Long-Run Effects of Childhood Shocks on Health in Late Adulthood

Evidence from the Survey of Health, Ageing, and Retirement in Europe

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In this paper we address the long-run effects of childhood shocks on health in late adulthood. Applying a life-course approach and data from SHARE we estimate direct and indirect effects of shocks like relocation, dispossession, or hunger on health outcomes after age fifty. Having lived in a children's home, in a foster family, or having suffered a period of hunger turn out to be the most detrimental. Using a finite mixture model, which allows to classify the associations between shocks and later health into a-priori unknown groups, we show that some adverse shocks have opposite effects for specific groups.

Keywords: Early life experience, health, Europe.
JEL Codes: J1, I12, J13

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1 Introduction

Assessing long-run impacts of childhood circumstances, such as socio-economic conditions, shocks, childhood health, or in-uterus conditions on health in later life has become increasingly topical in recent epidemiological, economic, or sociological research. The importance of this line of research lies, on the one hand, in a life-course perspective: these early events may have both direct or indirect effects – through health in early-life, education, job-choice, or other conditions – on health, wealth, and happiness throughout the whole life of an individual. On the other hand, the prevalence of such long-term or even intergenerational consequences may make potential policy interventions still more important.

This paper looks at a variety of adverse events which individuals may have experienced in childhood: starting from dramatic war- or social-upheaval-driven events such as dispossession or relocation to more family-driven events, living in a children's home, in a foster family, or suffering from hunger in childhood. To investigate the impact of these shocks, we use data from the Survey of Health, Ageing, and Retirement in Europe (SHARE), a panel study of elderly Europeans born roughly between 1920 and 1955. We exploit detailed retrospective information from specifically collected life histories (SHARELIFE) and observe health at the age of fifty plus years. SHARE data have the advantage that they are internationally comparable and collected in an interdisciplinary effort of epidemiologists, sociologists, and economists, which makes explorations across these domains more fruitful. Moreover, using such significant and well-defined childhood shocks reduces potential recall biases – compared to more petty events: individuals will have fewer problems remembering unique events such as relocation or dispossession during a war or a civil conflict.

In general, there are difficulties in identifying causal relationships between childhood shocks and health later in life due to the potential presence of unobserved factors, such as early-life experience of socio-economic environment or genetic predispositions for certain illnesses (Case et al., 2005). The childhood shocks we are concentrating on are less susceptible to endogeneity problems due to their character: considering war- or civil-conflict-driven events, the assumption of randomness is much more appropriate than for e.g. socio-economic background in general; this might also be said with respect to the loss of a parent, but less so with respect to suffering from hunger.

Given this, we proceed in two steps. At first we present reduced form models, where we use a rich data set on socio-economic background control variables to estimate associations between childhood shocks and health in later life. These models then are, step by step, enriched by the introduction of intermediate outcomes, that might be influenced by these shocks but also by unobservable childhood variables. In a final step, we use a finite mixture model to classify our individuals into a-priori unknown disjoint groups with different associations between selected shocks and later health. This classification will, in addition to our rich set of background controls and intermediate outcomes, remove unobservable heterogeneity in the data.

Previous research, in particular in traumatology, establishes that stressful and traumatic events in early live may have serious short-term health effects, especially on mental health. Most researchers explore the consequences of civil wars or natural disasters in developing countries on children and health. Beegle et al. (2010) study

children in Tanzania orphaned between age 7 and 15 and find that orphanhood results in a long-term welfare loss – due to worse access to food resources and education. Orphanhood is related to a loss in height of about two centimeters and around one year less schooling. Orphans of the Genocide in Rwanda, which had lost both parents, are found to suffer even 10 years later from severe mental health problems (Elbert and Schaal, 2006). Nuttall et al. (1997) address more generally the impact of conflict and stressful shocks in childhood. They study children during the Salvadorian Civil War, especially children that experienced stressful shocks, such as displacement, losing parents, suffering hunger, violence, etc. They find that these children are much more likely to suffer from mental health problems than children that did not experience traumatic events even during wartime. Jensen and Shaw (1996), on the other hand, highlight the strong adaptability of young children to cope with adverse events, which makes forecasts of long-term effects difficult.[1]

Another strand of the literature investigates the effect of hunger and malnutrition in early life. Malnutrition and hunger have a large negative impact on health of children. Persons that were children during the great famine in China face poorer health, lower adult height, lower educational attainment, and reduced labor market activity even 30 years later (Meng and Qian, 2009). Van den Berg et al. (2011) estimate the causal effect of war-induced hunger in early life in Germany, Greece, and the Netherlands on old-age health outcomes using data from SHARE.[2] Their results show that malnutrition results in reduced height, an increased risk of obesity, high blood pressure, and hypertension.[3]

There is a large literature on health and social circumstances in early life, which, in turn, are strongly associated to health and employment outcomes in late adulthood (e.g. Case et al., 2005; Case and Paxson, 2010; Currie and Hyson, 1999; Currie, 2009; Hayward and Gorman, 2004; Smith, 2009). Case et al. (2005) and Smith (2009) discuss possible linkages: health in childhood affects education and future health directly and socioeconomic status and health in later life indirectly via outcomes in young adulthood.

We contribute to the literature by looking at a large range of specific adverse childhood shocks on health outcomes of individuals in retirement age. We apply a life course approach to look at direct and indirect effects of selected childhood shocks. Moreover, by using a finite mixture model we can distinguish, if these adverse shocks have the same effects for all groups in the population.

2 Empirical setup

To study direct and indirect effects of adverse childhood experiences we apply a life course approach. We suppose that external shocks in child age affect childhood health and, in consequence, education. Childhood health and education in turn build an essential basis for future achievements and outcomes in adulthood. The

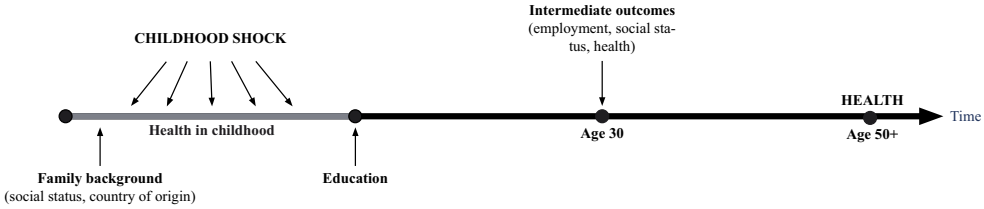
[1] See Bohacek and Myck (2011) on the effect of persecution in Central Europe on labor market outcomes later in life.

[2] See also Havari and Peracchi (2011).

[3] Wars or natural disasters may have direct impacts on health and mental health of affected children or young adults, but also indirect ones coming through reduced schooling opportunities (Ichino and Winter-Ebmer (2004), Meng and Gregory (2002), or Akbulut-Yuksel (2009).)

early years of life are therefore considered an important predictor for outcomes in later life. Figure 1 shows the timeline of events and our measured outcomes.

Figure 1: Timeline of life events and measured outcomes



Early childhood shocks are defined as relocation, dispossession, living in a children's home, in foster care, or suffering from hunger. Each of these events may have detrimental effects on both health and other outcomes. As a first step, we look at the association between these early life shocks and measures of childhood health – measured between age 0 and 15. As the timing of childhood health outcomes and early life shocks is unclear in SHARELIFE data, a strict causal analysis cannot be provided. Instead, we explore a simple correlation approach to assess the association between these factors in Equation (1):

$$Health_C = \alpha_0 + \alpha_i Shock_i + \alpha_2 SES_C + \rho_j X_j + \epsilon_{Health_C} \tag{1}$$

We also control for the social status of parents, (SES_C), include country and year dummies, and other controls (X_j). The specification in Equation (1) serves as a first test if there is an association between these early life shocks and health in childhood. Early life shocks can also have detrimental effects on education (Equation (2)), and socio-economic status and health in mid-life, measured at the age of 30 (Equations (3) and (4)).

$$Edu = \lambda_0 + \lambda_1 Shock_i + \lambda_2 Health_C + \lambda_3 SES_C + \rho_j X_j + \epsilon_{Edu}, \tag{2}$$

$$SES_{30} = \beta_0 + \beta_1 Shock_i + \beta_2 Health_C + \beta_3 Edu + \rho_j X_j + \epsilon_{SES_{30}}, \tag{3}$$

$$Health_{30} = \delta_0 + \delta_1 Shock_i + \delta_2 Health_C + \delta_3 Edu + \rho_j X_j + \epsilon_{Health_{30}} \tag{4}$$

While these intermediate outcomes may be interesting in themselves, we concentrate on long-term impacts of early life shocks on health outcomes measured at age 50 or later. We propose two strategies: a reduced-form approach (Equation (5)) will provide a total effect of early childhood shocks on health at age 50 or later. In this equation we include only childhood shocks together with other strictly exogenously determined variables such as cohort and country effects. In a further specification (Equation (6)), we include, step by step, socio-economic status in childhood and other intermediate outcomes: childhood health, education, socio-economic status, as well as health in mid-life. These indicators typically are important predictors

of health at older age and are causally affected by adverse childhood shocks. Not including these indicators, Equation (5) gives us the total effect of early life shocks – including both direct and indirect effects via intermediate outcomes.[4] Equation (6) provides a separation of these direct and indirect effects.[5] Insofar, as these intermediate outcomes are both caused by our interesting childhood shocks and by omitted unobservable childhood characteristics, controlling for them can reduce this potential omitted variables bias.

$$Health_{50+,i} = \gamma_{0i} + \gamma_{xi} Shock_x + \rho_{ji} X_j + \epsilon_{Health_{50+,i}} \tag{5}$$

$$\begin{aligned} Health_{50+,i} = \gamma_{0i} + \gamma_{xi} Shock_x + \gamma_{1i} SES_C + \gamma_{2i} Health_C + \gamma_{3i} Edu \\ + \gamma_{4i} SES_{30} + \gamma_{5i} Health_{30} + \rho_{ji} X_j + \epsilon_{Health_{50+,i}} \end{aligned} \tag{6}$$

3 Data

Sample

We are using data from SHARE; using release 1 from SHARELIFE (collected in 2008/09), SHARE Waves 1 (2004) and 2 (2006/07) data release 2.5.0. The sample consists of Europeans born between 1920 and 1955 originating from Europe and currently living in Austria, Germany, Netherlands, Spain, Italy, France, Denmark, Greece, Belgium, the Czech Republic, and Poland.

We keep only persons where all health outcome variables are available in the data. Missing values in explanatory variables are flagged and controlled for in the regressions with binary indicators. After data processing, 17,916 observations are left for analysis.

Variables

From the health information in SHARE we choose the following health outcome variables: self-assessed childhood health (measured from 1 to 5; the higher the worse), the number of illnesses in childhood (including typical children's illnesses as well as bone fractures, etc.) the number of health conditions diagnosed by a medical doctor, number of health symptoms, the number of depressive symptoms (Euro-D Scale), the number of activities of daily living limitations (ADL), and disability. Table 1 describes and defines all variables used.

Explanatory variables of major interest are childhood shocks: relocation or evacuation during a war, dispossession for the reason of persecution or war, having been fostered with another family, having lived in a children's home, and having suffered from hunger.

Information about dispossession due to persecution or war and suffering from hunger is provided in SHARELIFE. The question about dispossession reads as:

[4] Results in this analysis yield lower bound estimates of the effect of childhood shocks. The reason is selective mortality in two dimensions. First of all, we only observe persons that have already reached the age of 50. The second issue are childhood shocks; those severely hit during child age are less likely to reach an extensive age.

[5] See Brunello et al. (2011) for a recent decomposition of direct and indirect effects of education on health in later life.

"There may be cases when individuals and their families are dispossessed of their property as a result of war or persecution. Were you or your family ever dispossessed of any property as a result of war or persecution?" In case the respondent answers in the affirmative, it is asked about the time the property was taken away, which property, and whether the family has been compensated or not. At maximum respondents reported 3 different cases of dispossession, only the first dispossession of the respondent or family is considered in this study. Two final variables are generated: dispossession of a close family member before birth of the respondent and dispossession after birth but before the age of 16.

The question about hunger reads as follows: "Looking back on your life, was there a period during which you suffered from hunger?" When the respondent answered in the affirmative, it is asked in which year the hunger period started and stopped. Again, the age limit is 16.

Relocation and having lived with a foster family, or in a children's home are derived from a question on special events concerning living arrangements. "Have you ever experienced any of these events?" Provided answer categories are: 1. Lived in a children's home, 2. Been fostered with another family, 3. Evacuated or relocated during a war,... For these events no exact timing is possible.

Figure 6 shows the pattern of relocations for all sample persons over birth cohorts and countries. Relocations are mainly reported by cohorts born around World War II, with high relocation rates for persons from the former Soviet Union. Note that these individuals only come into the SHARE survey, if they have left their country of origin. Rates of relocation for individuals born between 1920 and 1945 are relatively high, if they were born in Germany, Poland, the Netherlands, Belgium, or France. As we are only interested in childhood shocks, we have to assign these relocations to a childhood event, by comparing the birth date with the war events. So we assign a wartime childhood relocation only to individuals who were less than 16 years of age after the war (in 1945), which might lead to some under-estimation of the number of victims of relocation in childhood due to a war. This contamination of the relocation indicator could in the econometric model lead to underestimation of the detrimental impact of relocation on health outcomes.

Summary statistics in Table 1 inform about the prevalence of these childhood experiences among SHARE respondents. Around 834 respondents (4.7%) indicate a relocation or evacuation during a war, 635 of them had been younger than 16 years at the time of the event. A total of 815 individuals (4.6%) report a dispossession, 204 of them suffered from dispossessions related to their inner family circle before their own birth, 428 were less than 16 years old at the time of that event. 470 (2.6%) individuals had lived in a children's home or with a foster family and around 6.5% of respondents had suffered from hunger as a child. For more detailed information about prevalence of events over time see Figures 2 to 7 in the Appendix. Our indicators for childhood shocks are relatively independent form each other; the highest correlation coefficient are 0.19 for dispossession and relocation during child age. All other correlations are much lower.

We employ childhood health, education, health, and social status at the age of 30 as intermediate outcome variables. Educational attainment is measured in years of full-time education. Outcomes – at the age of 30 – are the number of health conditions diagnosed by a doctor as reported by the respondents, and socio-economic

position (high-skilled white collar, low-skilled white collar, low-skilled blue collar, etc.) derived from ISCO type of occupation and the corresponding skill level.

Finally, our childhood social status controls – all associated with the age of 10 – include the following: the number of books in the household as a proxy for intellect of parents, rooms per person, the number of features of the accommodation (e.g. central heating, indoor bath room, warm water, etc.), and the socio-economic position derived from the type of occupation of the main breadwinner in the household. In addition, we include information on the area of living, the variable rural takes the value one if the first residence reported has been in a rural area or a small town. Moreover, in all estimations birth year and country of origin dummies to control for fixed cohort effects, like a specific war-effect all members of a birth cohort are exposed to, are included. As there are, typically, small individual correlations of the childhood shocks and these childhood social status variables, it is necessary to carefully control for these.

4 Results

Health at the age of 50 plus

Due to the fact that we can only estimate associations between childhood shocks and health in early life, estimation results for health in early life are not reported here in any detail. Results using self-assessed childhood health and the number of illnesses until the age of 15[6] show that childhood shocks are negatively associated with childhood health. Looking at self-assessed health in childhood we find strong and consistent effects for relocation, having lived in a children's home and having suffered from hunger with odds ratios ranging from 1.2 to 1.6. Concerning the number of illnesses, dispossession during child age is related to worse health in childhood as well. In this specification dispossession during child age can be associated with an increased number of health conditions by around 0.2. Foster family and hunger may have an impact on childhood health, though foster family is only significant for women.

Tables 2 and 3 display regression results of health outcomes at the age of fifty plus for men and women. In the first columns, we report a reduced form approach where we relate self-assessed health at the age of fifty plus only to adverse childhood shocks. These estimates capture all effects of these childhood shocks, irrespective of the transmission mechanism; i.e. all direct and indirect effects. In Column (II) we add indicators for childhood social status as control variables.

Columns (III) and (IV) extend the specification of model (II) by including, in a first step, childhood health and years of schooling, and then also outcomes at the age of 30 – health and social status – as intermediate effects. Columns (III) and (IV) include increasingly more intermediate outcomes; outcomes which themselves may be influenced by childhood shocks. Controlling for these intermediate outcomes purges the childhood shocks from indirect effects via childhood health, schooling or social status in mid-life in example. If – as expected – the effects are going in the

[6] Self-assessed childhood health is measured according to a Likert-type scale and thus estimated using an ordered Logit model. The number of illnesses in childhood is a count data type and estimated with Poisson regression.

same direction, the direct impact of childhood shocks on health at age fifty plus should become smaller. This is indeed what we find at least to some extent.

We first present the effects for men in Table 2. Comparing these different specifications, we find consistently negative effects of children's home, having been in a foster family, and having suffered from hunger as a child on health later in life. The strongest effects are found for having suffered from hunger. Hunger is increasing the odds to be in a worse self-assessed health state by some 30 percent – as compared to be in any better health state. These effects are large and somewhat higher in the first two Columns, where we include both direct and indirect effects, but the differences across Columns are not statistically significant. The negative health effect from having been fostered with another family in childhood is comparably large. The negative health effects from having lived in a children's home are comparable at around 30 percent higher odds; these effects are equal in size, but not statistically significant any more once we include all intermediate health and social outcomes.

It may seem remarkable that our direct effects of childhood shocks are not mitigated to a large extent once we include intermediate health outcomes - either in childhood or at age 30. One reason may be that, on the one hand, health in early life is, in general, fairly good; most individuals have excellent health. On the other hand, all intermediate health indicators are based on retrospective questions, so there might be higher measurement error.

As expected, there is a strong positive correlation between childhood health, health at age thirty, and health at age fifty plus. Results for education are similar. Individuals with one additional year of schooling have 4 percent lower odds to be classified in a worse health category. Our control variables for social status of the family – the number of rooms per persons and the number of books – have the expected effects to decrease the odds to be in poor health.

Looking at outcomes for women in Table 3 we find fairly similar results to those for men, although somewhat smaller in size. The largest negative effects of childhood shocks are obtained for having been in a foster family: the odds to be in a worse state of health increase by around 40 percent. Likewise, we do find negative effects for having suffered from hunger, but the size of this negative effect for women is only half as big as for men. Hunger increases the odds to be in a worse health category by 16 percent only. In this model – for hunger – we do find sizeable indirect effects: When we compare Column (II) with Column (IV) we do see that the total effect is twice as large as the direct effect we measure in Column (IV). No detrimental impact of having spent some time in a children's home can be examined.

Self-assessed health is often used as the prime indicator for health because it is comprehensive and internationally comparable (Lochner, 2011). Still, it is a subjective indicator and can be prone to measurement errors – in particular over time.[7] Therefore, in Table 4 we report results using more objective measures of health in later life: the number of health conditions diagnosed by a medical doctor, the number of health symptoms, the number of depressive symptoms (measured using the Euro-D Scale), the number of activities of daily living limitations (ADL), and the

[7] The recent literature finds self-assessed health rather reliable: Heiss (2011) finds strong autocorrelation in self-reported health across waves and a strong correlation with future mortality for the Health and Retirement Study (HRS). Brunello et al. (2011) show for SHARE that there is a strong correlation between self-assessed health and more objective measures. See also Bopp et al. (2012)

fact that the person was ever diagnosed as being disabled.

These indicators, although given by the respondents themselves, can be considered to be more objective, because they refer to a more detailed and more easily definable health condition. In particular, the question "Did your doctor tell you that you have ...?" should be less prone to varying self-assessment moods. We present two versions, respectively: following Table 2, Column (II) we control only for childhood social status (the reduced form) and following Column (IV) where we control for intermediate outputs (only direct effects). Whereas the first four outcomes are modeled as a Poisson regression model, the last dependent variable (disability) is modeled as a Logit regression.

Looking at the Table as a whole, we see that results for the number of health conditions, symptoms, and depression are closely related to the ones for self-assessed health: for men, generally, having suffered from hunger and having lived with a foster family have a strong relation to all of these outcomes; the results for children's home are similar, but smaller and not always statistically significant. Interestingly, we see that dispossession before birth is strongly correlated with negative health outcomes. The results are different for the rest: limitations in activities of daily living are not related to childhood shocks. It seems that these daily life activities are more loosely related to classical health diagnoses or symptoms. The probability of having ever been diagnosed as disabled is significantly higher if the person was relocated in childhood or dispossessed before birth; likewise for persons that have been living in a children's home.

For women and the outcomes of health conditions, health, and depressive symptoms, we establish almost exactly the same relations. A women is predicted to be diagnosed with more conditions or symptoms if she had suffered from hunger in childhood or if she had lived in a foster family or children's home.[8] In contrast to the results for men, there are no effects of any form of relocation or dispossession. The probability to suffer from limitations in activities of daily living is higher if a woman was dispossessed in childhood, has been living in a foster family, or has suffered from hunger. For disability there are only weak effects: there is some evidence that the probability to be disabled is somewhat higher if a woman was relocated in childhood or if she has suffered from hunger.

The quantitative effects are, in general, quite large: For men, having suffered from dispossession or hunger or having lived in a foster family increases the number of health conditions by 15 percent; in the case of women, having lived in a children's home or in a foster family (having suffered from hunger) increases the number of health conditions at age 50 plus by approximately 17 (ten) percent. Quantitative effects for the other outcome measures are comparably large. These effects might even be considered to be lower bound estimations due to a potential impact of these shocks on mortality of elderly persons, which might have removed the persons most severely hit from these shocks from our sample.

Finite mixture model

As the relationship between childhood shocks and later health outcomes may be different among subgroups of the sample, we use a finite mixture model (FMM).

[8] Having lived in a children's home has no impact on depression later in life, though.

Heterogeneity in the reaction to shocks may go beyond clearly-defined groups, such that a traditional method in dividing the sample into subgroups cannot capture this heterogeneity in full. FMM permits the estimation of the interesting parameters of the model for unknown groups, where – in a post-estimation step – the probability of group membership can be calculated for each individual in the sample (Wedel et al., 1993).

We estimate a two component FMM with the "number of health conditions at the age of 50+" as outcome variable that follows a Poisson distribution.[9] We assume that the random variable $Health(H)$ is drawn from a population which is an additive mixture of K distinct sub-populations with proportions π_k (Deb et al., 2011),

$$\rho(H_i|\theta_k) = \sum_{k=1}^{K} \pi_k f_k(H_i|\theta_k), \qquad 0 \leq \pi_k, \ \sum_{k=1}^{K} \pi_k = 1, \tag{7}$$

with $f_k(H_i|\theta_k)$ as the density for subpopulation k and θ_k as parameters to be estimated. The component distribution in the Poisson mixture is given by

$$f_k(H_i|\theta_k) = \frac{\lambda_{ki}^{H} exp(-\lambda_k)}{H_i!}, \tag{8}$$

where $\lambda_{ki} = exp(\alpha_{0k} + \alpha_{1k} Shock + \alpha_{2k} SES_C + \rho_{jk} X_j)$.

We can, thus, estimate the probability for each individual of being in one of the latent classes as

$$Pr(H_i \in l|\theta_j, H_i) = \frac{f_l(H_i|\theta_l)}{\sum_{k=1}^{K} \pi_k f_k(H_i|\theta_k)} \qquad \forall k = 1...K \ . \tag{9}$$

We estimate this finite mixture model using the Stata package fmm (Deb, 2012). Posterior probabilities and component membership are estimated using the Stata package fmmlc (Lüdicke, 2011).

Compared to an analysis of pre-determined subgroups, FMM has the advantage that no prior grouping information is necessary; compared to quantile regression, it has the advantage that the sources of heterogeneity can be characterized as well. Moreover, this classification removes unobservable heterogeneity in the data, which might otherwise threaten the identification of the childhood shock effects.

FMM estimation results are reported in Table 5 and post estimation component identification is presented in Table 6. We present 2-component estimates for men and women separately. For men, component one includes 6708 and component two 2094 individuals. The population of women is divided into 6688 and 2426 individuals, respectively. Although the size of these components is quite similar for males and females, it is important to note that the classification in such finite mixture models does not follow an a-priori given rule: for males and females the two components could be quite different. For comparison reasons, we stick to specification (II) from

[9] Due to convergence problems we use age and age squared as control variables instead of the full list of age dummies.

Table 5 where we control for childhood social status, but not for any intermediate conditions.

Before we discuss a differential coping with childhood shocks in these two components let us start with a characterization of these groups. Despite independent grouping, class characteristics are very similar for men and women. Generally, individuals in component one are of better health at the age of fifty plus. Males in component one suffer on average from one adverse health condition compared to a mean of three health conditions in component two. The same for females with 1.2 and 3.2 health conditions. So, where does this difference have its origin? In the component membership determination in Table 6 we see that members of component one come, in general, from better situated families. For both genders, childhood social status characteristics, like rooms per person, the number of features of the accommodation, being in a rural area or coming from a farmer's family is negatively associated with membership in component two. Moreover, earlier birth cohorts are more likely to belong to component one. In addition, the prevalence of childhood shocks is different: membership in component two is positively associated with having suffered from hunger or been in a foster family for males and negatively correlated with relocation in childhood.[10]

Next we discuss the effects of childhood shocks on the number of health conditions at the age of fifty plus. At first it has to be mentioned, that some coefficients might be less precisely estimated because of smaller sample size in each of the components. It turns out that the most interesting phenomena relate to relocation during childhood, having lived in a foster family, and having suffered from hunger.

Relocation has different effects across the two components, both for males and females. In component one the event of relocation and the number of adverse health conditions are positively associated, whereas in component two it is the other way round. In the standard Poisson regression the coefficient is positive but not statistically significant for both males and females. It seems that individuals from better situated families suffer more from relocation in childhood, whereas those in component two even seem to profit thereof. While those from richer families simply might have more to lose, those from a poorer background might even profit from being dislocated into a better region with better health care, etc. Moreover, relocation is much more frequent in the first group: for males, e.g. there are 294 individuals in component one and only 30 in component two. A negative consequence of relocation, thus, is an empirically much more frequent phenomenon, while a positive outcome can be considered to be the exception. Finite mixture modeling is indispensable in this case to reveal these differences.

While there are no significant effects of dispossession, the results for having lived in a children's home or foster family and having suffered from hunger reveal an noteworthy pattern: all these negative childhood shocks have serious detrimental effects on health in later life, but only for the smaller group of children from less affluent parents. While these effects are only marginally significant in the case of children's home, the effects are stronger for foster families in the case of boys and strongest for both genders in the case of hunger in childhood. It seems that more

[10] Kesternich et al. (2013) also find that lower child socio-economic status is positively associated with hunger, but negatively associated with dispossession and persecution in countries affected by World War II.

affluent families are better able to cope with fostering children, which might be caused by the availability of a larger social or family network which can absorb the shock of missing parents more easily.[11] As it comes to hunger in childhood, there are different explanations for these differing reactions: either more affluent families are better able to remediate periods of malnutrition or these periods of hunger are either shorter and more exceptional, or less severe in the first place.

5 Conclusion

This paper investigates the long-run impacts of different adverse childhood shocks on health in late adulthood. Using a simple life-course approach and SHARE data from eleven European countries we estimate the direct and indirect effects of shocks, such as relocation, dispossession, having lived with a foster family or in a children's home, or having suffered from hunger in early life. Our major findings are, that having lived in a children's home, having been fostered with another family, having suffered from hunger, and dispossessions are found to negatively affect health even after the age of 50. As dispossession and other adverse shocks typically also happened to the parents of our survey respondents we can speak about long-lasting inter-generational effects here.

Employing a finite mixture model that allows to classify the sample into a-priory unknown groups, we find that some adverse shocks have opposite health effects in different groups of individuals. Results suggest that individuals originating from better situated families suffer the most from relocation or evacuation during a war. The consequences of hunger, periods spent in a children's home, or having lived with a foster family, are notably larger for children from less affluent families compared to children from better situated families.

We found that early life shocks have long-lasting consequences on well-being of individuals. These outcomes underline the significance of early policy interventions in case of dramatic war- or social-upheaval-driven events, or more family-driven events to mediate the long-term impact and prevent future cost. These results also show evidence for the importance of being more cautious with general assessments of the impact of early life conditions on health or social circumstances in later life. The use of a finite mixture model offers a simple possibility to control for unobserved factors and to differentiate between a-priori unknown groups whose coping possibilities for such severe shocks may be substantially different.

[11] Santavirta (2010) also examines that if foster families' social status is below that of biological parents, fostering can have negative long-term effects on employment and welfare. Effects varying by socioeconomic status of the family are also established by Akbulut-Yuksel (2009).

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Table 1: Summary statistics

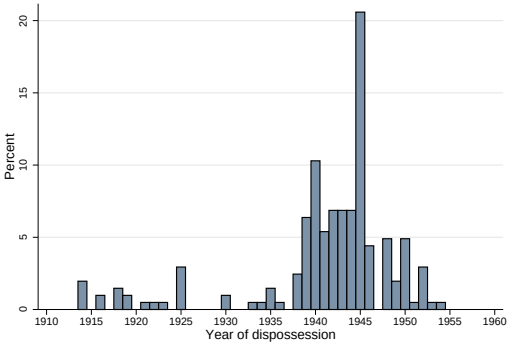
Variable	Description	Obs	Mean	S.D.	Min	Max
Year of birth		17916	1942	8.8682	1920	1955
Childhood shocks						
Dispossession before birth[1]	Year of event before birthyear of respondent	17909	0.0114	–	0	1
Dispossession 0-15[1]	Dispossession during the age of 0-15	17909	0.0239	–	0	1
Hunger 0-15[1]	Hunger during the age of 0-15	17912	0.0643	–	0	1
Relocation 0-15[2]	Relocation during the age of 0-15	17916	0.0354	–	0	1
Children's home[2]	Lived in a children's home	17916	0.0150	–	0	1
Foster family[2]	Been fostered with another family	17916	0.0132	–	0	1
Childhood social status controls						
Number of features of accommodation[1]	Sum of reported features of accommodation	17893	1.8246	1.6556	0	5
Rooms per person[3]	Number of rooms/number of persons in household at the age of 10	17743	0.7088	0.3959	0	4
Number of books	Number of books in household at the age of 10; measured in shelves	17798	2.0422	1.1829	1	5
Rural[1]	Area of first residence	17909	0.6350	–	0	1
High-skilled white collar	Legislator, Senior Official or Manager; Professional; 4^{th} skill level; main breadwinner in household	17564	0.0730	–	0	1
High-skilled blue collar	Technician or associate professional; Armed forces; 3^{rd} skill level; main breadwinner in household	17564	0.0600	–	0	1
Low-skilled white collar	Clerk; Service, Shop or Market Sales Worker; 2^{nd} skill level; main breadwinner in household	17564	0.1305	–	0	1
Low-skilled blue collar	Plant/machine operator or assembler; elementary occupation; and craft or related trades worker; 1^{st} or 2^{nd} skill level; main breadwinner in household	17564	0.4537	–	0	1
Farmer	Skilled agricultural or fishery worker; 2^{nd} skill level; main breadwinner in household	17564	0.2659	–	0	1
No main breadwinner	No main breadwinner in household	17564	0.0169	–	0	1
Childhood health and educational attainment						
Child health[1]	Self-assessed health in childhood; the higher, the worse	17875	2.0666	1.0025	1	5
Number of illnesses	Number of illnesses until the age of 15 (from W1 and W2)	17742	1.2251	0.8470	0	7
Years of schooling[4]	Total years of full-time education (from W2)	16462	10.2321	4.4086	0	25

Table continued on the following page...

Variable	Description	Obs	Mean	S.D.	Min	Max
Intermediate outcomes at the age of 30						
Health	Number of health conditions diagnosed by a medical doctor (from W1 and W2)	17916	0.0440	0.2505	0	6
High-skilled white collar	Legislator, Senior Official or Manager; Professional; 4^{th} skill level	17916	0.0967	–	0	1
High-skilled blue collar	Technician or associate professional; Armed forces; 3^{rd} skill level	17726	0.0951	–	0	1
Low-skilled white collar	Clerk; Service, Shop or Market Sales Worker; 2^{nd} skill level	17726	0.2069	–	0	1
Low-skilled blue collar	Plant/machine operator or assembler; elementary occupation; and craft or related trades worker; 1^{st} or 2^{nd} skill level	17726	0.2959	–	0	1
Farmer	Skilled agricultural or fishery worker; 2^{nd} skill level	17726	0.0715	–	0	1
Not employed	Not employed	17726	0.2328	–	0	1
Outcome variables at the age of 50+						
Self-assessed health	Self-reported health status; the higher, the worse	17916	3.2626	1.0569	1	5
Health conditions	Number of health conditions diagnosed by a medical doctor (from W1 and W2)	17916	1.6139	1.4979	0	14
Health symptoms	Number of health symptoms(from W1 and W2)	17916	1.5913	1.7304	0	12
Depressive symptoms	Number of depressive symptoms (EURO-D Scale; from W1 and W2)	17916	2.2137	2.1734	0	12
ADL limitations	Limitations in activities of daily living (ADL, from W1 and W2)	17916	0.1551	0.6389	0	6
Ever disability	Ever disability reported in disability module in W3	17916	0.1960	–	0	1

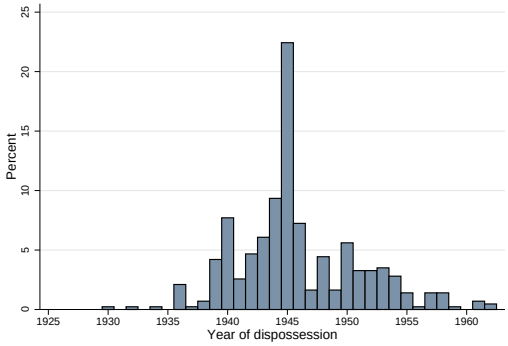
[1] Males with missing values in this variable are dropped from the sample.
[2] All observations with missing values in this variable are dropped from the sample.
[3] Rooms per person greater than 4 are set to missing.
[4] For Denmark raw data are used.

Figure 2: Year of first dispossession of close family before birth of respondent



First dispossession of close family before birth of respondent.

Figure 3: Year of first dispossession of close family or respondent during child age



First dispossession of close family or respondent himself between the age of 0 and 15.

Figure 4: Children's home by birth cohort and country of origin

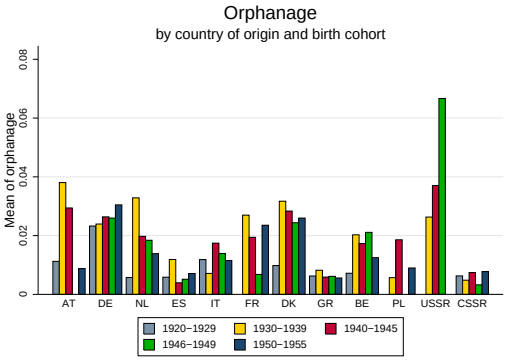


Figure 5: Foster family by birth cohort and country of origin

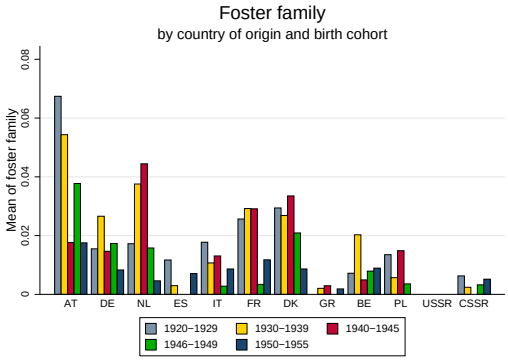
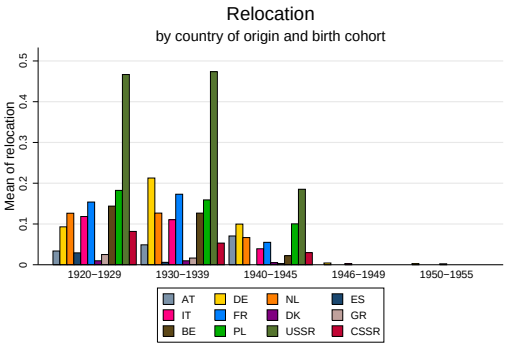
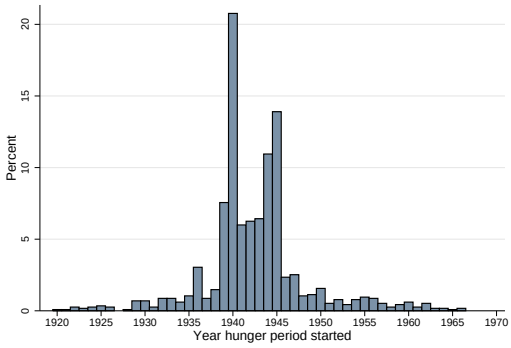


Figure 6: Relocation by country of origin and birth cohort



Notes: All reported relocations.

Figure 7: Year hunger period during child age started



Hunger period started until the age of 15.

Table 2: Self-assessed health at the age of 50+: males

	I	II	III	IV
Childhood shocks				
Relocation 0-15	0.9782	1.0567	1.0206	1.0428
	(0.1064)	(0.1156)	(0.1125)	(0.1149)
Dispossession before birth	1.1671	1.2233	1.1715	1.1564
	(0.2415)	(0.2534)	(0.2422)	(0.2386)
Dispossession 0-15	0.8231	0.8611	0.8704	0.8789
	(0.1104)	(0.1153)	(0.1172)	(0.1182)
Children's home	1.3248*	1.3617*	1.2797	1.2804
	(0.2212)	(0.2363)	(0.2202)	(0.2205)
Foster family	1.3585*	1.4238*	1.4015*	1.3691*
	(0.2520)	(0.2649)	(0.2595)	(0.2548)
Hunger 0-15	1.4710***	1.4429***	1.3189***	1.3154***
	(0.1169)	(0.1153)	(0.1061)	(0.1060)
Childhood social status				
Num. features of accommodation		0.9810	0.9916	0.9973
		(0.0159)	(0.0161)	(0.0163)
Rooms per person		0.8400***	0.8458***	0.8559***
		(0.0504)	(0.0508)	(0.0515)
Num. of books in household		0.8832***	0.9153***	0.9276***
		(0.0194)	(0.0205)	(0.0209)
Rural		0.9988	0.9912	0.9907
		(0.0454)	(0.0452)	(0.0453)
High-skilled white collar		0.8240**	0.8897	0.9374
		(0.0714)	(0.0775)	(0.0829)
High-skilled blue collar		0.8807	0.9434	0.9923
		(0.0791)	(0.0850)	(0.0903)
Low-skilled white collar		0.7750***	0.7944***	0.8349***
		(0.0504)	(0.0519)	(0.0554)
Farmer		1.0105	0.9762	0.9316
		(0.0517)	(0.0502)	(0.0506)
No main breadwinner		0.7655	0.7043**	0.7014**
		(0.1262)	(0.1154)	(0.1147)
Base: Low-skilled blue collar				
Childhood health and education				
Self-assessed childhood health 0-15			1.4173***	1.4103***
			(0.0303)	(0.0303)
Years of schooling			0.9533***	0.9634***
			(0.0051)	(0.0054)
Outcomes at the age of 30				
Num. of health conditions				1.4037***
				(0.1201)
High-skilled white collar				0.6978***
				(0.0507)
High-skilled blue collar				0.7991***
				(0.0509)
Low-skilled white collar				0.7755***
				(0.0463)
Farmer				1.1598*
				(0.0905)
Not employed				1.0067
				(0.0982)
Base: Low-skilled blue collar				
Pseudo R^2	0.0517	0.0571	0.0708	0.0735
N	8802	8802	8802	8802

Odds ratios from ordered Logit regression. Standard errors in parenthesis.
Controlled for country of origin and year of birth.
*10%,**5% and ***1% significance.

Table 3: Self-assessed health at the age of 50+: females

	I	II	III	IV
Childhood shocks				
Relocation 0-15	0.8811	0.9285	0.9239	0.9456
	(0.0997)	(0.1058)	(0.1061)	(0.1088)
Dispossession before birth	0.9096	1.0507	1.0567	1.0229
	(0.1554)	(0.1805)	(0.1818)	(0.1753)
Dispossession 0-15	0.9053	0.9494	0.9257	0.9533
	(0.1258)	(0.1318)	(0.1289)	(0.1327)
Children's home	1.2179	1.0575	0.8878	0.8819
	(0.1988)	(0.1790)	(0.1509)	(0.1501)
Foster family	1.4052**	1.3975**	1.3789*	1.3828*
	(0.2333)	(0.2338)	(0.2317)	(0.2321)
Hunger 0-15	1.3573***	1.3183***	1.1585	1.1632*
	(0.1213)	(0.1185)	(0.1052)	(0.1058)
Childhood social status				
Num. features of accommodation		0.9423***	0.9474***	0.9516***
		(0.0148)	(0.0150)	(0.0151)
Rooms per person		0.7625***	0.8101***	0.8215***
		(0.0451)	(0.0482)	(0.0490)
Num. of books in household		0.8932***	0.9370***	0.9496**
		(0.0188)	(0.0201)	(0.0205)
Rural		0.9201*	0.9236*	0.9118**
		(0.0414)	(0.0418)	(0.0413)
High-skilled white collar		0.7528***	0.7921***	0.7984***
		(0.0626)	(0.0665)	(0.0676)
High-skilled blue collar		0.8981	0.9494	0.9668
		(0.0767)	(0.0815)	(0.0832)
Low-skilled blue collar		0.8502***	0.8769**	0.8985*
		(0.0532)	(0.0552)	(0.0567)
Farmer		0.9455	0.9527	0.9101*
		(0.0492)	(0.0498)	(0.0488)
No main breadwinner		0.9718	0.9440	0.9638
		(0.1432)	(0.1402)	(0.1436)
Base: Low-skilled blue collar				
Childhood health and education				
Self-assessed childhood health 0-15			1.5256***	1.5138***
			(0.0315)	(0.0315)
Years of schooling			0.9492***	0.9577***
			(0.0056)	(0.0059)
Outcomes at the age of 30				
Num. of health conditions				1.6833***
				(0.1329)
High-skilled white collar				0.7305***
				(0.0676)
High-skilled blue collar				0.6516***
				(0.0690)
Low-skilled white collar				0.7134***
				(0.0458)
Farmer				1.2777**
				(0.1311)
Not employed				0.8377***
				(0.0487)
Base: Low-skilled blue collar				
Pseudo R^2	0.0545	0.0624	0.0820	0.0858
N	9114	9114	9114	9114

Odds ratios from ordered Logit regression. Standard errors in parenthesis.
Controlled for country of origin and year of birth.
*10%,**5% and ***1% significance.

Table 4: Health measures at the age of 50+

MALES

	Num. health cond.		Num. health sympt.		Num. depr. sympt.		ADL limit.		Ever disabil.	
	II	**IV**	**II**	**IV**	**II**	**IV**	**II**	**IV**	**II**	**IV**
Relocation 0-15	0.0182	0.0316	0.0258	0.0368	-0.0716	-0.0693	0.0100	0.0135	0.0376*	0.0395*
	(0.0640)	(0.0635)	(0.0605)	(0.0599)	(0.0745)	(0.0743)	(0.0307)	(0.0300)	(0.0221)	(0.0219)
Dispossession before birth	0.2431*	0.1875	0.2821***	0.2386**	0.4020***	0.3726***	0.0879	0.0830	0.1033***	0.0977***
	(0.1272)	(0.1261)	(0.1085)	(0.1075)	(0.1232)	(0.1226)	(0.2462)	(0.1690)	(0.0362)	(0.0360)
Dispossession 0-15	-0.0940	-0.0573	0.0153	0.0397	-0.0104	0.0029	-0.0265	-0.0229	0.0111	0.0165
	(0.0770)	(0.0763)	(0.0690)	(0.0684)	(0.0864)	(0.0861)	(0.0758)	(0.0490)	(0.0267)	(0.0266)
Children's home	0.1494	0.1654	0.2039**	0.2057**	0.0887	0.0636	0.0361	0.0381	0.0579*	0.0522
	(0.1053)	(0.1045)	(0.0951)	(0.0944)	(0.1151)	(0.1147)	(0.1028)	(0.0796)	(0.0333)	(0.0332)
Foster family	0.2047**	0.1925*	0.2803***	0.2656***	0.3812***	0.3643***	0.0481	0.0439	0.0018	-0.0002
	(0.1044)	(0.1036)	(0.0940)	(0.0932)	(0.1117)	(0.1113)	(0.1355)	(0.0904)	(0.0376)	(0.0374)
Hunger 0-15	0.2156***	0.1513***	0.2482***	0.1963***	0.4199***	0.3747***	0.0375	0.0320	0.0212	0.0108
	(0.0441)	(0.0439)	(0.0412)	(0.0410)	(0.0484)	(0.0485)	(0.1049)	(0.0653)	(0.0165)	(0.0164)
Pseudo R^2	0.0407	0.0521	0.0405	0.0498	0.0378	0.0427	0.0924	0.1034	0.0457	0.0606
Mean LHS	1.4710	1.4710	1.2853	1.2853	1.7388	1.7388	0.1278	0.1278	0.2036	0.2036
N	8802	8802	8802	8802	8802	8802	8802	8802	8802	8802

FEMALES

Relocation 0-15	0.0937	0.1061	-0.0620	-0.0315	-0.1735*	-0.1303	-0.0190	-0.0129	0.0336	0.0384*
	(0.0695)	(0.0688)	(0.0766)	(0.0757)	(0.0969)	(0.0963)	(0.0192)	(0.0202)	(0.0225)	(0.0221)
Dispossession before birth	-0.0240	-0.0717	-0.0126	-0.0485	0.1270	0.0966	0.0421	0.0361	-0.0479	-0.0587*
	(0.1323)	(0.1311)	(0.1302)	(0.1287)	(0.1476)	(0.1468)	(0.0357)	(0.0434)	(0.0357)	(0.0355)
Dispossession 0-15	0.0085	0.0257	0.0137	0.0388	-0.0745	-0.0557	0.0499*	0.0493	-0.0023	-0.0016
	(0.0850)	(0.0842)	(0.0890)	(0.0878)	(0.1162)	(0.1154)	(0.0289)	(0.0472)	(0.0276)	(0.0273)
Children's home	0.3141***	0.2190**	0.4122***	0.2905***	-0.0596	-0.1872	-0.0272	-0.0379	0.0238	-0.0011
	(0.1035)	(0.1027)	(0.1075)	(0.1065)	(0.1445)	(0.1439)	(0.0314)	(0.0441)	(0.0304)	(0.0302)
Foster family	0.2861***	0.2720***	0.3774***	0.3684***	0.3042**	0.2946**	0.0618*	0.0574	0.0386	0.0367
	(0.1002)	(0.0992)	(0.1049)	(0.1036)	(0.1368)	(0.1359)	(0.0359)	(0.0553)	(0.0305)	(0.0301)
Hunger 0-15	0.1743***	0.1385***	0.3088***	0.2430***	0.3992***	0.3287***	0.0366*	0.0281	0.0393**	0.0259
	(0.0528)	(0.0524)	(0.0548)	(0.0543)	(0.0687)	(0.0685)	(0.0202)	(0.0273)	(0.0178)	(0.0177)
Pseudo R^2	0.0582	0.0714	0.0513	0.0653	0.0413	0.0498	0.1260	0.1363	0.0470	0.0678
Mean LHS	1.7518	1.7518	1.8869	1.8869	2.6723	2.6723	0.1815	0.1815	0.1887	0.1887
N	9114	9114	9114	9114	9114	9114	9114	9114	9114	9114

Marginal effects at means after Poisson regression. Ever disability: Marginal effects at means after Logit regression.
Model II: Controlled for childhood social status.
Model IV: Controlled for childhood social status, health, education, and outcomes at the age of 30.
Model II and IV: Controlled for country of origin and year of birth.
Standard errors in parenthesis. *10%,**5% and ***1% significance.

Table 5: Finite mixture estimation of the number of health conditions at the age of 50+

	Males		**Females**	
	Comp. 1	Comp. 2	Comp. 1	Comp. 2
Childhood shocks				
Relocation 0-15	0.5362***	-0.7619***	0.8123***	-0.8584***
	(0.1771)	(0.2339)	(0.1768)	(0.2889)
Dispossession before birth	0.0923	0.5226	-0.2510	0.2084
	(0.2351)	(0.3725)	(0.1907)	(0.2885)
Dispossession 0-15	-0.1051	-0.0194	-0.0283	0.0936
	(0.1098)	(0.2019)	(0.1601)	(0.2791)
Children's home	0.0426	0.4205	0.3007	0.4894
	(0.1946)	(0.2945)	(0.1904)	(0.3311)
Foster family	-0.0595	0.5357*	0.1667	0.3509
	(0.1741)	(0.2749)	(0.1981)	(0.2657)
Hunger 0-15	0.1243	0.3321**	-0.1236	0.6859***
	(0.0766)	(0.1294)	(0.0907)	(0.1889)
Childhood social status				
Num. features of accomm.	-0.0074	-0.0123	-0.0239	-0.0827***
	(0.0174)	(0.0282)	(0.0247)	(0.0312)
Rooms per person	0.1064	-0.5083***	-0.1162	-0.1047
	(0.0755)	(0.1384)	(0.0891)	(0.1319)
Num. of books in HH	0.0323	-0.0546	0.0031	-0.0249
	(0.0248)	(0.0379)	(0.0294)	(0.0426)
Rural	-0.0351	0.0591	0.0865	-0.3787***
	(0.0467)	(0.0785)	(0.0695)	(0.0946)
High-skilled white collar	-0.2944***	0.2157	-0.0826	-0.0716
	(0.0774)	(0.1560)	(0.1113)	(0.1640)
High-skilled blue collar	-0.2000**	-0.0167	-0.1245	0.1001
	(0.0785)	(0.1493)	(0.1064)	(0.1557)
Low-skilled white collar	-0.0877	-0.1451	-0.0521	-0.0431
	(0.0668)	(0.1165)	(0.0796)	(0.1157)
Farmer 10	-0.0863*	-0.2247***	0.0241	-0.2087*
	(0.0500)	(0.0822)	(0.0670)	(0.1052)
No main breadwinner	0.0224	-0.0810	0.0416	0.4092
	(0.1853)	(0.3083)	(0.1991)	(0.2756)
(Base: Low-skilled blue collar)				
Other control variables				
Age	0.1856***	0.2535***	0.2438***	0.1240*
	(0.0352)	(0.0600)	(0.0453)	(0.0651)
Age squared	-0.0011***	-0.0016***	-0.0014***	-0.0006
	(0.0003)	(0.0004)	(0.0003)	(0.0005)
Mean LHS	1.0012	2.9761	1.2190	3.2205
N in component	6708	2094	6688	2426
N	8802		9114	

Marginal effects after FMM estimation. Estimated Model II (see Table 5).
Controlled for country of origin, wave indicator, and missing values.
Standard errors in parenthesis. *10%,**5% and ***1% significance.

Table 6: Probability of being in component 2 in FMM

	Males		**Females**	
Childhood shocks				
Relocation 0-15	-0.2193***	(0.0352)	-0.0460*	(0.0276)
Dispossession before birth	0.0042	(0.0451)	0.0171	(0.0399)
Dispossession 0-15	-0.0153	(0.0319)	0.0451	(0.0308)
Children's home	0.0218	(0.0378)	-0.0276	(0.0395)
Foster family	0.0802**	(0.0393)	0.0588	(0.0364)
Hunger 0-15	0.0438**	(0.0179)	0.0051	(0.0215)
Childhood social status				
Num. features of accomm.	-0.0050	(0.0037)	-0.0101***	(0.0037)
Rooms per person	-0.0692***	(0.0147)	-0.0023	(0.0140)
Num. books in HH	-0.0079	(0.0051)	-0.0032	(0.0049)
Rural	0.0061	(0.0105)	-0.0493***	(0.0107)
High-skilled white collar	0.0283	(0.0202)	-0.0034	(0.0199)
High-skilled blue collar	0.0012	(0.0209)	0.0262	(0.0197)
Low-skilled white collar	0.0020	(0.0150)	-0.0034	(0.0148)
Farmer	-0.0327***	(0.0118)	-0.0284**	(0.0127)
No main breadwinner	-0.0256	(0.0382)	0.0465	(0.0330)
(Base: Low-skilled blue collar)				
Birth cohort				
Born 1930-39	0.0330*	(0.0172)	0.0073	(0.0174)
Born 1940-45	0.0587***	(0.0176)	0.0230	(0.0176)
Born 1946-49	0.0863***	(0.0183)	0.0410**	(0.0181)
Born 1950-55	0.0561***	(0.0181)	0.0279	(0.0177)
(Base: Born 1920-29)				
Country of origin				
Austria	-0.0348	(0.0282)	0.0217	(0.0269)
Netherlands	-0.0470**	(0.0210)	-0.0111	(0.0211)
Spain	-0.0787***	(0.0230)	-0.1752***	(0.0277)
Italy	-0.0422**	(0.0203)	0.0137	(0.0219)
France	-0.1178***	(0.0228)	-0.0553**	(0.0218)
Denmark	-0.0073	(0.0212)	0.0359*	(0.0212)
Greece	-0.1426***	(0.0217)	-0.1998***	(0.0271)
Belgium	-0.0826***	(0.0207)	-0.0120	(0.0207)
Poland	-0.0237	(0.0225)	0.0716***	(0.0222)
Soviet Union and s.s.	-0.1428**	(0.0714)	0.0044	(0.0570)
Czechoslovakia and s.s.	-0.0807***	(0.0225)	0.0095	(0.0213)
Other countries	-0.2119 *	(0.1102)	0.0767	(0.0679)
(Base: Germany)				
Pseudo R^2	0.0237		0.0259	
Mean LHS	0.2379		0.2662	
N	8802		9110	

Marginal effects after Logit regression. Standard errors in parenthesis.
LHS: 0 ... component 1, 1 ... component 2
*10%,**5% and ***1% significance.