ABSTRACT

In 1975, in the second edition of his landmark work, Human Capital, Gary Becker set the foundations for an explanation of wage differentials as a return on an investment in education\(^1\). Arguably, however, wage differentials cannot be interpreted solely as a result of different investments in education, for multiple other factors, such as health, luck, discrimination, nepotism or even trade union power all play a crucial role as well.

This paper will attempt to contribute to this debate by integrating and formalising some of the new key evidence that has been put forward throughout the last few years. We contend that, despite the volumes of literature this topic has generated, the impact of the positive correlation between ability and education on wage disparity has not yet been fully clarified. Thus, the debate has often been framed as a “nature vs. nurture” exercise to separate the contribution to individual wages of innate ability from that of educational investment, without always acknowledging that education does not just teach new skills and techniques but also allows innate abilities, which are not necessarily distributed evenly across the population, to manifest themselves and develop. In other words: against a “pure” ability premium, which would present no correlation to education, and a “pure” educational premium, which would provide a standard return proportional to the investment made, this ability-developing effect of education would result in returns on education displaying a large variability across individuals, as it would depend not just on the investment itself but also on the presence or not of those latent abilities in the individual. The analysis becomes further complicated by the fact that many other environmental factors in addition to innate ability and education play a role not only in determining the wage premium but also the degree of uncertainty around it. Hence, both this uncertainty and the degree of risk aversion of individuals will have an impact on the wage premium which can, in principle, be attributed neither to ability nor to education or, for that matter, to any correlation between the two.

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\(^1\) The theoretical model on education and the distribution of earnings had been previously developed by Becker and Chiswick (1966) and Becker (1967).
There is a lot of literature on the empirical anomalies observed in educational returns, which have been attributed to alternative theories of human capital such as those that stress the role of education as a signaling mechanism, or of the socioeconomic background of individuals. In this context, multiple papers since the former article by Blaug (1976) or more recently by Weiss (1995) have highlighted the lack of solidity of the human capital theory from a Lakatosian viewpoint. In this paper we will make the case that these empirical anomalies can largely be explained as a consequence of the factors mentioned above as causes of wage differentials.

This paper is structured as follows:

First, we reinterpret the concept of “ability” through the methodology of policy evaluation. To this end we define the term “ability gap” so that it captures the individual’s latent learning capabilities. This allows us to explain the causes of the positive correlation between mean and marginal returns on education and the volume of investment in education. In this first section we also analyse from a theoretical point of view (i) the separation between average return on education and ability, (ii) the growth pattern of mean and marginal returns on education as a function of ability and (iii) the variability of returns that is explained by the ability variance. We interpret this ability variance in a wide sense which includes both predictable and unpredictable elements and thus intends to capture both the individuals’ private information on their own abilities and the impact of environmental factors.

Then we proceed to analyse the literature from the viewpoint of the concepts described above. Most of the existing empirical literature is aimed at separating the return of ability from that of education. Card (1999), for example, analyses this from a theoretical perspective and also presents empirical evidence regarding the bias that most traditional studies based on OLS estimations are subject to. Nevertheless, he concludes that the average return on education as measured through these traditional tools (which estimates performed in the 1990s placed between 5 and 8 percent) were not too biased and therefore their estimates would undervalue the true return in less than 10 percent. In addition to Card’s, the policy evaluation literature provides numerous analysis of these estimation biases, starting with Willis and Rosen (1979) and including numerous recent papers such as Carneiro, Heckman & Vytlacil (2005), Blundell, Dearden & Sianesi (2005), or Zamarro (2006). Some of the most recent papers in particular, such as Carneiro, Heckman & Vytlacil (2005) or Zamarro (2006), highlight the substantial contribution to mean and marginal returns on education of what, reinterpreting the unobservable variables in these models, we interpret as “ability gap.” Zamarro (2006), in particular, also allows to observe the cross-sectional variability of marginal returns as a function of this “ability gap.”

Finally, in order to analyse the distinction between heterogeneity, which we understand as “predictable” variability, and uncertainty, interpreted as “unpredictable” variability, we will use the results of other recent works such as Cunha & Heckman (2007), which predicts that, at the age of 17, when people typically decide whether to go to university or not, students are able to predict an eighty percent of the variability of their future earnings. However, the private information in which such prediction power is based does not exclusively consist of observable variables combined with the knowledge of one’s own abilities. Indeed, Cunha and Heckman (2007) show that agents have private information about a second factor which plays the most important role in the
explanation of the variability of earnings, although no explanation is given by these authors about the economic content of this factor. We do not know of any published studies that would allow us to measure how variations in the socioeconomic conditions of individuals at the age they make their college decision, as opposed to “rational” assessment of one’s latent capabilities, may impact educational decisions at this age, and we suggest that this may be a topic for future research.

REFERENCES


