



## EDUCATION QUALITY AND ECONOMIC GROWTH IN THE UNITED STATES

Elvira NICA<sup>1</sup>, Gheorghe H. POPESCU<sup>2</sup>

<sup>1</sup>Academy of Economic Studies, Bucharest, <sup>1</sup>E-mail: [popescu\\_elvira@yahoo.com](mailto:popescu_elvira@yahoo.com)

<sup>2</sup>Faculty of Finance, Banking and Accountancy, Dimitrie Cantemir Christian University, <sup>2</sup>E-mail: [popescu\\_ucdc@yahoo.com](mailto:popescu_ucdc@yahoo.com)

**Abstract** *The mainstay of the paper is formed by an analysis of the role of cognitive skills in the process of economic development, growing educational wage gaps, and markets for academic research. This paper seeks to fill a gap in the current literature by examining cognitive skills as a direct measure of human capital, the impact of cognitive skills on individual earnings, and the implications of policies designed to improve educational outcomes.*

**Key words:**

Cognitive skill; economic development; higher education practices

**JEL Codes:**

F43; O47; H52

### 1. Introduction

Considerable research attention has focused on the role of education and human capital in economic development, the association between school attainment and cognitive skills, and the shortcomings of higher education practices. The theory that I shall seek to elaborate here puts considerable emphasis on the impact of mismeasurement of the quantity of education on growth, the long-run economic implications of improvements in cognitive skills, and the impact of cognitive skills on outcomes.

### 2. The Role of Education and Human Capital in Economic Development

Schooling levels differ dramatically between developing and developed countries (they differ in a myriad of ways other than schooling levels). Education is the broad mix of inputs and processes that lead to individual knowledge. A productive development strategy will raise the schooling levels of the population. A number of countries have expanded schooling opportunities without seeing any dramatic catch-up with developed countries in terms of economic well-being. Cognitive skills in assessing policies related to developing countries are the key issue. Cognitive skills are related to both the quantity and quality of schooling. Schooling that does not improve cognitive skills has limited impact on aggregate economic outcomes (Corsani, 2013) and on economic development. The casual conversation based on disparities in school attainment may understate the magnitude of differences in true education and skills across countries. Ignoring

differences in cognitive skills (Naito, 2013) distorts the picture about the relationship between education and economic outcomes, missing important differences between education and skills and individual earnings, an important underlying factor determining the interpersonal distribution of incomes across societies, and the important element of education in economic growth. Cognitive skills have a strong impact on individual earnings, and a robust influence on economic growth. A high-quality school system can lead to improved cognitive skills. (Hanushek and Woessmann, 2008)

Countries with more inequality at one point in time experience less earnings mobility across the generations. The interaction between families, labor markets, and public policies structure a child's opportunities and determine the extent to which adult earnings are related to family background. In countries with greater inequality of incomes, a greater fraction of economic advantage and disadvantage is passed on between parents and their children. Measures of inequality and mobility (Pera, 2014b) should be juxtaposed as a starting point for understanding the causal process and its policy implications. The degree of inequality in labor markets determines both the resources parents have and the return to the education children receive. In countries where the return to college education is higher, generational mobility tends to be lower. The average premium for higher education is not informative about the distribution of that premium. (Corak, 2013) The employment crisis has exacerbated longer-term U.S. labor market trends (Prager, 2013) of rising inequality. The U.S. federal-state unemployment insurance (UI) program plays an

important role in sustaining consumption for the families of job losers in the presence of limited job opportunities, and provides economic support to facilitate further training and education. Performance management systems in employment and training programs should focus on longer-term employment and earnings outcomes. (Katz, 2014) Investments in school quality are more effective in decreasing persistent economic and educational inequalities and for reducing risky behaviors. With sufficient budgetary resources, policymakers may improve both neighborhood and school quality for low-income children. It is difficult to generate systematic large-scale improvements in school and teacher quality for low-income students growing up in high-poverty neighborhoods. (Fryer and Katz, 2013)

### **3. The Association between School Attainment and Cognitive Skills**

The economic situation in the United States is governed by the same basic educational forces as that in developing countries of South America. Schooling is but one of the factors influencing cognitive skills and human capital formation. Changes in school quality over time within individual countries may be important. Measures of cognitive skills capture variations in the knowledge and ability that schools strive to produce with their curricula, by emphasizing total outcomes of education, they incorporate skills from any source, and by allowing for differences in performance among students with differing quality of schooling, they emphasize the importance of different policies designed to affect the quality aspects of schools. Educational outcomes produce the most consistent and reliable information about education and development, and can be related directly to the relevant policy options facing nations, whereas the standardly used measures of school attainment provide less reliable measures of skill differences. (Hanushek and Woessmann, 2008)

The impact of the returns to education on the degree of intergenerational mobility may reflect an important role for the transmission of innate ability between parents and children, and endowments are not fixed traits transmitted mechanically across generations. A college education is increasingly a gateway to higher incomes. Monetary investments outside of formal schooling help promote a child's human capital in the primary school years. The nonmonetary capacities of families are likely to be more limited for low-income families. Increasing divergence in both monetary and nonmonetary investments in children may lead to an increasing divergence in cognitive attainments and achievements that are the necessary prerequisites for college success. The traits relevant for success extend

well beyond cognitive development before and during the school years. Public policy can affect the investments made in children across the entire income distribution and how families interact with labor markets. (Corak, 2013)

The dilemmas of university change are quintessential boundary work. The character and organizational structure of particular institutions are shaped by how they demarcate these boundaries. The U.S. system has long involved a complex mixture of private and state-based public institutions that are relatively autonomous from the federal government. The missions of teaching, research and a social charter have been challenged by calls for alternative revenue schemes and increased knowledge capitalization. Post-industrial economies may be dependent on knowledge exchange (Makó and Mitchell, 2013) between public and private institutions. Macro-level shifts of university research toward formal university–industry relations can have quite diffuse impacts on faculty and staff. The goals of democratic citizenship may co-exist with demands for demonstrable returns on educational investment. (Nickolai, Hoffman, and Nell Trautner, 2012)

Employers would need to compensate for overqualified work, as productivity is related to individuals. The returns to overschooled years are higher than the average in industries strongly functioning according to the human capital logic. In industries where the human capital logic prevails (Hunter, 2013b), the individual skill level pays off relatively well, independent of the job that is held. Industries that score high on the positional good index have a lower rate of return to overschooling. Overschooled years pay off less the more dominant the social closure mechanism gets. Wages are higher when the positional good mechanism becomes stronger (wages are higher in bureaucratic, larger and hi-tech sectors). Horizontal job matches are often found in settings strongly selecting on productive skills. The social closure mechanism is positively associated with horizontal job matches. Industries differ in the extent to which overschooling is rewarded. Labor market behavior might correspond to different mechanisms in different settings. (van de Werfhorst, 2011)

### **4. The Shortcomings of Higher Education Practices**

Investing in differing amounts of schooling affects individual earnings. More schooling is associated with higher individual earnings. Cognitive achievement measures may proxy for the relevant labor market skills (Hunter, 2013c) when assessed against individuals' performance in the labor market and the economy's ability to grow. The earnings advantages to higher achievement on standardized tests are quite

substantial. The returns to cognitive skills may be larger in developing countries than in developed countries. Cognitive skills are directly related to school attainment. The full economic impact of higher educational quality (Nicolăescu, 2013b) comes in part through greater school attainment. Actions that improve quality of schools will yield a bonus in terms of meeting goals for attainment. Both school attainment and cognitive skills (Pera, 2014a) enter into the determination of individual incomes. Cognitive skills are directly related to individual earnings. (Hanushek and Woessmann, 2008) The belief that market-based practices generate greater transparency (Zaharia *et al.*, 2013), efficiency, and responsiveness may be misplaced. The student-as-consumer model of pedagogy may influence how students perceive the instruction that they receive from their teachers. American research universities contribute significant revenue through faculty, staff, student, and visitor spending at local businesses. Universities and colleges face increasing pressures and incentives to become less dependent on federal grants and state support. The marketization pressures suggest increased segmentation across types of universities, many research universities moving toward market-driven revenue generation and away from public funding. (Nickolai, Hoffman, and Nell Trautner, 2012) Innovation makes intensive use of highly educated workers, whereas imitation relies more on combining physical capital with less educated labor. States that are closer to the technological frontier may enjoy different benefits from the same investment in education. The graduate education that occurs in research universities should be most growth-enhancing in states that are close to the technological frontier. The role of the government is to act as a venture capitalist (Nicolăescu, 2013a), investing in forms of education that would be profitable for private individuals or firms. States' educational investments and growth differ mainly because of exogenous differences in their technology. Appointment to certain political committees allows a legislator to deliver payback to his constituents in the form of specific education investments. Membership on federal committees generates shocks to research university spending, whereas membership on state committees generates shocks to the type of education institution that is present in the legislator's constituency. A state's proximity to the frontier is endogenous to its education investments. The economies of close-to-the-frontier states depends more technological innovation for their growth than do far-from-the-frontier states. Innovation is the most likely channel for externalities (Hunter, 2013a) and growth effects from research-type spending. In the U.S., all states are fairly close to the

world's technological frontier. Exogenous shocks to research-type education have positive growth effects in states fairly close to the technological frontier. Innovation is a plausible channel for externalities from research and four-year college type education. (Aghion *et al.*, 2009)

Community colleges are a growing segment of the U.S. higher education market. Educational resources and an educated workforce are key factors in regional growth. The bulk of research focuses on four-year colleges and universities. Colleges and universities often serve as regional economic catalysts. Community colleges are typically smaller than four-year colleges and universities and have smaller budgets, most students who attend community colleges are drawn from the local area, community college students are more likely to remain in a locality than students who attend four year colleges and universities with larger service areas, and community colleges are primarily teaching institutions (they do not result in the kinds of research and development business spin offs found near universities). Community colleges have fewer linkages with the local economy and much smaller economic impacts, but provide geographical and financial access to higher education to residents who would otherwise be unable to undertake study and improve their earning capabilities. Improvements in local labor earnings may not occur if education plays primarily a sorting or screening role. (Rephann, 2009)

## 5. Conclusions

The results of the current study converge with prior research on the productivity-enhancing effects of education and skills, the marketization of higher education, and the effect of education on economic growth mechanisms through which education may affect economic growth. The findings of this study have implications for the strong and significant relationship between cognitive skills and economic growth, the significance of cognitive skills as a consistent measure of human capital, and the local and regional economic impacts of community colleges.

## References

1. Aghion, P., L. Boustan, C. Hoxby, and J. Vandenbussche (2009), "The Causal Impact of Education on Economic Growth: Evidence from U.S.," in David Romer and Justin Wolfers (eds.), *Brookings Papers on Economic Activity*, 1–73.
2. Corak, Miles (2013), "Income Inequality, Equality of Opportunity, and Intergenerational Mobility," *Journal of Economic Perspectives* 27(3): 79–102.

3. Corsani, Antonella (2013), "Rent and Subjectivity in Neoliberal Cognitive Capitalism," *Knowledge Cultures* 1(4): 67–83.
4. Fryer, Roland G., Jr., and Lawrence F. Katz (2013), "Achieving Escape Velocity: Neighborhood and School Interventions to Reduce Persistent Inequality," *American Economic Review: Papers & Proceedings* 103(3): 232–237.
5. Hanushek, Eric A., and Ludger Woessmann (2008), "The Role of Cognitive Skills in Economic Development," *Journal of Economic Literature* 46(3): 607–668.
6. Hunter, Murray (2013a), "Creativity and Making Connections: 'The Patchwork of Entrepreneurial Opportunity,' (I)" *Psychosociological Issues in Human Resource Management* 1(2): 7–51.
7. Hunter, Murray (2013b), "Capabilities throughout the Organization Lifecycle," *Psychosociological Issues in Human Resource Management* 1(1): 37–107.
8. Hunter, Murray (2013c), "The Personal Paradigm Approach to Understanding the Nature of Entrepreneurs and How These Paradigms Contribute to Opportunity Discovery and Exploitation," *Journal of Self-Governance and Management Economics* 1(3): 44–61.
9. Katz, Lawrence F. (2014), "America's Job Challenges and the Continuing Role of the U.S. Department of Labor," *Industrial and Labor Relations Review* 6. *Forthcoming*
10. Makó, Csaba, and Brian Mitchell (2013), "Knowledge Economy and Innovation: A European Comparative Perspective," *Journal of Self-Governance and Management Economics* 1(2): 7–35.
11. Naito, Atsushi (2013), "Instability and Unsustainability of Cognitive Capitalism: Reconsideration from a Post-Keynesian Perspective," *Knowledge Cultures* 1(4): 47–66.
12. Nickolai, Daniel H., Steve G. Hoffman, and Mary Nell Trautner (2012), "Can a Knowledge Sanctuary also Be an Economic Engine? The Marketization of Higher Education as Institutional Boundary Work," *Sociology Compass* 6(3): 205–218.
13. Nicolăescu, Eugen (2013a), "The Financial Integration of the BRICS," *Journal of Self-Governance and Management Economics* 1(2): 42–47.
14. Nicolăescu, Eugen (2013b), "Business Ethics, Corporate Governance, and Social Responsibility," *Journal of Self-Governance and Management Economics* 1(1): 86–92.
15. Pera, Aurel (2014a), "The Use of Educational Psychology to Explain Economic Behavior," *Economics, Management, and Financial Markets* 9(1): 112–117.
16. Pera, Aurel (2014b), "The Interface between Personality Psychology and Education Economics," *Economics, Management, and Financial Markets* 9(1): 160–165.
17. Prager, Jonas (2013), "The Financial Crisis of 2007/8: Misaligned Incentives, Bank Mismanagement, and Troubling Policy Implications," *Economics, Management, and Financial Markets* 8(2): 11–56.
18. Rephann, Terance (2009), "Community Colleges and Local Economic Development," *Journal of Applied Research in Economic Development* 6(2): 3–15.
19. van de Werfhorst, Herman G. (2011), "Skills, Positional Good or Social Closure? The Role of Education across Structural-institutional Labor Market Settings," *Journal of Education and Work* 24(5): 521–548.
20. Zaharia, Constantin, Ioana Zaharia, Daniel Zaharia, and George-Cristinel Zaharia (2013), "Corporate Governance in Liberal Market Economies," *Economics, Management, and Financial Markets* 8(4): 148–153.