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**Family background and children's schooling outcomes**

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# Introduction

*“It is well documented that individuals are very diverse in a large variety of abilities, that these abilities account for a substantial amount of the interpersonal variation in socioeconomic outcomes, and that this diversity is already apparent at an early age. The family plays a powerful role in shaping these abilities, contributing both genetic endowments and pre- and post-natal environments, which interact to determine the abilities, behavior and talents of children” –Cunha, Heckman, Lochner and Masterov (2006)*

What determines the success of children? As stated by the quote from Cunha, Heckman, Lochner and Masterov in their handbook chapter, it is well documented that family background is a very important, if not the most important, determinant of socioeconomic outcomes of children. Not only scientists but also policy makers stress the importance of the family. In 2005 OECD Ministers responsible for social policies met in Paris to discuss "Extending opportunities: how active social policies can benefit us all". The Final Communique from this meeting stated that "Social and family policies must help give children and young people the best possible start to their lives and help them to develop and achieve through their childhood into adulthood." It further communicated that "Promoting child development requires society and families to invest adequate resources..... Special effort should be targeted on the families that are struggling to give their children the resources, both financial and time, that they need."

In order to use policy measures to help children and reduce inequalities between chil-

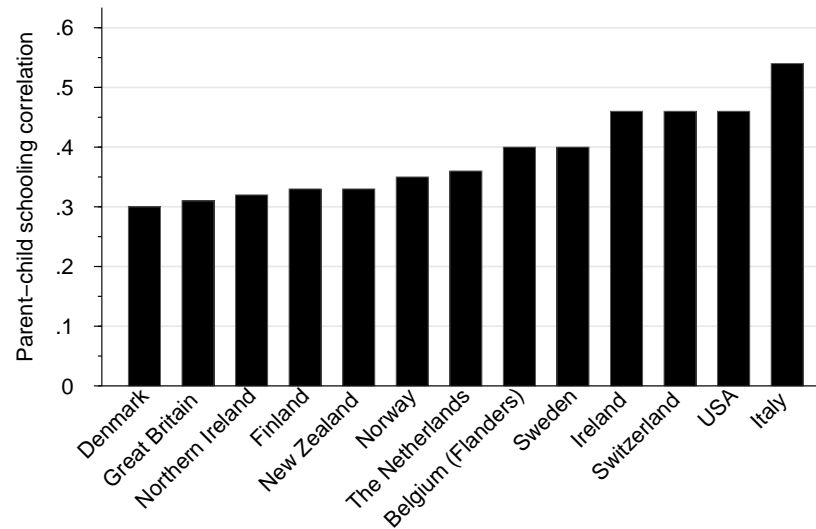
dren from different backgrounds, it is important to know how family background affects the socioeconomic outcomes of children. There are multiple channels through which the family can influence children's outcomes. The different family characteristics are generally strongly related, making it difficult to disentangle the different mechanisms. Disentangling the different mechanisms is not only challenging but also very important. Interpreting an association as a causal effect can lead to wrong conclusions, whereby a particular family characteristic could seem to affect children's socioeconomic outcomes while actually it is picking up the effect of something else.

This thesis will focus on one particular socioeconomic outcome, children's completed years of schooling. It will investigate why some children obtain the highest schooling level while others drop out without a diploma, and focus on what role family characteristics play in these differences in schooling outcomes.

Figure 1 shows the correlation between parents' and child's years of schooling, for 13 different countries, based on results from Hertz *et al.* (2007). This figure shows that children's schooling outcomes are strongly related to the schooling of their parents. These correlation coefficients are however not necessarily prove of a causal effect of parental schooling on child's schooling, it might pick up the effect of related characteristics such as genetic endowments and parent's child rearing talents. The remaining chapters will study the effects of father's and mother's schooling, birth order and family size on children's educational attainment with a particular focus on the use of different techniques to identify the causal impacts of these family background characteristics.

Chapter 1 investigates the effect of parents' schooling on child's schooling. Since observed associations between parental and child's schooling do not necessarily reflect a true causal effect, this chapter applies a relatively new technique, a nonparametric bounds analysis based on a study by Manski and Pepper (2000). The analysis starts with making no assumptions and then adds some relatively weak and testable assumptions to tighten the bounds. The assumptions are relatively weak in the sense that they do not impose a

Figure 1: Parent-child schooling correlations for different countries



source: Based on Hertz *et al.* (2007). The height of the bar presents the long-run average across 5-year cohorts of the correlation coefficient between the average of mother's and fathers schooling and child's schooling. Data set used: International Adult Literacy Survey except for the USA: International Social Survey Programme

linear effect of parents' schooling, they allow for a potential positive correlation between parents' schooling and unobserved endowments and they allow for possible interaction effects between heritable endowments and parents' level of schooling. Although the bounds on the effect of parents' schooling include a zero effect, the upper bounds are informative especially for the effect of increasing parents' schooling from a high school degree to a bachelor's degree. Both for the effect of mother's schooling as for the effect of father's schooling the nonparametric upper bounds are significantly lower than the OLS results.

Chapter 2 also studies the impact of parental schooling on child's schooling. The focus of this chapter is on the problem that many intergenerational mobility studies use samples in which part of the children is still in school. It investigates the consequences of this often encountered censoring problem and evaluates three solutions to it: maximum likelihood approach, replacement of observed with expected years of schooling, and elimination of all school-aged children. This chapter test how the three correction methods deal with

censored observations. The main finding is that the method that treats parental expectations as if they were realizations seems to fix the censoring problem quite well, while the other methods produce a (small) positive bias in the estimates.

Chapter 3 does not study the impact of parental schooling but instead investigates two other family background components, the effect of the number of children and birth order on children's completed years of schooling. An instrumental variables approach is used to identify the effect of family size. Instruments for the number of children are twins at last birth and the sex mix of the first two children. The effect of birth order is identified, by examining the relation with years of education for different family sizes separately. No significant effect of the number of children on educational attainment of the oldest child is found, while birth order has a significant negative effect. This decline in schooling outcomes with birth order turns out to be approximately linear. This chapter also investigates potential mechanisms behind the birth order effects; child-spacing and the allocation of parental resources. The results show that the negative birth order effects do not vary with the average age gap between children. Information on financial transfers to children shows that earlier born children have a higher probability of receiving money from their parents than later born children, also the amount they receive is higher. These results indicate that the allocation of parental resources is a potential mechanism behind the birth order effects.

Finally, Chapter 4 will summarize the main findings and conclusions of the preceding chapters.