Income Inequality and Schooling Investment in Latin America: a General Equilibrium Approach

Latin American Countries (LACs) in the 1990s have been characterized by a fast increase in earnings inequality due to steeply increasing returns to Higher education. Relative wages at College level increased by almost 30 per cent in Brazil and up to 70 per cent in Mexico while relative returns at both Intermediate and Lower education significantly decreased. As a consequence, returns to schooling have become more convex, with proportional increases in education translating into higher than proportional increases in income for the more educated.

Together with returns’ convexification, the 1990s has been characterized by a slow rate of educational progress. In all LACs the educational composition of the workforce shifted upwards but at the end of the decade it was still significantly skewed towards the bottom of the distribution with a shortage of highly educated workers.

The increase in relative returns to Higher education has been the subject of several empirical studies. Most of the studies have developed explanations based on exogenous demand shocks due to labour market reforms and trade liberalization that increased the demand for skills, while fewer have focused on the role of constraints on the supply side that could limit or prevent investments into Higher education.

The relevance of the findings has been very limited by the use of a partial equilibrium approach that can not account for the endogenous nature of human capital accumulation process. Either focusing on the supply or on the demand side cannot provide a comprehensive assessment of the mechanisms at play, so it comes at no surprise that no definite conclusion has been reached on the determinants of returns’ convexification.

In order to study demand-supply interactions and the feedback of changes in returns to schooling on educational choices, this paper develops a general equilibrium (GE) model of human capital accumulation that accounts for the endogenous evolution of relative returns and investment in education in the entire process of human capital accumulation. GE price effects indirectly change expected profitability of schooling investments together with measurable factors that directly influence educational choices.

On the supply side, individual education level is assumed to be the result of the investment decisions of an altruistic parent that chooses each period how much to save and whether to send the child to school or to work. Education choices are affected by the presence of credit constraints and uninsurable shocks to earnings.

The interaction between uncertainty and liquidity constraints could be a very important determinant of schooling investments in Latin America. Given convex returns, investment in education may appear to be profitable only if households can finance schooling until completion of Higher education. If earnings are expected to be exposed to high fluctuations and credit constraints are binding, households may not be able to finance education for several years and benefit from the high returns at College level. Poor households face a short run investment horizon and may decide to postpone schooling investments in a self-reinforcing trap of low income-low education.
On the demand side, a CES production function with physical capital and four education levels is used to model the way the prices of the four types of human capital have been evolving over time and to assess the extent to which the four education levels are substitutable for each other. Using individual-level data from 1987 to 2002 from Mexican National Employment Survey (ENEU), the model is used to assess the relative impact of binding liquidity constraints with respect to skilled biased demand shocks on educational choices and the resulting changes in earnings inequality.