

**Popescu C. Cristian**

„Alexandru Ioan Cuza” University Iași Faculty of Economics and Business Administration Carol I Avenue, no. 22, Iași, 700505 E-mail: [popescu@uaic.ro](mailto:popescu@uaic.ro) Tel.: 0232.20.13.99

**Diaconu Laura**

„Alexandru Ioan Cuza” University Iași Faculty of Economics and Business Administration Carol I Avenue, no. 22, Iași, 700505 E-mail: [dlaura\\_es@yahoo.com](mailto:dlaura_es@yahoo.com) Tel.: 0723.30.27.28

*The knowledge, skills and abilities, as main aspects of human capital, have significant influences on the economic development of a country. Unfortunately, in Romania, the low level of human capital at the young people, combined with one of the Europe’s lowest rates of life long learning, could determine a future continuous degradation of the economy. Moreover, the public financial support of the Romanian learning system, from 2007-2008, was suddenly interrupted by the international financial crisis. Yet, although the period of crisis seems to be unfavourable, it has to be mentioned that the future belongs only to those countries that are supporting the innovation, based on a high stock of human capital. Therefore, Romania should try to attract and maintain inside the country those people that have previously accumulated human capital through their temporary migration to the world developed economies.*

*Keywords: human capital, education, economic development, financial crisis*

*JEL Classification: O15, O16, G18*

**1. The Role of Human Capital to the Economic Development**

The common definition of human capital refers to knowledge, abilities and skills of the individuals that can be used in the activities that stimulate economic growth and development. As we can notice, human capital is one of the most important factors of production, deeply influencing the productivity of all the others. As an input factor in the production function, the growth rate of the output depends on the growth rate of human capital.

In this context, the “New Growth Theories” emphasize the endogenous determination of the growth rates, underlying the importance of human capital that results from the fact that the factors leading to the endogenous development are related to the stock of human capital. This may be either because human capital is assumed to directly produce new technology/knowledge, or because it is an essential input into a research sector that generates new knowledge/technology.

There were many approaches related to the connection between the human capital and the economic growth, most of them underlying the role of education, as a qualitative side of human capital, to the development of a country. From Romer’s point of view, the human capital is the essential input in research, because this generates new products or ideas able to foster the technological progress (Romer, 1990, p. 71-102). Nelson and Phelps refer to the fact that the human capital is able to adopt the new technologies: “a larger stock of human capital makes easier for a country to absorb the new products and ideas that have been discovered elsewhere” (Nelson, Phelps, 1966, p. 69-75); consequently, a country that has a higher level of human capital is growing faster than others because it is the one that catches up more rapidly to the technological leader. Considering this aspect, the nowadays huge differences in the living standard between the poorest and the richest states may diminish only in the case of those countries with an adequate initial level of human capital endowments, able to take advantages of the modern technology and enjoy the possibility of convergent growth. The states with a higher educational level grow faster than the others due to the fact that formal and informal education gives the opportunity to better adapt to the new technologies in a shorter period of time. This is why Baumol, Nelson and Wolf argue that while the developing countries, with middle incomes,

may overpass the technological gap, borrowing it from abroad, the poorest ones are unable to bridge the gap in technology and knowledge (Baumol, Nelson, Wolf, 1994, p. 56-74).

In a study conducted between 1998 and 1999 it is shown the fact that “increasing the regional capacity for human capital generation and utilization may be some of the most important regional development policies for the success of the future high technology economy” (World Employment Report, 1998-1999), because human capital is the foundation of learning institutions, which are in turn the building block of learning regional economies.

The positive effects of education can be noticed when the human and physical capital are complementary factors in production, meaning that firms will tend to invest in the sectors where the labor force is more educated; the low-skilled employees that work in regions with a high level of education, will do their job more with physical capital than the low-skilled ones from regions with a low level of education. Yet, it was argued that educated workers may raise the productivity of their less educated co-workers, or there may be spill-over effects from technical progress/knowledge accumulation which, in turn, arise from investments in human capital (Sianesi, Van Reen, 2000, p. 5-29).

Some authors such as Rauch (1993) or Acemoglu and Angrist (2000), analyzing the production externalities of education, conclude that a higher level of human capital generates an increase of individuals’ marginal product and, by extension, of their wages. Consequently, we can agree that a more educated labor force can raise the average productivity of a country. Moreover, education improves the welfare state not only by opening up broader economic opportunities, but also through its indirect benefits such as improvements in health, nutrition, opportunity for self-fulfillment and development of individual capabilities (Haveman, Wolfe, 1984). Regarding these indirect effects, Sianesi and Van Reenen (2000) underline that a high educational level might be related to a friendlier environment, a wider political and community participation, a greater social cohesion and a lower criminality; all these, on their turn, may influence the economic growth.

In spite of all these, there are also cases in which the educational stock may have a small impact on the economic performances. We talk about the situations when human resources are not entirely used, considering their potential, when the educational structure does not correspond to the economic needs or when a large part of the highly qualified persons want to emigrate. Yet, we do subscribe to the opinion according to which those that migrate from the less developed to developed countries have a positive impact only if they come back into their home country, after acquiring knowledge and experience from abroad.

Considering that the impact of the human capital on the economic performances does not solely depend on the quantity and type of human resources, but also upon a great number of other factors such as “matching of educational supply to labor demand”, “the level of job satisfaction”, “the capacity of any society to attract skills from outside” (Rodriguez-Pose, Vilalta-Bufi, 2004), some analysts tried to identify which variable of human capital has the greatest impact on the economic growth. While Judson (1998) proposed an estimation of the efficiency of the allocation of educational spending between primary, secondary and tertiary education, Hanushek and Kim (1995) considered that the quality of education has an important positive impact on economic growth.

## **2. The Romanian Human Capital**

Bringing the discussion on the case of Romania, country that wants to start an intense process of surpassing the development gaps between it and the Western countries, we could say that, at the normative level, there are required substantial investments in education and continuous trainings. Yet, in a realistic approach of the facts, the discussion could only take the form of an alarming and worrying approach. We firstly refer to the data included in the official statistics, noticing that only 53,2% of the students that are following the primary and secondary schools will also go to the university (INSSE, 2005). If we analyze how many the young people of 22 years old have

already finished the high-school, we found out an average of 66,5%, with 11% lower than the European average (77,3%). In 2006, compared to an enrolled population of 4,34 millions, there were only 185.255 high-school graduates, at which it added 150.187 vocational schools' graduates, meaning a 7,71%, much low than the European average (10%). Even in the case of continuous training we cannot say that there is any similitude to what we want to be, only 1,6% of the Romanian adults following professional training courses, while the EU target is 12,5% (INSSE, 2005). If we try to place Romania in the global context, regarding a more complex index, such as that of combined rate of schooling, in 2007 we were on the 68 place, near to Africa or Egypt. Meanwhile, from the point of view of Human Development Index, Romania was on the 62 place in 2008. Yet, we have to say that, even these places are far away from the assumed targets, each year there have been made progresses, justifiable through the increasing amounts allocated to education, health and social protection.

These are general conditions under which, in a previous research, we noticed that Romania has to substantially invest in education, as a basic condition for supporting, on long term, the economic growth process. This remark was made considering Lucas' (1988) conclusion, according to which the gaps between the economic growth rates for various states are given by the differences in human capital accumulation and, consequently, in order to converge, the less developed states have to augment the human capital accumulation's rates both by improving the educational process and by promoting the technical progress. Nowadays, a low level of human capital at the young people, combined with one of the Europe's lowest rates of life long learning (1,6%), could underline a future continuous degradation of the Romanian economy. Only a change of the vision of public authorities and a strong financial support of the education's sector could still turn down the situation. Consequently, in the context in which the human capital stock is spoilt both by the precarious educational system and by the strong migration process, it is necessary, at the macroeconomic level, to put a stress on the learning system and, with an adequate financing, to look for a strict quality of the educational act.

The modern growth theories are launching the optimistic hypothesis of the technological convergence (Solow 1956), which involves that, due to the volatile feature of the technological advantage, the countries inside the technological frontier may catch up with the states that are on the possibilities' boundary. Yet, the countries or the industries from the second echelon have different abilities of absorbing the technology (Abramovitz, 1986). They differ from the point of view of the internal policies regarding the education and the research (Romer, 1990). It is impossible to assimilate a technology without the existence of the educational and practical abilities necessary for its usage and understanding. These abilities are acquired through complex processes, which require time and substantial investments. The reality show the fact that there is a convergence tendency for the countries that are simultaneously developing the human capital stock at a higher degree than the developed states. In the most of the cases in which it does not happen like this the technological gap increases because, even at the same growth rates of the educational and professional stock, their appliance at a different basis will generate totally different results (Mankiw, Romer, Weil, 1992). For example, an increase in the number of the schooling years from 6,5 to 6,7 in the case of a developing country will not be similar, as an effect on the economic growth, to an augmentation from 10 to 10,2 years in the case of a developed state. If in the first case the secondary school years have increased, in the second one the tertiary education augmented. It is known that there are significant huge differences in innovation abilities according to the level of education. If the individuals with secondary education are more predisposed to technological imitation, the ones with tertiary knowledge are more able to innovate. This is why a 1% increase in the primary school enrolment rate will lead to a 2% GNP raise, while the same 1% augmentation of the secondary school enrolment rate will generate an increase of 2,5% or even 3%, in the case of the developing countries (Sianesi, Van Reenen, 2000). For example, although the increase in the school years in the Western countries is

very low just because of the high living standards, a small increase generates more individuals able to innovate; meanwhile, in the developing states there will be more people able to imitate the technology. Consequently, in order to speak about the convergence process, the increase in the educational level should be significantly greater in the developing states. Yet, for this there are required clear policies, focused on reaching up some purposes related to that educational level appropriate for the development cycle.

### **3. The Financial Crisis and the Romanian Stock of Human Capital**

Romania's convergence to the other EU members is not possible under the present circumstances. As we mentioned above, the strongest argument is related to the insufficient human capital level and to the less encouraging perspectives of evolution for the next periods, which result from the small enrolment rates and from the quality of the Romanian learning system.

According to the OECD statistics, Romania is behind all its neighbors from the point of view of the schooling rate's evaluation, at the young people up to 15 years old (428 points from an average of 500) and on the last but one place at the evaluation of the VIII<sup>th</sup> grade pupils at mathematics and sciences (470 points compared to an average of 500 points). So, it would be necessary that, in future, Romania accelerates the investments in education in order to surpass the handicap created due to the neglect of this aspect during the last 20 years. Although in 2007 and 2008 there were positive signals, the financial support of the Romanian learning system significantly growing due to the increased budgetary effort and to the augmentation of the GDP, the improvement process was suddenly interrupted by the international financial crisis, which is deeply influencing the Romanian economy. The bad foresights regarding the general economic evolution in 2009 has generated the necessity of rethinking the budgetary strategies, in the context of significantly diminish of the consumption and investments' spending. Despite the suggestions made by IMF and World Bank, one of the sectors in which the reforms were stopped through a significant reduction of the financial support was the education. Therefore, the budgetary rectification from April 2009 generated a deficit of 811 millions RON, money that cannot cover the tinny increase in the teachers' income or a part of the investments made by some learning institutions. This decision interrupts the positive trend of the knowledge accumulation, very necessary under the circumstances mentioned above. If it would be a temporary situation, the disequilibrium wouldn't be a major one, the system benefiting of inertia. Both the positive and the negative effects have a certain degree of elasticity in propagation. The improper financial support of this year could be compensated by a recovering in the next period, if there were long-term strategic development plans, as it happens in the case of many developed states such as USA, Japan, Germany or France.

Yet, for fortune, there is a positive side of the crisis: the possibility of recovering a part of human capital lost in the previous years through emigration. Due to the global crisis, the labor market from the developed states substantially diminished, fact that determined many persons who worked in other states to come back home. They did not come only with a substantial amount of money but also with a stock of knowledge, skills and abilities, which are very important for themselves and for the national economy. Although the money remittances are substantial, only in 2008 being more than 8 billions Euro, this is not the main advantage of the temporary migration; the advantage consists in the labor force specialization and human capital accumulation. There are many debates on the topic "circular migration" or "temporary migration". It is a certainty the fact that the emigrants from the developing countries bring with them, when returning in the origin countries, an additional stock of human capital that results either from the technical knowledge acquired through new activities, or from supplementary abilities and skills of managing the productive act, often materialized in setting new business in the origin country or between the home state and the host one.

There is also the advantage of the additional social capital accumulated, generated by the social spill-over effect, when a minority gets in touch with a dominant majority. In this way, a transfer of social norms occurs, aspect which is definitely favorable, in the context mentioned above. The individuals that get in touch with the extremely regulated framework of the developed countries are adapting their behavior, initially in a conscious and imposed manner and, afterwards, sub-conscious and unconditioned, acquiring superior behavioral automatisms, particular to the social, political and economic cultures of the host countries. Although, up to a certain level, the identity of the origin culture is kept, it was noticed that, when coming home, the emigrants will be willing and motivated to propagate and apply the models acquired during the migration period. This fact is noticeable in Romania especially in the rural areas, where the emigrants represent a distinct community, more emancipated, respected and imitated.

#### 4. Conclusions

Nowadays, the Romanian human capital accumulation is a process with divergent tendencies, being hard to estimate if the final result is a positive or a negative one. On one side, the budget for education and research is diminishing, as a consequence of the nowadays financial crisis and, on the other hand, the migration process is changing its direction, a significant part of the emigrants coming back due to the unfavourable international situation. While in the first case there is a loss of the educational stock, which could be surpassed only if, in future, the investments in education increase, in the second case there will be a significant human and social capital accumulation, on medium and long term, especially in the rural areas, where the migration significantly influenced the demography, during the previous years.

In future, Romania needs to intensify the support of the educational sector, if it wants to converge with the EU average. Although the period of crisis seems to be unfavourable to such an approach, it has to be mentioned that the future belongs only to those countries that are supporting the innovation, based on a high stock of human capital. Therefore, Romania should try to attract and maintain inside the country those people that have previously accumulated human capital through their temporary migration to the world developed economies.

#### Bibliography

1. Acemoglu, D., Angrist, J., "How large are the social returns to education? Evidence from compulsory schooling laws", *NBER Macroannual*, 2000.
2. Baumol, W.J., Nelson, R.R., Wolf, E.N., *Convergence of Productivity*, Oxford University Press, 1994.
3. Hanushek, E.A., Kim, D., "Schooling, Labor Force Quality, and Economic Growth", *NBER Working Paper No. W5399*, 1995.
4. Haveman, R., Wolfe, B., "Schooling and economic well-being: The role of non-markets effects" *Journal of Human Resources*, 19(3), 1984, p. 377-407.
5. Judson, R., "Economic growth and investment in education: how allocation matters", *Journal of Economic Growth*, n° 3, 1998, pp. 337-360.
6. Lucas, R., „On the Mechanics of Economic Development”, *Journal of Monetary Economics*, Elsevier B.V., Amsterdam, 22, p. 3-42, 1988.
7. Mankiw N.G., Romer D., Weil D.N., "A Contribution to the Empirics of Economic Growth", *Quarterly Journal of Economics*, 107, pp 407+437, 1992.
8. Nelson, R., Phelps, E., "Investment in Humans, Technological diffusion and Economic Growth", *American Economic Review Proceedings*, vol. LVI, 1966, pp. 69-75.
9. Rauch, J., Productivity gains from geographic concentration in cities, *Journal of Urban Economics*, 34, 1993, p. 380-400.
10. Rodriguez-Pose, A., Vilalta-Bufi, M., "Education, Migration and Job Satisfaction: the Regional Returns of Human Capital in the EU", *BEER paper no. 1*, 2004.

11. Romer, P., "Endogenous Technological Change", *Journal of Political Economy*, vol. XCVIII, 1990, pp. 71-102.
12. Sianesi, B., Van Reen, J., *The returns to Education: A Review of Macro-Economic Literature*, Centre for Economics and Education, LSE, 2000.
13. Solow, R. M., „A Contribution to the Theory of Economic Growth”, *Quarterly Journal of Economics* 70, 1956, p. 65-94.
- 14.\*\*\*, *World Employment Report*, 1998-1999,  
<http://www.ilo.org/public/english/235press/pkits/wer98/wer98ch2.htm>, accessed in August 2007.
15. \*\*\* Institutul Național de Statistică – *Anuarul Statistic al României. Cap. 2 – Populație*, la [www.insse.ro/cms/files/pdf/ro/cap2.pdf](http://www.insse.ro/cms/files/pdf/ro/cap2.pdf), 2005.