

The effect or parental education on children's scholastic achievement: a non-parametric bounds analysis

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In this paper we propose to investigate the impact of the mother's and the father's education on the scholastic achievement of the child at the age of 15 and 16. The evidence we use comes from the PISA math and reading scores in eight Latin American countries, namely Argentina, Brazil, Chile, Colombia, Mexico, Panama, Peru and Uruguay. This is an important issue for two reasons: i) performance at PISA tests has been shown to correlate positively with professional and personal success later in life; ii) the effect of the parental education background points to the persistence in inequality over generations.

There are a number of challenges when trying to estimate the causal impact of parents' education on a child's scholastic achievement. The first challenge rises from the fact that parent's education is likely to be correlated with unobservables that can affect children's school performance, including family stability, peer effects, and the importance assigned within the family to the accumulation of human capital. Therefore, one needs to use empirical methods that are not going to be affected by such correlations, and to that effect we are going to use the non-parametric bounds analysis of Manski (1989, 1997) and Manski and Pepper (2000). An analysis using bounds will allow us to identify a region of estimates of our effect of interest without assuming exogeneity of the parental education variable.

An additional problem in our context arises from the fact that not all children stay in school till age 15-16, and those who stay are unlikely to be representative of the population. Rather, they are likely to be children who benefit more from staying at school; hence we are facing a sample selection issue. We will address this additional complication using again non-parametric bounds techniques as described in Blundell, Gosling, Ichimura and Meghir (2007).

We are already far along in our calculations and have already some preliminary results that allow us to (partially) identify the causal effects of interest. We fully expect to have a paper ready by the date of the CSEF/IGIER conference.

References:

Blundell, R., A. Gosling, H. Ichimura, and C. Meghir. 2007. Changes in the distribution of male and female wages accounting for employment composition using bounds. *Econometrica*, 75: 323–63.-

Manski, C. F. 1989. Anatomy of the selection problem. *Journal of Human Resources*, 24: 343–60.

Manski, C. F. 1997. Monotone treatment response. *Econometrica*, 65: 1311–34.

Manski, C. F., and J. V. Pepper. 2000. Monotone instrumental variables: With an application to the returns to schooling. *Econometrica* 68: 997–1010.