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Muffels, Ruud and Fouarge, Didier

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Ruud Muffels
Didier Fouarge

Tilburg University
Tilburg Institute for Social and Socio-Economic Research
P.O. Box 90153
5000 LE Tilburg
The Netherlands

ruud.j.muffels@uvt.nl
fouarge@uvt.nl

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RUUD MUFFELS and DIDIER FOUARGE

THE ROLE OF EUROPEAN WELFARE STATES IN EXPLAINING RESOURCES DEPRIVATION

ABSTRACT

In a previous paper in this journal (Headey et al., 2000) a comparison was made between three so-called 'best cases' of welfare regime types, the 'Liberal' US, 'the 'Corporatist' Germany and the 'Social-Democratic' Netherlands. That paper was based on the ten-year datasets drawn from the national socio-economic panel studies. For this paper we use the unique comparative panel dataset of the European Community Household Panel. At the time of research, only three waves of data covering the 1994–1996 period were available. Instead of three countries representing three different welfare state types as in the earlier paper we cover twelve countries allowing us to distinguish a fourth Southern or Mediterranean welfare regime type and to compare the performance of the four regimes. Compared to the Headey's et al. paper we focus on the comparative analysis of the level of deprivation and pay less attention to income poverty and inequality. Because we consider deprivation to be part of the concept of social exclusion (see also Atkinson et al., 2002) our results also provide evidence on how welfare regimes across the EU cope with social exclusion. The result of the three 'best-cases' study were that the Social-Democratic welfare state performed best on nearly all social and economic indicators that were applied. Looking in this paper on deprivation levels the results are different and it appears that the Social-Democratic welfare state is good in preventing income poverty but performs less well in equalising levels of deprivation. The results also show that the immature Southern welfare states perform worse with respect to preventing deprivation. Trying to explain levels of deprivation by estimating Tobit panel regressions it turned out that the impact of regime type remains significant though limited. Structural disparities between the countries and regimes in terms of economic welfare, the demographic structure, and the employment situation explain most of the variance across countries.

1. INTRODUCTION

This paper draws on empirical data from the European Community Household Panel (ECHP) – covering twelve European countries over the 1994–1996 period – to explain the level of deprivation across Europe.[1] The paper focuses on the role of institutional variations across countries by looking at the impact of country and welfare regime type differences. For that purpose, and drawing from the theoretical and empirical literature, explanatory models for resources deprivation have been developed. Recently, Layte et al. (2001) applied a similar approach, also using European panel data, but their approach was primarily oriented at assessing the impact of social class and country differences and less so on explaining regime type differences.[2]

The paper builds further on the work by Headey et al. (2000) in this journal. Rather than using ten-year panel data for three countries as in Headey et al., we use three-year data for twelve European countries. Hence, our time horizon is much shorter but we cover more countries for which reason it is possible to consider a fourth regime type and to compare the performance of these four regimes. It also allowed us to test empirically whether or not the regime type clustering makes sense in terms of adding explanatory power to our models.

Background of the study

The rising inequality in earnings and asset income that the Western world witnessed since the mid 1980s and the rising prevalence of extended durations of poverty spells show that Kuznets' (1955) alleged trickle-down theory does not hold in many instances. Rising prosperity levels do not mechanically trickle down to the poor if it is not that regimes aim purposely to distribute resources more equally to the poor. It is for this reason that Headey et al. found that in the 'Liberal' US welfare state, where the government is much less inclined to pursue redistributive policies, the lower half of the income distribution hardly benefited from the fast income growth in the last decade. Politicians have to acknowledge that poverty and deprivation, be it short-term, transient or persistent, exists even in modern wealthy societies. Transient states of poverty should be of less concern to policy makers than persistent states since over life-time nearly a majority of the population will experience poverty at least once in their life from which they recover soon afterwards and never enter again. The concern should be with people entrapted in enduring poverty and lasting deprivation because they have hardly any opportunity to escape from it. Politicians should therefore be concerned especially with the

distributional and temporal aspects of poverty. Even when they believe that economic growth might be the best remedy for a country to eradicate poverty, they should be increasingly aware that the fruits of economic growth might not trickle down unconditionally to the poor. This is likely to be due to all kinds of personal, institutional and socio-cultural barriers inflicted upon the poor within society. In particular, the interest for the institutional dimensions of poverty is rising.

Within the political debate of the late 1980s and 1990s, and the background of the influence of the French discourse, it is likely that the term 'poverty' has been steadily substituted by terms such as social exclusion, social disintegration, and social marginalisation (de Haan, 1998). In poverty research the focus is gradually shifting from absolute to relative notions and from income poverty and lack of basic needs to deprivation and social exclusion and, its counterpart, social integration (Atkinson et al., 2002). We define deprivation as enforced lack of a number of goods and services, which are rather common in the society in which one lives.

This restricts the notion of social exclusion to a certain extent. A more comprehensive approach has often been followed in the literature, in which social exclusion is understood as the denial of the social, political and civil rights of citizens in society (Silver, 1994, Walker and Walker, 1997, Byrn, 1999). This more theoretical rights-based approach has been translated into an empirical one based on the concept of resources deprivation. Such a limitation allows the notion of social exclusion to be subjected to empirical study.

2. WELFARE REGIMES

With a view to socio-economic policy, arguments abound to conceive each country or region as unique and different from each other. However, others believe that welfare states come in types and that countries might be treated as belonging to a limited set of welfare regime types (Esping-Andersen, 1990). The term welfare regime refers to "that larger constellation of socio-economic institutions, policies and programmes all oriented toward promoting people's welfare quite generally" (Goodin et al., 1999: p. 5). Regimes represent in this view a particular mode of policy intervention, a particular set of intervention strategies, policy tools and a particular design of the regulatory or institutional framework. However, these regimes must be viewed as *ideal-types* and there is not likely to be any country that fits perfectly in one type (see also Gallie and Paugam, 2000). There is surely much variation also within clusters.

The idea of welfare regime types refers to Esping-Andersen's *Three worlds*

of welfare capitalism and his socio-political account of welfare state types. In this paper, Esping-Andersen's classification has been used, albeit in an amended version and with recognition of the pitfalls and caveats of his approach. His typology has been amended through adding a fourth regime type: the Southern welfare regime. For this, credit is paid to authors like Leibfried (1992), Ferrera (1996) and Bonoli (1997) who argued that the Southern, Mediterranean countries constitute a different welfare regime type with its familial characteristics and its immature and selective social security system granting poor benefits and lacking a guaranteed minimum benefit system.

The recourse to Esping-Andersen's classification does not, however, imply that each country necessarily belongs to one particular regime cluster, nor that the classification is independent of the political domains to which the clustering apply nor that the belonging to a regime-cluster might not change over time. On the contrary it might well be that a country constitutes a 'hybrid' case since it does not belong to one particular cluster but to more clusters, or that a focus on 'employment', 'income', 'deprivation' or 'health' changes the belonging of countries to particular clusters. Particularly over time, regime shifts are quite common and reflect a country's policy change that might imply a radical overhaul of the existing welfare system because of which it might move into another regime cluster. The Netherlands could be exemplary for such a shift since the Dutch welfare state might be characterised as having been primarily a Corporatist 'breadwinner state' in the 1960s, 1970s and early 1980s (passive labour market policies and low female labour market participation) oriented at stabilising the labour income of the family's head but changing its policies quite strongly thereafter. Dutch labour market and employment policies became more active in the spirit of what Social-Democratic policy-makers advocate as promoting the 'right to work'. During the 1980s and 1990s, social security policies also became stricter by tightening the eligibility rules for receiving benefits, downsizing the benefit levels and shortening their duration, but at the same time safeguarding the principles of equality, uniformity and universality. Regime-types might, therefore, be a dynamic concept – and not a stable feature of a country's socio-economic policy – that requires continuous scrutiny to test its current value.

One of the countries of concern within Esping-Andersen's (1990, 1999) classification is Ireland, which has been put within the Liberal cluster. It could be argued that Ireland does not fit in the Liberal type particularly because it shares the features of a breadwinner type of social security system as well as a Southern regime-type due to its familial characteristics. Some authors, therefore, believe that

it belongs to a hybrid type of welfare state that does not fit in either type. Another country of concern in this respect is Italy, considered by Esping-Andersen to be a Corporatist country but sharing in many respects the features of a Catholic, familial Southern regime. Because of the focus on 'life-style deprivation', in this chapter one might expect Italy to reflect a diverse picture in terms of resources deprivation, especially across the rich Northern and poor Southern region. The Southern part of Italy would then be more likely to be classified under the Southern familial type of regime whereas the Northern part seems to fit better in the Corporatist cluster. Some authors, therefore, presume that also Italy constitutes a hybrid case (Gelissen, 2002). In order to avoid the inclusion of Ireland and Italy in a hybrid type it was decided to keep Ireland under the same Liberal heading as Great Britain and to put Italy, as Esping-Andersen did, under the Corporatist heading. Countries like Germany, Belgium, France, Austria, Luxembourg and Italy, then, belong to a continental Corporatist type of welfare state and the Netherlands and Denmark were classified in the Social-Democratic regime cluster. The Southern cluster, thus, consists of Spain, Greece and Portugal.

Whether or not such a clustering makes sense empirically or not has been tested, using the three-wave European panel-data. Such a test may reveal how well the regime clustering is capable of capturing the unique features of each country in explaining levels of income and consumption deprivation across Europe.

3. RESOURCES DEPRIVATION

Within the ECHP much information is collected about the life resources of people, such as the possession of durables by the household, the health status of adult household members, the financial position of the head and the partner, housing conditions, and so on. From this list of life style indicators, a relative deprivation index has been constructed. Our aim is to measure people's objective status of deprivation defined as being deprived of a minimum level of resources that is required to attain a decent living. Henceforth, only items that measure people's objective state of resources deprivation were considered. The approach adopted here resembles the notion of 'enforced lack of necessities' by Mack and Lansley (1985) and especially the 'life-style deprivation' approach of Callan et al. (1996) and Layte et al. (2001).

The list of items in the deprivation index is not limited to monetary items. It contains 21 items in four resource areas: health conditions, financial stress, housing conditions and possession of durables people want but cannot afford. The entire list of items is given in Appendix. The 21 items were coded as 1 (deprived of that item)

or 0 (not deprived of that item). The deprivation score is the weighted sum of the deprivation scores over the 21 items. The weights applied correspond to the proportion of 'haves' (not deprived) in the country. The idea behind the weighting scheme is that the extent of relative deprivation for an individual increases, the larger the share of people who actually 'have' the item the individual is lacking. This follows Runciman's (1966) definition of deprivation according to which a person feels more deprived the more he sees other people as better off. Lacking a trivial item most people have will contribute more to a sense or 'feeling of deprivation' than lacking an exclusive item almost nobody possesses (Desai and Shah, 1988, Muffels, 1993). Since the weights are calculated on the national samples, the weighting of deprivation with the proportion of 'haves' within the population is also likely to diminish the deprivation differences across the countries. In this sense the weighting schemes also compensates for cultural differences across countries.

Although the analyses are performed at the individual level, we only used the information on the head of the household and not on the partner to avoid the arbitrariness involved in bringing it to a household score. Therefore, the deprivation score of the head is assumed to reflect the deprivation situation of all household members. This means that, at each wave of the data *t*, the deprivation score for each individual in the sample equals the sum over the items *j*, weighted with the sample proportion of 'haves' (ω_j) and normalised by dividing D_i for each person by the sum of the weights over all items *j*:

$$D_i = \frac{\sum_{j=1}^{J} \omega_j d_{ij}}{\sum_{j=1}^{J} \omega_j} * 100,$$

$$\text{with } \omega_j = \frac{\sum_{i=1}^{N} d_{ij}}{N},$$

where *N* is the total sample size and *J* the number of deprivation items (21). The deprivation index is multiplied by 100 so that it can easily be interpreted as the percentage of consumption items the person misses. Hence, $D_i \in [0,100[$ (0 if a person misses no items and D_i approaching 100 – but never 100 – if a person misses all items while everyone else possesses them). The results for 1996 are presented in Table I. In the table, we also report the percentage of those in poverty, the level of income inequality and the correlation between standardised income and our measure of deprivation.[3]

The findings in Table I reveal some remarkable facts about how countries and welfare state regimes deal with inequality of outcomes in terms of poverty and deprivation. The mean level of deprivation displays a great level of variation between countries even within the regime clusters of countries. However, it is apparent that a great deal of this variation is still maintained when we look purely at the regime type effects. The level of deprivation is largest in Southern European regimes (where the population misses an average of 15.4 percent of all item), next largest in the Liberal regime and lowest in the Social-Democratic regime. In those regimes, the population misses an average of, respectively, 15.4, 10 and 5.5 percent of all item. This is in line with the findings for income poverty and also corroborates the findings of Headey at al. (2000). Confirming our expectations with respect to the Southern regime, that regime is clearly performing worse compared to any of the other regimes in mitigating inequality of outcomes. This confirms our hypothesis that the Southern regime should be considered a distinct regime type.

TABLE I

Mean deprivation index, inequality of deprivation, percentage in poverty and income inequality, 1996

	Mean deprivation	Inequality of deprivation[a]	Percentage in poverty	Inequality of income[a]	Correlation between income and deprivation
Corporatist	8.3	1.324	11.6	0.632	-0.324
Germany	6.7	1.524	11.7	0.560	-0.291
Belgium	7.6	1.509	11.4	0.578	-0.268
Luxembourg	5.2	1.769	6.1	0.554	-0.255
France	9.0	1.261	9.2	0.612	-0.347
Italy	10.1	1.134	14.0	0.745	-0.302
Social-Democratic	5.5	1.568	7.7	0.639	-0.242
Denmark	6.1	1.359	6.1	0.500	-0.218
The Netherlands	5.2	1.653	8.2	0.686	-0.254
Liberal	10.0	1.257	11.6	0.725	-0.350
Great Britain	9.9	1.255	11.8	0.722	-0.349
Ireland	10.3	1.284	8.3	0.735	-0.359
Southern	15.4	0.889	14.0	0.717	-0.431
Greece	19.3	0.676	15.2	0.709	-0.427
Spain	13.0	0.957	13.3	0.697	-0.426
Portugal	20.4	0.799	15.2	0.805	-0.434
EU	9.7	1.242	11.8	0.681	-0.323

a: inequality is measured by the coefficient of variation
Source*: ECHP, Wave 3, 1996, own calculations.*

The picture with respect to the dispersion in deprivation is, however, rather different. The dispersion of resources deprivation is about twice as large as the dispersion of income, which is at first sight remarkable considering the fact that the score on the deprivation index might be viewed as reflecting at least partly the

longer-term consumption status of household. This finding clearly suggests that the resources deprivation yardstick based on a lifestyle index is rather different from measures based on income. Countries belonging to the Social-Democratic regime type display now the highest level of inequality in the level of deprivation, and those in the Southern regime the lowest. This is contradictory to our expectation because we suspected that a high level of monetary resources would also trigger the possession of resources in the non-monetary domain. This does not seem to be true. The findings for the Liberal and Corporatist regime show that they perform equally well, though the differences across the countries within the latter regime type are large and larger than the differences in income inequality. Also this reconfirms the conclusion that income alone is not sufficient to explain levels of deprivation and that deprivation measures something else than just financial strain. The findings for the correlation between income and resources deprivation suggest that both measures are most closely negatively associated in Southern welfare regimes. That the association however is far from perfect (-0.4) explains why the income inequality in Southern regimes can be rather high and the deprivation inequality nonetheless low. The correlation is lowest in the Social-Democratic welfare regime indicating that a high income is less of a guarantee for a low level of deprivation than in the other regimes. This explains why for this regime the outcomes for income inequality are so much different from the ones for deprivation inequality.

Because our primary interest is to explain variations in the level of deprivation, we developed an empirical model for deprivation. The variables included in the model reflect the personal and household characteristics, differences in needs, household formation and socio-economic events, as well as country and welfare regime type dummies (see Section 4). The choice for these variables very much resembles the findings of a number of empirical studies on deprivation over the last decade in Europe (see Layte et al., 2001). Although our deprivation indicator is a continuous one, it only takes values in the 0–100 interval. The minimum value of 0 is a censoring point: considering the whole sample, 35 percent has a deprivation level equal to 0 (see Table A.I in Appendix). It is however clear that these persons do not enjoy the same level of welfare. In other words, there is variation in the level of welfare that is not accounted for by our indicator. In this context, standard OLS estimation would not reflect the structure of the data. In this paper we therefore model deprivation using the following Tobit model:

$$D_i^* = \beta X_i + \varepsilon_i ,$$

D_i^* is unobserved, but $\quad D_i = 0$ if $D_i^* \leq 0$

$$D_i = D_i^* \text{ if } D_i^* > 0$$

where D_i^* is the true level of deprivation, X_i a vector of explanatory variables, β a vector of coefficients including a constant term and ε_i a random normal error term with mean 0 and variance $\hat{\sigma}^2$. The model was estimated on all individuals present in the three waves of the panel (see Section 4). Robust estimators of variance are reported in order to account for the fact that the dependent variable is measured at the household level.

The performance of the models is evaluated by Veall and Zimmermann's (1994: 487) preferred measure for pseudo-R^2:

$$Pseudo - R^2 = \frac{\sum_{i=1}^{N} \left(\hat{\beta} X_i - \hat{\beta}\overline{X}\right)^2}{\sum_{i=1}^{N} \left(\hat{\beta} X_i - \hat{\beta}\overline{X}\right)^2 + N\hat{\sigma}^2} .^4$$

4. THEORETICAL UNDERPINNINGS

The question to be dealt with is whether or not welfare regimes matter at all in explaining differences in resources deprivation levels across countries. We can derive the most important factors at stake in explaining levels of deprivation from the rich literature on social and economic inequality and poverty. Among others, we could review a few of the most relevant theoretical underpinnings for the issue at stake. Well-known and extremely important in this respect is *human capital theory*. This theory predicts that the distribution of advantage and disadvantage in society is strongly associated with the human capital endowments built up during the various stages in life at school (education), in social networks (preschool and social learning) and at work ('on the job' learning). Another related economic theory is *job search theory* which pays particular attention to the temporal and institutional factors involved in the job search process itself which might be held responsible for the realisation of successful 'job matches' on the labour market and, therewith, on the distribution of well-being during lifetime. The sociological and increasingly influential *life course theory* – that is narrowly linked to modernisation theory – states that the occurrence of biographical life events such as marriage, childbirth, divorce, migration and death act as triggers for economic success and failure in the various stages of life and, therewith, for the socio-economic fate of

people during life.[5] The classical theory on *social mobility and social stratification* points to factors such as *social position and social class*, *inherited wealth* and *social background* for the explanation of social success and upward social mobility. In the literature on poverty and deprivation, reference is directly or indirectly made to these general theories for selecting the factors that might explain the occurrence of different forms of poverty in society.

From the literature on deprivation the following factors might be used and implemented in our models given the limitations of the dataset:

1. *Personal and household characteristics determining individual preferences:*
Personal characteristics are included to account for differences in taste and individual preferences that might affect the reported and experienced level of deprivation. Apart from the head's age and sex in the various models, age squared is included to allow for the possibility that the relationship between deprivation and age is a U-shaped or saddle shaped pattern with deprivation initially decreasing with increasing age but increasing again after a certain age threshold.

2. *Needs differences, determined by household size and household structure:*
We expect resources deprivation to be affected by the needs of the household. Welfare economic theory states that due to 'economies of scale' the household's welfare is affected by the sheer size and composition of the household, i.e. the number and age of adults and living-in children. The marital status variable (dummies for married, single, divorced) is included here to reflect the life stage people are in. It is likely to affect their needs due to the impact of the scale factor as well as the impact of a shared household budget management practice.

3. *Household formation and dissolution events reflecting the 'biographisation' of poverty:*
These variables capture the impact of life biography events, which are believed to trigger the processes for moving into or for escaping from deprivation. Since we have data for three years we were able to assess empirically whether or not such a life event (marriage, separation, childbirth and children moving in or leaving home) has taken place between 1994 (the first interview date) and 1996 (the last interview date). Dummies were included in the model to capture these life events (more or less adults, more or less children). The reference group were households with no change in the number of adults or children between 1994 and 1996.

4. *Socio-economic position indicated by employment status and human capital endowments:*[6]
Socio-economic status, is presumed to play a significant role in explaining deprivation. It combines the likely impact of human capital endowments measured by education level with the impact of the current employment status and (un)employment history on deprivation. This factor refers to the role of the labour market in preventing and resolving situations of deprivation whose likely impact has been stressed by many authors. We have included two education level dummies for a high or low education level (the medium level acts as the reference category) and one dummy for being involved in 'on the job' training. Next, we included dummies to assess whether or not people had some experience with unemployment in the last five years prior to the interview. To account for other relevant factors affecting the labour market position a factor is used to deal with being involved in household and caring duties and a dummy variable for retired people.

5. *Labour market status and labour market events:*
A variable indicating the 'longitudinal employment status' is included in the models. The longitudinal employment status variable is aimed at measuring the degree to which people are attached to or included in the labour market in the 36 months prior to the interview in 1996. People are classified as 'work insecure' when their attachment to the labour market, in terms of the number of months being employed, is less than 100 percent of the number of months available for work, but more than 50 percent. People are called 'partially excluded' when they work between 0–50 percent of all the months available for work, but at least one month. People are considered 'fully excluded' if they do not work at all during the three-year period. The reference category consists of people 'fully employed' during the three-year period. This variable allows the changes in employment status to be captured during the years prior to the interview date (see also Muffels and Fouarge, 2002). Obviously, the use of this information requires that we only consider the individuals who were present in all three waves of the data.

6. *The income position of the household:*
The question to what extent resources deprivation is affected by the income position might be answered by considering the past income status of the respondent. The obvious idea is that the higher past or lagged income is, the lower resources deprivation will be. Furthermore, it might be that the deprivation situation is particularly affected by previous spells of income poverty, which

presumably exaggerate experiences of financial stress and economic strain. For this reason, in our models a variable for past equivalent income is included as well as a variable measuring the past income poverty status of the household. Past income is the average equivalent income over the three years prior to the date at which deprivation is measured. It is taken to be a measurement for people's permanent income. Past poverty is measured by the frequency of poverty hits in the previous three-year period (poverty 'hit-rate'). Again, using this measure of permanent income implies that we only use the longitudinal sample.

7. *Institutional differences related to the particular set-up of national policies:* Finally, regime type dummies are included in the model to allow for variations in policies and institutional designs that are likely to affect the distribution of deprivation in society. Earlier, it was stated that the possibility of significant interaction effects between 'regime type' and other factors cannot be ruled out. In the model we will include interaction effects that might capture the dissimilarities in the socio-economic and socio-cultural context. In the model we want to account for differences in the demographic composition (household size), the employment structure (a dummy for being fully excluded from the labour market or not; the employed act as the reference category) and the income distribution (equivalent income). Hence, interaction variables were created between three regime types (the Corporatist regime is taken as the reference category) and these four structural variables.

The factors listed under 1 to 7 are assumed to reflect the common – not to country or regime-related – structural, causal factors that determine the deprivation levels across all European countries. In the models to be estimated, the institutional regime type dummies might interact with these structural causal factors and that part of the regime type impact must be attributed to these structural regime and country-related interaction effects. To the extent that all or parts of the regime effects are captured through the inclusion of these interaction effects, the estimation results show to what extent the regime type effects are sustained or not. In this sense, the model estimations constitute the *litmus test* for the relevance of the regime type classification, *sui generis*, for explaining income and resources deprivation across Europe. In the end it might well be that the estimation results show that there is hardly any pure regime type effect in addition to the impact of the common structural factors and the interaction effects of these with regime types or that its impact is rather small.

5. EXPLAINING LEVELS OF DEPRIVATION

In total, we estimated five models to explain levels of deprivation. The first model we estimated is the basic explanatory model without country or regime type variables. It includes personal characteristics and needs variables, household formation events variables, as well as socio-economic position and labour market status variables (Model 1). Further, the model includes information on past income and poverty status, because both are expected to be a strong predictor of deprivation. In the second model, country dummies were included (Model 2). Next, these were replaced with regime-type dummies (Model 3). This allows us to test whether the suggested regime-type clustering makes any sense empirically. This model was then extended to include interaction effects between regime types and needs variables, labour market status and past income (Model 4). Finally, the same model was estimated but with country dummies and interaction effects rather than regime dummies (Model 5). The results for the first three models are presented in Table II. The estimates for Model 4 are presented in Tables III.a and III.b. The results of Model 5 are presented in the Appendix.

Viewing the outcomes of these models, the household 'needs', the head's 'socio-economic position' and the lagged level of household income are undoubtedly the three factors explaining most of the variance in individual levels of deprivation. The impact of the household needs reflects the importance of the life stage people are in. People in their middle-ages combine the pressure of working, learning and caring and if for one or another reason income resources are dried up, e.g. because of the loss of work, the level of non-monetary resources will also deteriorate. The impact of socio-economic position points to the lack of 'capabilities' and human capital endowments to maintain the household's position in the distribution of monetary as well as non-monetary resources. The impact of past experiences of a low income or poverty on deprivation indicates the path dependency of situations of hardship during the life cycle. The smaller the flows of monetary resources in the past the more likely the household tends to experience high levels of deprivation.

The results (Model 1) also show a decreasing pattern of deprivation with age. This might reflect the impact of accumulated resources and durables on reducing levels of deprivation. If people grow older, they tend to accumulate the resources and durables required for subsistence. They will also have invested more in building up assets (housing, capital) during their life-course. Finally, during their life older people have learned to cope with situations of financial stress (e.g. through increasing their earnings). As to the effect of gender, we find that other

things being equal, female-headed households display higher levels of deprivation than male-headed households. Partly, this is due to the consequences of divorce and separation events, which for women seem to have stronger negative effects on their life conditions than for men. The dummy variable for lone parents also indicates that persons in such families are significantly more likely to be deprived. These results confirm the conjectures generally made about the feminisation of poverty.

The household size (number of adults and number of children), which is taken to reflect the needs of the household, is a strong determinant of consumption deprivation. Living in a larger household will increase the level of deprivation. The impact of household formation events on deprivation is found to be significant. As the study of Goodin et al. (1999) already has shown, separation implies a higher risk of entering income poverty for those it concerns. The findings here suggest that divorced or separated people also seem to have less non-monetary resources and that they are more likely to be deprived than married persons, and so are singles. This outcome reveals that marriage is a warrant for keeping deprivation down. A household formation event like an adult leaving the household during the observation period is also associated with higher levels of deprivation. This is because such an event will often lead to diminishing resources. The arrival of young children or grown-up children in the household – through birth or because a child moves in – is likely to have a similar negative impact on the family's living conditions. However, if dependent children leave the household the level of deprivation seems to decrease, though this effect is insignificant.

Important though these needs and household formation variables are, they are of less weight than the socio-economic variables. These reflect the traditional impact of education, social status and labour market position on the economic conditions and lifestyles of people in society. They indicate that equality in terms of outcomes is very much dependent on the distribution of opportunities and human resources. The presumptions of human capital theory that a higher education reduces deprivation and improves the life prospects of people are firmly confirmed. Though the effect of a higher level of education is strong, the reverse and stronger effect of a low education level on deprivation is even more striking. For the same reason, being involved in education or training programmes within or outside the firm strongly lowers the deprivation level.

TABLE II
Results of estimation of three regression models for resources deprivation in 1996, Tobit regressions

	Model 1		Model 2		Model 3	
N = 79,385	β	abs. t-val	β	abs. t-val	β	abs. t-val
Constant	89.088	[13.17]**	78.196	[11.54]**	80.454	[12.18]**
Personal characteristics						
Head's age	-0.366	[5.34]**	-0.362	[5.32]**	-0.336	[4.93]**
Head's age squared	0.353	[5.01]**	0.354	[5.07]**	0.336	[4.79]**
Female head	1.897	[5.28]**	1.891	[5.25]**	1.894	[5.34]**
Needs variables and household formation						
N of adults	0.661	[5.01]**	0.563	[4.59]**	0.309	[2.47]*
N of children	0.908	[5.20]**	0.999	[5.75]**	0.958	[5.50]**
Separated (ref=married)	2.637	[3.71]**	2.293	[3.28]**	2.264	[3.23]**
Single	4.474	[6.34]**	5.092	[7.33]**	4.894	[7.03]**
Lone parent	5.895	[5.67]**	5.709	[5.60]**	5.854	[5.72]**
Less adults	0.890	[2.49]*	0.871	[2.50]*	0.779	[2.21]*
More children	1.711	[3.25]**	1.471	[2.87]**	1.646	[3.18]**
Less children	-0.364	[0.88]	-0.202	[0.49]	0.111	[0.27]
Socio-economic status						
Unemployment history	3.283	[9.47]**	3.367	[9.84]**	2.976	[8.71]**
Retired	-2.119	[3.57]**	-2.299	[3.92]**	-2.139	[3.66]**
Homework/caring duties	-2.918	[5.66]**	-2.755	[5.44]**	-2.850	[5.61]**
High education (ref=average educ)	-0.932	[2.48]*	-1.577	[4.21]**	-1.591	[4.21]**
Low education	3.851	[12.91]**	3.174	[10.91]**	3.091	[10.65]**
In training	-3.893	[6.33]**	-3.674	[6.08]**	-3.597	[5.94]**
Long-term employment status (ref=fully employed, 3 waves)						
Work insecure	2.339	[6.17]**	2.368	[6.37]**	2.474	[6.64]**
Partially excluded	3.939	[8.03]**	4.193	[8.70]**	3.974	[8.24]**
Fully excluded	4.248	[8.42]**	4.563	[9.17]**	4.161	[8.39]**
Past income and poverty status						
Log of permanent income, 3 waves	-8.733	[12.61]**	-7.643	[11.11]**	-7.855	[11.67]**
Poverty hit-rate	-0.114	[0.34]	0.324	[0.96]	0.274	[0.82]
Country dummies (ref=Germany)						
Belgium			-3.626	[7.10]**		
Luxembourg			-25.952	[33.53]**		
France			2.049	[4.83]**		
Italy			-0.377	[0.81]		
Denmark			-6.356	[13.32]**		
The Netherlands			-8.779	[18.12]**		
Great Britain			2.745	[5.11]**		
Ireland			-7.204	[14.69]**		
Greece			10.558	[21.55]**		
Spain			1.812	[3.74]**		
Portugal			8.080	[13.92]**		
Regime type (ref=Corporatist)						
Liberal					1.995	[4.80]**
Social-Democratic					-8.306	[28.61]**
Southern					4.443	[15.81]**
Pseudo-R^2	0.370		0.497		0.435	

* significant at 5%; ** significant at 1%; robust estimator of variance
Source: ECHP, Waves 1–3 (1994–1996).

The longitudinal employment status has a strong impact on the level of deprivation. The longer people are excluded from the labour market in the 36 months prior to the interview date, the more likely they are to be deprived. The more people have a secure and stable work history, the less deprived they are. This is corroborated by the significant effect of the indicator for having experienced unemployment in the past five years. Remarkably, though, caring duties lower the deprivation level, probably because the persons involved are married and female and are not dependent for their living on their own labour earnings. The equally negative signs for retired persons are in line with the effect of age.

The effect of our measure of permanent income makes it clear that one is very unlikely to experience high levels of deprivation when one's level of permanent income is high. The poverty status variable, however, has no additional explanatory power once the permanent income variable has been included.

Inclusion of the country dummies (Model 2) does not change much to the estimates, but it does increase substantially the explanatory power of the model. However powerful and significant the socio-economic characteristics of the household are, as being predictors of the deprivation level, there do seem to be country specific elements to deprivation. The cross-country differences in deprivation found in Table I cannot exclusively be explained by differences in people's social and economic background. The main question of this paper is however whether these country differences are unique or that they merely reflect regime type effects? Regarding the results for Model 3 – where the country indicators were replaced with regime-type dummies – it seems true that regime type effects can explain most of the country variance. Comparing Model 2 and Model 3, it is shown that the price in terms of explained variance is limited: our measure of pseudo-R^2 decreases with only 6 percentage points from 0.497 to 0.435.

Do regime types matter?

Up to here, we have shown that it seems to make sense to cluster countries in terms of regime types. However, it remains to be seen whether the structural effects found in the previous estimated models to explain levels of deprivation are not common but vary across regime type. This has been tested through adding cross-terms to the previous models. The estimates are reported in Tables III.a and III.b.

Though increasing household sizes, on average, increases deprivation, it lowers deprivation in the Social-Democratic and Southern regime compared to the Corporatist regime (Table III.b). In the former regime, it is likely to be due to the government supporting the larger family (collective solidarity), whereas in the

latter it is likely family support (family solidarity) that keeps deprivation low in larger families.

TABLE III.a

Explaining resources deprivation in European welfare regimes, 1996, Tobit regressions

	Model 4	
N = 79,385	β	abs. t-val
Constant	67.826	[9.45]**
Personal characteristics		
Head's age	-0.332	[4.90]**
Head's age squared	0.325	[4.68]**
Female head	1.909	[5.45]**
Needs variables and household formation		
N of adults	0.620	[3.55]**
N of children	1.065	[5.17]**
Separated (ref=married)	2.456	[2.71]**
Single	4.906	[6.99]**
Lone parent	5.610	[5.50]**
Less adults	0.886	[2.55]*
More children	1.803	[3.51]**
Less children	-0.019	[0.05]
Socio-economic status		
Unemployment history	2.896	[8.59]**
Retired	-2.086	[3.57]**
Homework/caring duties	-2.765	[5.54]**
High education (ref=average educ)	-1.420	[3.92]**
Low education	2.931	[10.33]**
In training	-3.465	[5.74]**
Long-term employment status (ref=fully employed, 3 waves)		
Work insecure	2.446	[6.57]**
Partially excluded	3.804	[8.02]**
Fully excluded	4.351	[7.39]**
Past income and poverty status		
Log of permanent income, 3 waves	-6.574	[9.11]**
Poverty hit-rate	0.203	[0.67]
Regime type (ref=Corporatist)		
Liberal	41.802	[4.10]**
Social-Democratic	7.723	[0.87]
Southern	44.110	[8.00]**
Interaction effects	See Table III.b	
Pseudo-R^2	0.455	

* significant at 5%; ** significant at 1%; robust estimator of variance

Source: ECHP, Waves 1–3 (1994–1996).

TABLE III.b

Regime effects for the interaction variables, continuation of Table II.a

	Model 4	
	β	abs. t-val
Household size (ref=Corporatist)		
Liberal*household size	-0.384	[1.18]
Soc dem*household size	-0.990	[4.43]**
Southern*household size	-0.606	[3.56]**
Labour market exclusion (ref=Corporatist)		
Liberal*fully excluded	0.387	[0.37]
Soc dem*fully excluded	2.399	[3.70]**
Southern*fully excluded	-1.724	[3.66]**
Interaction with permanent income (ref=Corporatist)		
Liberal*permanent income	-4.139	[4.04]**
Soc dem*permanent income	-1.498	[1.64]
Southern*permanent income	-4.094	[7.31]**

* significant at 5%; ** significant at 1%; robust estimator of variance

Source: ECHP, Waves 1–3 (1994–1996).

Whereas being excluded from the labour market raises deprivation across all regimes it leads to less deprivation in the Southern regime. This perverse effect might be due to the larger role of the 'informal' sector particularly for people excluded from the labour market. A similar effect was found in Muffels and Fouarge (2002). The positive and significant effect for the Social-Democratic regime shows that being persistently excluded from the labour market has a stronger impact on deprivation than in the Corporatist regimes. Together with the insignificant effect of permanent income on reducing deprivation in the Social-Democratic regime, it tempt us to conclude that the high level of income protection generally offered in the Social-Democratic welfare regime is not a sufficient strategy to cope with deprivation. Viewing the outcomes of the level of permanent income for the other regimes it turned out that its effect on reducing deprivation is generally larger and stronger in the Liberal and Southern regimes than in the Corporatist ones.

While the effects and significance of the covariates remain stable across the various models estimated, the pure regime effects are affected by the inclusion of the cross-terms with permanent income. The Southern and the Liberal regime consistently appear to have larger levels of deprivation than the Corporatist welfare regime. The sign for the egalitarian Social-Democratic regime is, indeed, negative in Model 3, indicating that deprivation is lower than in the Corporatist regime. However, this effect is suppressed and becomes insignificant once we include the interaction effect with permanent income as in Model 4. One important conclusion therefore is that the magnitude and significance of the effects of regime types on deprivation appears to be mediated through permanent income. This is particularly

the case for the Social-Democratic regime type. It implies that the Social-Democratic welfare state's efforts towards guaranteeing income stability over time do not have additional pay-offs in terms of the reduction of deprivation.

Our analyses show that notwithstanding taking account of a lot of, at first sight, important interaction effects with compositional differences, regime effects remain significant. The contribution of regime type to explaining the total variance across the population is not that large, even when we leave out the interaction effects, but they seem to capture most of the variance caused by the sheer country differences. The last model estimated is similar to Model 4, but the regime type dummies as well as the interaction effects were replaced with country dummies. The results of this so-called 'country model' (Model 5) are presented in Appendix (Table A.II). If the explained variance of both models is compared, it can be seen that Model 4 explains as much as 88 percent of the variance explained by the model with country dummies. The conclusion drawn from this is that though structural (compositional) factors play a more dominant role in explaining differences in deprivation levels, the effect of regime type remained significant and substantial. The results showing that 'regimes' matter in explaining non-monetary deprivation demonstrate that the notion of regimes might bring some more light in the 'dark forest' rather than causing the researcher to be lost in the 'myriad of unique (country) trees'. If we follow Atkinson et al. (2002) in claiming that apart from monetary indicators non-monetary indicators are important in their own right to measure the social performance of welfare states in tackling social exclusion then the notion of 'regimes' certainly contributes to explaining the performance of countries in preventing social exclusion.

6. CONCLUSIONS AND DISCUSSION

This paper focuses on explaining resources deprivation that is considered a measure for multidimensional poverty. The measure for resources deprivation departs from a selected list of social indicators as implemented in the European Community Household panel survey (see Appendix). It combines monetary and non-monetary indicators and resembles in part the approach to measure social exclusion adopted by a working group set up under auspices of the Belgium presidency (Atkinson et al., 2002). To be more precise, the term resources deprivation we use here is defined as a state of enforced lack of resources, which are fairly common in the lifestyles of people in the society where they live. The dimensions underlying the concept might be manifold but the panel data of the European Community puts severe restrictions on the sort of dimensions that might

be distinguished. In this study, four of them have been used: health; financial stress; housing and the possession of durables that people want but cannot afford. The basic idea was to construct an indicator of resources deprivation (consumption of durables and life style goods) using micro data for the 1990s. The second aim of the paper was to explain levels of resources deprivation across welfare regimes by estimating Tobit regression models. The primary focus has been on the impact of institutional variables translated into the impact of welfare regime types on resources deprivation.

The finding that the dispersion in the distribution of resources deprivation is larger in the egalitarian regimes tempts us to conclude that attaining income equality does not mean that inequalities in other domains of life are also successfully tackled by these regimes. The concepts of income and resources deprivation are clearly associated but instead of being substitutes they have to be considered as being complementary, each focusing on different dimensions of the lifestyles of people in society. It is for that reason that the performance of regimes in tackling income poverty turns out to be rather different from their performance in tackling resources deprivation though there remains a clear association between the two performance indicators.

Looking at the difference across regime types it became clear that deprivation poverty tends to be more prevalent in Southern and Liberal regimes and less so in Corporatist and Social-Democratic regimes. We take this as evidence for our assertion that welfare regimes matter in explaining differences in resources deprivation across countries. In the full model, with the inclusion of a broad set of theoretically inferred indicators, the regime type model performed rather well and explained 88 percent of the total variance explained by the country model.

Nonetheless, we found that most of the variance is not explained by country or regime type differences but by common structural factors like the needs of the household, the human capital of its members, the turnover and dynamics on the labour market and the distribution of permanent income. Particularly interesting is the large contribution of socio-economic status variables to explaining deprivation, which reflects the traditional impact of class, education and employment status. This suggests that inequality in terms of outcomes ultimately depends on the distribution of resources and opportunities (human capital, health, employment creation and destruction, inherited wealth, and so on). The interaction effects with needs variables (household size, separation), socio-economic status and long-term income did not level out the effects of regime type. On the contrary, the effect of regime type remained significant in the full model particularly for the Liberal and

the Southern welfare regimes.

Policy implications

By way of conclusion, the assertion was made that common structural factors obviously play a larger role in explaining differences in deprivation levels across Europe than regime type effects. However true this might be from an analytical perspective, from a policy perspective, one should keep in mind that regime types should not erroneously be believed to be stable features of a country's policy but instead a dynamic reality that requires continued scrutiny to test its heuristic and practical value in an increasingly dynamic economic and social context.

Although past income is a strong determinant of deprivation, the inequality in the deprivation distribution is found to be large – and indeed larger than the inequality in income. This suggests that policies aimed to fight social exclusion should not be limited to income policies. It should be preferable, from a policy perspective, to extend their scope to employment policies, health policies, education and housing policies. Policies should thus take a broader picture on board and focus on the entire set of dimensions underlying the exclusion concept. Since the social processes underlying deprivation boil down to the features of the broader social and economic order, it requires a good deal of social engineering to tackle the perverse equity effects for particular groups in the various domains of life. This paper clearly indicates that the social fabric in the various countries is designed substantially differently and with different success in the way forward to attaining a society with a low level of deprivation. The challenges for social policies are quite dissimilar and, therefore, so also are the ways to achieve the goals most of the welfare states under scrutiny are prioritising. Some regimes perform better in achieving these goals than others though dependent on the sort of indicators used. The Social-Democratic regime performs well in spreading income poverty risks but far worse in spreading risks of deprivation, defined as being deprived of a number of monetary and non-monetary resources. We also found support for our conjecture that the Southern regimes, however different they might be, perform on average worse in reducing income poverty as well as resources deprivation. The main conclusion of the paper, however, is that this finding should not primarily be attributed to the design of their social and economic policies (regime effect). It can more likely be attributed to structural disparities across countries. Such disparities have arisen in the course of time through different paths of socio-economic development. They also stem from the whole range of economic, social, political and physical assets a society possesses.

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REFERENCES

Atkinson, A., B. Cantillon, E. Marlier and B. Nolan: 2002, Social Indicators; The EU and Social Exclusion (Oxford University Press, Oxford).

Beck, U.: 1992, Risk Society; Towards a New Modernity (Sage Publications, London).

Bonoli, G.: 1997, 'Classifying welfare states: a two-dimension approach', Journal of Social Policy 26, pp. 351–72.

Byrne, D.: 1999, Social Exclusion (Open University Press, Buckingham).

Callan, T., B. Nolan, C. Whelan and J. Williams: 1996, Poverty in the 1990's; Evidence from the 1994 Living in Ireland Survey (Oak Tree Press, Dublin).

Desai, M. and A. Shah: 1988, 'An econometric approach to the measurement of poverty', Oxford Economic Papers 40, pp. 505–22.

Esping-Andersen, G.: 1990, The Three Worlds of Welfare Capitalism (Polity Press, Oxford).

Esping-Andersen, G.: 1999, Social Foundations of Post-Industrial Economies (Oxford University Press, Oxford).

Ferrera, M.: 1996, 'The "Southern" model of welfare in social Europe', Journal of European Social Policy 6, pp.17–37

Gallie, D. and S. Paugam: 2000, Welfare Regimes and the Experiences of Unemployment in Europe (Oxford University Press, Oxford).

Gelissen, J.: 2002, Worlds of Welfare, Worlds of Consent? Public Opinion on the Welfare State (Brill Academic Publisher, Leiden).

Giddens , A.: 1992, The Consequences of Modernity (Polity Press: Cambridge).

Goodin, R., B. Headey, R. Muffels and H.-J. Dirven: 1999, The Real Worlds of Welfare Capitalism (Cambridge University Press, Cambridge).

Haan, A. de: 1998, 'Social exclusion. An alternative concept for the study of deprivation?', IDS Bulletin 29, pp. 10–9.

Headey, B., R. Goodin, R. Muffels and H.-J. Dirven: 1997, 'Welfare over time:

three worlds of welfare capitalism in panel perspective', Journal of Public Policy 17, pp. 329–59.

Headey, B., R. Muffels, R. Goodin and H.-J. Dirven: 2000, 'Is there a trade-off between economic efficiency and a generous welfare state? A comparison of best cases of "The three worlds of welfare capitalism"', Social Indicators Research 50, pp. 115–57.

Layte, R., C. Whelan, B. Maître and B. Nolan: 2001, 'Explaining levels of deprivation in the European Union', Acta Sociologica 44, pp. 105–22.

Leibfried, S.: 1992, 'Towards a European welfare state? On integrating poverty regimes into the European Community', in Z. Ferge and J. Kolberg, Social Policy in a Changing Europe (Campus Verlag, Frankfurt am Main).

Leisering, L. and S. Leibfried: 1999, Time and Poverty in Western Welfare States, United German in Perspective (Cambridge University Press, Cambridge).

Kuznets, S.: 1955, 'Economic growth and income inequality', American Economic Review 45, pp. 1–28.

Mack, J. and S. Lansley: 1985, Poor Britain (George Allen and Unwin, London).

Muffels, R.: 1993, Welfare Economic Effects of Social Security - Essays on Poverty, Social Security and Labour Market: Evidence from Panel Data (Tilburg University Press, Tilburg).

Muffels, R. and D. Fouarge: 2002, 'Working profiles and employment regimes in Europe', Schmollers Jahrbuch. Journal of Applied Social Science Studies 122, pp. 85–110.

Runciman, W.: 1966, Relative Deprivation and Social Justice (Routledge and Kegan Paul, London).

Silver, H.: 1994, Social Exclusion and Social Solidarity: Three Paradigms, ILLS Discussion Papers no. 69 (ILO, Geneva).

Veall, M. and K. Zimmerman: 1994, 'Goodness of fit measures in the Tobit model', Oxford Bulletin of Economics and Statistics 56, pp. 485–99.

Walker, A. and C. Walker: 1997, Britain Divided: The Growth of Social Exclusion in the 1980s and 1990s (Child Poverty Action Group, London).

APPENDIX: INDICATOR FOR RESOURCES DEPRIVATION

The list of indicators for resources deprivation

Health situation
1. Health of the person in general;
2. Person is hampered in daily activities by a physical or mental health problem, illness or disability.

Financial stress
3. Can the household afford keeping you home adequately warm?
4. Can the household afford paying for a week's annual holiday away from home?
5. Can the household afford replacing worn-out furniture?
6. Can the household afford buying new, rather than second-hand, clothes?
7. Can the household afford eating meat, chicken or fish every second day, if wanted?
8. Can the household afford having friends or family for drink/dinner once a month?
9. Has the household been unable to pay scheduled mortgage payments or rent for the accommodation during the past 12 months?
10. Has the household been unable to pay scheduled utility bills during the past 12 months?
11. Has the household been unable to pay purchase hire instalments or other loan repayments during the past 12 months?

Housing situation
12. Does the dwelling have bath or shower?
13. Does the accommodation have shortage of space?
14. Does the accommodation have damp walls, floors etc.?
15. Does the accommodation have rot in window frames or floors?

Possession of durables (not possessing for financial reason)
16. Possession of a car;
17. Possession of colour TV;
18. Possession of a video recorder;
19. Possession of a micro wave;

20. Possession of a dishwasher;

21. Possession of a telephone.

Descriptive statistics of deprivation index

TABLE A.I

Descriptive statistics of deprivation index, 1996

	Proportion of zeros	Mean value	Standard deviation	Maximum
Germany	50	6.7	10.3	75.5
Belgium	48	7.6	11.4	70.8
Luxembourg	62	5.2	9.2	61.4
France	36	9.0	11.3	85.1
Italy	25	10.1	11.4	78.9
Denmark	44	6.1	8.3	71.2
The Netherlands	57	5.2	8.7	61.7
United Kingdom	39	9.9	12.5	84.8
Ireland	38	10.3	13.3	74.1
Greece	0	19.3	13.0	77.4
Spain	18	13.0	12.4	83.2
Portugal	10	20.4	16.3	82.1
EU	35	9.7	12.0	85.1

Source*: ECHP, Wave 3, 1996, own calculations.*

TABLE A.II

Estimates of country model for resources deprivation, 1996, Tobit regressions

	Model 5	
N = 79,385	β	abs. t-val
Constant	61.681	[6.17]**
Personal characteristics		
Head's age	-0.333	[4.94]**
Head's age squared	0.321	[4.63]**
Female head	1.887	[5.32]**
Needs variables and household formation		
N of adults	0.008	[0.02]
N of children	0.399	[1.12]
Separated (ref=married)	2.180	[3.18]**
Single	4.541	[6.59]**
Lone parent	5.192	[5.11]**
Less adults	1.004	[2.91]**
More children	1.677	[3.29]**
Less children	-0.228	[0.55]
Socio-economic status		
Unemployment history	3.210	[9.56]**
Retired	-2.217	[3.71]**
Homework/caring duties	-2.645	[5.28]**
High education (ref=average educ)	-1.116	[3.12]**
Low education	2.998	[10.43]**
In training	-3.483	[5.81]**
Long-term employment status (ref=fully employed, 3 waves)		
Work insecure	2.287	[6.21]**
Partially excluded	3.915	[8.28]**
Fully excluded	4.914	[4.50]**
Past income and poverty status		
Log of permanent income, 3 waves	-5.778	[5.68]**
Poverty hit-rate	0.334	[1.19]
Country dummies (ref=Germany)		
Belgium	14.601	[0.97]
Luxembourg	178.754	[12.76]**
France	51.038	[3.56]**
Italy	-9.596	[0.84]
Denmark	23.612	[1.43]
The Netherlands	15.444	[1.25]
Great Britain	43.166	[3.34]**
Ireland	153.461	[14.99]**
Greece	36.370	[3.90]**
Spain	44.465	[4.60]**
Portugal	41.813	[4.24]**

Interaction effects		
Household size		
Belgium * household size	0.328	[0.78]
Luxembourg * household size	-1.735	[4.08]**
France * household size	0.507	[1.35]
Italy * household size	1.253	[3.27]**
Denmark * household size	0.047	[0.12]
The Netherlands * household size	-0.665	[1.70]
Great Britain * household size	0.479	[1.05]
Ireland * household size	0.540	[1.57]
Greece * household size	0.970	[2.87]**
Spain * household size	0.067	[0.20]
Portugal * household size	0.890	[2.52]*
Long-term employment status		
Belgium * fully excluded	0.744	[0.60]
Luxembourg * fully excluded	-13.632	[10.40]**
France * fully excluded	-1.305	[1.19]
Italy * household size	-0.442	[0.42]
Denmark * fully excluded	3.045	[2.45]*
The Netherlands * fully excluded	1.845	[1.59]
Great Britain * fully excluded	0.106	[0.08]
Ireland * fully excluded	-1.366	[1.30]
Greece * fully excluded	-2.667	[2.70]**
Spain * fully excluded	-1.103	[1.07]
Portugal * fully excluded	-2.698	[2.51]*
Past income (3 waves)		
Belgium * long-term income	-2.062	[1.33]
Luxembourg * long-term income	-19.842	[14.13]**
France * long-term income	-5.335	[3.63]**
Italy * long-term income	0.691	[0.59]
Denmark * long-term income	-3.251	[1.90]
The Netherlands * long-term income	-2.421	[1.91]
Great Britain * long-term income	-4.443	[3.40]**
Ireland * long-term income	-17.653	[16.70]**
Greece * long-term income	-3.036	[3.18]**
Spain * long-term income	-4.597	[4.64]**
Portugal * long-term income	-3.957	[3.89]**
Pseudo-R^2	0.518	

* significant at 5%; ** significant at 1%; robust estimator of variance

Source: ECHP, Waves 1–3 (1994–1996).

NOTES

[1] The version of the ECHP used at the time of the research (waves 1–3) did not include data for Sweden. Data for Finland are only available for the third wave of 1996. For Austria the data for the first wave of 1994 are missing. Hence, we have information for 12 countries stretching over a period of three years, from 1994 to 1996.

[2] The findings here corroborate largely the results of Layte et al. (2001) although the impact of country differences appeared much larger in their approach, probably due to the use of an unweighted deprivation index.

[3] Income was standardised using the modified OECD equivalence scale, which attributes a weight of 1 to the first adult, 0.5 to other adults aged 14 and older and 0.3 to children younger than 14. The poverty line was set at 50 percent of median standardised income.

[4] We use this measure because the standard McFardden pseudo-R^2 makes no real sense for continuous and mixed discrete/continuous models such as the one estimated here because the log-likelihood value can be positive or negative.

[5] Leisering and Leibfried (1999) have employed the term 'biographisation of poverty' to refer to the impact of life events which trigger, in particular, the occurrence of new, transient or temporal forms of poverty. This notion is, therefore, closely associated with the notion of the 'risk society' in modernisation theory elaborated, among others, by Giddens (1992) and Beck (1992), according to which individuals are increasingly confronted with risk and uncertainty by the emergence of a post-traditional social order in response to which people adapt their life biography decisions and change their life-styles to cope with the rising 'uncertainty'.

[6] 'Social class' also belongs to this category. The factor 'social class' is determined by income, socio-economic position and professional status. In this chapter, the focus is restricted to the underlying factors 'income' and 'socio-economic position'. For an explicit treatment of 'social class' to explain deprivation, see Layte et al. (2001).

OSA-Working papers

No.	Author(s)	Title
WP2000-1	Jan Boone & Jan C. van Ours	Modeling financial incentives to get unemployed back to work
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WP2000-3	Jan Boone & Lans Bovenberg	Optimal labour taxation and search
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