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## 19 Is there a European land of opportunity? Cross-country differences in inter- generational mobility in 14 European countries and Israel

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- ▶ We explore cross-country variations in intergenerational mobility across Europe in the past half-century using subjective and objective non-monetary deprivation indices
  - ▶ Populations in Spain and Italy are the least socially mobile, independently of the relative poverty measures considered
  - ▶ Using material deprivation as indicator we find that populations in Denmark, Sweden, the Netherlands and Luxembourg are the most socially mobile
  - ▶ In terms of social deprivation, respondents in countries like Denmark and Germany seem to move up the status ladder
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### 19.1 Intergenerational mobility in Europe

Intergenerational mobility research analyses the extent to which the earnings, occupational status or educational attainment of individuals are determined by the family of origin (the socio-economic status of the parents) rather than by their own ability, skills, and efforts. There is currently a great deal of literature that analyses patterns of intergenerational mobility of income, especially in the U.S. The renewed interest in this literature is explained in part by an increase in inequality in the past decades and by the availability of better data linking two or more generations (Chetty et al. 2014). Becker and Tomes (1979) were the first to analyse intergenerational mobility from an economic perspective, addressing several aspects of the rise and fall of families that were left unexplained by the sociological approach.

The basic empirical relationship in the literature links the parents' earnings to those of their children, providing an estimate of intergenerational earnings elasticity (Mazumder 2005). Another important aspect of mobility research involves cross-country comparisons. D'Addio (2007) found, for example, that countries with greater economic inequalities (e.g. U.S., U.K.) have lower intergenerational mobility compared with countries with more uniform income distributions, such as Denmark, Sweden and Canada.



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However, studies which examine the effect of parents' incomes on children's income face substantial methodological challenges that stem from the task of measuring permanent income. First, life-cycle bias caused by differences in income dynamics at different stages of life may exist. Second, attenuation bias may emerge due to measurement errors in the income variables. Third, data on income for two or more generations are only rarely available. As a result of these issues, research on mobility has recently started to consider intergenerational transmission of education, social status, and other factors as alternative drivers of social mobility.

In the present article we document patterns of intergenerational mobility in Europe and Israel using an indirect measure of income and/or social status, namely, relative poverty. Individuals at the bottom part of the distribution in terms of standards of living are labeled as "poor." In particular, by means of transition matrices and statistical indices of social mobility, we study whether poverty in the period of childhood persists up to older age and, if so, whether this process differs across countries. The availability of fully comparable data from 15 different countries that participate in the Survey of Health, Ageing and Retirement in Europe (SHARE) makes this inquiry both possible and unique.

In the current analysis, we employ non-monetary proxies available in the SHARE dataset. Furthermore, for each country we break the sample into three birth cohorts, i.e., individuals born before, during, and after World War 2 (WW2) (1920-1938, 1939-1945, 1946-1954). This is a natural classification given the fact that most SHARE respondents might have been exposed to WW2-related events. Following Havari and Peracchi (2014), we do not try to identify causal effects of some policy-relevant parameter (such as the potential effect of compulsory schooling or labour market reforms, or the implementation of some redistributive policy which is likely to affect social mobility). The motivation behind this choice is our focus on cross-country variations in intergenerational mobility across Europe. Since different policy reforms may have occurred at different times in the countries considered, an analysis based solely on a comparison between pre-reform and post-reform groups might lead us to compare social mobility levels of different cohorts, thus biasing the findings.

## 19.2 Variables of interest

As noted previously, we make use of subjective and objective proxies of poverty both in childhood and adulthood. We describe, first, the variables related to subjective poverty. As a proxy for poverty in childhood, we use the following retrospective probe: "*Think about your family when you were growing up, from birth*

to age 15 included. Would you say your family during that time was pretty well-off financially, about average, or poor?” (variable MCO09). As a proxy for poverty in adulthood we consider the respondent’s current ability to make ends meet financially: “Thinking of your household’s total monthly income, would you say that your household is able to make ends meet with great difficulty, with some difficulty, fairly easily, easily” (variable CO007). To investigate the evolution of financial distress from childhood into adulthood we create dichotomous indicators for both questions, classifying the respondents as either “poor” or “not poor”.<sup>1</sup>

As for the objective measures of poverty, we consider three continuous indices of material deprivation, one during childhood and two in adulthood. These indices allow us to generate two different transition matrices to study the pattern of poverty from childhood to adulthood. For the childhood measure, we extract the principal component from the following questions: “...how many rooms did your household occupy in this accommodation, including bedrooms but excluding kitchen, bathrooms, and hallways?” (variable MCO03, normalised by the number of people living in such household, MCO04); and “...approximately how many books were there in the place you lived in when you were 10? Do not count magazines, newspapers, or your school books” (variable MCO05). The score on this variable is the first principal component from the two questions. We refer to this variable in this chapter as “Child-poverty”.

The first index of deprivation in adulthood, material deprivation (“Matdeprivation”), is based on questions concerning the affordability of basic needs and consumption habits (for details, see chapter 5 in this volume). The second index, social deprivation (“Socdeprivation”), is based on questions concerning participation in everyday life, social activities and the quality of the neighbourhood (for details, see chapter 6 in this volume). Both indices are constructed using the hedonic weighting scheme that takes into account the relative contribution of each material deprivation item on an overall measure of life satisfaction, accounting for country heterogeneity. For the scope of our analysis, we divided the distribution of all the continuous indices of deprivation, both at childhood and adulthood, into tertiles.

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<sup>1</sup> Individuals whose household is able to make ends meet “with great difficulty” are categorised as “poor.”

## 19.3 Description of the indices

In order to construct the indices, we were guided by the following guidelines.

Let vector  $(Y_i; X_i)$  describe the relative level of poverty of individuals from family  $i$  during adulthood and childhood, respectively. In this study we are interested in the extent to which the relative level of poverty in adulthood,  $Y_i$ , depends on the relative level of poverty in childhood,  $X_i$ .

To facilitate cross-national comparisons, the literature has developed a variety of mobility indices which may be divided into three broad classes: a) single stage indices, 2) indices based on transition matrices, and 3) inequality reduction indices (Savegnago 2015). In the current analysis we make use of one index belonging to the second class: the Trace index which is functional of the transition matrix  $P_{k \times k}$  between levels of childhood poverty and levels of poverty in adulthood (Shorrocks 1978). The generic element  $p_{ij}$  represents the probability that the level of poverty in adulthood falls in the  $j$ -th class given that the level of childhood poverty is in the  $i$ -th class.

The Trace index of social mobility is defined as

$$m_T = k - \frac{\text{trace}(P)}{k-1}$$

where  $P$  is the transition matrix and  $k$  is the number of classes ( $k=3$  for the objective measures of deprivation,  $k=2$  for the subjective measures of financial distress). Note that null mobility would imply  $m_T = 0$ , while perfect mobility would mean  $m_T = 1$ .

## 19.4 Sample selection and descriptive statistics

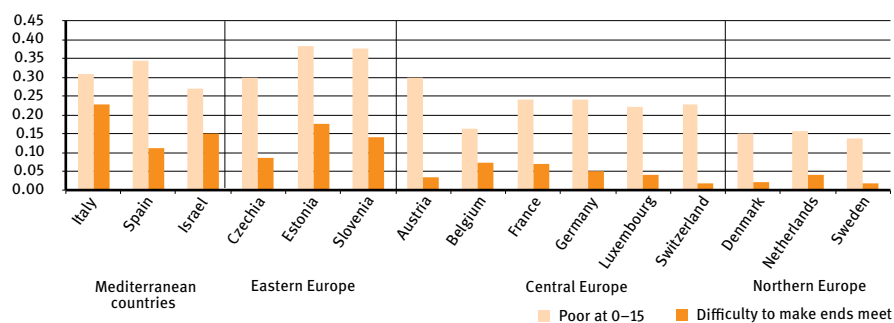
We consider in the analysis respondents from all SHARE countries who were eligible to answer the mini-childhood (MC) section (hence, those who did not participate in the SHARELIFE survey). They represent about 80 per cent of the entire SHARE sample. Table 19.1 displays summary statistics on socio-demographic characteristics for the pooled sample. For instance, nine per cent of respondents indicate that they have great difficulties in making ends meet, while 27 per cent grew up in a family with poor financial conditions.

**Table 19.1:** Pooled sample statistics

	Mean	Std. Dev.	Min	Max	Obs
Age	66.00	10.00	50	103	46,232
Male	0.45	0.50	0	1	46,913
Married	0.72	0.45	0	1	43,686
Years of education	11.04	4.44	0	25	43,263
1 bookshelf or more at 10	0.66	0.48	0	1	45,493
Rooms/person at 10	0.74	0.45	0.02	16.67	45,964
Poor at 0-15	0.27	0.44	0	1	46,913
Great difficulty making ends meet	0.09	0.29	0	1	46,913
Index of objective poverty in childhood	0.09	0.04	0	1	45,422
Index of Mat. Deprivation	0.15	0.20	0	1	41,921
Index of Soc. Deprivation	0.17	0.13	0	0.83	41,794

Source: SHARE Wave 5 release 0

Moreover, Figure 19.1 provides evidence of differences in financial conditions across countries. A large heterogeneity may be seen: Mediterranean and Eastern European countries display a higher level of financial vulnerability (social exclusion), ranging from 34 per cent to 38 per cent of respondents declaring poor financial conditions in childhood (in Spain and Estonia, respectively). In addition, individuals from Italy, Israel and Estonia are more likely to report having difficulties in making ends meet. On the other hand, the proportion of individuals in poor financial conditions is much lower in Central and Northern Europe (with the lowest values in Sweden and Denmark).

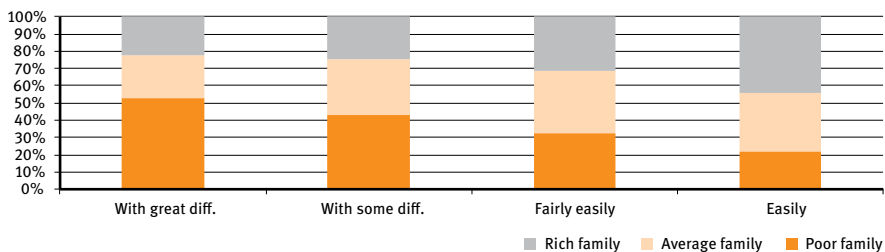


**Figure 19.1:** Percentage of respondents aged 50+ reporting poor financial conditions in childhood and adulthood, by country

Notes: Wave 5 households (n=46,913)

Source: SHARE Wave 5 release 0

Since we are interested in social mobility, in Figure 19.2 we show the proportion of individuals reporting making ends meet “easily”, “fairly easily”, “with some difficulty”, or with “great difficulty”, by self-reported financial situation at childhood.



**Figure 19.2:** Percentage of respondents aged 50+ reporting poor financial conditions in childhood by their current financial situation

Notes: Wave 5 households (n=46,913)

Source: SHARE Wave 5 release 0

A clear gradient emerges from this figure: among those who report making ends meet with great difficulty more than 50 per cent were in a poor financial situation in childhood, as opposed to just 20 per cent of those who report coming from a wealthy family. On the other hand, more than 40 per cent of those able to make ends meet easily come from a wealthy family, while only 20 per cent come from a poor background.

## 19.5 Patterns of intergenerational mobility in 14 European countries and Israel

In this section we use the Trace index previously elucidated to provide a ranking of social mobility in 14 European countries and Israel. Results based on subjective measures of financial distress are displayed first, followed by those based on the objective measures of material deprivation in childhood and adulthood. For both subjective and objective measures, results are presented: a) for the pooled sample and b) by cohort (individuals born before, during, and after WW2).

## 19.5.1 Subjective measures of relative poverty: financial distress

In Table 19.2 we rank the countries from the most mobile to the least mobile according to our measures of financial distress in childhood and adulthood. The pooled sample shows that populations in France, Germany, and Czech Republic are the most socially mobile while populations in Luxembourg, Italy, and Sweden are the least mobile.

**Table 19.2:** Ranking based on the subjective measures of financial distress in childhood and adulthood: Trace index

	Pooled	Pre-WW2	WW2	Post-WW2
<b>Most mobile</b>	France	Switzerland	France	Denmark
<b>2</b>	Germany	Germany	Czech Republic	France
<b>3</b>	Czech Republic	Denmark	Germany	Slovenia
<b>4</b>	Estonia	France	Switzerland	Netherlands
<b>5</b>	Belgium	Austria	Italy	Estonia
<b>6</b>	Switzerland	Belgium	Slovenia	Sweden
<b>7</b>	Austria	Israel	Luxembourg	Austria
<b>8</b>	Netherlands	Estonia	Estonia	Germany
<b>9</b>	Denmark	Spain	Austria	Belgium
<b>10</b>	Slovenia	Slovenia	Netherlands	Czech Republic
<b>11</b>	Spain	Czech Republic	Spain	Luxembourg
<b>12</b>	Israel	Netherlands	Belgium	Israel
<b>13</b>	Luxembourg	Sweden	Denmark	Switzerland
<b>14</b>	Italy	Italy	Israel	Spain
<b>Least mobile</b>	Sweden	Luxembourg	Sweden	Italy

Source: SHARE Wave 5 release 0

When the sample is split by cohort (pre-WW2, WW2, post-WW2), results are fairly mixed:<sup>2</sup>

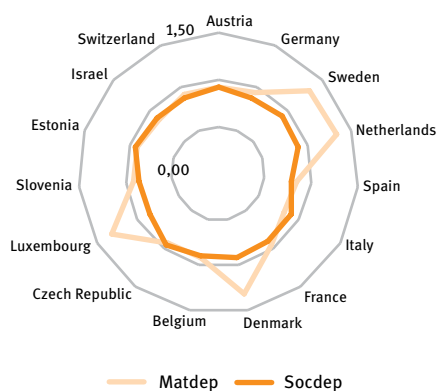
- i) Those born before WW2 living in Switzerland, Germany, and Denmark experienced the greatest social mobility with respect to respondents from other countries;
- ii) Those born before WW2 and living in Luxembourg, Sweden, and Italy experienced the lowest social mobility;

<sup>2</sup> The results for Israel should be interpreted with caution, since this country experienced massive immigration after WW2. Thus, it is likely that individuals classified as “born before WW2” and “during WW2” were born outside of Israel.

- iii) France seems to be the most “stable” country in terms of social mobility pattern, since it appears at or near the top of the ranking in the three sub-samples considered;
- iv) Social mobility in Slovenia and the Netherlands improved: these countries’ ranking of social mobility was “raised” from the low level experienced by those born before WW2 to the relatively high level experienced by those born after WW2.

### 19.5.2 Objective measures of relative poverty: material deprivation

As already explained, we consider three different objective measures of relative poverty, one during childhood (Child-poverty) and two in adulthood (Matdeprivation and Socdeprivation). The results are summarised in Figure 19.3, in which each country is placed around the center based on its Trace index score. The higher the score (i.e. the higher the level of social mobility) the further away the country is from the center of the figure. Results based on Matdeprivation show that Denmark, Luxembourg, the Netherlands, and Sweden are extremely mobile. This result is in line with the main findings of the literature on income mobility. Nevertheless, the results based on Socdeprivation are not so clear cut.



**Figure 19.3:** Ranking of countries based on different measures of material deprivation in adulthood using the Trace index (pooled sample).

Source: SHARE Wave 5 release 0

Tables 19.3a and 19.3b present the results separately by birth cohort (pre-WW2, WW2, post-WW2) for the Matdeprivation and Socdeprivation measures, respectively. Table 19.3a suggests that individuals in Denmark, Luxembourg, Sweden,



and the Netherlands experienced the greatest levels of social mobility, while individuals in Italy and Spain experienced the lowest social mobility opportunities independently of whether they were born before, during or after WW2.

**Table 19.3a:** Ranking based on the objective measures of social deprivation in childhood and adulthood using Matdeprivation, by birth cohort (pre-WW2, WW2, post-WW2): Trace index

	Pre-WW2	WW2	Post-WW2
<b>Most mobile</b>	Denmark	Sweden	Netherlands
<b>2</b>	Luxembourg	Netherlands	Switzerland
<b>3</b>	Sweden	Denmark	Sweden
<b>4</b>	Netherlands	Luxembourg	Denmark
<b>5</b>	France	Switzerland	Luxembourg
<b>6</b>	Switzerland	Belgium	Austria
<b>7</b>	Belgium	France	France
<b>8</b>	Estonia	Austria	Germany
<b>9</b>	Slovenia	Czech Republic	Belgium
<b>10</b>	Czech Republic	Germany	Czech Republic
<b>11</b>	Israel	Israel	Slovenia
<b>12</b>	Germany	Estonia	Estonia
<b>13</b>	Italy	Slovenia	Israel
<b>14</b>	Austria	Italy	Italy
<b>Least mobile</b>	Spain	Spain	Spain

Source: SHARE Wave 5 release 0

As far as the results for the index of social deprivation are concerned, Table 19.3b suggests a varied story:

- i) Individuals in the Czech Republic and Estonia experienced the greatest levels of social mobility, independently of whether they were born before, during or after WW2;
- ii) Social mobility in Sweden, Denmark, and Germany improved: these countries' ranking of mobility was "raised" from the low level experienced by those born before WW2 to the relatively high level experienced by those born after WW2;
- iii) Social mobility in Switzerland worsened: this country's ranking of mobility decreased from relatively high level experienced by those born before WW2 to the relatively low level experienced by those born after WW2.

**Table 19.3b:** Ranking based on the objective measures of social deprivation in childhood and adulthood using Socdeprivation, by birth cohort (pre-WW2, WW2, post-WW2): Trace index

	Pre-WW2	WW2	Post-WW2
<b>Most mobile</b>	Czech Republic	Estonia	Czech Republic
<b>2</b>	Luxembourg	Czech Republic	Sweden
<b>3</b>	Estonia	Italy	Estonia
<b>4</b>	Netherlands	Sweden	Germany
<b>5</b>	France	Switzerland	Austria
<b>6</b>	Switzerland	Denmark	Denmark
<b>7</b>	Slovenia	Austria	France
<b>8</b>	Italy	Israel	Israel
<b>9</b>	Israel	Netherlands	Netherlands
<b>10</b>	Austria	Germany	Italy
<b>11</b>	Spain	Belgium	Slovenia
<b>12</b>	Germany	Spain	Belgium
<b>13</b>	Belgium	Slovenia	Switzerland
<b>14</b>	Sweden	France	Luxembourg
<b>Least mobile</b>	Denmark	Luxembourg	Spain

Source: SHARE Wave 5 release 0

### 19.5.3 First attempt to investigate mediators of social mobility: compulsory schooling laws

Our previous analysis does not identify causal mechanisms behind social mobility, but we can explore one of its most prominent mediators: education. Findings from the literature suggest that intergenerational educational persistence is a key determinant of wage and income persistence. A natural research question is whether increasing compulsory schooling years can affect social mobility. We consider European countries in which major educational reforms were implemented in the post-WW2 period (Brunello et al. 2009). As in previous studies, we select one reform for each country to avoid blurring the differences between the pre-treatment and post-treatment cohorts. It is important to mention that for most countries compulsory schooling laws have contributed to an increase of individuals' schooling by one year (generally from eight to nine years of schooling). To make the comparison between post-treated and pre-treated cohorts as credible as possible, we restrict our sample to respondents born up to ten years before or after the pivotal cohort, namely the first cohort affected by the education reform.

In Table 19.4 we report the percentage of respondents claiming to be in poor financial situation in childhood and having difficulty making ends meet in adulthood by country and treatment status (D=0 if one was born up to ten

years before the pivotal cohort versus D=1 if one was born up to ten years after the pivotal cohort). Although this exercise enables us to consider the evolution of social mobility within countries, it does not allow for cross-country comparisons, which is the main focus of this chapter. For that purpose we report calculations for subjective measures of deprivation in childhood and adulthood, which are two binary indicators of financial distress.

**Table 19.4:** Percentage of respondents reporting their family to be in poor financial conditions in childhood (columns 1-2) and having some or great difficulty making ends meet at the time of interview (columns 3-4) by country and treatment

	Poor at age 0-15		Difficulty in making ends meet	
	(1) D=0	(2) D=1	(3) D=0	(4) D=1
<b>Austria</b>	35.59	25.00	3.10	5.16
<b>Germany</b>	25.81	15.76	5.48	7.27
<b>Sweden</b>	14.46	10.30	2.42	2.33
<b>Netherlands</b>	25.75	19.42	2.98	2.57
<b>Spain</b>	29.61	21.74	12.34	15.92
<b>Italy</b>	34.89	26.55	18.74	21.31
<b>France</b>	26.33	19.35	8.12	10.09
<b>Denmark</b>	17.80	14.37	3.46	1.89
<b>Belgium</b>	20.13	18.70	5.40	7.72
<b>Czech Republic</b>	40.20	36.07	6.44	7.10

Notes: Treatment: D=1 if born after pivotal cohort +10 years; 0 otherwise. The total number of observations is about 20,000 and varies by country (from 1,400 observations in Denmark to 3,168 in Germany). A reform passed in Austria in 1962 which increased schooling from 8 to 9 years, implies that the treated group is composed by cohorts born between 1947 (first cohort hit by the reform) and 1957.

Source: SHARE Wave 5 release 0

Generally, the percentage of individuals reporting poor financial conditions in childhood is higher for the pre-reform group in almost all countries. On the contrary, changes in the percentage of respondents having difficulty making ends meet pre- and post-reform do not have a clear pattern. One possible interpretation is that increasing compulsory schooling by one year can lead to short-term improvements (these reforms constrained 14-year-olds to stay one more year in school), with apparently no significant direct effects on poverty in adulthood. The data at hand allow us to describe intergenerational mobility of older cohorts (individuals born before 1954), although it would be interesting from a policy point of view to study more recent cohorts who were exposed to a stream of reforms implemented in the 1970s and 1980s.

## 19.6 Conclusions

In this chapter we explored cross-country variations in intergenerational mobility in 14 European countries and Israel in the past half-century using non-monetary subjective and objective proxies of poverty during childhood and older age. The results suggest that Southern European countries (Italy and Spain, in particular) are the least advantageous in terms of social mobility, independently of the measures of relative poverty considered (financial distress and material deprivation in childhood and adulthood). Previous empirical evidence has shown that the low level of intergenerational mobility in Italy, where family background is important for labour market success, may be due to a centralised and egalitarian tertiary education which hinders poor children from competing with richer children (Checchi et al. 1999). Empirical evidence for Spain (Cervini-Plà 2014) suggests that a potential cause of the low intergenerational mobility in that country is the late age at which children leave the parental home, a phenomenon also prevalent in other Southern European countries. This may negatively reinforce the influence of parents on children. Furthermore, in Spain there is little occupational mobility and many jobs are filled through social referral.

Much more variability is encountered at the top of the social mobility ranking. The objective measures of material deprivation show that Denmark, Luxembourg, the Netherlands, and Sweden are the most intergenerationally mobile societies in Europe. These results are in line with previous findings in the literature. In contrast, our subjective measures of financial distress put Sweden at the bottom of the ranking distribution, positioning the Netherlands and Denmark as mid-level countries. This partially contradicts the evidence found using the more objective measure; further research is needed to solve this inconsistency.

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