	11	11
BE	11	11
CY	10	10
CZ	10	9
DE	11	12
DK	9	9
EE	16	15
ES	16	15
FI	8	9
FR	10	11
EL	16	17
HU	14	15
IE	14	14
IS	9	8
IT	16	17
LT	19	18
LU	13	14
LV	18	19
NL	10	8
NO	8	8
PL	21	19
PT	15	15
SE	7	10
SI	10	9
SK	13	11
UK	14	14

Source: EU-SILC data, cross-sectional file, 1.08.2009 UDB release.
Reading note: with the poverty threshold calculated at national level, 11% of individuals aged 25-55 in Austria were at-risk-of-poverty in 2005.

These official figures are based on the cross-sectional file, which means that all individuals are taken into account (whereas the longitudinal file concerns only those present at least two years).

Appendix 2. Poverty probability determinants at country-level

Response Profile

Ordered Value	pov_indicator	Total Frequency
1	1	72218
2	0	211983

The GLIMMIX procedure is modeling the probability that pov_indicator='1'.

Dimensions

G-side Cov. Parameters	3
R-side Cov. Parameters	2
Columns in X	21
Columns in Z per Subject	3
Subjects (Blocks in V)	26
Max Obs per Subject	30703

Optimization Information

Optimization Technique	Newton-Raphson
Parameters in Optimization	4
Lower Boundaries	4
Upper Boundaries	1
Fixed Effects	Profiled
Residual Variance	Profiled
Starting From	GLM estimates

…/… 32 iterations

Convergence criterion (PCONV=1.11022E-8) satisfied.

Fit Statistics

-2 Res Log Pseudo-Likelihood	1834383
Generalized Chi-Square	291051.3
Gener. Chi-Square / DF	1.02

Covariance Parameter Estimates

Cov Parm	Subject	Estimate	Standard Error
Intercept	country	0.3242	0.1091
uppereducHH	country	0.2754	0.08766
nbemployedHH	country	0.1406	0.04498
AR(1)	ID_unique_UE27(country)	0.3201	0.002776
Residual		1.0242	0.002811

Asymptotic Covariance Matrix of Covariance Parameter Estimates

Cov Parm	Subject	CovP1	CovP2	CovP3	CovP4	CovP5
Intercept	country	0.01190	0.000089	-0.00019	-6.96E-7	-5.7E-7
uppereducHH	country	0.000089	0.007684	0.000032	-6.59E-7	-3.03E-7
nbemployedHH	country	-0.00019	0.000032	0.002024	3.937E-7	2.309E-8
AR(1)	ID_unique_UE27(country)	-6.96E-7	-6.59E-7	3.937E-7	7.707E-6	2.001E-6
Residual		-5.7E-7	-3.03E-7	2.309E-8	2.001E-6	7.903E-6

Asymptotic Correlation Matrix of Covariance Parameter Estimates

Cov Parm	Subject	CovP1	CovP2	CovP3	CovP4	CovP5
Intercept	country	1.0000	0.009333	-0.03776	-0.00230	-0.00186
uppereducHH	country	0.009333	1.0000	0.008229	-0.00271	-0.00123
nbemployedHH	country	-0.03776	0.008229	1.0000	0.003152	0.000183
AR(1)	ID_unique_UE27(country)	-0.00230	-0.00271	0.003152	1.0000	0.2564
Residual		-0.00186	-0.00123	0.000183	0.2564	1.0000

Solutions for Fixed Effects

Effect	wave	Estimate	Standard Error	DF	t Value	Pr > |t|
Intercept		1.4742	0.4733	25	3.11	0.0046
wave	2005	-0.1846	0.02712	284E3	-6.81	<.0001
wave	2006	0	.	.	.	.
GDPhabnuts		-0.1103	0.01437	284E3	-7.68	<.0001
GDPvariation		0.1560	0.01959	284E3	7.97	<.0001
unempratenuts		0.1386	0.01449	284E3	9.56	<.0001
socexclexpenses		-0.7600	0.1292	284E3	-5.88	<.0001
unemploymentexpenses		-0.2225	0.1042	284E3	-2.14	0.0327
woman		0.01188	0.01397	284E3	0.85	0.3949
age_centered		0.001467	0.000852	284E3	1.72	0.0849
age_centered2		0.000469	0.000105	284E3	4.46	<.0001
chronicdiseaseHH		-0.1419	0.01692	284E3	-8.38	<.0001
activityhamperedHH		0.1720	0.01753	284E3	9.81	<.0001
uppereducHH		-1.2942	0.1357	25	-9.54	<.0001
socexclexpenses*uppereducHH		0.7339	0.1826	284E3	4.02	<.0001
nbchildren		0.3795	0.01529	284E3	24.82	<.0001
nbchildren2		-0.01734	0.004273	284E3	-4.06	<.0001
nbadultsHH		-0.2065	0.02767	284E3	-7.46	<.0001
nbadultsHH2		0.08637	0.004631	284E3	18.65	<.0001
nbemployedHH		-1.0282	0.1132	25	-9.08	<.0001
unemploymentexpenses*nbemployedHH		-0.1153	0.06613	284E3	-1.74	0.0812

Appendix 3. Sample size, by country and year

Number of individuals aged 25-55, in each country, for each year (sample size, unweighted cases)

Country	2005	2006
AT	3882	5469
BE	2408	4002
CY	2357	3373
CZ	4391	7367
DE	10529	9285
DK	3549	3451
EE	2665	4269
ES	8472	11501
FI	4021	5528
FR	5876	7324
EL	4642	4211
HU	4353	6609
IE	2872	1992
IS	1584	2243
IT	12955	18048
LT	2533	3713
LU	4322	4601
LV	2704	3438
NL	8574	9287
NO	4088	3926
PL	10627	14644
PT	2671	3662
SE	3541	4751
SI	8671	11271
SK	3447	4898
UK	6224	7594

Source: EU-SILC data, longitudinal file, 1.08.2009 UDB release, authors' computations.

Appendix 4. List of available regions[37] in the dataset

Austria

AT1	Ostösterreich
AT2	Südösterreich
AT3	Westösterreich

Belgium

BE1	Région de Bruxelles-Capitale / Brussels Hoofdstedelijk Gewest
BE2	Vlaams Gewest
BE3	Région Wallonne

Republic of Cyprus

CY0	Kypros / Kibris

Czech Republic

CZ01	Praha
CZ02	Stredni Cechy
CZ03	Jihozapad
CZ04	Severozapad
CZ05	Severovychod
CZ06	Jihovychod
CZ07	Stredni Morava
CZ08	Moravskoslezsko

Germany

The region variable is not available in the longitudinal dataset for Germany.

DE	Germany

Denmark

DK0	Denmark

Estonia

EE0	Estonia

Spain

ES11	Galicia
ES12	Principado de Asturias
ES13	Cantabria
ES21	País Vasco
ES22	Comunidad Foral de Navarra
ES23	La Rioja
ES24	Aragón
ES30	Comunidad de Madrid
ES41	Castilla y León
ES42	Castilla-La Mancha
ES43	Extremadura
ES51	Cataluña
ES52	Comunidad Valenciana
ES53	Illes Balears
ES61	Andalucía
ES62	Región de Murcia
ES63	Ciudad Autónoma de Ceuta
ES64	Ciudad Autónoma de Melilla
ES70	Canarias

Finland

FI13	Itä-Suomi
FI18	Etelä-Suomi
FI19	Länsi-Suomi
FI1A	Pohjois-Suomi

France

FR10	Île de France
FR21	Champagne-Ardenne
FR22	Picardie
FR23	Haute-Normandie
FR24	Centre
FR25	Basse-Normandie
FR26	Bourgogne
FR30	Nord - Pas-de-Calais
FR41	Lorraine
FR42	Alsace
FR43	Franche-Comté
FR51	Pays de la Loire
FR52	Bretagne
FR53	Poitou-Charentes
FR61	Aquitaine
FR62	Midi-Pyrénées
FR63	Limousin
FR71	Rhône-Alpes
FR72	Auvergne
FR81	Languedoc-Roussillon
FR82	Provence-Alpes-Côte d'Azur
FR83	Corse

Greece

GR1	Voreia Ellada
GR2	Kentriki Ellada
GR3	Attiki
GR4	Nisia Aigaiou, Kriti

Hungary

HU1	Kozep-Magyarorszag
HU2	Dunantul
HU3	Alfold Es Eszak

Ireland

The region variable is not available in the longitudinal dataset for Ireland.

IE0	Ireland

Iceland

IS	Iceland

[37] Details from EU-SILC documentation and http://ec.europa.eu/eurostat/ramon/nuts/codelist_en.cfm?list=nuts

Italy

ITC	Nord-Ovest
ITD	Nord-Est
ITE	Centro (I)
ITF	Sud
ITG	Isole

Lithuania

LT0	Lietuva

Luxembourg

LU0	Luxembourg (Grand-Duché)

Latvia

LV0	Latvija

The Netherland

The region variable is not available in the longitudinal dataset for the Netherlands.

NL	The Netherlands

Norway

NO0	Norway

Poland

PL1	Region Centralny
PL2	Region Poludniowy
PL3	Region Wschodni
PL4	Region Polnocno-Zachodni
PL5	Region Poludniowo-Zachodni
PL6	Region Polnocny

Portugal

PT	Portugal

Sweden

SE	Sweden

Slovenia

SI	Slovenia

Slovakia

SK0	Slovenska

The United Kingdom

The region variable is not available in the longitudinal dataset for UK

UK	United-Kingdom

Appendix 5. Description of the explanatory variables and descriptive statistics

Description of the explanatory variables

Name of the variable	*Label of the variable*	Description of the variable
woman	*woman*	EU-SILC variable RB090; woman=1 if RB090=2
age_centered	*age centered (around the average: 41.27)*	EU-SILC variable RX020, centered (age in the year prior to the survey)
chronicdiseaseHH	*chronic disease in the household*	Authors' calculations using the EU-SILC variable PH020: is there at least one household member who suffers from a chronic disease?
activityhamperedHH	*activity hampered by disease in the household*	Authors' calculations using the EU-SILC variable PH030: is there at least one household member whose activities are hampered because of health problems?
uppereducHH	*upper education level in the household*	Authors' calculations using the EU-SILC variable PE040: is there at least one household member whose upper level of education is tertiary education (PE040=5)?
nbchildren	*number of children in the household*	number of children (age 0-14) in the year prior to the survey
nbadultsHH	*number of adults in the household*	number of adults (age 18 or more) in the year prior to the survey
nbemployedHH	*number of employed people in the household*	number of employed household members (authors' calculations using the EU-SILC variable PL030 – codes 1 or 2)
country	*country*	EU-SILC variable RB020
wave	*wave*	EU-SILC variable RB010
GDPhabnuts	*regional annual GDP per capita (in 10^3 Euros)*	Information from Eurostat
unempratenuts	*regional unemployment rate (expressed in %)*	Information from Eurostat

Descriptive statistics for the whole sample

Wave	N Obs	Variable	N	NMiss	Mean	Std Dev	Minimum	Maximum
2005	131891	pov_indicator	131891	0	0.1965	0.4259	0	1.0000
		woman	131887	4	0.5130	0.5357	0	1.0000
		age_centered	131891	0	-0.6425	9.1801	-16.2665	14.7335
		age_centered2	131891	0	73.7935	76.2358	0.0710	264.6
		chronicdiseaseHH	131891	0	0.3885	0.5223	0	1.0000
		activityhamperedHH	131891	0	0.2931	0.4878	0	1.0000
		uppereducHH	126795	5096	0.3962	0.5182	0	1.0000
		nbchildren	131891	0	0.9077	1.1426	0	11.0000
		nbadultsHH	131891	0	2.3903	1.0792	1.0000	10.0000
		nbemployedHH	129384	2507	1.5131	0.8971	0	8.0000
		GDPhabnuts	131891	0	23.7538	7.1961	8.2000	57.1000
		unempratenuts	131891	0	8.8728	4.4381	2.5000	21.4000
2006	166379	pov_indicator	166379	0	0.2000	0.3757	0	1.0000
		woman	166371	8	0.5128	0.4695	0	1.0000
		age_centered	166379	0	-0.2041	7.9962	-16.2665	14.7335
		age_centered2	166379	0	72.5178	66.5149	0.0710	264.6
		chronicdiseaseHH	166379	0	0.3911	0.4584	0	1.0000
		activityhamperedHH	166379	0	0.2926	0.4273	0	1.0000
		uppereducHH	158892	7487	0.4059	0.4560	0	1.0000
		nbchildren	166379	0	0.9288	0.9917	0	12.0000
		nbadultsHH	166379	0	2.4239	0.9506	1.0000	11.0000
		nbemployedHH	162220	4159	1.6016	0.7713	0	8.0000
		GDPhabnuts	166379	0	24.7924	6.6164	8.7000	63.1000
		unempratenuts	166379	0	8.1568	3.0558	2.8000	21.0000

Descriptive statistics for at country level

wave	country	N Obs	Variable	N	N Miss	Mean	Std Dev	Minimum	Maximum
2005	BE	2408	pov_indicator	2408	0	0.0609	0.2696	0	1.0000
			woman	2408	0	0.4920	0.5635	0	1.0000
			age_centered	2408	0	0.2142	9.5775	-16.2665	14.7335
			age_centered2	2408	0	72.2531	78.0715	0.0710	264.6
			chronicdiseaseHH	2408	0	0.3267	0.5286	0	1.0000
			activityhamperedHH	2408	0	0.3100	0.5213	0	1.0000
			uppereducHH	2089	319	0.5108	0.5609	0	1.0000
			nbchildren	2408	0	0.9201	1.3651	0	7.0000
			nbadultsHH	2408	0	2.3255	1.1521	1.0000	7.0000
			nbemployedHH	2408	0	1.4716	0.9269	0	5.0000
			GDPhabnuts	2408	0	26.6319	10.0738	19.4000	53.3000
			unempratenuts	2408	0	8.4371	4.3000	5.4000	16.3000
2006	BE	4002	pov_indicator	4002	0	0.0789	0.2398	0	1.0000
			woman	4002	0	0.4979	0.4447	0	1.0000
			age_centered	4002	0	0.0482	7.6695	-16.2665	14.7335
			age_centered2	4002	0	74.3560	62.3554	0.0710	264.6
			chronicdiseaseHH	4002	0	0.3407	0.4215	0	1.0000
			activityhamperedHH	4002	0	0.3010	0.4080	0	1.0000
			uppereducHH	3634	368	0.5390	0.4439	0	1.0000
			nbchildren	4002	0	0.8937	1.0366	0	7.0000
			nbadultsHH	4002	0	2.2926	0.8868	1.0000	7.0000
			nbemployedHH	3969	33	1.5155	0.7240	0	4.0000
			GDPhabnuts	4002	0	28.0513	8.4301	20.1000	55.1000
			unempratenuts	4002	0	8.3091	3.8080	5.0000	17.6000
2005	CZ	4391	pov_indicator	4391	0	0.4156	0.4304	0	1.0000
			woman	4391	0	0.4986	0.4366	0	1.0000
			age_centered	4391	0	-1.3598	8.1510	-16.2665	14.7335
			age_centered2	4391	0	88.9707	65.7152	0.0710	264.6
			chronicdiseaseHH	4391	0	0.3762	0.4230	0	1.0000
			activityhamperedHH	4391	0	0.3349	0.4121	0	1.0000
			uppereducHH	4391	0	0.2071	0.3539	0	1.0000
			nbchildren	4391	0	0.7598	0.8045	0	5.0000
			nbadultsHH	4391	0	2.5584	0.8599	1.0000	7.0000
			nbemployedHH	4391	0	1.7005	0.7878	0	4.0000
			GDPhabnuts	4391	0	17.0978	5.9279	13.3000	35.6000
			unempratenuts	4391	0	7.9891	3.1642	3.5000	13.9000
2006	CZ	7367	pov_indicator	7367	0	0.4136	0.3314	0	1.0000
			woman	7367	0	0.5002	0.3364	0	1.0000
			age_centered	7367	0	-1.2929	6.2442	-16.2665	14.7335
			age_centered2	7367	0	87.7967	49.6113	0.0710	264.6
			chronicdiseaseHH	7367	0	0.3807	0.3267	0	1.0000
			activityhamperedHH	7367	0	0.3379	0.3183	0	1.0000
			uppereducHH	7323	44	0.2118	0.2749	0	1.0000
			nbchildren	7367	0	0.7563	0.6111	0	7.0000
			nbadultsHH	7367	0	2.5852	0.6729	1.0000	8.0000
			nbemployedHH	7367	0	1.7118	0.6076	0	5.0000
			GDPhabnuts	7367	0	18.2129	4.8756	14.2000	38.4000
			unempratenuts	7367	0	7.2759	2.1418	2.8000	12.8000
2005	DK	3549	pov_indicator	3549	0	0.0331	0.1237	0	1.0000
			woman	3549	0	0.4989	0.3458	0	1.0000
			age_centered	3549	0	-0.1867	5.9554	-16.2665	14.7335
			age_centered2	3549	0	74.1813	48.3555	0.0710	264.6
			chronicdiseaseHH	3549	0	0.2248	0.2887	0	1.0000
			activityhamperedHH	3549	0	0.1249	0.2287	0	1.0000
			uppereducHH	3488	61	0.4311	0.3413	0	1.0000
			nbchildren	3549	0	0.9719	0.7503	0	7.0000
			nbadultsHH	3549	0	1.9228	0.4682	1.0000	7.0000
			nbemployedHH	3491	58	1.5338	0.4816	0	4.0000
			GDPhabnuts	3549	0	27.8000	0	27.8000	27.8000
			unempratenuts	3549	0	4.8000	0	4.8000	4.8000
2006	DK	3451	pov_indicator	3451	0	0.0320	0.1208	0	1.0000
			woman	3451	0	0.4933	0.3430	0	1.0000
			age_centered	3451	0	-0.0156	5.7369	-16.2665	14.7335
			age_centered2	3451	0	69.9331	46.3429	0.0710	264.6
			chronicdiseaseHH	3451	0	0.2375	0.2919	0	1.0000
			activityhamperedHH	3451	0	0.1280	0.2292	0	1.0000
			uppereducHH	3391	60	0.4392	0.3390	0	1.0000
			nbchildren	3451	0	0.9772	0.7343	0	5.0000
			nbadultsHH	3451	0	1.9430	0.4724	1.0000	5.0000
			nbemployedHH	3382	69	1.5658	0.4818	0	4.0000
			GDPhabnuts	3451	0	29.1000	0	29.1000	29.1000
			unempratenuts	3451	0	3.9000	0	3.9000	3.9000
2005	DE	10529	pov_indicator	10529	0	0.0748	0.4145	0	1.0000
			woman	10529	0	0.5332	0.7863	0	1.0000
			age_centered	10529	0	-0.2368	13.1238	-16.2665	14.7335
			age_centered2	10529	0	69.3959	109.6	0.0710	264.6
			chronicdiseaseHH	10529	0	0.4474	0.7836	0	1.0000

			activityhamperedHH	10529	0	0.4231	0.7786	0	1.0000
			uppereducHH	10364	165	0.5070	0.7878	0	1.0000
			nbchildren	10529	0	0.7408	1.5855	0	6.0000
			nbadultsHH	10529	0	2.1375	1.3513	1.0000	7.0000
			nbemployedHH	10529	0	1.3698	1.2661	0	5.0000
			GDPhabnuts	10529	0	26.3000	0	26.3000	26.3000
			unempratenuts	10529	0	11.1000	0	11.1000	11.1000
2006	DE	9285	pov_indicator	9285	0	0.0624	0.3895	0	1.0000
			woman	9285	0	0.5655	0.7983	0	1.0000
			age_centered	9285	0	1.8870	12.4357	-16.2665	14.7335
			age_centered2	9285	0	63.1927	108.7	0.0710	264.6
			chronicdiseaseHH	9285	0	0.4929	0.8051	0	1.0000
			activityhamperedHH	9285	0	0.3678	0.7766	0	1.0000
			uppereducHH	9285	0	0.5429	0.8022	0	1.0000
			nbchildren	9285	0	0.9117	1.6225	0	6.0000
			nbadultsHH	9285	0	2.2395	1.4165	1.0000	6.0000
			nbemployedHH	9285	0	1.6796	1.2261	0	5.0000
			GDPhabnuts	9285	0	27.4000	0	27.4000	27.4000
			unempratenuts	9285	0	10.2000	0	10.2000	10.2000
2005	EE	2648	pov_indicator	2648	0	0.6987	0.1792	0	1.0000
			woman	2648	0	0.5190	0.1952	0	1.0000
			age_centered	2648	0	-0.8065	3.5205	-16.2665	14.7335
			age_centered2	2648	0	81.8660	28.6931	0.0710	264.6
			chronicdiseaseHH	2648	0	0.4745	0.1951	0	1.0000
			activityhamperedHH	2648	0	0.4575	0.1946	0	1.0000
			uppereducHH	2648	0	0.4219	0.1929	0	1.0000
			nbchildren	2648	0	0.8302	0.3793	0	8.0000
			nbadultsHH	2648	0	2.4462	0.4073	1.0000	8.0000
			nbemployedHH	2648	0	1.6159	0.3584	0	6.0000
			GDPhabnuts	2648	0	13.7000	0	13.7000	13.7000
			unempratenuts	2648	0	7.9000	0	7.9000	7.9000
2006	EE	4257	pov_indicator	4257	0	0.6417	0.1471	0	1.0000
			woman	4257	0	0.5192	0.1533	0	1.0000
			age_centered	4257	0	-0.8308	2.7528	-16.2665	14.7335
			age_centered2	4257	0	81.1909	22.5456	0.0710	264.6
			chronicdiseaseHH	4257	0	0.4938	0.1534	0	1.0000
			activityhamperedHH	4257	0	0.4280	0.1518	0	1.0000
			uppereducHH	4227	30	0.4447	0.1525	0	1.0000
			nbchildren	4257	0	0.7761	0.2906	0	9.0000
			nbadultsHH	4257	0	2.4614	0.3270	1.0000	8.0000
			nbemployedHH	4257	0	1.6337	0.2754	0	6.0000
			GDPhabnuts	4257	0	15.4000	0	15.4000	15.4000
			unempratenuts	4257	0	5.9000	0	5.9000	5.9000
2005	IE	2872	pov_indicator	2872	0	0.0824	0.1751	0	1.0000
			woman	2872	0	0.5097	0.3183	0	1.0000
			age_centered	2872	0	-0.2720	5.5261	-16.2665	13.7335
			age_centered2	2872	0	75.3925	44.0678	0.0710	264.6
			chronicdiseaseHH	2872	0	0.3453	0.3027	0	1.0000
			activityhamperedHH	2872	0	0.2946	0.2903	0	1.0000
			uppereducHH	2777	95	0.4414	0.3168	0	1.0000
			nbchildren	2872	0	1.1631	0.7583	0	9.0000
			nbadultsHH	2872	0	2.5971	0.7238	1.0000	9.0000
			nbemployedHH	2872	0	1.6651	0.6233	0	6.0000
			GDPhabnuts	2872	0	32.4000	0	32.4000	32.4000
			unempratenuts	2872	0	4.3000	0	4.3000	4.3000
2006	IE	1992	pov_indicator	1992	0	0.0811	0.2023	0	1.0000
			woman	1992	0	0.5266	0.3700	0	1.0000
			age_centered	1992	0	0.5228	6.2803	-16.2665	13.7335
			age_centered2	1992	0	72.0837	50.2126	0.0710	264.6
			chronicdiseaseHH	1992	0	0.3667	0.3571	0	1.0000
			activityhamperedHH	1992	0	0.2901	0.3363	0	1.0000
			uppereducHH	1929	63	0.4180	0.3660	0	1.0000
			nbchildren	1992	0	1.2204	0.9358	0	9.0000
			nbadultsHH	1992	0	2.5523	0.7821	1.0000	7.0000
			nbemployedHH	1992	0	1.5983	0.6942	0	5.0000
			GDPhabnuts	1992	0	34.8000	0	34.8000	34.8000
			unempratenuts	1992	0	4.4000	0	4.4000	4.4000
2005	EL	4642	pov_indicator	4642	0	0.2368	0.3385	0	1.0000
			woman	4642	0	0.5011	0.3981	0	1.0000
			age_centered	4642	0	-1.1845	6.9457	-16.2665	14.7335
			age_centered2	4642	0	77.5079	57.6718	0.0710	264.6
			chronicdiseaseHH	4642	0	0.2578	0.3483	0	1.0000
			activityhamperedHH	4642	0	0.2381	0.3391	0	1.0000
			uppereducHH	4446	196	0.3357	0.3777	0	1.0000
			nbchildren	4642	0	0.7773	0.7372	0	8.0000
			nbadultsHH	4642	0	2.6662	0.7512	1.0000	10.0000
			nbemployedHH	4642	0	1.5917	0.6483	0	7.0000
			GDPhabnuts	4642	0	20.8883	4.4502	16.2000	28.3000
			unempratenuts	4642	0	9.9011	0.9685	8.2000	11.4000

2006	EL	4211	pov_indicator	4211	0	0.2574	0.3462	0	1.0000
			woman	4211	0	0.5024	0.3960	0	1.0000
			age_centered	4211	0	-0.8390	6.8965	-16.2665	14.7335
			age_centered2	4211	0	76.5434	57.1113	0.0710	264.6
			chronicdiseaseHH	4211	0	0.2626	0.3485	0	1.0000
			activityhamperedHH	4211	0	0.2301	0.3333	0	1.0000
			uppereducHH	4027	184	0.3405	0.3772	0	1.0000
			nbchildren	4211	0	0.7931	0.7434	0	8.0000
			nbadultsHH	4211	0	2.6953	0.7519	1.0000	10.0000
			nbemployedHH	4211	0	1.6258	0.6779	0	7.0000
			GDPhabnuts	4211	0	21.8582	4.8696	16.9000	30.5000
			unempratenuts	4211	0	8.9479	0.5389	7.9000	9.7000
2005	ES	8429	pov_indicator	8429	0	0.2004	0.5233	0	1.0000
			woman	8429	0	0.4927	0.6537	0	1.0000
			age_centered	8429	0	-1.7718	11.3422	-16.2665	14.7335
			age_centered2	8429	0	78.3910	95.7980	0.0710	264.6
			chronicdiseaseHH	8429	0	0.3623	0.6285	0	1.0000
			activityhamperedHH	8429	0	0.3263	0.6131	0	1.0000
			uppereducHH	7794	635	0.4688	0.6525	0	1.0000
			nbchildren	8429	0	0.7216	1.2211	0	7.0000
			nbadultsHH	8429	0	2.6879	1.4681	1.0000	8.0000
			nbemployedHH	8429	0	1.6190	1.1830	0	6.0000
			GDPhabnuts	8429	0	23.1034	6.0902	15.6000	29.9000
			unempratenuts	8429	0	9.2296	3.6424	5.6000	19.7000
2006	ES	11438	pov_indicator	11438	0	0.1913	0.4309	0	1.0000
			woman	11438	0	0.4098	0.5387	0	1.0000
			age_centered	11438	0	-1.8626	9.4802	-16.2665	14.7335
			age_centered2	11438	0	78.3685	80.1413	0.0710	264.6
			chronicdiseaseHH	11438	0	0.3500	0.5225	0	1.0000
			activityhamperedHH	11438	0	0.3440	0.5204	0	1.0000
			uppereducHH	10605	833	0.4680	0.5469	0	1.0000
			nbchildren	11438	0	0.7259	0.9986	0	7.0000
			nbadultsHH	11438	0	2.6490	1.1568	1.0000	11.0000
			nbemployedHH	11438	0	1.6282	0.9546	0	7.0000
			GDPhabnuts	11438	0	24.6383	5.4181	16.7000	32.1000
			unempratenuts	11438	0	8.6267	2.7513	5.3000	21.0000
2005	FR	5876	pov_indicator	5876	0	0.0798	0.4672	0	1.0000
			woman	5876	0	0.5252	0.8610	0	1.0000
			age_centered	5876	0	1.3631	14.0051	-16.2665	14.7335
			age_centered2	5876	0	67.8346	116.5	0.0710	264.6
			chronicdiseaseHH	5876	0	0.4439	0.8567	0	1.0000
			activityhamperedHH	5876	0	0.2686	0.7642	0	1.0000
			uppereducHH	5699	177	0.3917	0.8420	0	1.0000
			nbchildren	5876	0	1.0526	1.9390	0	7.0000
			nbadultsHH	5876	0	2.2903	1.5338	1.0000	7.0000
			nbemployedHH	5874	2	1.5306	1.2917	0	4.0000
			GDPhabnuts	5876	0	25.2810	11.6435	19.6000	38.7000
			unempratenuts	5876	0	8.8630	3.0632	6.4000	13.2000
2006	FR	7324	pov_indicator	7324	0	0.0917	0.4396	0	1.0000
			woman	7324	0	0.5262	0.7608	0	1.0000
			age_centered	7324	0	1.2819	12.4687	-16.2665	14.7335
			age_centered2	7324	0	68.6154	104.2	0.0710	264.6
			chronicdiseaseHH	7324	0	0.4242	0.7530	0	1.0000
			activityhamperedHH	7324	0	0.2657	0.6730	0	1.0000
			uppereducHH	7119	205	0.3899	0.7433	0	1.0000
			nbchildren	7324	0	1.0192	1.6985	0	7.0000
			nbadultsHH	7324	0	2.2675	1.3719	1.0000	7.0000
			nbemployedHH	7324	0	1.5391	1.1152	0	4.0000
			GDPhabnuts	7324	0	26.1066	10.5634	20.3000	40.1000
			unempratenuts	7324	0	8.8601	2.5799	6.1000	12.4000
2005	IT	12955	pov_indicator	12955	0	0.1430	0.4209	0	1.0000
			woman	12955	0	0.4996	0.6012	0	1.0000
			age_centered	12955	0	-0.6673	10.2847	-16.2665	14.7335
			age_centered2	12955	0	73.6183	83.8161	0.0710	264.6
			chronicdiseaseHH	12955	0	0.2886	0.5448	0	1.0000
			activityhamperedHH	12955	0	0.2261	0.5030	0	1.0000
			uppereducHH	12797	158	0.2134	0.4925	0	1.0000
			nbchildren	12955	0	0.7360	1.0747	0	5.0000
			nbadultsHH	12955	0	2.5511	1.2129	1.0000	7.0000
			nbemployedHH	12955	0	1.4667	0.9832	0	5.0000
			GDPhabnuts	12955	0	23.6233	7.0590	15.6000	28.8000
			unempratenuts	12955	0	8.1620	5.5057	4.0000	15.3000
2006	IT	18048	pov_indicator	18048	0	0.1718	0.3850	0	1.0000
			woman	18048	0	0.4995	0.5103	0	1.0000
			age_centered	18048	0	-0.4297	8.6658	-16.2665	14.7335
			age_centered2	18048	0	72.2801	70.6271	0.0710	264.6
			chronicdiseaseHH	18048	0	0.2796	0.4581	0	1.0000
			activityhamperedHH	18048	0	0.2694	0.4528	0	1.0000
			uppereducHH	17906	142	0.2191	0.4222	0	1.0000
			nbchildren	18048	0	0.7350	0.9174	0	6.0000
			nbadultsHH	18048	0	2.5369	1.0417	1.0000	7.0000
			nbemployedHH	18048	0	1.4865	0.8410	0	6.0000

			GDPhabnuts	18048	0	24.5302	6.1430	16.3000	29.8000
			unempratenuts	18048	0	7.1662	3.8868	3.6000	12.7000
2005	CY	2357	pov_indicator	2357	0	0.0719	0.0821	0	1.0000
			woman	2357	0	0.5104	0.1588	0	1.0000
			age_centered	2357	0	-1.1817	2.8284	-16.2665	14.7335
			age_centered2	2357	0	80.6322	23.5761	0.0710	264.6
			chronicdiseaseHH	2357	0	0.3778	0.1541	0	1.0000
			activityhamperedHH	2357	0	0.3540	0.1520	0	1.0000
			uppereducHH	2315	42	0.4840	0.1589	0	1.0000
			nbchildren	2357	0	0.9912	0.3387	0	8.0000
			nbadultsHH	2357	0	2.7608	0.3348	1.0000	7.0000
			nbemployedHH	2357	0	1.8203	0.2727	0	6.0000
			GDPhabnuts	2357	0	20.4000	0	20.4000	20.4000
			unempratenuts	2357	0	5.3000	0	5.3000	5.3000
2006	CY	3373	pov_indicator	3373	0	0.0552	0.0601	0	1.0000
			woman	3373	0	0.5142	0.1316	0	1.0000
			age_centered	3373	0	-1.0617	2.3468	-16.2665	14.7335
			age_centered2	3373	0	80.5458	19.5748	0.0710	264.6
			chronicdiseaseHH	3373	0	0.4170	0.1298	0	1.0000
			activityhamperedHH	3373	0	0.2706	0.1170	0	1.0000
			uppereducHH	3319	54	0.4900	0.1317	0	1.0000
			nbchildren	3373	0	1.0275	0.2843	0	8.0000
			nbadultsHH	3373	0	2.8076	0.2898	1.0000	7.0000
			nbemployedHH	3373	0	1.8817	0.2335	0	6.0000
			GDPhabnuts	3373	0	21.3000	0	21.3000	21.3000
			unempratenuts	3373	0	4.5000	0	4.5000	4.5000
2005	LV	2704	pov_indicator	2704	0	0.8089	0.2019	0	1.0000
			woman	2704	0	0.5195	0.2566	0	1.0000
			age_centered	2704	0	-0.6736	4.5409	-16.2665	14.7335
			age_centered2	2704	0	78.6490	37.5947	0.0710	264.6
			chronicdiseaseHH	2704	0	0.5020	0.2568	0	1.0000
			activityhamperedHH	2704	0	0.4826	0.2566	0	1.0000
			uppereducHH	2686	18	0.3015	0.2357	0	1.0000
			nbchildren	2704	0	0.7461	0.4546	0	7.0000
			nbadultsHH	2704	0	2.5481	0.5490	1.0000	6.0000
			nbemployedHH	2704	0	1.6262	0.4794	0	5.0000
			GDPhabnuts	2704	0	10.9000	0	10.9000	10.9000
			unempratenuts	2704	0	8.9000	0	8.9000	8.9000
2006	LV	3438	pov_indicator	3438	0	0.7396	0.1993	0	1.0000
			woman	3438	0	0.5180	0.2270	0	1.0000
			age_centered	3438	0	-0.7024	4.0261	-16.2665	14.7335
			age_centered2	3438	0	79.0465	32.8692	0.0710	264.6
			chronicdiseaseHH	3438	0	0.5185	0.2270	0	1.0000
			activityhamperedHH	3438	0	0.4850	0.2270	0	1.0000
			uppereducHH	3417	21	0.3494	0.2165	0	1.0000
			nbchildren	3438	0	0.7660	0.4175	0	11.0000
			nbadultsHH	3438	0	2.6926	0.4952	1.0000	6.0000
			nbemployedHH	3438	0	1.7491	0.4339	0	5.0000
			GDPhabnuts	3438	0	12.4000	0	12.4000	12.4000
			unempratenuts	3438	0	6.8000	0	6.8000	6.8000
2005	LT	2527	pov_indicator	2527	0	0.7906	0.2636	0	1.0000
			woman	2527	0	0.5165	0.3237	0	1.0000
			age_centered	2527	0	-0.8742	5.5828	-16.2665	14.7335
			age_centered2	2527	0	75.0490	46.8519	0.0710	264.6
			chronicdiseaseHH	2527	0	0.3968	0.3169	0	1.0000
			activityhamperedHH	2527	0	0.3962	0.3168	0	1.0000
			uppereducHH	2455	72	0.3853	0.3162	0	1.0000
			nbchildren	2527	0	0.9105	0.6330	0	6.0000
			nbadultsHH	2527	0	2.5087	0.6445	1.0000	9.0000
			nbemployedHH	2527	0	1.6172	0.5482	0	5.0000
			GDPhabnuts	2527	0	11.9000	0	11.9000	11.9000
			unempratenuts	2527	0	8.3000	0	8.3000	8.3000
2006	LT	3713	pov_indicator	3713	0	0.7549	0.2280	0	1.0000
			woman	3713	0	0.5173	0.2649	0	1.0000
			age_centered	3713	0	-0.6671	4.5500	-16.2665	14.7335
			age_centered2	3713	0	74.1260	37.1506	0.0710	264.6
			chronicdiseaseHH	3713	0	0.4288	0.2623	0	1.0000
			activityhamperedHH	3713	0	0.3475	0.2524	0	1.0000
			uppereducHH	3613	100	0.4118	0.2618	0	1.0000
			nbchildren	3713	0	0.9010	0.5201	0	7.0000
			nbadultsHH	3713	0	2.5249	0.5195	1.0000	9.0000
			nbemployedHH	3713	0	1.6651	0.4300	0	5.0000
			GDPhabnuts	3713	0	13.1000	0	13.1000	13.1000
			unempratenuts	3713	0	5.6000	0	5.6000	5.6000
2005	LU	4322	pov_indicator	4322	0	0.0106	0.0191	0	1.0000
			woman	4322	0	0.4941	0.0930	0	1.0000
			age_centered	4322	0	-0.5958	1.5620	-16.2665	14.7335
			age_centered2	4322	0	70.9201	12.6713	0.0710	264.6
			chronicdiseaseHH	4322	0	0.3231	0.0870	0	1.0000
			activityhamperedHH	4322	0	0.3213	0.0868	0	1.0000
			uppereducHH	4210	112	0.3544	0.0895	0	1.0000

			nbchildren	4322	0	0.9074	0.2003	0	7.0000
			nbadultsHH	4322	0	2.3891	0.1848	1.0000	7.0000
			nbemployedHH	4322	0	1.5991	0.1397	0	5.0000
			GDPhabnuts	4322	0	57.1000	0	57.1000	57.1000
			unempratenuts	4322	0	4.5000	0	4.5000	4.5000
2006	LU	4601	pov_indicator	4601	0	0.0192	0.0251	0	1.0000
			woman	4601	0	0.4979	0.0917	0	1.0000
			age_centered	4601	0	-0.8068	1.5614	-16.2665	14.7335
			age_centered2	4601	0	73.1864	12.9800	0.0710	264.6
			chronicdiseaseHH	4601	0	0.3346	0.0865	0	1.0000
			activityhamperedHH	4601	0	0.3191	0.0855	0	1.0000
			uppereducHH	4494	107	0.3524	0.0882	0	1.0000
			nbchildren	4601	0	0.9019	0.1980	0	6.0000
			nbadultsHH	4601	0	2.3624	0.1804	1.0000	6.0000
			nbemployedHH	4601	0	1.5974	0.1353	0	5.0000
			GDPhabnuts	4601	0	63.1000	0	63.1000	63.1000
			unempratenuts	4601	0	4.7000	0	4.7000	4.7000
2005	HU	4353	pov_indicator	4353	0	0.7286	0.3793	0	1.0000
			woman	4353	0	0.5111	0.4264	0	1.0000
			age_centered	4353	0	-0.7273	7.8870	-16.2665	14.7335
			age_centered2	4353	0	86.0190	62.2732	0.0710	264.6
			chronicdiseaseHH	4353	0	0.5287	0.4258	0	1.0000
			activityhamperedHH	4353	0	0.4448	0.4239	0	1.0000
			uppereducHH	4350	3	0.2556	0.3721	0	1.0000
			nbchildren	4353	0	0.8801	0.9083	0	7.0000
			nbadultsHH	4353	0	2.6492	0.8968	1.0000	9.0000
			nbemployedHH	4353	0	1.5751	0.7810	0	5.0000
			GDPhabnuts	4353	0	14.2595	4.9600	9.3000	23.2000
			unempratenuts	4353	0	7.3201	1.4527	5.1000	9.2000
2006	HU	6609	pov_indicator	6609	0	0.6904	0.3197	0	1.0000
			woman	6609	0	0.5155	0.3456	0	1.0000
			age_centered	6609	0	-0.7190	6.3795	-16.2665	14.7335
			age_centered2	6609	0	85.6337	50.2613	0.0710	264.6
			chronicdiseaseHH	6609	0	0.4654	0.3449	0	1.0000
			activityhamperedHH	6609	0	0.3874	0.3369	0	1.0000
			uppereducHH	6609	0	0.2955	0.3155	0	1.0000
			nbchildren	6609	0	0.8703	0.7353	0	8.0000
			nbadultsHH	6609	0	2.6738	0.7254	1.0000	7.0000
			nbemployedHH	6609	0	1.5826	0.6395	0	5.0000
			GDPhabnuts	6609	0	15.0909	4.4141	9.7000	24.9000
			unempratenuts	6609	0	7.5619	1.4049	5.1000	9.9000
2005	NL	8574	pov_indicator	8574	0	0.0581	0.1868	0	1.0000
			woman	8574	0	0.4921	0.3992	0	1.0000
			age_centered	8574	0	-0.4148	6.8706	-16.2665	14.7335
			age_centered2	8574	0	74.2244	56.6392	0.0710	264.6
			chronicdiseaseHH	8574	0	0.2497	0.3456	0	1.0000
			activityhamperedHH	8574	0	0.1563	0.2899	0	1.0000
			uppereducHH	8206	368	0.4600	0.3967	0	1.0000
			nbchildren	8574	0	0.9032	0.8799	0	6.0000
			nbadultsHH	8574	0	2.1546	0.6870	1.0000	7.0000
			nbemployedHH	8407	167	1.4760	0.6251	0	5.0000
			GDPhabnuts	8574	0	29.4000	0	29.4000	29.4000
			unempratenuts	8574	0	4.7000	0	4.7000	4.7000
2006	NL	9287	pov_indicator	9287	0	0.0318	0.1310	0	1.0000
			woman	9287	0	0.4975	0.3732	0	1.0000
			age_centered	9287	0	-0.2668	6.3946	-16.2665	14.7335
			age_centered2	9287	0	73.4840	53.0152	0.0710	264.6
			chronicdiseaseHH	9287	0	0.2542	0.3249	0	1.0000
			activityhamperedHH	9287	0	0.1644	0.2766	0	1.0000
			uppereducHH	8949	338	0.4702	0.3716	0	1.0000
			nbchildren	9287	0	0.9265	0.8325	0	6.0000
			nbadultsHH	9287	0	2.1678	0.6369	1.0000	7.0000
			nbemployedHH	9279	8	1.6542	0.5648	0	5.0000
			GDPhabnuts	9287	0	30.9000	0	30.9000	30.9000
			unempratenuts	9287	0	3.9000	0	3.9000	3.9000
2005	AT	3882	pov_indicator	3882	0	0.0522	0.1828	0	1.0000
			woman	3882	0	0.5056	0.4107	0	1.0000
			age_centered	3882	0	-0.1534	6.9123	-16.2665	14.7335
			age_centered2	3882	0	70.8171	57.3363	0.0710	264.6
			chronicdiseaseHH	3882	0	0.2931	0.3739	0	1.0000
			activityhamperedHH	3882	0	0.3432	0.3900	0	1.0000
			uppereducHH	3882	0	0.3181	0.3826	0	1.0000
			nbchildren	3882	0	0.8440	0.8552	0	6.0000
			nbadultsHH	3882	0	2.3847	0.8766	1.0000	8.0000
			nbemployedHH	3882	0	1.6527	0.7373	0	7.0000
			GDPhabnuts	3882	0	28.0319	1.8223	23.9000	29.6000
			unempratenuts	3882	0	5.1660	1.0814	3.9000	6.7000
2006	AT	5469	pov_indicator	5469	0	0.0555	0.1577	0	1.0000
			woman	5469	0	0.5080	0.3443	0	1.0000
			age_centered	5469	0	-0.3177	5.7667	-16.2665	14.7335
			age_centered2	5469	0	70.2327	48.1919	0.0710	264.6

			chronicdiseaseHH	5469	0	0.2754	0.3076	0	1.0000
			activityhamperedHH	5469	0	0.3202	0.3213	0	1.0000
			uppereducHH	5469	0	0.3149	0.3198	0	1.0000
			nbchildren	5469	0	0.8224	0.7036	0	6.0000
			nbadultsHH	5469	0	2.3748	0.7198	1.0000	8.0000
			nbemployedHH	5469	0	1.6395	0.6173	0	6.0000
			GDPhabnuts	5469	0	29.4096	1.4577	25.3000	30.8000
			unempratenuts	5469	0	4.7459	0.9453	3.3000	6.3000
2005	PL	10627	pov_indicator	10627	0	0.7381	0.4729	0	1.0000
			woman	10627	0	0.5039	0.5378	0	1.0000
			age_centered	10627	0	-0.6632	9.9424	-16.2665	14.7335
			age_centered2	10627	0	85.8863	79.9035	0.0710	264.6
			chronicdiseaseHH	10627	0	0.4761	0.5372	0	1.0000
			activityhamperedHH	10627	0	0.2527	0.4674	0	1.0000
			uppereducHH	10561	66	0.2646	0.4748	0	1.0000
			nbchildren	10627	0	0.8989	1.1369	0	11.0000
			nbadultsHH	10627	0	2.7400	1.3407	1.0000	9.0000
			nbemployedHH	10564	63	1.4003	1.0024	0	5.0000
			GDPhabnuts	10627	0	11.5603	2.5551	8.2000	15.7000
			unempratenuts	10627	0	17.7915	2.0488	15.7000	21.4000
2006	PL	14644	pov_indicator	14644	0	0.7258	0.4102	0	1.0000
			woman	14644	0	0.5037	0.4598	0	1.0000
			age_centered	14644	0	-0.6473	8.4644	-16.2665	14.7335
			age_centered2	14644	0	85.1495	67.2797	0.0710	264.6
			chronicdiseaseHH	14644	0	0.4808	0.4594	0	1.0000
			activityhamperedHH	14644	0	0.3260	0.4310	0	1.0000
			uppereducHH	12928	1716	0.2834	0.4143	0	1.0000
			nbchildren	14644	0	0.9003	0.9688	0	11.0000
			nbadultsHH	14644	0	2.9673	1.1522	1.0000	9.0000
			nbemployedHH	13001	1643	1.5990	0.8760	0	6.0000
			GDPhabnuts	14644	0	12.3506	2.4094	8.7000	17.0000
			unempratenuts	14644	0	13.9915	1.0485	12.7000	16.4000
2005	PT	2671	pov_indicator	2671	0	0.4168	0.5441	0	1.0000
			woman	2671	0	0.5072	0.5517	0	1.0000
			age_centered	2671	0	-0.6899	9.8001	-16.2665	14.7335
			age_centered2	2671	0	79.3436	79.7975	0.0710	264.6
			chronicdiseaseHH	2671	0	0.4695	0.5507	0	1.0000
			activityhamperedHH	2671	0	0.4113	0.5430	0	1.0000
			uppereducHH	2198	473	0.2303	0.4696	0	1.0000
			nbchildren	2671	0	0.8315	0.9949	0	9.0000
			nbadultsHH	2671	0	2.8063	1.1722	1.0000	8.0000
			nbemployedHH	2671	0	1.8021	1.0142	0	7.0000
			GDPhabnuts	2671	0	17.3000	0	17.3000	17.3000
			unempratenuts	2671	0	7.6000	0	7.6000	7.6000
2006	PT	3662	pov_indicator	3662	0	0.4019	0.4575	0	1.0000
			woman	3662	0	0.5112	0.4665	0	1.0000
			age_centered	3662	0	-0.3565	8.3039	-16.2665	14.7335
			age_centered2	3662	0	79.3109	66.5722	0.0710	264.6
			chronicdiseaseHH	3662	0	0.4380	0.4630	0	1.0000
			activityhamperedHH	3662	0	0.3936	0.4559	0	1.0000
			uppereducHH	3049	613	0.2419	0.4037	0	1.0000
			nbchildren	3662	0	0.7832	0.8223	0	9.0000
			nbadultsHH	3662	0	2.8086	1.0182	1.0000	9.0000
			nbemployedHH	3662	0	1.8287	0.8564	0	7.0000
			GDPhabnuts	3662	0	18.0000	0	18.0000	18.0000
			unempratenuts	3662	0	7.7000	0	7.7000	7.7000
2005	SI	8671	pov_indicator	8671	0	0.1266	0.0915	0	1.0000
			woman	8667	4	0.4899	0.1376	0	1.0000
			age_centered	8671	0	-0.6833	2.4495	-16.2665	14.7335
			age_centered2	8671	0	79.6898	19.9780	0.0710	264.6
			chronicdiseaseHH	8671	0	0.2501	0.1192	0	1.0000
			activityhamperedHH	8671	0	0.2177	0.1136	0	1.0000
			uppereducHH	8471	200	0.2149	0.1128	0	1.0000
			nbchildren	8671	0	0.7566	0.2591	0	9.0000
			nbadultsHH	8671	0	2.9380	0.3047	1.0000	9.0000
			nbemployedHH	8658	13	1.7535	0.2551	0	6.0000
			GDPhabnuts	8671	0	19.6000	0	19.6000	19.6000
			unempratenuts	8671	0	6.5000	0	6.5000	6.5000
2006	SI	11271	pov_indicator	11271	0	0.1306	0.0808	0	1.0000
			woman	11263	8	0.4929	0.1200	0	1.0000
			age_centered	11271	0	-0.7373	2.1167	-16.2665	14.7335
			age_centered2	11271	0	78.4043	17.6044	0.0710	264.6
			chronicdiseaseHH	11271	0	0.2915	0.1090	0	1.0000
			activityhamperedHH	11271	0	0.2126	0.0981	0	1.0000
			uppereducHH	11189	82	0.2549	0.1046	0	1.0000
			nbchildren	11271	0	0.7634	0.2254	0	9.0000
			nbadultsHH	11271	0	2.9358	0.2660	1.0000	9.0000
			nbemployedHH	11262	9	1.7851	0.2174	0	6.0000
			GDPhabnuts	11271	0	20.7000	0	20.7000	20.7000
			unempratenuts	11271	0	6.0000	0	6.0000	6.0000

2005	SK	3447	pov_indicator	3447	0	0.7661	0.3005	0	1.0000
			woman	3447	0	0.5198	0.3547	0	1.0000
			age_centered	3447	0	0.1174	6.4023	-16.2665	14.7335
			age_centered2	3447	0	81.3319	53.0850	0.0710	264.6
			chronicdiseaseHH	3447	0	0.4441	0.3528	0	1.0000
			activityhamperedHH	3447	0	0.3993	0.3477	0	1.0000
			uppereducHH	3432	15	0.3085	0.3279	0	1.0000
			nbchildren	3447	0	0.8904	0.7283	0	6.0000
			nbadultsHH	3447	0	3.0942	0.8632	1.0000	8.0000
			nbemployedHH	3447	0	1.9700	0.7508	0	8.0000
			GDPhabnuts	3447	0	13.5000	0	13.5000	13.5000
			unempratenuts	3447	0	16.3000	0	16.3000	16.3000
2006	SK	4898	pov_indicator	4898	0	0.7157	0.2680	0	1.0000
			woman	4898	0	0.5217	0.2968	0	1.0000
			age_centered	4898	0	0.0502	5.3919	-16.2665	14.7335
			age_centered2	4898	0	82.3628	44.6004	0.0710	264.6
			chronicdiseaseHH	4898	0	0.4327	0.2944	0	1.0000
			activityhamperedHH	4898	0	0.4442	0.2952	0	1.0000
			uppereducHH	4870	28	0.3248	0.2783	0	1.0000
			nbchildren	4898	0	0.8442	0.5925	0	8.0000
			nbadultsHH	4898	0	3.1409	0.7288	1.0000	8.0000
			nbemployedHH	4898	0	2.0315	0.6170	0	8.0000
			GDPhabnuts	4898	0	15.0000	0	15.0000	15.0000
			unempratenuts	4898	0	13.4000	0	13.4000	13.4000
2005	FI	4021	pov_indicator	4021	0	0.0529	0.1404	0	1.0000
			woman	4021	0	0.4953	0.3137	0	1.0000
			age_centered	4021	0	-0.3310	5.6323	-16.2665	14.7335
			age_centered2	4021	0	80.6732	46.9628	0.0710	264.6
			chronicdiseaseHH	4021	0	0.3076	0.2896	0	1.0000
			activityhamperedHH	4021	0	0.2930	0.2856	0	1.0000
			uppereducHH	3927	94	0.5226	0.3133	0	1.0000
			nbchildren	4021	0	0.8869	0.7442	0	10.0000
			nbadultsHH	4021	0	2.1009	0.5226	1.0000	7.0000
			nbemployedHH	4018	3	1.4707	0.4894	0	5.0000
			GDPhabnuts	4021	0	25.6182	2.5938	19.1000	29.6000
			unempratenuts	4021	0	8.5095	1.1694	6.9000	11.7000
2006	FI	5528	pov_indicator	5528	0	0.0622	0.1290	0	1.0000
			woman	5528	0	0.4953	0.2669	0	1.0000
			age_centered	5528	0	-0.3237	4.7976	-16.2665	14.7335
			age_centered2	5528	0	80.8606	39.6984	0.0710	264.6
			chronicdiseaseHH	5528	0	0.2901	0.2423	0	1.0000
			activityhamperedHH	5528	0	0.2894	0.2421	0	1.0000
			uppereducHH	5404	124	0.5179	0.2668	0	1.0000
			nbchildren	5528	0	0.8898	0.6325	0	12.0000
			nbadultsHH	5528	0	2.0887	0.4440	1.0000	8.0000
			nbemployedHH	5528	0	1.4683	0.3940	0	4.0000
			GDPhabnuts	5528	0	27.1434	2.3172	20.2000	31.3000
			unempratenuts	5528	0	7.7955	0.9975	6.3000	11.3000
2005	SE	3541	pov_indicator	3541	0	0.0452	0.1750	0	1.0000
			woman	3541	0	0.5016	0.4211	0	1.0000
			age_centered	3541	0	-0.3763	7.4383	-16.2665	14.7335
			age_centered2	3541	0	78.1345	60.4577	0.0710	264.6
			chronicdiseaseHH	3541	0	0.2827	0.3793	0	1.0000
			activityhamperedHH	3541	0	0.1482	0.2992	0	1.0000
			uppereducHH	3414	127	0.4394	0.4189	0	1.0000
			nbchildren	3541	0	0.9789	0.9351	0	8.0000
			nbadultsHH	3541	0	2.1022	0.6935	1.0000	7.0000
			nbemployedHH	3155	386	1.5457	0.5973	0	5.0000
			GDPhabnuts	3541	0	27.1000	0	27.1000	27.1000
			unempratenuts	3541	0	7.5000	0	7.5000	7.5000
2006	SE	4751	pov_indicator	4751	0	0.0527	0.1577	0	1.0000
			woman	4751	0	0.5011	0.3531	0	1.0000
			age_centered	4751	0	-0.4989	6.1470	-16.2665	14.7335
			age_centered2	4751	0	76.0001	49.7601	0.0710	264.6
			chronicdiseaseHH	4751	0	0.2920	0.3211	0	1.0000
			activityhamperedHH	4751	0	0.1593	0.2585	0	1.0000
			uppereducHH	4534	217	0.4728	0.3530	0	1.0000
			nbchildren	4751	0	1.0203	0.7818	0	6.0000
			nbadultsHH	4751	0	2.0672	0.5636	1.0000	7.0000
			nbemployedHH	4210	541	1.5782	0.4843	0	5.0000
			GDPhabnuts	4751	0	28.7000	0	28.7000	28.7000
			unempratenuts	4751	0	7.1000	0	7.1000	7.1000
2005	UK	6224	pov_indicator	6224	0	0.0739	0.5272	0	1.0000
			woman	6224	0	0.5260	1.0064	0	1.0000
			age_centered	6224	0	-1.9273	16.1286	-16.2665	13.7335
			age_centered2	6224	0	67.7453	142.1	0.0710	264.6
			chronicdiseaseHH	6224	0	0.4031	0.9887	0	1.0000
			activityhamperedHH	6224	0	0.2293	0.8473	0	1.0000
			uppereducHH	4949	1275	0.5177	1.0064	0	1.0000
			nbchildren	6224	0	1.2542	2.3990	0	6.0000
			nbadultsHH	6224	0	2.1928	1.7624	1.0000	7.0000
			nbemployedHH	4766	1458	1.5478	1.7058	0	6.0000

			GDPhabnuts	6224	0	27.4000	0	27.4000	27.4000
			unempratenuts	6224	0	4.8000	0	4.8000	4.8000
2006	UK	7594	pov_indicator	7594	0	0.0837	0.4988	0	1.0000
			woman	7594	0	0.5363	0.8983	0	1.0000
			age_centered	7594	0	-1.5980	14.5325	-16.2665	13.7335
			age_centered2	7594	0	67.6428	128.3	0.0710	264.6
			chronicdiseaseHH	7594	0	0.4049	0.8842	0	1.0000
			activityhamperedHH	7594	0	0.2199	0.7461	0	1.0000
			uppereducHH	5998	1596	0.5080	0.8985	0	1.0000
			nbchildren	7594	0	1.2305	2.1147	0	6.0000
			nbadultsHH	7594	0	2.1941	1.5651	1.0000	8.0000
			nbemployedHH	6118	1476	1.5570	1.4788	0	5.0000
			GDPhabnuts	7594	0	28.4000	0	28.4000	28.4000
			unempratenuts	7594	0	5.4000	0	5.4000	5.4000
2005	IS	1583	pov_indicator	1583	0	0.0333	0.0418	0	1.0000
			woman	1583	0	0.5066	0.1164	0	1.0000
			age_centered	1583	0	-1.0735	2.0227	-16.2665	14.7335
			age_centered2	1583	0	76.5700	16.9520	0.0710	264.6
			chronicdiseaseHH	1583	0	0.2143	0.0956	0	1.0000
			activityhamperedHH	1583	0	0.1521	0.0836	0	1.0000
			uppereducHH	1359	224	0.3835	0.1150	0	1.0000
			nbchildren	1583	0	1.1989	0.2545	0	5.0000
			nbadultsHH	1583	0	2.4249	0.2303	1.0000	7.0000
			nbemployedHH	1318	265	1.8715	0.1947	0	6.0000
			GDPhabnuts	1583	0	29.3000	0	29.3000	29.3000
			unempratenuts	1583	0	2.5000	0	2.5000	2.5000
2006	IS	2240	pov_indicator	2240	0	0.0322	0.0348	0	1.0000
			woman	2240	0	0.4993	0.0986	0	1.0000
			age_centered	2240	0	-0.9177	1.7342	-16.2665	14.7335
			age_centered2	2240	0	78.2001	14.4429	0.0710	264.6
			chronicdiseaseHH	2240	0	0.2180	0.0814	0	1.0000
			activityhamperedHH	2240	0	0.1579	0.0719	0	1.0000
			uppereducHH	2021	219	0.4147	0.0983	0	1.0000
			nbchildren	2240	0	1.1305	0.2161	0	5.0000
			nbadultsHH	2240	0	2.3563	0.1875	1.0000	7.0000
			nbemployedHH	2054	186	1.7410	0.1499	0	5.0000
			GDPhabnuts	2240	0	29.3000	0	29.3000	29.3000
			unempratenuts	2240	0	2.8000	0	2.8000	2.8000
2005	NO	4088	pov_indicator	4088	0	0.0326	0.1001	0	1.0000
			woman	4088	0	0.4919	0.2816	0	1.0000
			age_centered	4088	0	-0.6817	4.8555	-16.2665	14.7335
			age_centered2	4088	0	74.7612	40.0863	0.0710	264.6
			chronicdiseaseHH	4088	0	0.2545	0.2454	0	1.0000
			activityhamperedHH	4088	0	0.1610	0.2070	0	1.0000
			uppereducHH	3887	201	0.3970	0.2753	0	1.0000
			nbchildren	4088	0	1.0059	0.6332	0	8.0000
			nbadultsHH	4088	0	2.0123	0.4476	1.0000	8.0000
			nbemployedHH	3996	92	1.4737	0.4073	0	4.0000
			GDPhabnuts	4088	0	39.6000	0	39.6000	39.6000
			unempratenuts	4088	0	4.4000	0	4.4000	4.4000
2006	NO	3926	pov_indicator	3926	0	0.0312	0.0978	0	1.0000
			woman	3926	0	0.4909	0.2814	0	1.0000
			age_centered	3926	0	-0.5332	4.7661	-16.2665	14.7335
			age_centered2	3926	0	71.9978	39.3175	0.0710	264.6
			chronicdiseaseHH	3926	0	0.2769	0.2518	0	1.0000
			activityhamperedHH	3926	0	0.1713	0.2120	0	1.0000
			uppereducHH	3583	343	0.4123	0.2776	0	1.0000
			nbchildren	3926	0	0.9872	0.6287	0	8.0000
			nbadultsHH	3926	0	2.0046	0.4367	1.0000	8.0000
			nbemployedHH	3732	194	1.5183	0.4010	0	5.0000
			GDPhabnuts	3926	0	43.4000	0	43.4000	43.4000
			unempratenuts	3926	0	3.4000	0	3.4000	3.4000

Appendix 6. Empty model (weighted)

Response Profile

Ordered Value	pov_indicator	Total Frequency
1	1	76252
2	0	222018

The GLIMMIX procedure is modeling the probability that pov_indicator='1'.

Dimensions

G-side Cov. Parameters	1
R-side Cov. Parameters	2
Columns in X	1
Columns in Z per Subject	1
Subjects (Blocks in V)	93
Max Obs per Subject	19942

Optimization Information

Optimization Technique	Newton-Raphson
Parameters in Optimization	2
Lower Boundaries	2
Upper Boundaries	1
Fixed Effects	Profiled
Residual Variance	Profiled
Starting From	GLM estimates

…/… 6 iterations

Convergence criterion (PCONV=1.11022E-8) satisfied.

Fit Statistics

-2 Res Log Pseudo-Likelihood	1738618
Generalized Chi-Square	294644.1
Gener. Chi-Square / DF	0.99

Covariance Parameter Estimates

Cov Parm	Subject	Estimate	Standard Error
Intercept	region	1.7720	0.2639
AR(1)	ID_unique_UE(region)	0.4571	0.002340
Residual		0.9878	0.002734

Asymptotic Covariance Matrix of Covariance Parameter Estimates

Cov Parm	Subject	CovP1	CovP2	CovP3
Intercept	region	0.06965	-2.32E-7	-2.12E-7
AR(1)	ID_unique_UE(region)	-2.32E-7	5.477E-6	2.254E-6
Residual		-2.12E-7	2.254E-6	7.473E-6

Asymptotic Correlation Matrix of Covariance Parameter Estimates

Cov Parm	Subject	CovP1	CovP2	CovP3
Intercept	region	1.0000	-0.00038	-0.00029
AR(1)	ID_unique_UE(region)	-0.00038	1.0000	0.3524
Residual		-0.00029	0.3524	1.0000

Solutions for Fixed Effects

Effect	Estimate	Standard Error	DF	t Value	Pr > |t|
Intercept	-1.4902	0.1387	92	-10.74	<.0001

The empty model contains only a random intercept. The dependent variable is thus explained by the overall mean, a random term at group level and a random term at individual level. The empty model allows to find out the relative parts of the variance between groups (regions here) and the variance within groups. It is thus possible to calculate the intraclass correlation coefficient (ICC) (here: 55.1% = 1.772/3.2169, i.e. the intercept variance divided by the total variance).

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