HUMAN CAPITAL THEORY – ONE WAY OF EXPLAINING HIGHER EDUCATION MASSIFICATION

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Abstract: The spectacular increases in schooling figures in the first two decades after the Romanian Revolution of 1989 are often discussed from the perspective of "massification" of higher education. Causal explanations of the expansion of tertiary education as a social phenomenon have been advanced by academics belonging to different schools of thought. In this paper, I will refer to the explanations of the school of human capital, whose main exponent is Gary Becker and how the explanation is built around human capital and technology, two factors that augmentate each other from Becker's perspective. Because investments in education generate skills, and skills generate technological progress, then this progress creates a demand for specialized labor and increases the earnings of those who invest in their education. Therefore, increased earnings are strong incentives to invest in education.

Problems and debates

I will begin this section by discussing the general elements of human capital theory, given the theoretical pillars on which this view is based. Thus, I will try to review the theoretical perspectives that discuss this concept, developed in its early forms by Gary Becker. The starting point, therefore, will be Becker's publications, and I will later bring up related or complementary theories, whose utility is to complete the overview of the theory of human capital. To go into a more specific area of interest to this paper, I will try to highlight the close link between human capital and higher education, since the central element here, the individual, faces different choices when completing middle studies. Whether you go to college or seek a job after high school, all these decisions later bring the individual different benefits (both monetary and non-monetary) that human capital theory tries to measure in the form of long-term returns.

"Human capital is the set of skills that the workforce possesses" (Goldin, 2016). Starting from this definition, I intend to discuss in this section the main ideas and debates around the theory of human capital, given the close connection between it, the university environment and the labor market. Whether we are talking about general human capital, or one specific to certain tasks, the core of this theory is the choice the individual makes when balancing the costs and benefits of an action such as admission to college. More specifically, in this case, human capital (benefits) represent the skills and competences that an individual would learn during his studies, as well as gains obtained at a job for which he has prepared. On the other hand, the costs take the form of opportunities that the individual gives up at the expense of studies, so the gains that he would have obtained if, for example, the individual had chosen to engage and not to enroll in college (Ibid.). In this sense, strictly from an economic rational perspective, the most effective way to maximize the return as a student in higher education would be for the individual to engage during

their studies and thus obtain both income from work and transversal capacities from university courses.

Winner of the Nobel Prize in Economics in 1992, Gary Becker is the leading author of this paper, given the assumptions he makes about individuals' investment in education and the implications of schooling in individual development. Thus, „Human Capital" discusses individuals as rational, informed, and able to rank their preferences according to the costs and benefits that, for example, admission to college entails (Becker, 1993). In other words, the perspective of human capital theory has as its central point the idea that enrollment in college will bring for the individual, in the long run, more gains than an alternative variant (employment, for example). The reason is that the faculty will provide him with a package of skills and abilities designed to help the individual in as many situations as possible, thus a general human capital based on transversal skills. Therefore, for Becker, the return is associated with the insertion into the labor market after the completion of the studies (Ibid., p. 59). This is, in Walter McMahon's view, a "classic" version of human capital, the one in which only the income that the individual produces in the workplace is quantified. McMahon thus proposes another perspective, that of the "new human capital," according to which non-monetary benefits, such as individual health or other long-term externalities, should also be quantified (McMahon, 2009). In terms of schooling, Becker defines the school as "an institution specialized in the production of training", as opposed to a firm/company that provides training strictly for the production of goods (Becker, 1993). To be more specific, Becker distinguishes between a school of crafts (for example, a barber shop) that aims to train individuals for a single skill and a university that provides a broad and diverse set of skills to students. However, schools and firms are substitute sources of specific skills. More specifically, this complementarity has developed over time through the transition, for example, from apprenticeships in law firms to law schools, or from learned engineering at work to engineering schools (Rottenberg, 1962). The discussion here thus revolves around the interdependence between universities and employers in terms of the knowledge and skills that students accumulate. On the one hand, knowledge related to technical fields (such as constructions) will be developed rather in the workplace, education in this respect being complementary to practical knowledge. On the other hand, a doctor will need a lot of specialized theoretical effort before he can carry out his practical work, in this case the theoretical training will be complemented by the working skills, developed during the residency period. The same is true of researchers, for whom the few years of school are not so important, as the intense practical work done to master the "art" of both theoretical and empirical research (Becker, 1993).

Given this close link between the university environment and the labor market (i.e. the need for graduates to find a job in their field after completing their studies), human capital theory is an important factor in formulating economic models for the labor market. Because the literature makes this distinction between general human capital and that specific to certain firms or occupations, one of the perceptions held here is that an individual, both during his studies and at work, obtains transferable skills that can be harnessed in several occupations. Specifically, the idea that even specific skills have become increasingly portable, especially for university graduates, for whom at least 40% of the increase in income due to human capital is due to the specific skills that the individual has learned (Gathmann & Schönberg, 2007). Therefore, the idea of "rates of return" appears again in question, which Becker interprets as the amount of money to be collected

once the investment in human capital has been completed. In this regard, Becker argues, young people are more likely to accumulate human capital, change jobs, relocate and seize different economic, social or political opportunities. The reason here is not that young people are more interested in learning, accumulating new ideas, or not being so connected to a routine or family, but it is the idea that incentives are much stronger for those who can yield for as long as possible (Becker, 1993).

"A traditional view among economists is that educational achievements are largely autonomous. An alternative view, supported by evidence, is that educational achievements are adjusted to – and influenced by – the demands of the economic system" (Becker, 1993). Becker's conclusion points out that modern economic systems stimulate investment in human capital. The main reason here is that, in the period after World War II, the demand for people educated in research and development of military technologies and services increased. Thus, while human capital represents the individual's skills and knowledge, economic development is closely related to the progress of technology and scientific knowledge. Therefore, if investment in education generates new skills, and these new skills lead to technological progress, then there are strong incentives for individuals to invest in their own education, given that the specialized workforce is better remunerated (Ibid., 324). In a more simplified form, Melvin Reder says that human capital is a theory with a clear central idea, namely that individuals are "human agents of production" – like machines – with an increased productive capacity designed to use them in the labor market. Since material benefits occur after a considerable period of time, Reder sees the resources used in training a student as "investments" whose goal is to generate as much return as possible for as long as possible (Reder, 1967).

However, the idea that individuals enroll in the tertiary education system, complete their studies, and subsequently reap the fruits of their labor is not the only one that human capital theory discusses. More specifically, according to Becker, investment in human capital is also a major factor in the development of societies at the aggregate level, hence general economic growth ("while human capital is made up of knowledge and skills, and economic development depends on advances in technological and scientific knowledge, development probably depends on the accumulation of human capital") (Becker, 1993). Paul Samuelson and William Nordhaus also highlight the importance of quality of work and human resources (skills, knowledge and work professionalism). According to them, any state can purchase modern technology, high-performance computers or sophisticated military equipment, but it is important that all of these can be used efficiently by a specialized and trained workforce, that is, by individuals who have invested in human capital (Samuelson & Nordhaus, 2010). Finally, in order to summarize the theoretical perspectives discussed in the previous paragraphs, I believe that we can look at human capital in higher education as investments aimed at producing more wealth and, in terms of accessibility, at the level of the public sector, reduce income inequalities as education builds up by massifying higher education.

Theoretical discussions, questions and hypotheses

This section focuses on the discussion around the concept of human capital, as it is perceived in the literature and what are the main connections between human capital the economic environment (i.e., the labor market, specifically). I will thus discuss theoretical contributions that regard the accumulation of human capital as the engine of economic

development in a society, but also perspectives that target people as essential elements of well-being, but which cannot be treated as marketable properties, regardless of accumulated human capital. I will also turn my attention to the importance of institutions in a society, given that in order to invest in human capital, individuals need an institutional legal framework that is as efficient and accessible as possible. In order to decide whether or not to invest in their own education, individuals need as many sources of information as possible about the opportunities in the labor market after completing their studies. In this way, they can calculate, more or less formally, whether the investment of going to college is profitable and thus lose the income they would have generated if they had accessed the job market immediately after finishing high school.

For a significant period of history, income levels were low, life expectancy was high, and economic growth did not exist. Today, people live longer, richer and healthier lives as knowledge and research increase and spread. Moreover, the training and education of individuals, improvements in health, changes in demography and fertility have made our society what it is today, that is, a product of advances in human capital (Goldin, 2016). As the Oxford English Dictionary defines, human capital represents the skills that the workforce possesses and is thus regarded as a good or a resource. In this way, "human capital" encompasses the notion that there is an investment in people (such as education, health or specialist training) and also that all these investments will help increase the productivity of the individual (Ibid.). I have made this brief introduction, because the discussion of human capital has become a habit nowadays when it comes to the productivity of individuals, which has not always been the case. More specifically, economist Theodore Schultz points out that while humans are an important component of the welfare of nations, they are free beings and cannot be considered as a property or a tradable good (Schultz, 1961).

An important aspect that I will discuss extensively later in the paper and which I want to introduce even in this subchapter is the importance of institutions in a state, and therefore the ability of nations to support the accumulation of human capital in the most legal and efficient way possible. Investment in human capital directly depends on factors such as the degree of functioning of capital markets or the level of certainty in the economy or policy. In other words, when political power is held unequally and disproportionately, then the accumulation of human capital will be achieved below the optimal level because groups of individuals will not be able to access stable, credible, long-term commitments (Goldin, 2016). Therefore, if strong institutions are needed to generate economic progress, then "Why isn't everyone developed?" (Easterlin, 1981). The answers here may be diverse, but I will stop for the moment at the one offered by Daron Acemoglu and James Robinson, according to which Europeans imposed "bad" institutions on the geographical areas with high population density that they colonized. Thus, Europeans have extracted as many resources as possible from rich areas, and in the poorest have developed institutions as inclusive as possible to allow European migration. In this way, institutional differences persisted and what the authors called "future reversal" occurred, whereby places with not to many resources, such as North America, subsequently became richer, while resourceful areas (such as the Caribbean) did not develop (Acemoglu et al., 2002).

Investing in human capital is truly an exercise in decision-making under conditions of uncertainty, and the character of individual perceptions and expectations must be important (Clotfelter & Rothschild, 1993). Thus, I will continue to discuss the behavior of students

in order to continue their studies or, on the contrary, their abandonment followed by their insertion into the labor market. Despite the fact that the decision to enroll in a college is not a purely financial one for the individual, a basic principle of human capital theory is that students rationally calculate the rates of gain they can record, and that they can be able to do so, given the investment made (Paulsen, 2001). To be more clear, studying individual university behavior assumes that: (1) students choose or not to enroll in a faculty; (2) students choose which faculty to go to (so a process of ranking preferences); (3) students choose whether or not to attend classes in the following year; (4) students choose in which field to specialize (Ibid., p.62). Even if students do not accurately calculate the long-term return (gains from completing their studies), they nevertheless compare the expected costs and benefits and ultimately choose for them the best possible alternative to the options available after finishing high school (Arai, 2013). Thus, Charles Manski calls the young people facing such a decision "adolescent economists" (Manski, 1993).

As we have discussed so far, the model of human capital theory has considerable explanatory power when it comes to predicting the effects of monetary changes on individual behavior. However, monetary costs and benefits can be very different between individuals due to differences in other aspects that are, this time, non-monetary and much more difficult to measure and estimate. I am referring here to factors such as access to information on post-secondary opportunities, differences in socio-economic status and background, opportunities in the labor market, but also discriminatory practices found in the labor market or higher education institutions (Paulsen, 2001). The financial components associated with the decision to pursue university studies lead to a series of generalizations about the effects of the monetary factor on the decision of individuals to invest in their own education. More specifically, an individual will enroll in a college if: (1) he will earn more money due to his university degree (Murphy & Welch, 1992); (2) will meet low tuition costs (tuition fees, books, accommodation costs) (Heller, 1997); (3) the value of the exchanges is high (St. John, 2000) and (4) would not have made much money if he had chosen to access the job market immediately after high school (Kane, 1995).

"Registration and success in higher education are clearly influenced by several factors: Previous schooling and academic achievement, the rigor and pattern of courses taken in secondary education, family and cultural attitudes, motivation, awareness of opportunities – not just the ability to pay. [...] For low-income students, eliminating financial barriers is critical, but there are many other things that begin much earlier, both in life and in the educational path" (Paulsen, 2001). In Gary Becker's Human Capital market model, the increase in human capital demands results from the increase in students' expectations of the "marginal" benefits of investing in higher education (Becker, 1993). In this case, "marginal" benefits mean the additional gains that the individual who invests in education accumulates after adding an additional unit to his investment, that is, in tertiary education (Paulsen, 2001). In other words, the more an individual will invest in human capital (enrolling in a college, completing it, enrolling in a master's degree, etc.), the more rewarding he will be later, due to the investment made. Thus, in order for students to be able to anticipate the marginal benefits of their investment, they need a clear vision of the opportunities that higher education generates (Ibid., p. 83).

Last but not least, according to Paul Windolf, the theory of human capital assumes that there is a close relationship between the university environment and the labor market, as

mutually regulating systems, so that university expansion is stimulated by job opportunities. Moreover, another assumption of the theory of human capital would be that individuals guide their decisions according to the conditions in the economic environment of the labor market, thus, the number of registrations increases or decreases directly in proportion to the rates of gain that individuals expect in an economic cycle (Windolf, 1997). Thus, since human capital theory directly presupposes a market relationship between the demand for qualified personnel and the levels of enrollment in the tertiary sector, periods of economic growth are characterized by university expansion, while the economic recession entails a decline in the number of students. Therefore, according to this perspective, university expansion does not continue indefinitely, but is limited by the demand for specialized qualifications. (Ibid., p.9). I have introduced this last element in the discussion because, as I intended, the period of university expansion that I will analyze is the one after 1989, especially the years 2000-2010, when the most university registrations were registered in Romania (the transition period also coincides with the accession to the European Union).

Contributions and gaps

In the following paragraphs, I intend to increase the frequency of mentioning statistical data and empirical research on the impact of human capital on labor market productivity. I will therefore discuss for the beginning what data are at the level of the Organisation for Economic Cooperation and Development (OECD) on the expected material benefits of individuals from the accumulation of human capital. Moreover, I will consider the correlation between having a university qualification and indices such as employment or unemployment rates, in order to highlight the contribution of the accumulation of human capital to future opportunities. Subsequently, I will also consider the non-material benefits that students can benefit from once they obtain a university degree, which the literature discusses with caution, given the increased difficulty of measuring factors such as civic spirit or happiness. I have thus come to identify, in my opinion, one of the biggest challenges facing the university environment today, namely to respond to today's economic challenges while preparing students for the challenges they will face in the future.

From the point of view of the relationship between human capital and the labor market, modern economies directly depend on the skilled workers that the university environment provides, workers who are also seeking benefits in the labor market (OECD, 2022). In this way, the benefits that individuals have due to the accumulation of human capital, along with increased educational opportunities, have led to the increase in the number of qualified individuals within the member countries of the Organization for Economic Cooperation and Development (OECD). The growing demand for qualifications makes it possible for markets to attract as many tertiary education graduates as possible and also to provide them with the best employment prospects. On the contrary, the prospects available to an individual who has accessed a lower level of education are much lower. At the OECD level, college graduates have twice the income of those with secondary, high school education and also have a much higher chance of finding a job (Ibid., p. 82). Moreover, the problem of unemployment risks deepening in the coming years, since many unskilled workers are operating sectors that will be automated in the near future (Arntz et al., 2016).

An estimated 14% of current jobs will disappear in the next 15-20 years, and another 32% are likely to change radically with the automation of individual tasks (OECD, 2019).
"Education systems must respond to today's labor market challenges and prepare students for future labor markets" (OECD, 2022). I believe that this is one of the biggest challenges facing the university environment, to be able to provide students with information that will prepare them for the present and for the future. According to OECD indicators, individuals who earn a university degree are much more protected from the effects of an economic crisis than those who have not accessed the tertiary education sector. In particular, both during the financial crisis of 2008 and the recent COVID-19 pandemic, unemployment was much lower among the tertiary educated population compared to the less educated population (Ibid., p.63). Not only that, but the employability rate is higher as the level of university qualification is higher. More specifically, individuals who have obtained a doctoral degree have the highest employment rates, and those who have obtained a master's degree have a higher level of employment than those with a bachelor's degree or its equivalent. Also, on average, OECD countries have the highest employment rates among individuals who have obtained a degree in information and communication technology, and the lowest among graduates of arts, humanities, social sciences and journalism (Ibidem, p.62).
As we have discussed so far, the indicators of the efficiency (or profitability) of higher education schooling are a calculation of the value of the gains earned by the individual over the course of life, relative to the educational cost. In particular, for an investment in education to be economically justifiable, the return should be positive and should also be higher than that generated by alternatives (Psacharopoulos & Patrinos, 2018). However, the literature indicates that economic return is not the only one that should be taken into account in the discussion of profitability, as well as personal (or private) yield indices. This idea, transposed as early as 1973 by "there is no education whose purpose is only to earn a living; as much as it is to live a life (Du Bois, 1973)", reflects the fact that there are other gains that higher education generates, leaving aside the pecuniary factor. Thus, Walter McMahon discusses "private non-commercial benefits of higher education," which he says positively affects the quality of life of any graduate in various ways unrelated to earned money (McMahon, 2009).
The reason I bring this issue into question is that, no matter how important the economic part associated with investing in higher education is, not all students do this calculation when they decide to go to a college (Ibid., 120). More specifically, individuals acquire multiple skills and competencies over the years of study, which will not necessarily be reflected in material gains obtained after completion of studies. I will call them "transversal skills" and I refer here, first of all, to elements such as short-term benefits: improved health, low risks of obesity and depression, racial tolerance, low crime, and the dissemination of new technologies (McMahon, 2009). All this comes as a "contagion", as a result of the academic interaction between the individual and other colleagues, teachers, but also by participating in various events that foster communication and networking with other parties involved in the learning process. All these elements, McMahon says, lead to medium-term benefits (increased longevity, reduction of social inequalities, development of civic spirit), but also long-term benefits (such as happiness, political stability, lowering poverty levels and developing social cohesion). Therefore, there is a direct correlation between short-term and medium-term and long-term benefits, given that the healthiest and most effective

behavior of individuals will ultimately lead to a more prosperous and happy society (Ibid., 129).

One view of the multitude of elements that are included in the concept of "human capital" is that we can divide this concept into two distinct components, depending on the skills acquired. Specifically, human capital can be divided into "educational capital," i.e. those skills and competences that an individual acquires within the educational process and "biological capital," i.e. those physical abilities that we have mentioned in the previous paragraph (health, happiness, etc.) (Popovici, 2011). Of interest, however, in this paper, is the "educational capital" with which the individual remains after the completion of studies, i.e. the ability of individuals to produce income through their work, through the knowledge acquired in the educational process. Even though he does not explicitly use the terms "human capital", Adam Smith points out this concept by: "A man educated at the price of labor and a long time for any use which requires extraordinary dexterity and skill can be compared to an expensive machine. We must expect that the work which he learns to do, beyond the ordinary wages of ordinary labor, will replace the whole expense of his education with at least the ordinary profits of an equally valuable capital (Smith, 1976, p. 145).

Conclusions

We thus observe that we have returned to the point from which we originally left, namely that, from the point of view of the theory of human capital, the individual is regarded as a machine which, the more resources (in this case educational) are allocated to him, his productivity is substantially increased. Whether we are talking about previously mentioned "transversal skills" or strictly technical working skills, it is expected that all of this will be improved as long as the individual invests in his own human capital. For this reason, the discussion about human capital is one of the theoretical pillars that have as purpose the explanation of the university expansion, thus the massification of the higher education systems.

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