

Reassessing the Criticism of Human Capital Theory**منظور جديد في نقد نظرية رأس المال البشري****Pr. ZENAGUI Sid Ahmed¹**

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Received: 11/01/2025**Accepted:** 20/03/2025**Published:** 31/03/2025**Abstract:**

Despite widespread criticism, human capital theory (HCT) has remained central to the teaching and practice of economics for over six decades. This paper reinterprets the critique of HCT, focusing on two often-overlooked aspects. The first is the pervasive presence of external learning effects, which are acknowledged in formal discussions of HCT but are marginalized in most empirical research and policy recommendations. Similarly, the social determinants of education demand are often neglected. We argue that the embedding of HCT in methodological individualism makes it impossible to incorporate key, non-peripheral factors that influence both the demand for and the effects of education. The tensions that arise from applying an individualistic methodology to inherently social phenomena have been ignored within HCT. This oversight leads to significant issues in various fields of socioeconomic inquiry, several of which are highlighted in this paper. We conclude by advocating for a new research agenda and an updated program for the training of economists concerned with learning, which includes behavioral economics, applications of the capability approach to education, and an expansion of empirical research on the external effects of education in both historical and contemporary contexts.

Keywords: behavioral economics; capability approach; education; external effect; hysteresis; training.

JEL Classification Codes: E24, J24, J41.

ملخص:

على الرغم من الانتقادات التي وُجّهت إليها، تظل نظرية رأس المال البشري (HCT) محورية في تدريس الاقتصاد وممارسته منذ ستة عقود. يعيد هذا البحث صياغة النقد الموجه لهذه النظرية، مع التركيز على جانبين يتم تجاهلهما عادة. الأول هو الحضور الواسع لتأثيرات التعلم الخارجية، التي يتم التطرق إليها بشكل شكلي في العروض الرسمية لنظرية رأس المال البشري، ولكن يتم تجاهلها في الغالب في الأعمال التجريبية ونصائح السياسات. بشكل مماثل، يتم تجاهل العوامل الاجتماعية التي تحدد الطلب على التعليم. تُظهر أن تضمين نظرية رأس المال البشري في الفردية المنهجية يجعل من المستحيل دمج العوامل الرئيسية غير الهامشية التي تؤثر على الطلب على التعليم وآثاره. تم التعامل مع التوترات الناتجة عن استخدام منهجية فردية لشرح الظواهر الاجتماعية بطبيعتها ضمن نظرية رأس المال البشري من خلال تجاهلها. النتيجة هي مشكلة في العديد من المجالات المهمة في الدراسات الاجتماعية الاقتصادية، والتي يتم الإشارة إلى بعض أمثلتها في هذا البحث. نختم بالدعوة إلى أجندة بحثية جديدة وبرنامج محدث لتدريب الاقتصاديين المعنيين بالتعليم، يشمل الاقتصاد السلوكي، وتطبيقات نهج القدرات في التعليم، وتوسيع البحث التجريبي حول التأثيرات الخارجية للتعليم في السياقات التاريخية والمعاصرة.

كلمات مفتاحية: الاقتصاد السلوكي، نهج القدرات، التعليم، التأثيرات الخارجية، التباطؤ، التدريب

تصنيفات JEL : E24, J24, J41.

1. Introduction: Human Capital Theory and its Critics

Human Capital Theory (HCT) has maintained its prominence in the field of economics despite enduring criticisms over the last five decades. While the concept of "human capital" is commonly associated with skill acquisition, HCT encompasses a broader paradigm that connects education and training to economic growth. It contrasts with traditional institutional approaches, credentialism, and sociological theories, as well as emerging alternatives like the capability approach to education and the application of behavioral economics in the analysis of learning (Rubenson & Browne, 1994); (Lavecchia et al., 2016). Despite its criticisms, HCT remains central not only in economics but also in shaping global education and training policy, framing discussions on skills and educational outcomes.

HCT emerged as a dominant economic theory in the 1960s, with Gary Becker serving as its key proponent. Becker linked the analysis of educational investment and its benefits to the theory of choice, applying a microeconomic approach (Becker, 1962). This approach, rooted in methodological individualism, assumes that learning can be understood through a representative individual who invests in education to accumulate human capital. While Becker's theory was in contrast to institutionalist approaches, it sought to explain the role of education in economic development, especially in a Cold War context where economic growth was seen as crucial to national security ((Becker, 1993); Lott, 1987).

The rise of HCT was driven by an overarching concern in economics to address the "residual" in macroeconomic production functions, where a significant portion of economic output could not be accounted for by labor and capital alone (Solow, 1957). Critics of HCT, including (Bernanke & Gertler, 1995), argued that the theory faced "prediction failure," particularly in its ability to explain the complex dynamics of education and economic growth. Despite these early critiques, HCT's central tenets have remained influential in both economic theory and policymaking, with critics being relegated to the periphery of economic discourse (White, 2016).

HCT is grounded in several key assumptions. **First**, it views education as an investment in human capital, which is central to the production function. Educational choices are treated analogously to investments in physical capital, employing discounting methods to calculate future returns. **Second**, HCT is founded on methodological individualism, assuming that individuals make rational choices regarding their education based on expected personal returns. **Third**, the theory assumes well-functioning markets for education and skilled labor, downplaying issues such as overeducation and labor market imperfections. These assumptions, while useful in certain contexts, fail to capture the social and economic complexities that influence educational outcomes.

A central critique of HCT is its focus on individual decision-making, which overlooks the role of social factors, such as class, race, and gender, in shaping educational outcomes (Bailly, 2016); (Tan, 2014). Critics have argued that HCT fails to account for the social dynamics of education, such as the role of status competition, credentialism, and the social context of learning (Collins, 1979). While HCT has been instrumental in linking education to economic development, it has been criticized for ignoring the broader societal benefits of education, such as its role in fostering social cohesion and civic engagement (Brown et al., 2020); (Piore & Sabel, 1984).

Some scholars, particularly from the field of radical economics, have criticized HCT for its neglect of the social determination of educational outcomes and its failure to address issues of class and inequality (Bailly, 2016); (Tan, 2014); (Rubenson & Browne, 1994). Others have raised concerns about the theory's emphasis on individual economic returns, suggesting that education serves more as a positional good or a signal of social status rather than a direct driver of productivity (Spence, 1973; Collins, 1979). Education's relationship to wages has also been questioned, with critics noting the increasing wage inequality that HCT fails to explain (Piore & Sabel, 1984); (Marginson, 2019).

The resilience of HCT has been attributed to its alignment with neoliberal economic principles, which favor market-based solutions to education policy (Vally & Motala, 2014). While HCT's supporters argue that it can accommodate progressive education policies, critics contend that the theory's focus on individual returns to education limits its ability to address the social dimensions of education and its broader societal effects. Despite these critiques, HCT continues to dominate discussions in economics and education policy, due in part to its empirical success in predicting certain policy outcomes, such as the response of educational demand to financial incentives (Jensen, 2010).

However, the enduring dominance of HCT does not necessarily signify a progressive research agenda. While the economics of education literature has expanded, much of it focuses on empirical investigations into educational production and does not rely heavily on HCT's individualistic assumptions. Critics of HCT argue that the theory's failure to address social determinants and externalities in education prevents it from offering a comprehensive understanding of education's role in society (Goldin & Katz, 2008).

In the following sections, we explore the key problems arising from applying methodological individualism to education, focusing on the marginalization of social factors and the neglect of externalities. We argue that the application of HCT in education has limited our understanding of the broader social and economic impacts of education. Finally, we discuss potential alternatives to HCT that can better frame the relationship between education, the economy, and society.

2. The Problem of Methodological Individualism as Applied to Education

Learning, in its broadest sense—whether formal or informal—is fundamentally incompatible with a reductionist approach that attempts to focus solely on individual actions and overlooks or underestimates the complex social interactions involved in the learning process. One of the central critiques of Human Capital Theory (HCT) is its reliance on **methodological individualism**, which diminishes the significance of the social context and external outcomes related to education. This individualistic framework tends to marginalize the **social dynamics** and **interactions** that shape learning, viewing them as secondary or even irrelevant.

HCT, in its focus on decision-making at the individual level, tends to overlook the influence of social factors like peer groups, family, and broader societal norms on the learning process. It primarily explains education as a private investment, where an individual incurs costs in pursuit of future personal benefits (Becker, 1962). The theory, therefore, neglects the external influences that play a crucial role in educational outcomes.

2.1. The Social Context of Learning and Demand for Education

Under HCT, education is framed as a result of an individual's maximization of a utility function based on expected future benefits, with a presumption of stable technology in learning. This view fails to adequately capture the social context in which learning occurs. It misses how factors such as **peer effects**, social class (Ali et al., 2020), and the influence of family and neighborhood play a substantial role in shaping educational choices and aspirations. For instance, peers contribute not only to the acquisition of knowledge but also to the development of behavioral norms, personality, and work habits. Education is thus deeply embedded in a social fabric that goes unnoticed in HCT's individualistic framework.

Furthermore, the theory's **marginalization of social class**, race, and gender in shaping educational aspirations and decisions remains problematic. By focusing on **IQ** and presumed individual ability as central to educational outcomes (Becker, 1976), HCT fails to account for how social positioning influences access to resources, aspirations, and opportunities in the educational process. Research increasingly emphasizes the **cultural context** of intelligence, arguing that it cannot be understood outside its societal context (Sternberg, 2004), pointing to a gap in HCT's assumptions about the role of **cultural and social determinants** in shaping human capital development.

2.2. Externalities and Spillover Effects

HCT also tends to downplay the **external effects** of education—both economic and noneconomic—that can have significant implications for society. If these externalities were properly integrated into the theory, it could fundamentally alter the framework's approach to policy-making and economic growth. While HCT acknowledges externalities in passing, it relegates them to the margins of the theory, often considering them as afterthoughts (Becker, 1993). This oversight prevents a deeper understanding of how **spillover effects** from education contribute to broader social and economic benefits.

Spillovers include a range of effects, such as:

1. **Improvements in communication** (language literacy, numeracy) that benefit society as a whole by lowering transaction costs and improving consumer decision-making.
2. **Emulation** of skills, knowledge, and organizational practices that lead to improved efficiency and innovation within workplaces, communities, and industries (Mason et al., 2020).
3. **The generality of knowledge**: Fundamental knowledge acquired through education is publicly available and may lead to technological advancements that are accessible to society, especially in developing countries (Jerrim & Macmillan, 2015a).
4. **Inter-generational effects**, where the education of parents, particularly mothers, influences the future educational outcomes of children (Jerrim & Macmillan, 2015b).
5. **Public goods**: Education generates broader cultural and societal benefits that are available to all, such as better public media, the availability of high-quality public services, and even cultural artifacts (Nussbaum, 2010); (Marginson, 2019).

The exclusion of these long-term and wide-reaching effects from HCT limits its ability to explain **economic growth** and **societal development** fully. While some evidence does

suggest the magnitude of these effects (Marginson, 2019), they are often overlooked in empirical studies, with researchers focusing predominantly on the private returns to education. This limitation results in a **narrow interpretation of education's role in economic development** and does not capture the larger societal transformations that result from broad-based educational investments.

2.3. Mainstream Marginalization of Externalities

One significant issue with HCT is the **marginalization of externalities**. While the theory acknowledges that education has external effects, it often does so only in passing or as a brief mention in introductory discussions. This has led to a limited understanding of the profound impact education can have on society. Studies that focus on externalities are rare, making up a small fraction of the academic literature on the economics of education. A search of prominent journals in economics reveals that only a small percentage of papers address the external effects of education, and those that do often treat them as a secondary concern.

The marginalization of these externalities is at odds with the growing body of empirical research that suggests education's external effects are substantial and wide reaching. Studies show that the **spillover effects** of education include improved societal well-being, greater civic participation, enhanced public health, and more efficient economic systems. By focusing exclusively on **private returns**, HCT fails to provide a comprehensive view of the role education plays in economic and social development, ignoring critical interconnections between individual learning and societal advancement.

3. Consequences for Economic Analysis

Moreover, the marginalization of the external effects of learning in HCT has important consequences for a number of fields of economic and social enquiry. Of these, we shall briefly discuss five: the underestimation of the significance of macroeconomic hysteresis, misspecification of the benefits of trade, the underestimation of the social (and especially long-term) value of education, short-termism combined with over-emphasis on incentive-based solutions for education policy, and the futility of efforts to estimate the "human capital stock."

First, the marginalization of social effects in the HCT context inhibits the recognition of the full consequences of macroeconomic hysteresis, with unemployment scarring workers through de-skilling and creating impediments to learning, productivity growth, and economic development. Disutility from the under-employment of labor in, especially, rural areas, as focused on in the literature of economic development (Becker, 1993), is only reinforced by the incumbent absence of the learning-by-doing effects so emphasized in the new economic growth conceptualizations; severe poverty has similar consequences for productivity by undermining the health of the workforce. Furthermore, a region's mass unemployment makes for a (well-nigh irreversible) destruction of its "communities of work." Thus, strategies for economic growth that embody a high risk of downturns may well be more costly than they appear, at first, on the basis of standard economic calculations. The costs of an economic downturn cannot merely be measured as the income foregone, but should also include a calculation of the social capital (permanently) destroyed (Cerra et al., 2023); (Walentin & Westermarck, 2022). Thus, the

deprivation that takes place within an economic downturn is an issue impinging not only upon human welfare, but also the trajectory of development of the economy.

Second, the problem of the individualistic treatment of education and the acquisition of workforce skills also has implications for optimal trade and outsourcing policies. Thus, international outsourcing might be an optimal strategy for an individual firm, but socially suboptimal if it leads to industry-wide skill losses in national or regional “communities of learning.” Such losses might be irreversible, and thus a further source of regional or national hysteresis (Auerbach & Skott, 1995). Whether a free flow of overseas investment or outsourcing has a desirable outcome for the domestic economy of a nation is likely to be contingent on particular circumstances; the presumptions of orthodox HCT, however, tend to preclude consideration of such circumstances.

Third, a direct consequence specifically for education economics is the likely underestimation of the social returns to education. Long-term returns, especially, may be undervalued owing to the long lags in externalities which the marginalized research noted above is only recently beginning to uncover. Relatedly, the relative returns to particular types, streams, or levels of education are likely to be distorted if viewed only through the lens of private benefits and costs. Research on the relative external benefits of different education types is extremely rare. Indeed, the prevailing view, even among critics from outside economics, seems to have been that social returns are lower than private returns because education is deemed to be mainly a positional good, conveying social and economic status rather than making people more productive (Di Stasio et al., 2016). In essence, this is to argue that the external effect of education is negative. In our view, this argument, at least in its pure form in which education is seen as only positional, is not defensible in light of evidence for education's direct effects on productivity and economic development.

Fourth, this underestimation and distortion of the value of education lead to a misspecified approach to education policy. A disregard of the external effects leads governments to base their funding policies exclusively on evidence of private returns to the levels or types of education, or to particular subjects (as witnessed by the denigration of arts education). Disregard of long-term lags fosters a short-termist approach to education and training that targets the development of specific, and often quickly obsolescent skills. HCT-inspired public policy is thus inclined to give less focus to a strategy oriented around a broad-based culture of learning across individuals and to emphasize the cultivation of workplace-ready skills at the individual level. This short-termist orientation is reinforced when young people, in the context of human capital-inspired policies, accumulate substantial indebtedness as students (Looney & Yannelis, 2024). Such an orientation will be deleterious both for society as a whole and at the individual level by discouraging the cultivation in young people of fundamental skills that will offer flexibility for a lifetime of work. This individualist perspective on education policy, sometimes referred to as “neoliberal responsabilization” (e.g., (Looney & Yannelis, 2024)), complements the self-entrepreneurial orientation on human development emanating from the Chicago school (Hacker, 2008).

Fifth, the marginalization of social context has also permitted the advancement of a radical accounting practice: as an alternative to education- and health-based measures, we

observe an earnings-based measure of the human capital stock of nations following an original suggestion by (Jorgensen et al., 2009). The earnings-based measure is the only one of three measures that is explicitly built on (rather than just motivated by) HCT, the alternatives being derived from educational achievements or costs. It computes the stock as the discounted value of present and future expected earnings streams for people of each age, sex, and level of education (Abrahamse et al., 2007); World Bank 2021, 145–147). Validation exercise attempts have been made, with mixed success, to reconcile earnings-based capital stock measures with the other measures. Large disparities in estimates of the magnitude of aggregate returns between cost-based and earnings-based approaches (Abrahamse et al., 2007) suggest a state of disarray. Recent attempts to resolve this tension have prompted a movement away from the individualistic premises of HCT: Jones (2019, 1176), for example, notes the amplification of the value of workers' skills that can take place through “complementarities across workers,” thus hinting at the presence of external effects of learning discussed above. Income-based accounting measures of the human capital stock may be compared across socioeconomic groups or countries. Largely absent, however, are any serious attempts to use the estimates to help explain economic development—ironically, one of the core original motivations for HCT. This abstention is unsurprising, considering its self-evident danger of being wrapped in tautology: earnings are a major component both of GDP and also by definition of the earnings profiles on which the income-based human capital index is built. Yet, if earnings-based accounting measures are not used to aid understanding and policy, their scientific utility seems limited.

These five consequences of deploying methodological individualism to analyze the relationship between education and the economy as a whole through HCT illustrate the general problem in which the paradigm finds itself: its inability to overcome, rather than ignore, the inherent tensions of a theory which allows for externalities in principle but marginalizes them in most of its uses and normative prescriptions. Viewed from outside the economics profession, an analysis of the provenance and impact of learning in society that became so focused on the supposedly autonomous decisions of individuals might seem bizarre and take some explaining. This marginalization of external effects in neoclassical economics is ironic, since their introduction early in the 20th century by (Pigou, 1920) remains one of the leading innovations in the economics of that era.

Yet the scholastic impetus for this individualistic focus and marginalization of externalities in mainstream economics stems from an intensification, in the post-war world, of the desire for a rigorous analytical foundation for microeconomics based on rational choice, and the wish to avoid confronting this tension, as much as from any ideological impetus. Endogenous preferences and external effects complicate the construction of rigorous formulations of general equilibrium and preclude any simple notion that free market solutions are necessarily socially optimal.

For HCT, the presence of substantial education externalities potentially alters the dynamics of growth and development in multiple ways, while critically undermining the simple normative prescriptions that stem from its individualistic approach.

4. The Problem of Incomplete and Imperfect Markets for Education, Training, and Skilled Labor

In addition to the problems encountered by framing the relationship of education and training to the economy through the lens of methodological individualism, further problems arise because Human Capital Theory (HCT) needs to make strong assumptions about the functioning of both education and skilled labor markets.

1. Assumptions of Functioning Markets

- **HCT's Foundation:** For HCT to be viable in explaining education provision and demand, it presupposes well-functioning markets for education, training services, and skilled labor. Without such markets, the framework loses practical application (Becker, 1993).
- **State Control:** Historically, education systems were largely state-controlled, with market influences confined to elite institutions and training services (Green & Henseke, 2021).
- **Neoliberal Era:** The introduction of market forces in education has been met with challenges due to the long-term nature of educational benefits and the neglect of externalities like social inequality (Green & Henseke, 2021).

2. Disequilibria in Labor Markets

- **Over-Education:** Increasing numbers of educated individuals occupy jobs not requiring their qualifications. This mismatch, driven by the growing demand for credentials, creates long-term disequilibria in labor markets (McGuinness, 2006).
- **Skills Mismatch:** Over-education has been reframed as skills mismatch, complicating discussions of HCT's applicability. Policy discourses often treat these concepts separately, ignoring the broader implications for educational markets (Quintini, 2011).
- **Disconnect:** This divergence between viewing education as a market and addressing labor demands in terms of skills rather than degrees challenges HCT's coherence (Sanchez-Sanchez & McGuinness, 2015); (Meroni & Vera-Toscano, 2017).

3. Challenges to Wage Determination

- **Imperfect Labor Markets:** Segmented labor markets and wage compression challenge HCT's predictions. For instance, Becker's assertion that employees would fund their general training does not hold in industries with limited competition (Stevens, 1994).
- **Training Inefficiencies:** Employees are often unable to fund training fully due to constraints like wage stagnation and firm-specific skills, leading to sub-optimal outcomes (Walentin & Westermarck, 2022).

4. Wage Inequality

- **Mincer Equation:** Wage distribution is often explained through education and experience, as reflected in the Mincer equation (Jorgensen et al., 2009). However, attributing all wage variations to productivity oversimplifies the issue.

- **Gender Pay Gap:** HCT partially attributes the gap to differing education and employment investments by men and women. Yet, it fails to account for systemic biases and unequal opportunities.
- **Racial Wage Gap:** Structural factors such as labor hysteresis, housing discrimination, and intergenerational disadvantages reveal HCT's limitations in explaining racial wage disparities (McGuinness, 2006).

5. Broader Implications

- **Systemic Factors:** Broader issues like redlining, unemployment effects, and unequal childhood opportunities highlight the need for systemic interventions.
- **Multilateral Approaches:** A more comprehensive framework is necessary to address the interconnected social, economic, and institutional inequities that HCT's individualistic approach overlooks (Fugazza, 2003).

5. Moving On: Toward Reframing the Agenda for Economics Research on the Education–Economy Nexus

The section critiques Human Capital Theory (HCT) for its inability to provide a comprehensive explanation of the relationship between education and the economy, as well as broader societal outcomes. It emphasizes HCT's reliance on methodological individualism, which marginalizes critical external effects and social determinants of education demand. This results in a narrow framework that has ceased to generate meaningful, testable hypotheses. Key Points of Critique:

1. Marginalization of External Effects:

- HCT acknowledges externalities but relegates them to a secondary status in both theory and policy discussions (Green & Henseke, 2021).
- A broader research program is necessary to quantify these effects, encompassing economic, social, and nonmarket outcomes of education (Vally & Motala, 2014); (Lavecchia et al., 2016).

2. Social Determinants of Education Demand:

- HCT neglects the social and institutional contexts that shape education demand, instead focusing on individual choices (Camagni et al., 2016).
- The capability approach offers an alternative, highlighting how societal conditions influence individual aspirations and capabilities (Jensen, 2010).

3. Methodological Limitations:

- The framework's assumption of fixed preferences and its instrumental view of education limit its ability to address issues like social inequality, long-term market disequilibrium, and systemic barriers to access (Buzzelli 2015; Caucutt and Lochner 2020).

Proposed Reframing Approaches

1. Education Spillovers and Externalities:

- Advocates for an expansive research program to estimate the diverse effects of education across various contexts (Green & Henseke, 2021); (Allah-Mensah and McGrath 2023).
- Calls for interdisciplinary methods, including big data analytics and historical analysis, to enhance understanding (Gennetian et al. 2019; (Jorgensen et al., 2009)).

2. The Capability Approach:

- Inspired by Sen (1997) and (Nussbaum, 2010), this approach broadens the focus from material progress to human agency and capabilities.
- Critiques HCT's instrumental perspective on education, highlighting its intrinsic value and societal impacts (Barro & Barro, 2000).
- Promotes a collaborative framework involving economics, sociology, and psychology to explore how aspirations are shaped by social contexts (Nussbaum, 2010).

3. Behavioral Economics of Education:

- Addresses the shortcomings of traditional optimization models by incorporating psychological and social factors influencing educational choices (Thaler 2017); (Lavecchia et al., 2016).
- Explores biases like loss aversion, limited attention, and social norms, particularly in relation to class and gender differentiation (Hoff and Demeritt 2023).
- Suggests using behavioral insights to design policies that improve educational access and outcomes (Gennaioli et al., 2013).

Recommendations for Renewal:

1. Reject Methodological Individualism:

- Move beyond treating education as a commodity governed by individual choice, recognizing its unique societal role (Lavecchia et al., 2016).
- Focus on education's transformative impact on personality, societal cohesion, and long-term development.

2. Integrate Broader Contexts:

- Develop theories and policies that consider education's unfolding impact across diverse societal and temporal contexts.
- Emphasize the collective and systemic dimensions of education's contribution to economic and social well-being (Sen 1997).

3. Enhance Economist Training:

- Encourage economists to incorporate interdisciplinary perspectives and methodologies (Caucutt and Lochner 202).
- Recognize the limitations of income-centric metrics in evaluating educational policies (McGrath et al. 2022).

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