On the importance of families and public policies for child development outcomes

Rosero Moncayo, J.A.

Chapter 6

Summary and conclusions

The chapters in this thesis investigate how public interventions in developing countries can promote human capital accumulation of children at different stages of life (pre-school, compulsory and post-compulsory education) and how a specific characteristic of a child, the order of birth, might affect the intrahousehold allocation of resources and produce outcomes differences across siblings. All the chapters of this dissertation use data from Ecuador, a lower middle income country, characterized by high poverty levels and inequality.

Chapter 2 evaluates the effects of the program of the largest provider of early childhood development interventions in Ecuador, the Child Development Fund (FODI). This program aims at improving the development of children at early ages (younger than 6 years old) in poor families. FODI supports two types of interventions: child care centers and home visits. This chapter examines the impact of both interventions on a range of relevant outcomes: children's cognitive and motor development, children's health, parenting styles, mothers' labor supply and income, and mothers' stress and depression. FODI does not run its own centers but subsidizes non-profit suppliers of early childhood development services. To allocate its budget, FODI runs a contest between suppliers in which a score is given based on a mixture of perceived quality of the suppliers and indicators of the social background of the families that are intended to be served. Based on this score the proposals are ranked and the ones with the highest scores are awarded according to the available budget. This funding scheme creates an exogenous threshold which is exploited in a regression discontinuity design to identify the effects of the two treatments relative to their respective control groups. With the intention to compare the effectiveness of the two interventions we combine the regression discontinuity design with a difference-in-differences approach which assumes that the difference in outcomes between the two comparison groups measures the no-intervention difference for the two treatment groups. The empirical analysis uses a self-collected data set designed to evaluate the early development programs in Ecuador

(also called ENEVIN) that has as main features the inclusion of a battery of cognitive tests and health outcomes of the children, as well as measurements of the mental health of the mothers and the quality of the family's learning environment.

The results of this chapter show that home visits are beneficial for children's cognitive and motor outcomes, whereas child care centers have no impact on these outcomes. Moreover, while home visits decrease the likelihood of a child to have anemia, child centers results in children being underweight more often. The results also show that home visits promote mothers' psychological well-being, whereas child center do exactly the opposite. Finally, child care centers increase mothers' labor market participation and income, while home visits reduce labor market participation but leave family income unaffected. Therefore, the two type of interventions represent a trade-off between child outcomes and mother's psychological well-being on one hand, and labor participation and income on the other hand. Being informed about the existence of this trade-off is especially relevant for policy makers at the moment of designing and implementing efficient policies aiming to enhance children's development at early ages while ensuring women's right to work in developing countries.

The results on the effects of child care centers on children's outcomes presented in chapter 2 stand in sharp contrast to the findings that other studies have presented on the effectiveness of child care centers in Latin America. Considering these conflicting results and the fact that a regression discontinuity design identifies aneffect that is valid on a sample of children in the neighborhood of the discontinuity point, chapter 3 investigates the effects of another provider of child care services in Ecuador, the Child Rescue Program (ORI). This program shares the same objective and target population as FODI. Given the absence of a baseline taken before the start of the program and the impossibility of implementing an experimental or a quasi-experimental design, this chapter uses different matching techniques to identify the effect of the program. Unlike RD estimators, matching methods identify an average effect that is valid for the whole distribution of treated children. Matching assumes that selection is driven only by observable characteristics. With the intention of reducing the influence of bias due to unobservables, matching is done using a sample of control children that are considered eligible for an early development intervention and were willing to participate if the opportunity had been given. This sample as well as the sample of treated children are taken from the survey designed to evaluate the early development programs in Ecuador (ENEVIN).

Similarly to the findings in chapter 2, the results of this chapter show that children exposed to child care centers do not perform better on different cognitive tests than the children in the control group. Furthermore, the program has negative effects on health outcomes of the treated children and increases the probability of labor participation of

their mothers as well as the household income. These results give additional support to the existence of a trade-off between children's development and mothers' labor market participation as described in chapter 2.

Chapter 4 deviates from the theme of early childhood development to examine the effect of another sort of programs that have the potential to build up human capital of disadvantaged children at a later age. Specifically, this chapter investigates the impact of a greatly promoted housing assistance program in Ecuador, the Housing Incentive System, on school enrollment, child labor and its capacity to take a family out of poverty. The program follows a savings-voucher-mortgage scheme. It grants a single voucher to poor families that can be used as a financial support of a new house investment which is complemented by family's savings and a mortgage loan. For the empirical analysis, the chapter uses administrative data from the program that is merged to a household panel data (SELBEN survey) in order to link the history of a voucher application with socioeconomic information and outcomes. To identify the effect of the program, two empirical approaches are employed. First, a sample of approved applicants is used to exploit the variation in duration of the different stages to obtain a voucher and convert it into a house to construct comparable treatment and control groups. I do this using a sample of approved applicants to the program and controlling for different sources of endogenous variation. Second, the analysis uses the variation across siblings that arises from the fact that siblings are exposed to the program at different ages is used.

The results presented on chapter 4 show that being treated by the program and succeeding in converting the voucher into a house improves enrollment into post-compulsory education (age 15 to 18 years old) and decreases the probability that a child participates in the labor market in the same age interval. Furthermore, it is found that the program has a positive impact on increasing the level of welfare of a family, thus, reducing its likelihood to be considered poor. Overall, the results highlight the fact that the social benefits of housing should not be underestimated and should be taken into account as a key element in a strategy to overcome long term poverty. The chapter also investigates potential mechanisms that are behind the program's effects: physical environment and the access to better neighborhoods. The analysis finds that the program improves the physical environment in which the children unfold since it increases access to sanitation, improves the quality materials of the house and reduces the probability to live overcrowded. On the other hand, there is no evidence of the presence of neighborhood effects since families do not reallocate into better neighborhoods.

Chapter 5 differs from the previous three chapters as it puts emphasis on analyzing how parents distribute family resources among their children in developing countries. This chapter examines the role that a specific characteristic of a child, the order of birth,

has on parents' decisions to invest in their children's education and on the decision to send them to the labor market. The empirical analysis uses two sources of data. To examine the effect of birth order on secondary school enrollment and child labor, this chapter uses a large national database on beneficiaries of social assistance programs (SELBEN survey) in Ecuador. To inquire about the existence of birth order effects earlier in life on cognitive outcomes, the self-collected ENEVIN survey is used. In order to identify a causal effect, the analysis uses within family fixed effects model to correct for observed differences in birth order that are driven by family size and any other omitted factor that is shared among siblings.

The birth order results in this chapter are opposite to what is commonly found in developed countries. Conditional on age, earlier born children stay behind in their human capital development since they are less likely to be enrolled in secondary education and are more likely to work if compared with their younger siblings. This is consistent with a context in which the lack of resources might drive parents to send their earlier born children out to work and contribute to the family income which in turn has the potential to increase the likelihood of younger children to stay longer at school. Similar birth order patterns are also observed much earlier in life using a range of measures of preschool cognition. Finally, chapter 5 investigates potential explanations for the persistent positive birth order patterns. The results show that later born children receive more childcare time than earlier born children and they are also breastfed longer. Moreover, the estimates suggest an important role of poverty; that is, the largest order effects are observed for children in their teens growing up in poor, low educated families and even tend to reverse in richer families.