EDUCATION, STRUCTURAL CHANGE AND ECONOMIC DEVELOPMENT

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The progressive diffusion of education is one of the most important aspects of economic development, which occurred during the XXth century. In this paper we discuss the role of education in economic development in a system in which the emergence of new sectors, based on innovation, is the main driving force for economic development. The problem has been studied by dividing the population into two social classes, which we called L (low) and H (High), and which differ for their level and quality of education. Typically, the H class has higher level and quality of education, which in turn leads to a higher level of human capital. Here the two classes do not differ for their initial level of wealth. This implies that any effects of different amounts and quality of education are due exclusively to the investment and to the organization of the education system.

The approach we will follow in this paper relies on the role of education in creating competencies and thus in affecting the human capital of workers. Human capital is obviously dependent on the education system, although it can also be considerably affected by on the job learning (Becker, 1962). Most of the existing empirical studies of human capital rely on education data, mostly but not only years of schooling.

A possible mechanism through which education could have contributed to economic development consists of raising the income per capita, and thus the purchasing power, of consumers while

simultaneously increasing the value of the output produced using better educated workers. The investment in education would be successful in a microeconomic sense if it could give consumers a positive return. The existence of such a relationship at the microeconomic level will lead to a positive impact of education on economic growth. However, it needs to be considered that the positive feedback between education and growth would only sustain itself if the value of the increased output due to education was large enough to absorb the extra purchasing power of consumers. If this did not happen, if, for example, consumers' income increased more than the value of output, then we could simply expect prices to rise. On the other hand, if the value of the output increased by more than purchasing power of consumers we could expect the process not to sustain itself since at least part of the output could not be sold. In other words, a positive contribution of education to economic growth and development can only exist and be economically sustainable if a positive feedback exists between education, innovation and demand. In particular, no innovation could have contributed to economic development unless demand existed for the corresponding output (Saviotti Pyka, 2012, 2013). In this sense the mechanism of economic development is more likely to have been a co-evolution of education and of other relevant variables rather than a cause effect relationship in which education was the cause and enhanced revenues or rates of growth the effect.

The results reported in this paper show that, even in absence of wealth effects, education can have two contrasting effects: (i) it can affect positively social mobility by allowing a share of the L class to move up to the H class; (ii) it tends to lead to a more skewed income distribution due to the higher quality of education supplied to the H class. These two effects can be combined in different ways to obtain a desired distribution of income and of human capital: A higher share of education investment going to the L class tends to produce a more egalitarian income distribution, while a greater difference between the education quality of the two classes tends to favor the relative income of the H class. These two variables can be used by policy makers to obtain the desired distribution of income and their other objectives, although the extent to which the two variables can be combined is limited by the tradeoff between income growth and income distribution.

Amongst the other objectives that policy makers would have to take into account there are output and growth. For example, they would have to find a suitable compromise between income distribution and growth. Although only the first of these variables was the object of our paper, we showed that even in presence of a very low investment in education social mobility tends to be higher in periods of the life cycle of industrial sectors in which the rates of entry of new firms and of employment growth are highest.

The previous paragraph shows that the effects of education on income distribution and on social mobility interact with the economic performance of the system and that sometimes, though not all the times, it is possible to obtain a better economic performance and a fairer society. Of course, we stress that in the present paper there are no wealth effects, which we expect would lead to a more skewed income distribution of educational resources and of income.