

Title: The Impact of Crises on Human Capital Formation – Cases from Ecuador

Abstract:

This thesis consists of three essays that explore the impact of three different shocks that affected Ecuador in 1999, in 2016 and in 2020. Specifically, the thesis studies the effects of an economic crisis in 1999, an earthquake in 2016 and the Covid pandemic in 2020 on children's human capital formation. The thesis provides estimates of the impact of shocks in the short, medium, and long term, on both health and education and for the population at large. Depending on the essay, the analysis relies on secondary data, universal national administrative data, and nationally representative surveys.

The first essay deals with the effects of the economic crisis that Ecuador experienced in 1999. Between July 1998 till the end of 1999, Ecuador suffered the worst economic and financial crisis in its history with GDP per capita declining by 28% in 1999. Taking advantage of micro-level nationally representative data collected in 2012 and 2014, the paper provides evidence on the effects of this crisis on human capital formation. The paper shows that the negative repercussions for children born during the crisis are still observable more than 10 years after macroeconomic recovery. Despite purging the data of age-in-months, survey effects, and controlling for geographical time trends, the evidence indicates that 12 to 16 years after the crisis, the cohorts born during the recession report height-for-age Z-scores that are 0.003 standard deviations lower and 0.002 fewer years of schooling for each month of exposure compared to those who were not exposed to the crisis at birth. This implies that children exposed to the entire crisis are 0.063 Z-scores smaller and have 0.042 fewer years of schooling. To provide a sense of the magnitude consider that between 1985 to the start of the crisis - i.e. 13 years - the height of teenagers increased by 1.23 cm, while the impact of the crisis on exposed children was half a cm, that is, a loss of five years of nutritional and anthropometric progress. Equivalently, considering education, the loss is equivalent to a one-year loss in educational progress. Girls and children born in urban households are most adversely affected. Selective childbearing or excess infant mortality are unlikely to be driving the results. The persistence of the negative effects points to the existence of a poverty trap suggesting that policy interventions in response to (economic) crises should be extended beyond macroeconomic recovery to also counteract such long-term, micro-level consequences.

The second essay analyzes the impact of a major earthquake that occurred on the coast of Ecuador on April 16, 2016, on educational outcomes of secondary school children. Since the damage was geographically concentrated, affected infrastructure and individuals could be readily identified. A difference-in-difference strategy with geo-referenced data was implemented to

compare earthquake affected and non-affected children, in terms of their educational outcomes. Somewhat paradoxically, the analysis shows that test scores on the standardized school-leaving exam, 'Ser Bachiller', were higher for children attending school in earthquake-affected parishes. On average, children in affected areas scored 0.254 to 0.30 (out of 10) points higher in the exam and their exam success rate was 12 percentage points higher. The essay proceeds to show that the earthquake became an opportunity as it led to increased resource flows to the affected areas. Specifically, the earthquake was associated with increased educational expenditure per student and improvements in access to educational inputs such as computers, laboratories, and the internet which in turn translated into increases in test scores. Other factors are also explored, such as increased teacher, parental and community solidarity and commitment to education generated after the earthquake. Overall, the results suggest that the earthquake was an opportunity for the region as it made pre-existing problems visible and led to resource flows from the government and international organizations and increased community solidarity and resilience. The results suggest that such relief efforts mitigated the loss of human capital and may have more than compensated for the negative effects of a natural disaster.

Finally, the third essay examines the effect of the COVID-19 lockdowns in Ecuador on the health outcomes of newborns. The novelty of the paper is its use of universal administrative data from a developing country to examine the effect of the pandemic on a population of newborns. This is a group for which the impact of the lockdowns has not yet been studied. Differentiated impacts of the lockdown are explored by geographical area (rural versus urban) and sector of work (formal versus informal). The key results are that, on average, a newborn exposed to the lockdown weighs 34 grams less, is 0.16 centimeters shorter, and has a 2-percentage point higher probability of being low weight as compared to a newborn not exposed to the lockdown. This represents a loss of approximately two decades of nutritional progress for newborns in Ecuador. The impact of the lockdown is stronger in urban areas and for those affiliated with the informal sector. The paper provides evidence on two possible explanations for the deterioration 1) increases in food prices which prevented families from maintaining food consumption and/or forced them to rely on lower-quality food, and 2) a decrease in prenatal checks due to restrictions on mobility.