

## Reflections on Research, Creativity and Innovation as Pillars in Enhancing the EU’s Convergence Process

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### Abstract

*Beyond the inherent problems of the periods of crisis, Europe can bet on the convergence process on resources such as talent, creativity of its citizens, vital elements in the generation of scale effects. Supporting the human resource, stimulating research, creativity and innovation, EU ensure its premises to long-term development. Considering these aspects, the paper aims at accounting for the importance of creativity, innovation and investment in human capital for the strengthening of EU’s resilience capacity so as to turn it into a more intelligent, more inclusive and a more sustainable entity. The article highlights, one the one hand, the position of the various states in terms of creativity, measured on the basis of 3Ts (talent, technology, tolerance) and, on the other hand, their correlation with the Human Development Index and economic growth. The results obtained will guide in drawing out some action measures.*

**Key words:** research, creativity, innovation, human capital, convergence

**J.E.L. classification:** F63, O11, O30, O47, R11

### 1. Introduction

The crisis which played the role of the barometer for European and world economy made decision factors objectively see the results of the past decade and aim at new targets to reach in a new motivated way and against a new background, as well. The interdependence between states imposes the existence of coherent development strategies based on which effective action should be taken so as to generate multiplication effects on the European Single Market. As a result, particular attention was given to the consolidation of EU’s economic governance and the adding of new indicators or the replacement of existent ones for the monitoring in time of the performances recorded by the countries in various policy fields by the avoidance of a dilution of strategic priorities and the maintenance of focus on key aspects (incentives to entrepreneurship innovation, investment in human capital, extension of public-private partnerships, etc.). What is currently imposed is a more competitive Europe against the background of the significant growth of countries such as China or India worldwide. In a world in which challenges are multidimensional, the European Union (EU) needs to both identify new growth sources and invest in them to achieve sustainable, intelligent and inclusive development, to become more and more resilient via the formation of new entrepreneurial culture meant to create the necessary conditions for creativity and innovation; this is necessary in order to reduce the gaps when compared to the other non-EU nations and at intra-community level.

### 2. Literature review

Convergence essentially depends on elements such as: spatial distribution of technology and innovation, mobility of factors, specialisation models, inter-regional commerce flows, quality of public policies, etc. (Vandenbussche *et al*, 2006; Ciccone and Papaioannou, 2009). The dynamic of the European integration process confirms a concentration of capitals and innovative industries in central countries where the cost of access to technology is low, the level of human capital high,

whereas the periphery develops inter-branch complementarities, thus incurring structural adjustment costs and differences in productivity (Pascariu and Țigănașu, 2017). Although before the beginning of the crisis EU made obvious economic progress, along with its onset, it underwent a process of transformation that aimed at the increase of the level of investment for research and innovation, the strengthening of the methods of communication, development of entrepreneurial structures, drop of the unemployment rate, etc. All these provided a framework for the configuration of funds in the financial scheme for 2014-2020. Such an example is the launch by the European Commission, in January 2012, of the youth action teams for the purpose of helping the member states which were the most affected by the rise of unemployment among the youth to reorient the funds they received to this priority. Other examples consist in the new integrated approach of the Erasmus+ and the Horizon 2020 programmes which stress scientific excellence, the leader position of the EU in the industrial sector and the ability to efficiently respond to societal challenges. To cope with these aims and to encourage the creation of added value in economy, it is necessary to generate new abilities/ competencies among the young, adapted to the demands of the labour market, along with the support of creativity and innovation.

One of the main vulnerabilities which caused delays in the development of the countries from central and eastern Europe compared to western ones is the investment in human resources. That is why, the need to develop new skills among young generation is necessary, fact supported by the European Commission (EC), which states in its report entitled *Strengthening European Identity through Education and Culture* (EC, 2017, p. 3): "a highly-qualified and flexible workforce forms the backbone of a resilient economy that deals with shocks well and plays a pro-active role in the global economy". Moreover, "education forms the basis for a creative and productive workforce that drives R&D and innovation; education and training equip people with the skills they need on the labour market and enable them to respond to changing circumstances and structural change or disruption" (EC, 2016). Inside the EU, due to typically heterogeneities among states, there are many unexpected flows disturbing the convergence process (Bodvarsson and Van den Berg, 2009; Castles *et al*, 2014; King and Lulle, 2016; Capello, 2016). Youth are mostly vulnerable to this, by simply being 'new entrances' in that system. This vulnerability has an implicit transfer to the countries, suffering losses of resilience. It is widely accepted that a resilient Union means a Union that invests in its young people. Investing in people is the most valuable resource on long-term. In the same time, the knowledge transfer between the main promoters of new idea (universities, research institutes, agencies, NGOs, local/regional/national authorities) will increase the potential to participate in European challenges and to reaffirm their role as actors in supporting resilience and accelerating the process of convergence. The theory of change, as well as the resilience theory, mention that to be able to resist, to adapt, to recover and to transform from different types of internal or external shocks, the governments should invest in human capital.

In a constantly changing world in which technologies modify the society's running and where the international environment is defined by the change of power between states, a radical passage to innovative processes can be noticed, as well as the rise of creative communities, that have imagination as raw matter and which positively influence development trajectories. Characterised as industries with potential to create jobs and prosperity via the valuing, generation and exploitation of intellectual property, creative industries are one of the most dynamic sectors for the EU which may constitute a resource with uncounted possibilities in ensuring added value (EC, 2014). These are defined by five principles, namely: originality, experimentation, capacity to rewrite roles, to be unconventional and act as flexibly as possible in a situation (Landry, 2008); therefore, creativity could be considered as a modernist concept which encourages innovation and facilitates progress (Bhattacharya and Bloch, 2004). The dimensions to which the concept subscribes are related to: the creativity of individuals (their ability to innovate and to respond to the new challenges in society by finding new solutions), the creativity of products (focuses on the uniqueness of a product or service provided as compared to the other products available on the market) and the creativity of processes (how a company delivers the product and services to the end consumer) (Cooke and Schwartz, 2007; Müller *et al*, 2008; Correia and da Silva Costa, 2014). Within creative industries, ingenuity and imagination decide on what people want to do, create and buy. Therefore, the person who develops new ideas is the strong link of these processes (Howkins, 2001; Bakhshi *et al*, 2008). The present shows that individuals are the motor of

economic growth by the formation of human capital clusters so that highly skilled individuals who are productive and talented become the true richness of a region/country by attracting companies meant to create a favourable environment to the rise of new economic activities and durable workplaces meant to increase the degree of local attractiveness. Interestingly enough, the ability to compete and prosper within world economy does no longer pertain to the commerce of goods, services, capital and investment flows, but also to the countries' capacity to attract and keep creative people so that development policies encourage societies to become more and more creative.

### 3. European facts related to human capital

Starting from the realities described above, it is important for Europe to remain an attractive place to study and to have in the future more European universities among the top of international rankings in education: out of the 50 best universities in the world, only 6 are located in the EU (according to the ARWU, 2018). For building a resilient society it is required to strengthen the role of the research and academic cooperation, as well as the capacity of academics to address societal challenges of shared concern. The higher education in eastern Europe passed through various transformations since the communist regime collapsed. The volatility of the education system has so far harmed the educational process, as only 5 universities in eastern EU is ranking in the top 500 worldwide universities (ARWU, 2018). Moreover, the enrolment in higher education is lower as compared with the older EU members, while the share of young people neither in employment nor in education or training is lower. Therefore, both institutional and education quality highlight important vulnerabilities in the eastern European states, emphasizing the need to enhance their resilience capacity so as to better respond to diverse shocks (economic, social, political, environmental). The Romanian education system has missed enrolling to a defined path towards improving quality. More and more students are already going abroad and the chance they come back home when finishing studies are reduced (Careja, 2013). The *brain drain* phenomenon and the low tertiary education attainment reflect the low quality of the academia' offer (for example, none of the Romanian universities is ranking in the top 500 worldwide universities according to the ARWU, 2018). Moreover, even during the early period after the economic crisis, when the unemployment was still high and the labour market offer more generous, employers were shown to face difficulties in finding appropriate qualifications for some jobs (Dimian, 2014). Later on, a recent KeysFin study (2017) points out that almost every Romanian company is facing the effects of human resources crisis and that Romania may be heading towards an acute labour market crisis.

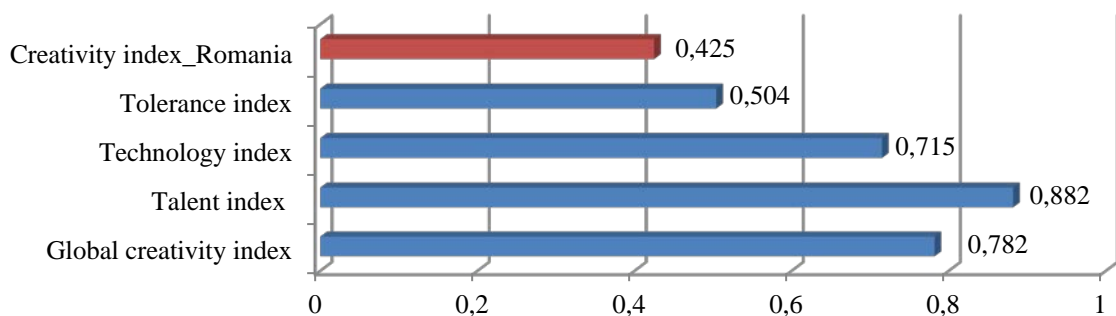
The EU has made major efforts in order to encourage internal labour mobility, like designing a European health insurance card, the coordinating of social security schemes between member states etc. Labour mobility may be one of the solutions in order to reduce youth unemployment within the EU, as it is twice as high as the overall unemployment rate: in 2017, over 6 million young people aged between 15 and 24 years were neither in employment nor in education or training (Eurostat, 2018). Among the labour market participants, young population with no previous experience have been mostly affected, the average youth unemployment within EU28 being still around 20% (Eurostat, 2018). In Romania, the situation is pretty much the same, the youth unemployment rate gravitating around 23% at the beginning of 2017. But the average youth unemployment hides major differences between member: at the end of 2016, the youth unemployment was 45,7% in Greece, 42,2% in Spain, 37,9% in Italy; at the opposite is situated Germany: 6,5%. Considering the high unemployment disparities, the labour mobility between member states is still very low, being overreached by migration from outside EU. An overview of the European skills and jobs statistics is presented in *Annex 1*. The last decade economic crisis showed that there are huge differences between states/regions in their vulnerability to economic shocks and their ability to adapt and recover from the economic disruptions. Although the most recent economic crises have been widespread, proving a strong contagious effect, the geographical display of the effects was highly uneven. Thus, by analysing the Eurostat data, in 2007 only 1 (of the 276 NUTS2 regions) was facing economic downturn, in the next two years, the crisis has rapidly spread, affecting 72 regions in 2008 and 2009. In 2017 there are still 98 regions which did not manage to get to the same level

of GDP as the peak before the crisis. Furthermore, there were only 8 resistant regions which did not encounter downturn during 2007-2017 period.

#### 4. Research methodology, data and results

To highlight the link between creativity, investment in human capital and economic growth, the regression analysis and scientific observation were used. The data were collected from sources provided by the United Nations Development Programme (UNDP) and the Martin Prosperity Institute. Specialty literature (Florida, 2002) draws on the notion of *creative class* (labour force employed in fields such as mathematics, computer science, engineering, architecture, education, training, arts, media, healthcare, etc.), which, by the combination of the 3Ts (technology, talent and tolerance), leads to innovation, which is strongly correlated to convergence. Individuals' talent is quantified based on three sub-indices (Florida, 2005): *creative class index* (the percentage of people engaged in activities that imply the carrying out of creative actions or which use creativity inputs out of the total of the working population, being calculated via the use of statistical data series on the structure of workforce occupancy on professional categories); *human capital index* (the share of the population aged between 25 and 65 having a bachelor's degree); *scientific talent index* (calculated through the analysis of the number of researchers per one thousand inhabitants). According to the Global Creativity Index (GCI), which rates and ranks 139 nations, in the creative class, Luxembourg is at the top (54%), followed by Bermuda (48%), Singapore (47%), Switzerland (47%), Iceland (45%) (Martin Prosperity Institute, 2015). Based on the 3 Ts (Talent, Technology and Tolerance), the hierarchy of states has also been made, as follows: *technology* (index computed based on the research and development (R&D) spending, R&D labour force, and patented innovations: South Korea, Japan, Israel, the United States, Finland, Australia, New Zealand, Germany, Singapore, Denmark; *talent*: measured as average levels of educational attainment and the percentage of labour force in the creative class: Australia, Iceland, the United States, Finland, Singapore; *tolerance* (index calculated based on the openness to diversity/to people: Canada, Iceland, New Zealand, Australia, the United Kingdom. Cumulatively, on the 3Ts, Australia ranks the first place, followed by the United States, New Zealand, Canada, Denmark, Finland, Sweden, Iceland, Singapore, the Netherlands.

Figure no 1. The correlation of GCI components with HDI



Source: author's representation based on Martin Prosperity Institute data (2015)

Note: rating scale is between 0 and 1, where 1 denotes maximum creativity.

It is noticed that at global level, talent is the best placed component of *creative class* (0,882). Romania ranks 68th out of the 139 analyzed states, having the three constituent elements of the creativity index as follow: talent (60th place), technology (65th place), tolerance (76th place), obtaining a general score of 0,425. Referring to *the Human Development Index* (HDI), this takes a wide variety of human development factors into account: the education dimension is measured by mean of years of schooling for adults aged 25 years and more and expected years of schooling for children of school entering age, the standard of living dimension is measured by gross national income per capita and the health dimension is assessed by life expectancy at birth (UNDP, 2018). The scores for the three dimensions are aggregated into a composite index using geometric mean.

In Table 1 are presented the correlations between the indicators: GNI per capita, R&D expenses and HDI.

*Table no 1. The correlations between GNI, R&D and HDI*

Coefficients		GNI per capita	R&D expenses	HDI
GNI per capita	Pearson	1.000	.693**	
	Kendall's tau_b	1.000	.584**	.746**
	Spearman's rho	1.000	.781**	.892**
R&D expenses	Pearson	.693**	1.000	
	Kendall's tau_b	.584**	1.000	.554**
	Spearman's rho	.781**	1.000	.776**
HDI	Kendall's tau_b	.746**	.554**	1.000
	Spearman's rho	.892**	.776**	1.000

\*. Correlation is significant at the 0.05 level (2-tailed).

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Source: own calculations, based on Eurostat and HDR data, 2018

The strongest interdependencies are established between GNI per capita and HDI (Spearman index has a value of 0.892) and between GNI per capita and R&D expenses (Spearman index has a value of 0.781 ), meaning that the more a country will invest in R&D, both HDI and GNI per capita will increase on long-term, which will generate multiplier effects in economy.

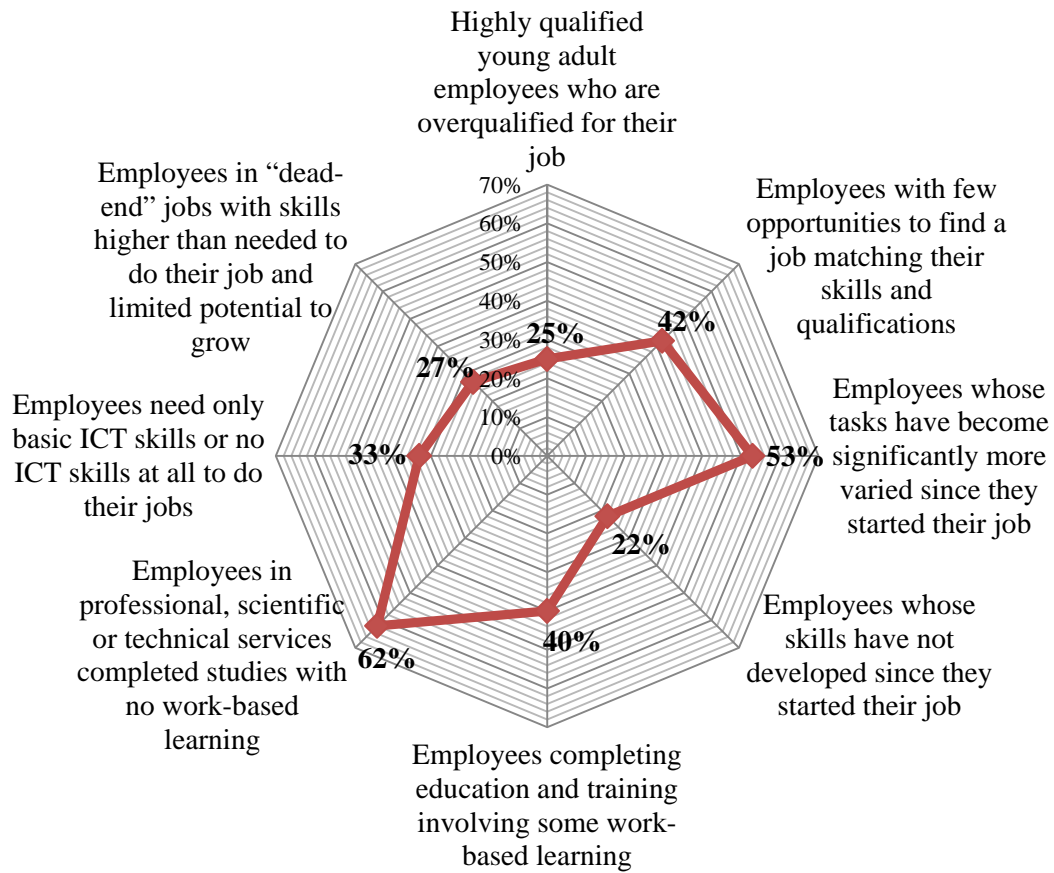
## 5. Conclusions

The multitude of structural transformations in the economy, together with the ongoing need to adjust to the dynamics of the market and the current challenges determine the consolidation of the societies' capacity to govern for resilience. The ability to manage resilience lies in actors, social networks and institutions which, through their (flexible or reflexive) way of governing and through their openness to learning, should be able to adapt to changes occurring in the economy. States' resistance to shocks depends, especially, on the quality of institutions, on their power to overcome the crisis periods. Streamlining the means of action that fully exploits the potential of creative industries, through the investment in human capital, EU could become an entity of prestige and originality, competitive and prosperous. The recovery of Europe after the economic crisis means the strengthening of the capacity to invent, initiate new projects, innovate and increase in a sustainable manner. Therefore, EU needs to bring fore innovative industries, to connect creative ideas to the needs of the market (absorption and application by companies of the research results from various fields). In addition, in designing development policies, it is necessary to consider local peculiarities, to encourage creative enterprises by improving the access to financing (financial institutions should increase their degree of sensitising on the economic potential of these industries). Last but not least, to be capable of adapting to the evolution of behaviour and consumers' expectancies, internal or external partnerships need facilitating between the companies that perform in the creative sector with companies from other sectors (clusters and cluster networks), resulting in the development of innovative business models. At the same time, widening access to the opportunities provided by the European market not only that generates an impact at the individual level, by improving skills and competences, but also at macroeconomic level, as it can help levelling the huge disparities in terms of youth unemployment and labour mobilities. By addressing the skill mismatch problem, the educational programmes/curriculum should be adapted to the labour market needs (to better respond to labour market expectations) because education and human capital accumulation lead to a better resilience capacity, together with research, creativity and innovation. A reformed education and research policy should be capable of responding flexibly to the changing situation in the region, to challenges and crises, while preserving its continuity and predictability.

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### Annex 1. European skills and jobs statistics



Source: author's representation based on the survey of the European Centre for the Development of Vocational Training (European Skills and Jobs), 2018