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Education and regional mobility in Europe

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ABSTRACT

This paper estimates the impact of education on regional mobility in Europe using compulsory schooling reforms. Using data on individuals from eight European countries, I find that people who are induced by a school reform to acquire one more year of education are much more likely to relocate to another region in their country between the age of 15 and 50. I also show that education increases the probability of moving to a city for people from rural areas.

1. Introduction

Worker flexibility is often considered a key ingredient required for a well-functioning labour market. One aspect of flexibility is mobility. More rigid labour markets are usually characterised by less mobile workers. In a flexible labour market, unemployed workers leave depressed regions and relocate to others where they can find jobs. Using variation in demand conditions across US states, Blanchard and Katz (1992) find that migrating to another region is one of the main forms of adjustment to a negative regional demand shock. Decressin and Fatás (1995) show that Europeans also move to respond to demand shocks but that they are less reactive than in the US.[1] This may help explain why unemployment differentials across regions are more persistent in Europe. Bound and Holzer (2000) argue that mobility costs are higher for workers with lower education as they are also less mobile. This implies a difference in the welfare incidence of demand shocks across educational levels.

It is thus important to identify the individual determinants of regional migration and understand the relationship between schooling and mobility. Pissarides and Wadsworth (1989), among others, propose a human capital framework of migration decisions where an individual relocates if the net returns from a move are higher than the cost. They argue that the cost of movement depends on a number of personal observable and unobservable characteristics. An analysis of the relationship between education and regional mobility could be influenced by these unobservables, which may be the drivers of migration patterns. Are more educated people more likely to leave their hometown to move to another region within their country? Is the magnitude of the effect large? Does this reflect a causal relationship or a mere correlation between education and unobserved characteristics, such as parental background or personality traits? Does schooling - and in particular compulsory schooling - really have an impact on regional mobility?

In a recent study, Machin, Salvanes, and Pelkonen (2012) find that education has an effect on regional mobility in

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[1] Molloy, Smith, and Wozniak (2011) and Kaplan and Schulhofer-Wohl (2012) find that US interstate migration rates have decreased since the early 1990s but that geographic mobility is still higher than in most European countries.

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Norway. To solve the selection problem, they exploit the exogenous variation provided by a school reform that increased years of compulsory education by two years. They focus on Norwegians who were born between 1947 and 1958 and have less than 10 years of education. In this paper, I explore whether their findings hold in a broader context.

Using two-stage least squares (2SLS) and data on individuals born between 1920 and 1956 in eight European countries, I find that people who are induced by a school reform to acquire one more year of education are much more likely to relocate to another region in their country between the age of 15 and 50. People with an additional year of education have also 0.12 more regional migrations. The magnitude of the coefficient is large when compared to the average number of regional migrations of 0.74 as this corresponds to a 16% increase. These results are very much in line with Machin et al. (2012) who use inter-county migrations in Norway and find that the impact of an additional year of education on mobility is 15%. However, whether someone ever moved to another region may matter more than the exact number of moves during the career. Education appears to make people more mobile but it should also help them make good migration choices, thereby reducing the total number of moves during the career. When the dependent variable is whether someone ever relocated to another region between the age of 15 and 50 (instead of the number of regional migrations), I find that the 2SLS estimate is 0.058. I also show that education increases the probability of moving to a city for people from rural areas.

Educational attainment is instrumented using compulsory schooling reforms in Europe, which exogenously vary across time and countries - if country and year of birth fixed effects are controlled for. When implemented carefully, this identification strategy generates credible estimates of the causal impact of education on regional mobility for a subgroup of individuals in the population, the compliers, who acquire more education because of a school reform. With the assumption that changes in compulsory schooling affect the outcome variable only by increasing years of education, it has been used in the literature to identify the effects of education on various outcomes, including earnings (Acemoglu & Angrist, 2001; Oreopoulos, 2006), crime (Lochner & Moretti, 2004; Machin, Marie, & Vujić, 2011), mortality (Lleras-Muney, 2005; Clark & Royer, 2013), obesity (Brunello, Fabbri, & Fort, 2013a) and the intergenerational transmission of human capital (Black, Devereux, & Salvanes, 2005; Holmlund, Lindahl, & Plug, 2011). The remainder of this paper is organised as follows. The next section introduces the rich dataset that I use. The third section discusses the empirical strategy and the estimates of the impact of education on regional mobility. The last section is a conclusion.

2. The data

This paper uses the Survey of Health, Ageing and Retirement in Europe (SHARE), a multidisciplinary and cross-national European data set containing current and retrospective information on labour market activity, retirement, health and socioeconomic status of more than 25,000 individuals aged 50 or older. I draw data from the first three waves of the survey, and in particular the third wave, SHARELIFE, which contains detailed retrospective life and labour market histories. The data for the first wave of SHARE were collected in 2004/05, the data for the second wave in 2006/07 and the data for SHARELIFE in 2008/09.

In SHARELIFE, each individual is asked to report information on the residences where she has lived for more than 6 months during her life, including the year in which she started (and eventually stopped) living in the residence, the region of each residence,[2] the country of each residence if it is different from the country of the current residence,[3] and the area of the residence.[4] Table 1 gives some more details on regional migrations at the country level, i.e. by country of current residence at the time of the SHARE interview. People from Denmark and Sweden are on average much more mobile than people from Austria, Belgium or Italy. In Denmark, more than half of the population moved to another region at least once between the age of 15 and 50.

One could be concerned by the quality of retrospective data on education and geographic mobility. However, Garrouste and Paccagnella (2011) and Havari and Mazzonna (2011) find that recall bias is not severe in SHARELIFE data, arguably because of the state-of-the-art elicitation methods that were used: respondents are helped to locate events along a time line, starting from domains that are more easily remembered, and then asked progressively more details about them. Using individual social security numbers, Bingley and Martinello (2014) match the Danish subsample of SHARE with administrative data drawn from Danish civil registries and tax reports. Their validation study finds that SHARE is a reliable source for the analysis of socioeconomic data, including variables such as schooling and income.

Fig. 1 shows that average years of education in Europe have increased over time: individuals born in the 1950s spent on average two and half more years in school than those born in the 1930s. Fig. 2 suggests a positive association across countries between education and the number of regional migrations between the age of 15 and 50.[5] I consider only migrations until age 50 for at least two reasons: (i) this is intended to exclude moves to retirement locations and (ii) the

[2] SHARE follows the NUTS classification (Nomenclature of territorial units for statistics) established by Eurostat. The information is available at NUTS 2 level for most countries, NUTS 1 for Belgium, France, Germany, the Netherlands and NUTS 3 for the Czech Republic.

[3] Importantly, the list of foreign countries where someone could have lived before age 50 includes more countries than the countries surveyed in SHARE. As explained below, I focus on individuals who are residing in eight European countries at age 50+ but have information on all their moves during their life, even when they moved from (or to) another country that does not participate in SHARE. The additional country categories are: Finland, Hungary, Ireland, Norway, Portugal, Russia, the United Kingdom, the United States, other European countries (including Turkey), and non-European countries.

[4] The area of residence is classified in 5 categories: a big city, the suburbs or outskirts of a big city, a large town, a small town, a rural area or village.

[5] The fact that some European countries have more NUTS regions than others, as shown in Table 1, could lead to a positive relationship between the average number of regional migrations and the number of regions across countries. If the size of each region within the country is smaller, one would indeed expect people to report that they have moved more often across regions during their life. Fig. A.1 in Appendix A shows that such a positive relationship does not exist.