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Economics Letters 91 (2006) 90–97

economics letters

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Timing of school tracking as a determinant of intergenerational transmission of education

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Received 15 February 2005; received in revised form 12 October 2005; accepted 10 November 2005

Abstract

We test with Swiss data whether intergenerational educational mobility is affected by the time at which pupils are first streamed in secondary school. Late tracking significantly affects mobility and reduces the relative advantage of children of better educated parents.

Keywords: Ability tracking; Streaming; Segregation; Intergenerational transmission of education; Educational mobility

JEL classification: I2; I21; J24; D30

1. Introduction

Educational mobility is commonly measured as the correlation between parent and child education. International evidence shows vast differences in mobility across countries (OECD, 2003) and yet we know little about its determinants. One frequently discussed mechanism is that the time at which pupils are separated based on ability in homogeneous groups or tracks affects mobility: if such a segregation[1]

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[1] The terms segregation, tracking and streaming are used in the literature as synonyms for a typically ability-based grouping of pupils in tracks of different academic requirement.

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doi:10.1016/j.econlet.2005.11.003

takes place at early ages or low grades, pupils' ability can only be measured with substantial noise and parental background and expectations may dominate the tracking decision (OECD, 2003; Brunello et al., 2004; Lauer, 2003; Ammermüller, 2004).

To our knowledge, the correlation between the timing of first tracking and the extent of social mobility have not been investigated empirically so far for a given institutional framework. OECD (2003, p. 221) tabulates cross-country evidence. However, due to institutional differences, international data hardly allow to identify the true effect of the timing of tracking on educational mobility.

We investigate this effect based on data from a single country, Switzerland. The Swiss educational system is organized at the level of 26 cantons. Probably for historical reasons, the cantonal education systems differ with respect to the age of first enrollment and the grade at which students are tracked. While further minor institutional details vary across cantons (e.g. timing of language classes, class sizes), the overall institutional framework is similar. If we assume that there are no unobserved differences between cantons that are correlated with the timing of tracking, we can empirically identify the causal effect of the timing of tracking on educational mobility.

2. Data and empirical approach

We apply cross-sectional data from the 2000 Swiss population census. The dependent variable indicates youths' type of secondary training at age 17 in categories of high (college-bound), medium (vocational) and low (only mandatory training) levels of secondary schooling (for details, see Bauer and Riphahn, 2004). We similarly categorize parental education.[2] To measure the magnitude of intergenerational education transmission, we evaluate the probability that children attend high level (i.e. college-bound) secondary schooling given their parents' education.

In our sample of 62,535 Swiss born youths, about 1 in 10 children of fathers with low education attends high secondary education compared to more than 6 in 10 children of highly educated fathers, with similar outcomes for mothers. These are substantial differences. To investigate the role of the time of tracking, we use cantonal information from two sources: (1) administrative education statistics provide information on the grade of tracking as of 1995 (Grade 1) (EDK, 1995). (2) In a survey of cantonal education departments, we collected information on the typical grade (Grade 2) and age (Age) of tracking for the period between 1994 and 1998, when the pupils in our sample made their transition to secondary schooling. In order to illustrate the validity of our identifying assumption, we compare the average characteristics of early and late tracking cantons in Table 1. We find that hardly any characteristics differ significantly for the two groups of cantons. While the overall educational attainment is higher in late tracking cantons, early tracking cantons spend a higher share of the public budget on education. Overall, these figures do not cast doubt on our identification strategy.

Table 2 describes the probability of high child secondary schooling given fathers' education in cantons with early and late tracking. A comparison across columns yields that the probability of high (i.e. college-bound) child education increases when fathers are of high, rather than low education. A comparison across rows yields that this difference in the probability of high education varies depending on the separation regime in place (see columns 3 and 4). We find a decline in the absolute and relative

[2] We consider five education indicators for each parent: high, middle, low, no information provided, parent missing (i.e. single parent household).