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Educational choice, endogenous inequality and economic development ☆

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Abstract

This paper investigates the mechanics through which wealth may, in the long run, trickle down from the rich to the poor. In the presence of indivisibilities in investment of human capital and impossibility of borrowing money, investment in education is financed through an intergenerational transfer. In an OLG model where aggregate production requires capital and both skilled and unskilled labor, it is shown that the long run equilibrium outcome depends on the values of few key parameters. A complete characterization of the steady state is provided. Under some configurations of the parameter values a unique invariant equilibrium exists where inequality vanishes asymptotically. Under others, multiple equilibria exist and the equilibrium outcome crucially depends on the initial conditions of the system. These equilibria are characterized by a negative relationship between inequality and economic development.

JEL classification: O11; O15

Keywords: Inequality; Trickle down; Economic development

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1. Introduction

In the presence of imperfect credit markets, intergenerational transfers within the family are particularly important for economic development and income inequality. Investment in education has to be financed out of the savings of parents and consequently the income distribution crucially matters both at the individual and at the aggregate level. At the individual level, an unskilled dynasty may be unable to escape its inferior state leading to persistent inequality. At the aggregate level, underinvestment in education may result in underdevelopment and poor economic performance. This is all the more relevant today as technological capability depends on the availability of skilled workers.

We build an overlapping generations general equilibrium model where each generation lives only for two periods. When young, individuals face the opportunity to invest in education. After this, they supply inelastically one unit of labor. Individuals when young are credit constrained. In particular, we assume that they are unable to borrow money. Thus, investment in education can be financed only thanks to intergenerational transfers, which are due to "warm glow" preferences of parents over bequests (see Andreoni, 1989; Aghion and Bolton, 1997). On the other hand, we assume that individuals are able to lend money to the production sector at the endogenous equilibrium interest rate which depends on the marginal productivity of capital. Finally, when old they consume and determine the size of the intergenerational transfer. Investment in education in this paper allows the individuals to pocket an endogenously determined, non-negative skill premium. Following Galor and Zeira (1993) we consider investment in education to be indivisible. An educational investment in the present paper consists in the enrollment in a higher education program the completion of which allows individuals to acquire a superior qualification, and thus to gain an edge over other individuals. We assume the cost of education to be a fixed proportion of aggregate output.

We assume that aggregate production requires capital and both skilled and unskilled labor. Skilled and unskilled labor can be either gross-complements or gross-substitutes (as in Acemoglu, 2002). We derive long run equilibria characterizing steady states. We focus on the mechanics through which wealth may, in the long run, trickle down from the rich (skilled) to the poor (unskilled) and its consequences on aggregate income.

We identify four key parameters: the size of the intergenerational transfer, the relative importance of skilled labor in the production function, the elasticity of substitution between skilled and unskilled labor and the relative cost of education. The latter plays a major role in shaping the asymptotic behavior of the economy. Above a threshold level a continuum of stable steady states exists. All steady states share the common feature that inequality in income, consumption and utility levels persists across generations. Below this threshold level, in addition to a continuum of stable equilibria characterized by persistent inequality, another stable equilibrium emerges. In this equilibrium individuals are indifferent between investing and not investing in education and thus while wage inequality persists across generations, inequality in consumption and utility levels vanishes asymptotically. Approaching this equilibrium, wealth trickles down from the rich to the poor which in the end can afford to invest in education. In the equilibrium, the skill premium equals the costs of education and thus individuals are indifferent between investing and not investing in education. The possibility of a trickle-down depends on the value of the other key parameters as well as on the initial conditions of the system. In particular, we find that the larger is the size of the intergenerational transfer or the lower is the relative importance