THE THREE AXES FOR RESUMING ECONOMIC GROWTH, AND ATTAINING EMPLOYMENT OBJECTIVES AT NATIONAL AND EUROPEAN LEVEL

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Abstract. *The time horizon 2020 is still uncertain regarding economic-financial developments at world and European Union level, as waves of migration, Brexit, and other (still unforeseeable) events could threaten the slow growth rate achieved in the first post-crisis years. Brexit may be interpreted at different policy and analysis levels. The decoupling from the common European process might be resumed to a few main topics regarding economic growth concerns, trade, and employment issues to which were added the explosive increase of immigrants in the country, and the EU red tape that seems to have but added reasons. Some negative predominant factors are the increasing loss of jobs in the manufacturing sector at national and especially at regional level. From 72.6% in 2008 at the outbreak of the crisis, a decrease to 70.3% in the peak year of the Great Recession, and an increase to 73.7% in 2015 [1]; increasing disparities between the regions in Great Britain; increase of immigration waves from countries not regarded as traditional immigration sources etc.*

Employment growth is one of the issues of outmost concern because of the direct link existing between jobs' polarization and the economic turnaround without the creation of new workplaces. In this context, new and innovative approaches are required, both for labor market as a whole, and employment.

The present paper intends a brief analysis of the three main axes in this respect. The identification of the 'critical' industrial sectors for medium- and long-term employment; the path for better adjustment of educational and vocational training systems to actual labor market demands; and a short review of institutional frameworks at national and European level for ensuring full- and inclusive employment.

Keywords: *economic growth, employment, unemployment, labor market, institutional frameworks.*

JEL Classification*: E24, I24, I39, J48, O40.*

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1. Introduction

The first decade of the 21st century and the beginning of the second decade have shown that, as opposed to the previous decades, economic growth and the increase in the employment rate are no longer characterized by the same interdependency as in past historical decades of technological shift and economic growth.

First, there are increasingly more experts talking about an actual *"economic*[1] *singularity"* born from clustering related technological innovations that generate a change that is considerable enough to trigger a new *leap* into a stage of (re)industrialization under the name of *industry 4.0* [2].

From a global viewpoint, including here the European Union, we are in full process of strengthening a knowledge society and economy. Nevertheless, considering the disputes of the experts about the beginnings of the digital and information revolution, perhaps attempting to define the time of its emergence would be useful. For instance, Fritz Machlup argued that once 29% of the GDP is owed to knowledge industries, we could consider that this revolution is initiated [3].

At European Union level, the knowledge economy indicators are still in full development process, and they tend to present an image of the developments at the level of the member-states about the relevance of the digital and information technology in both economic and household life. These indicators could be of particular relevance as they might also contribute in explaining the existence of disparities, especially those of the development regions for all member-states[2], and with particular emphasis on the new member-states from the two accession waves of 2004 and 2007, and in particular for Romania.

Identifying progress regarding Romania's change into a KBE is associated with opportunity of identifying the essential reasons why this progress is marked by essential contradictions: on one hand, according to

[1] The *singularity* used by Chace in his work is borrowed from mathematics and physics and it means, actually, a variable becoming infinite, meaning the disappearance of traditional rules and hence an increased degree of unpredictability and diminished chances of correct forecasts as it might be used also to developments in the field of employment, where technological unemployment becomes more frequent.

[2] This need exists considering for instance Italy and the Mezzogiorno region.

international statistics, Romania benefits of access speeds to international networks placing the country on the fifth position for fixed broadband internationally, but on the 41 position for mobile connections in September 2017 [4], and still this advantage cannot be fully valorized on the axes regarded as essential: (i) for economic growth to increase competitiveness, innovativeness and national/regional (re)industrialization to the highest levels attainable; (ii) optimum use within the education and vocational training system for improving and increasing the attractiveness degree of the teaching-learning methods and for increased and swifter flexibility according to labor market demands and last, but not least, (iii) for initiating innovations of institutional nature as to encourage and support the interaction between the expanding virtual market due to IoT and the other markets (labor market, goods market, etc.) so as to be able to create a unitary support and incentive basis for a competitive and innovative-creative environment in general. Romania's competitive advantage in this context is the ability to 'build' such a new type of institutional structure for economic growth in this emerging environment characterized by information, digitalization, automation, and knowledge right from the beginning. This would contribute to achieving a sound environment for the business environment, for the financial-banking one, and for the education and labor market sectors that are increasingly more fluid, and require increasingly more adaptive premises due to migration, demographic ageing, and changing expectations and cultures of the youths who in medium- and long-term are the labor force of the future etc.

This approach becomes imperative, if we consider the geopolitical and geo-economic increasingly more complicated developments of the last two decades and in particular the post-crisis evolutions. All show clearly that the technological changes have exceeded in amplitude the potential of the main economic sector, from the financial-banking one to the cultural sector.

For instance, the financial-banking sector is faced, from an institutional perspective, as structure, methods, and instruments, by increasing competition of internet banking, of FinTech developers who provide some new tools and instruments to entrepreneurs, business environment representatives and thus impose a change also in the 'traditional' and institutionalized business model of (retail) banks. For instance, we could mention here also from the 'disharmony' present in granting banking licenses to the ones related to bankruptcy procedures.

Just as well, signs of unequal ‘competition’ are present in the productive sectors (agriculture, industry, and services) as all are more and more involved in and exposed to technological change – with significant impact on the labor market, but also for global and national sustainable economic growth.

In the new context generated by technological change and shifting to *industry 4.0* both at European and at national level, an analysis is increasingly more necessary in particular at the level of the regions of development about the constitutive elements and factors that may contribute to shaping next to the *industry 4.0* the *economy 4.0* which, considering current trends, is in full-process of development. At European level, the *economy 4.0* will have as main characteristics *smart, inclusive, green* associated with increased demand for new types of products and services that require a new wide range of skills of cognitive, creative, and innovative nature associated with technological skills as to provide at the same time for an ageing society and to ensure sustainable growth based on all types of AI and computer-assisted operations and a labor force corresponding to the new demands for skills and competences.

2. Economic growth and employment in the EU and Romania

Great Britain has initiated the Brexit procedures and negotiations are underway, as compromises are analyzed along with the reasons that encouraged and drove this approach. The main question is whether Brexit is an effect or a symptom, and to discriminate it is necessary to clarify the approach. If Brexit is an effect, then it might be attributed to several triggers: (i) successive crises in Europe and their propagation for several years, followed by a post-crisis full of uncertainties; (ii) immigration waves entering the EU in 2015 and 2016 amplifying the fears at national level about employment opportunities, resilience and sustainability of welfare and social assistance systems (health, education, pensions etc.); (iii) increasing higher wage-gaps and income differentials at national level, between regions and between urban-rural areas; (iv) the perceived increased pressure regarding the compliance with the austerity and the single currency. These issues are not unique to Great Britain, but are shared by the majority of member-states, all of them giving signs of tiredness, in particular with respect to austerity policies.

Moreover, what Great Britain perceived as ‘threat’ to its national identity, based on conditionings regarded as too high for essential and

traditional economic sectors of the country, shows the issues posed by the 'innovative' construction represented by the European Union. For instance, from an institutional viewpoint, consider the 'institution' of employment that was first mentioned in a European Union Treaty by the Treaty of Amsterdam. Several other disharmonies and dissonances with respect to institutions – formal and informal alike – might have contributed together with additional factors triggered by disruptive technologies during the last decades to this radical step as the 'institutional fault lines' were not addressed, analyzed and the need for 'institutional innovation' was acknowledged as such during the last years, especially in the post-crisis period.

However, if Brexit is approached as a symptom of concern regarding economic growth correlated directly to the absorption capacity of labor force, then for avoiding other exits from the European Union, three essential axes need to be addressed:

i. *The axis of industrial change/shift* according to the concept of *industry 4.0* promoted in particular by one of the continental European drivers of economy and industry in direct and strict correlation with creating and generating new jobs: Germany. Developed by the German Government as of 2012 together with important companies in manufacturing and other industry and service sectors, the concept and initiative called *industry 4.0* is an essential part of the economic growth plan of the country up to 2020. The Strategy and Action Plan resulting from this cooperation between policy-makers and industrial and services' stakeholders aim to make Germany the leading market for industry 4.0 solutions.

This IT-based industry will change completely in the following years the manufacturing engineering sector. Built on cyber-physical systems (CPS) and machine-to-machine communications it implies considerable changes regarding the factories of the future and develop flexible models of work-organization. In order to meet the challenge companies will hire high-skilled employees with in-depth knowledge in technological and IT specialization fields while they improve resource productivity and efficiency.

ii. *The education axis* needs to be correlated to the requirements of the new technological/industrial development stage, especially when considering the *industry 4.0* developments. In this context, the approaches need to be more prudent but incisive at the same time: the education systems on the curricular component are

relatively ‘behind’ against the dynamic developments regarding the demand of competences and skills on the labor market. It is a less openly acknowledged fact that no curricula or educational program can adjust completely to the swift changes, some even yearly, of the demand on the labor market, irrespective of the policies, measures and intentions of the decision factors within the educational and vocational training systems. Therefore, it will be even more necessary to develop alternative education and vocational training paths, and to further develop the framework for the (mutual) recognition of a multitude of formal, informal and even non-formal education and training-types and initiatives, so as to allow current generations in the labor market, and especially to the young cohorts that are future’s main labor force increased opportunities of employment and access to the present jobs and to future jobs as required by the labor market.

iii. The *institutional axis* required for handling a shared symptom at European level, respectively the one of institutional frameworks that need to be adjusted in order to meet the challenges of the new economic and social developments. These developments associated to the technological and industrial shift are inevitable as the technological innovation leads to changes in job descriptions, in work-organization, in rules, and in norms both at formal and informal level. In this respect, the simple institutional development is not a solution, as new types of businesses, contracts, know-how, and working arrangements emerge in the virtual world which will need to create and build their own institutions as they mature and become relevant for economic growth at European and global level. Hence, the need for institutional innovation will increase with respect to the physical and virtual world. The reasoning consists in the fact that leaving aside path dependency of traditional and long-established institutions, and the incremental institutional changes, the disruptive stages – from economic, social, or political viewpoint – impose sometimes decisive and/or sudden changes in institutions and institutional arrangements. A good example in this respect is the need of building, developing and strengthening institutions (economic, social, political, cultural etc.) after the fall of communism in the eastern and central part of Europe.

Only by approaching these three axes, we might address the centrifugal symptom shown at European level not only by the developed member-states, but also by the developing member-states, as all member-states question currently at least one of the main organizational or functional components of the European Union.

Moreover, we consider that the axis in the field of industrial development, and regarding the education system depend essentially on the last axis, the institutional axis which is the one able to support efforts in all other fields of interest. The argument is sustained by one of the basic conceptual understandings of the institutions, respectively their understanding as "factor of limiting costs of transactions/transfers" [5] which allows also for integrating the new institutional economy in the mainstream economics.

The core, unifying element for all three axes is represented by the human capital and the way in which this capital might be optimum valorized for obtaining economic growth in the context of the highly competitive industry 4.0 emerging at present and which shall generate new opportunities for this human capital that is the depository of the required skills, competences and innovativeness, and creativeness required in a 21st century dominated by uncertainties and in-depth economic and social changes.

We consider that the essential risks of the European Union in the changed context generated by the successive crises, and the extended post-crisis period are represented by demographic risks including here demographic ageing, by increased migration waves, the increased jobs and occupations' polarization, the higher income differentials between more population segments, social risks related to quality of life and to chances of accessing better health care. All these risks originate from the disjunction between the programmatic documents of the European Union and the realities at the level of each member-state. For addressing several of these risks and issues, one of the main solutions is addressing and adjusting economic institutions and institutional arrangements with impact on the labor market and on its main components.

Thus, even though the Maastricht Treaty (1997) stipulated already and underpinned the importance of the human capital, and of full-employment, it is noticeable that the formulation of policies, monitoring, assessing and benchmarking regarding employment are relatively under-represented at EU-level if we consider the relative 'poverty' of statistical data about human capital, about the education and vocational training of

this capital, about the investments in it, as well as the absence of clear and specific diagnoses for segments of interest such as the young population (for instance, NEET), or other vulnerable groups for reasons varying from those related to health to those related to the impossibility of identifying a job because the area of residence is at far distance from any opportunities of gainful employment. Currently, these segments of interest are no longer represented only by the vulnerable groups defined as such but, rather, we might state that all active population segments, the entire human capital, became vulnerable as employment opportunities diminish in a context in which labor demand and supply are increasingly more often mismatched due to technological progress and swifter implementation into production and other areas of daily life of last-minute innovations.

The current stage is the one of competition between "the learned tradition of the classic production/manufacturing sectors and the new represented by manufacturing industries fit to be viable in the 21st century", a "competition between education and technology", between "quality of education and quality of jobs", between "economic competitiveness and competitiveness of the social models" at European and global level [6 Goldin and Katz 2008]. The core element and common denominator is represented by the human capital and especially by "what this capital produces/generates from the economic, social, and cultural viewpoint" [7 Acemoglu, Autor 2012]. Therefore, the highest risks are found for the human capital as factor of economic growth but, at the same time, in the knowledge-based economy and society this factor is the main guarantee for sustainable economic and social development.

2.1. Economic growth and employment in the EU-28(27)

Up to the end of the 20th century, the agreed model of production in manufacturing (excluding mining, constructions, and energy) was the Fordist system until the sixties, followed by the Post-Fordist one as of the sixties, up to the time of the 'disruptive' intervention of the current flexible systems. The first two stages are noticeable for their incremental growth that allowed – as some jobs disappeared – for generating new jobs either in the same sector of activity or in related sectors [8]. The last decades of the 20th century and, especially, the beginning of the 21st century represented the moment when the simultaneous concurrence of several factors led on one hand to the emergence of flexible production systems, and on the other, because of the financial and economic crisis which broke out during

the first decade, to the questioning of the economic and social development model as the trends signaled the vanishing of the 'standardized' mass production and consumption.

The high pace at which the digitalized society grew allowed for unprecedented developments and, finally, for shaping the new knowledge-based society which, by its definition, signals the contraction of labor-intensive sectors but also the change of occupational profiles because the worker of the 21st century is characterized to a larger extent by cognitive, creative, innovative competences, by skills and ability to manage his/her working time, but also the one of taking quick decisions, if necessary.

Industry 4.0 is increasingly present and accounting for 20 billion Euros/year in Germany based on the already created and embedded cyber-physical systems (CPS), and the new forms of collaboration, including here social media. The aim of the leading driver of European smart growth is of more than 40 billion by 2020. Worth mentioning here is also that the application sector in this respect accounts for about 4 billion Euro already, with an estimated added value factor of approximately 15 billion Euro [9]. Germany is followed by France and Italy (Factory of the Future) in shaping and developing what is one of the flagship initiatives of Europe 2020, respectively a smart and green economy, protecting the environment, and which is able to generate new and better quality jobs. Driven by the Internet of Things (IoT) the Industrial Internet of Things (IIoT) is the next step of man-machine interaction based on augmented virtual reality and increased capacities for transferring digital instructions for the modern manufacturing based on robotics and 3D applications. From this perspective, *industry 4.0* is the natural consequence of the lean revolution of the seventies, of the outsourcing phenomenon of the nineties and the automation revolution of the 2000s.

In this context, one of the most difficult issues refers to (re) distributing labor force in the labor market, and to the judicious allocation of new labor force entries according to competences and skills, and to ensuring even a relative balance between labor demand and supply.

In the pre-crisis period, in 2008 was registered a peak in the employment rate of 65.7% at EU-28(27) level for individuals with ages between 15 and 64 years according to the European Labour Force Survey. However, up to 2010 decreases of the employment rate were registered by 1.6 pp. Even more relevant is the period from 2010 to 2013 when this rate was characterized by stagnation to the values of 2010 with slight variations between 64.1% and at most 64.2%. Increases of the employment rate are

registered after 2014 by 0.8 pp to 64.9%. During the following post-crisis period, the employment trend continued its increase and by 2016 with 66.6% in the second quarter it surpassed the values registered in 2008 (65.8% in 2016 q2) before the crisis [10]. Nevertheless, it is worryingly that the actual number of jobs was still lower in 2016 (218.9 million in q2) than in 2008 (219.1 million in q2). This has several implications and signal evolutions that are of concern for policy makers and stakeholders from industries, services and other sectors generating added value and providing jobs to the labor force: it means that the profile of jobs has changed, and that other solutions are identified for gainful employment on one hand but, on the other hand, it shows the need for new and innovative institutional arrangements for the labor market, as this employment is translated often into temporary, part-time, determined period of time contracts, or any other arrangements, including the ones addressed to self-employed.

At the same time, the employment rate increased from 68.7% in 2010q2 to 71.1% in 2016q2, for the age group from 20 to 64 years of age, and this is still challenging when considering the Europe 2020 target of 75% employment. The most difficult situation is the situation of the population segments in this group who have low education attainment levels, including here also those with low or even non-existent skills corresponding to current labor market demand.

The employment trends show increases as they vary from 52.4% in Greece, up to 76.7% in Sweden and 74.3% in Germany (2016), as all EU member-states, save for Austria, Finland, Luxembourg, and Belgium reported employment rates increases. Nevertheless, this does not contradict the reality that for some countries the situation continues to be worse than before the crisis and with losses of employment in the entire period from the outbreak of the crisis in 2008 and up to 2016 in the second quarter. Greece, Spain, and Cyprus are among the countries where the policy solutions failed to deliver better labor market outcomes.

At the same time, increases are notable in temporary employment for all EU-28(27) countries from 13.6% in 2013q2 to 14.3% in 2016q2, as the share increased in 16 countries while the lowest rates were recorded in the Baltic States, Romania, and Bulgaria. This trend of temporary employment is not an encouraging sign for economic growth, or for the prospects of the temporary workers, as they risk to be ‘trapped’ in this type of employment. At the beginning, temporary employment was regarded as a solution for making permanent employment more ‘attractive’ to employers by

providing for deregulatory measures. However, the outcomes expressed in these increases of the temporary jobs, while the overall number of jobs remained lower than before the crisis' outbreak, are indicative for several labor market failures of institutional nature, correlated with the increased volatility of industries and services as skills and competences' requirements and demand on the market change quicker than the adjustment power of the labor force and of the education market.

The job-creation pattern is also not the most ideal: a substantial part of net job growth after 2013 was the outcome of the increase in the part-time employment share in total employment from 17.6% in the second quarter of 2008 to 19.6% in the second quarter of 2016. Another concerning issue is that this part-time jobs were characterized mostly by low-wages and low-skills. Other differences are that in some countries were created more part-time jobs than full-time ones (Austria, Denmark, Finland, Cyprus, and Latvia) while part-time employment outpaced full-time employment in countries like the Netherlands, Germany, France, Italy and Greece.

The evolution of the industrial sector at European level continues to be below the aims of the Europe 2020 Strategy, as its contribution to GDP is less than the contribution of the services' sector regarding the objectives of economic growth and sustainable development. Therefore, one of the goals of the Europe 2020 Agenda is to increase the percentage participation of industry to the EU GDP to 20% [12]. This implies the attempt to re-launch the European industrial sector, and in this context, Germany with its *industry 4.0*-action plan has one of the top leading positions.

Moreover, this diminishment of industry's share to the European GDP is reflected also in disparities at the level of the member-states. Regarding the contribution of the industrial sector in GDP, there is a significant gap between the Czech R. (24.7%), Ireland (23.3%), Hungary (22.7%) and Germany (22.4%) all these countries holding top positions, and Greece, and Greece, France and Great Britain where the contribution of the industrial sector diminished to about 10% in national GDP.

Considering the correlation between economic growth, employment opportunities and the industrial shift taking place at present, analyses have been made which estimate that the European Union benefits of competitive advantages in some key strategic sectors for re-launching (re) industrialization, respectively sectors like aeronautics, constructions, chemical and pharmaceutical products, the automotive industry, including here spatial

industry. At the same time, it should be taken into account that industry represents 80% of European exports, while 60% of private investments in the R&D sector are realized by companies involved directly in productive activities [13]. Several studies show that the best premises are found within the automotive industry, as about 12 million jobs rely on this industry either directly or indirectly, and most R&D and innovation investments are financially supported with approximately 28 billion Euros/year, as well. Other sectors of particular relevance and contributions exceeding 6% of the GDP at EU-level, respectively 800 billion Euros are: the sector dedicated to applications for satellite-assisted navigation, including here strategic sectors of network management, and intelligent transportation infrastructures etc. For instance, two projects were initiated that might have impact positively the value chain of reindustrialization, respectively the Galileo and GMES projects, as their outcomes expressed in financial terms are translated into 90, respectively 70 billion Euros for the following 20 years [14].

It is easy noticeable that the digital industry and economy will gain increasing relevance at the level of the EU member-states.

If we consider only the relevance networks and internet have gained for companies as e-business becomes increasingly more relevant for large, medium and small-sized enterprises with a percentage point increase of about 7 pp between 2011 (69%) and 2016 (77%). The figures show two trends: one hand the saturation with respect broadband fixed connections at about 92% of all enterprises in the EU using them for accessing the internet and, on the other hand, the rising of interest and investments for increasing speed for the fixed internet connections, while investing more in mobile connections [Eurostat].

The most relevant ways of using internet for EU businesses are for e-sales, social media internet based applications used for image building and marketing, and cloud computing. The latter is used mainly by large companies (+250 employees), as they resorted to this solution in a share of 45% in 2016, followed by 29% of the medium-sized companies, and only 19% of the small-sized companies. At the same time, this solution tends to be more used in Northern Member-States while fewer than 10% of the companies from Greece, Latvia, Poland, Bulgaria, and Romania make use of it. However, cloud computing recorded the highest increase, and more specifically for file storage.

The trend of using internet applications for e-mail remained constant, while new uses like accessing computer power for running company specific applications (21%), or for customer relationship management (29%), and making use of office software have all registered percentage points increases almost on a yearly basis [Eurostat].

These evolutions, associated to automation and robot-use in the automotive industry and other manufacturing sectors as well change the industry, in particular the manufacturing sector and all other related services at rapid pace, and increase on one hand the fears related to future employment prospects of the human resources and on the other hand ensure the sound foundation for the emergence of new and challenging occupations of the future.

The human capital is the essential factor, as all these processes still require supervision and monitoring performed by employees and thus the human capital continues to have a decisive role in ensuring sound economic growth. However, this human capital will be conditioned by the ability to put to good use knowledge, skills, and competences gained during the process of education and/or vocational training. This ability is first fully achieved by showing willingness and readiness for agile learning, for adjusting, assimilating, integrating, and strengthening all the gained knowledge and skill capital in the labor market, and by ensuring that lifelong learning is part of the personal career development. The employee of the future will need increasingly more to make good use of cognitive skills, of creativity and innovativeness for performing jobs well and in a competitive manner.

The relevance of skills and competences is proven by the developments of the last decades when both job profiles and requirements changed rapidly according to the demands of the real economy, but also depending on the new technologies and production methods implemented almost immediately after their emergence by firms in order to maintain competitiveness, achieve savings, and ensure sustainability of the business.

The post-crisis period had other effects by changing or even eliminating some of the rules and provisions of labor contracts, by imposing the reconsideration of some essential aspects related to ensuring the subsistence means, and the reconciliation of the work-life balance, and setting new demands for the individual in order to achieve own objectives of professional and personal satisfaction, and career development and

success. These issues are significant as many experts and even business representatives anticipate that the future is no longer represented necessarily by lifetime contracts in the same enterprise, company or even sector or branch (a model widely practiced during the entire 20th century, irrespective of the economic system, whether capitalist or socialist) but on multiple labor contracts, frequent changes of employer and of job-types, all of these signaling for the necessity of promoting not only lifelong, but also agile learning. By promoting agile learning the individuals are enabled to make use and fully valorize competences, skills, and knowledge in changed contexts, jobs, work situations, and conditions. This is relevant as the border between formal and informal education, and/or vocational training will become increasingly blurred, as due to demographic ageing and fewer cohorts entering the labor market will exert pressure on employers and employees to find innovative ways for meeting their needs. At the same time, by making use of agile learning and other innovative means, the pitfall of long-term unemployment could be avoided for some segments of the labor force, while at the same time encouraging the education system to take even more steps as to get closer to the requirements of the current and more important future requirements of the labor market.

The changes on the labor market have considerable impact on the employment trends, not only for total employment but also for employment on genders. The crisis period showed a bias that favored more men than women, but this global not only European trend overlaps the comparable trend to diminish this employment gap, and it is considered that in the future decades this gap will close, as women will become equal in numbers to men in employment.

Nevertheless, flexibility, new employment forms temporary, part-time, or based on time-fractions will become more frequent as *industry 4.0* provides on one hand for new agile employment opportunities with diversified tasks as repetitive tasks will be taken over by automated systems and robots, and on the other hand a solution for the labor force in the process of adjusting and preparing for employment in new jobs and activities that currently do not exist and are still to be created. These circumstances, that increase the fears of the existing labor force, and the numbers of NEETS, could be better used for developing new ways in which the distance between education and labor market demand could be closed, and future growing mismatches between labor force demand and

supply avoided, as necessity because technological progress outpaces almost daily the education and training capacities of the educational and vocational training systems, but also of the individual to adjust rapidly. Formal education and training, combined with on-the-job training will have an increasing role to play in this respect, and national and/or regional governments need to find ways to encourage employers, and employees alike to be more committed to programs and projects of continuing learning and vocational improvement.

An argument in this respect is the evolution in some of the core EU member-states where a remarkable growth is noticed with respect to part-time employment and time-fractions employment during the post-crisis, whereas this trend tends to remain more 'conservative' in the New Member States (Fig. 1).

The two mentioned developments – the equality in the numbers of men and women active in the labor market, but mainly the increase in part-time, and time-fractions employment – have relevance also from the viewpoint of investments in educational and vocational training systems, showing that the policies adopted during the crisis by developed countries for investing in various schemes and projects of re-skilling the labor force, whereas developing countries favored less such schemes. Legal impacts are to be expected as well, which will be reflected in institutional changes, including institutional changes in two main fields associated with the labor market: the pensions' system and the social assistance system.

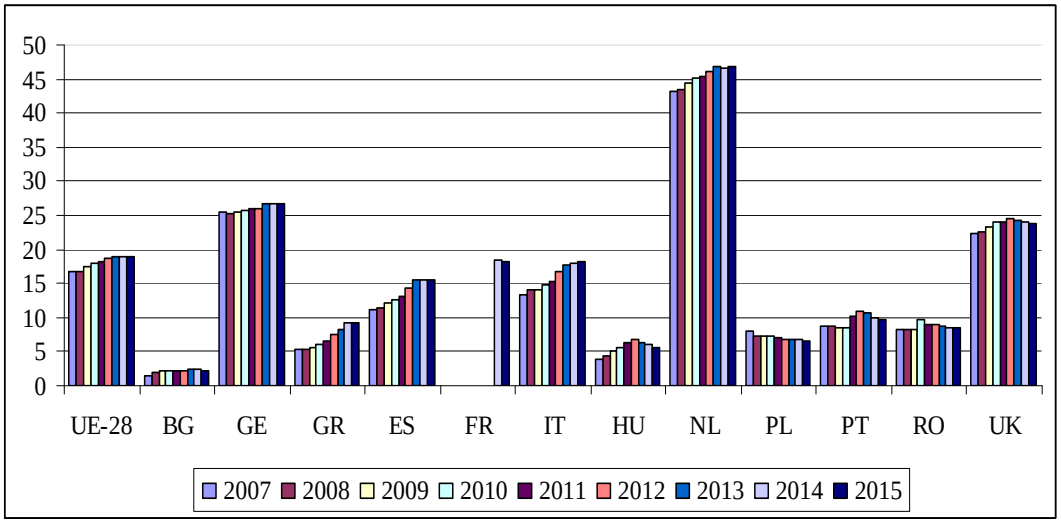

Figure 1. Part-time employment rate in EU-28 countries in the period 2007-2015 (%).

Data source: Eurostat statistics (cod online: [lfsa_eppga]).

Part-time employment might provide important information about economic growth performance and resuming the processes of reindustrialization at European level and for Romania, as well. Thus, if Germany, the Netherlands, and the United Kingdom show the highest increases regarding part-time employment these are actually evidence of the weight increase in knowledge – and science-intensive occupations and in the services' sector. Moreover, it is evidence about the increasing polarization, which leaves open either the path to high-tech, high-skilled jobs that allow for flexibility on the job and quicker implementation of *industry 4.0* type processes and for better valorization of manufacturing processes, higher product personalization, and of corresponding services, or the low-skilled services demanded on various markets. The first type of employment in knowledge intensive sectors, even part-time, contributes to generating new jobs in related sectors, in services as they ensure between 0.5 to 2 new jobs outside manufacturing [15].

At the same time, it allows for estimating that in the new context, mainly higher educated individuals will be found increasingly more in part-time activities, in time-fraction activities and, in general, in jobs that allow for higher flexibility.

For the low skilled, the chances are far worse, and this category needs to be approached by making use of special active labor market measures as they are exposed to the risk of social exclusion and growing poverty.

2.2. Economic growth and employment in Romania: country specifics

By analyzing the transition period of Romania to a market economy, and the period following the accession to the EU in 2007 it might be said that from an empirical viewpoint the entire period is an example and a signal about the complex interplay and interrelations between political, economic and social factors and about how their approach has particularized Romania in this period and triggered several concern-rising phenomena: massive migration of the most active segments of labor force, speed-up of the demographic ageing process, involuntary slow-down of the catch-up process with developed economies due to massive deindustrialization, considerable productivity decline, absence of national investments and capital for research-development and innovation, and competitiveness losses.

Thus, from the viewpoint of economic growth, the lowest peak was reached in 1992 when the economic decrease was by 25% and associated to peaking 'transition unemployment' of 11.4% by the year 1994. Economic growth was resumed in a sustained manner only after 2000 as the key-role of 'driver' pertaining to the private sector became better understood and measures were taken from fiscal viewpoint to support and meet the requirements of the private business sector.

However, the crisis of 2007 reached also Romania by 2009 when the GDP growth rate plummeted by about 7.1 % and it resumed difficult growth by 2011 when compared with the previous year the annual growth rate was of 1.1%.

The real GDP growth rate picked up in the post-crisis years, as in 2013 it recorded 3.5%, followed by a decrease of 0.4 pp in 2014. The period 2014-2016 was characterized by constant increases of the rate from 3.9% in 2014 to 4.8 in 2016. For the current year, the GDP growth rate is of about 5.5 % according to latest IMF estimates and places Romania among the top 10 fast growing economies at EU level. The GDP growth rate expresses also a development shared by several countries of the EU after the austerity imposed during the time of the crisis. Indeed, much of this increase is due to the fiscal measures of the last couple of years translated into various tax reductions, exemptions, or changes that encouraged increased consumption. Nevertheless, risks are related in this context to increased costs for labor, the case of Romania being an example as they increased much faster at country level than the EU-28 average. Thus, labor costs of Romanian companies increased in the second quarter of 2017 to 18.6% year-on-year, which is almost 12 times higher than the 1.6% average at EU level. However, this trend is comparable by 10% increases also in other countries pertaining to the New Member-States' group, respectively in Hungary, the Czech R., Bulgaria, Lithuania, and Poland.

Romania's GDP growth is based on contributions of trade, services, and industry. Nevertheless, some fears are expressed about a possible 'unhealthy' growth as much of it is also due to consumption.

At the same time, the relatively low rates of unemployment for the entire period – far from being a 'success signal' regarding policies dedicated to employment and to labor force – is a worrying warning as it is appreciated that in the period 2000-2015 and especially after the EU accession (2007) large numbers of labor force migrated for labor abroad, irrespective of their educational and vocational training level. Moreover,

the migrants represent the most active segments on the labor market, including here high-skilled young physicians and IT specialists who have full potential of working in the new economy.

The evolution of labor migration has the most considerable impact at the level of the regions of development, and it might contribute largely to explaining the considerable disparities between the regions of the country, together with the other additional factors related to infrastructure, proximities, and other factor endowments. Moreover, between 2000 and 2015, the number of Romanian migrants abroad increased in average by 7.3% yearly and if related to total population in the country, the Romanian Diaspora represents 17%. For sustainable economic growth, this labor migration phenomenon, considering that increasingly more experts like physicians and IT-specialists leave the country, next to other categories of labor force specialized in manufacturing, constructions, services represents an actual threat.

If correlated with the diminishing numbers of young cohorts entering school and leaving school for universities or labor market, as the number of births continues to be negative at country level, than other risks emerge as well.

Already, the labor market sends signals of distress from some vital sectors: for instance, the health sector where the deficit of physicians increases steady each year, the period 2010-2017 being defined by one of about 13.000 physicians. Not only sectors requiring higher education and high-skills send distress signals, but also the sectors demanding for medium- and low-skilled workers have similar issues in constructions, manufacturing, transportation etc.

This allows for identifying three major influences that create a relatively disadvantageous image regarding employment at national and regional level: (i) the influence of the transition period where deindustrialization was not accompanied by effective policy measures to address manufacturing sectors that might contribute based on generated added value to sustainable economic growth; (ii) the influence of (repeated) delays in the reform of the educational system, and of hesitancy in implementing policies and measures allowing for the development of dual education and training systems, as well as the lack of measures for increasing awareness of employers about the relevance of initiatives supported by the business environment, and of lacking programs and projects for forecasting the actual demands of the market and for training

and re-qualifying labor force. An example is that while during the crisis most countries attempted to improve education and vocational training incentives, concerns in this respect were almost absent in Romania, and finally (iii) the influence exerted by the slow adjustment of labor market institutions to the requirements of the new economic and social development state. The Romanian labor market continues to be highly rigid, flexibility regarding working-conditions and time continues to be low, failing to consider the changes necessary for closing the gap between demand and supply. To this a contribution has also the communist 'inheritance' which is noticeable with respect to the need of institution-building, such as was the case for unemployment which was quasi-inexistent before 1980, and of the trade unions that still need to improve their knowledge- and practices'-base. In the case of unions, after the period of the nineties when they had a lot of power, this power diminished to almost annihilation as result of the measures taken after the EU-27(28) accession, and of the crisis. The union movement shows signs of picking-up again for the last couple of years, but in this case, as in the case of other institutions, policies and measures further actions need to be done for their strengthening as the lacking institutional 'tradition and culture' continues to be strongly felt.

3. Institutional arrangements and their relevance

The integrating element for the developments in the industry and manufacturing sector, but also for the economic growth in general and for ensuring full-employment according to the Europe 2020 Strategy objective is represented by the way in which the necessary institutional support is approached, and more specifically the institutions with economic impact and impact on the labor market in particular. After a long period of neglect, the crisis and post-crisis period brought back in the attention of academics the relevance of institutional economics especially with respect to employment, economic growth, quality of life and economic and social development [16], [17], [18], [19]. This idea is supported especially by the "Solowian black box" [20] which shows that next to the known factors to economic growth contribute some specifics and particularities that cannot be explained either by capital, by endowments or human capital alone.

Thus, the concerns related to exiting the financial and economic crisis, next to which a (still persisting) social crisis was added, along with

the ones dedicated to ensuring sustainable economic growth and development were a fertile ground for investigating alternative hypotheses for pursuing new perspectives, ideas and guidelines in formulating policies, measures and strategies in the post-crisis.

The current most significant hypotheses are the ones promoted by the new economic geography and the new institutional economics. The geographic hypothesis [20] promotes a model related to natural climate conditions, to spatial interferences and confluences, to proximities and their relevance, whereas the institutional hypothesis provides a more complex image with direct impact on forms of governance, on economic policies and industrial policies (even for the IT sectors that are in full-process of developing own institutions and institutional arrangements), and on European regional and macro-regional policies. However, the most relevant are those institutions and institutional arrangements/factors with impact on the labor market. All terms used in labor economics, and with respect to labor market and labor force like minimum wage, employment, unemployment, and lately the suggested, and even experimented with minimum (universal) income are outcomes of institutional incremental changes, and of changes in occupational profiles, working-time, and conditions, of the nature and interpretation shift from employment safety to employability safety etc.

Moreover, the development of economic policies contributed lately to weakening some institutions, such as the negotiation power of trade unions, or to highlighting the institutional issues that require further examination and new innovative solutions like contracts, working-time, work-conditions etc. In this context, of particular relevance is the Employment Protection Index [EPL], an instrument developed by OECD for identifying, highlighting and monitoring the various areas covered by labor contracts, but also by employment policies and measures [21]. For instance, this OECD instrument highlighted that unemployment benefits, and tax wedges are two of the labor market institutions that have a rather negative contribution to achieving the Europe 2020 targets. This fact is relevant also for Romania where on one hand there are ‘incentives’ for long-term unemployment as passive measures were given precedence over active labor market policies, while the tax wedge contributed to increasing unemployment as it was not necessarily associated with other changes to compensates higher costs with labor. To this is added the fact that even if it contributes to increasing individual earnings, it creates also considerable

gaps and marked differences between various professional categories in the labor market.

The institutions associated with active labor market policies and measures are the only able to compensate satisfactorily and to a certain extent these differentiations. Packages of active labor market measures leaving aside the contribution to diminishing unemployment by encouraging unemployed to actively seek a job, have positive impact on developing new and innovative institutional approaches, either at national or global level, an example in this respect being the 'skilling and re-skilling vouchers' that might be created based on the unemployment contributions paid during the active period on the labor market, next to other measures of enterprises, employers and other stakeholders that decide to invest in the professional and vocational improvement of their employees. Another such innovation, still debated and with multiple effects but which is applied increasingly more in the EU is the minimum guaranteed income, or in its American variant the minimum universal income, as a measure to compensate the hiatus generated to the transition to a new type of economy and by the shift to *industry 4.0.*

4. Conclusions

The current developments have unprecedented dynamics on all markets but are of particular importance for the national and regional labor markets due to increasingly swifter implementation of digital, automation and robot-solutions in most economic sectors. Due to these developments, the active population at EU-28 level is faced with the dilemma generated by technological progress versus technological pressure, leading to increased polarization between low and high-skills and the squeezing of the middle-skills positions. Simply constructing some 'blocks' of activities and occupations that will continue to exist, or will vanish on mid – and long-term is not a consistent and sound approach as long as it fails to be associated to sustainable economic and social measures and mitigation solutions [22].

On the labor market two on-going types of processes have direct impact regarding structure, contents of and occupational profiles: the 'macro' processes, respectively demographic ageing, migration and technological progress/pressure, and the 'micro' processes which are reflected in the options at the level of individuals based on the 'macro' decisions taken by decision factors.

The interaction between these processes contribute to deep changes of the labor market, and therefore, for the time horizon 2020, but also for the next decades the evolutions of the labor market will be characterized by stronger continuity/change volatility if sustainability is to be assured on the labor market as well as the superior valuation of human capital. In this respect, four main areas of action are identified, the variables of which are determinant for the labor market: (i) ensuring economic growth and sustainable development; (ii) continuing with and adjustment to structural changes by making use of the required material, financial, infrastructural and human resources in view of achieving performances at the level of the regions of development; (iii) analyzing the mid-term and long-term effects of providing for a minimum guaranteed/universal income, and of the increasing differentials of income on the labor market; (iv) assessment of the links with and of the shocks received by or because of the labor market, considering the latest geopolitical and geo-economic developments as these links and shocks impact not only a region but propagate at the level of the European or global economy.

An essential role is played by institutions and institutional arrangements, both national and European. In this respect, beyond the truth that very often reforms (structural or otherwise) in the economic sector and on the labor market are realized in unfavorable contexts, which doesn't allow for enough time to be understood clearly as necessity and regarding their meaning by the involved and interested stakeholders – from decision factors in the field of policies to their beneficiaries [23] – so therefore they often are reluctantly implemented, these reforms are delayed also because of the path dependency, and the changes of the real economy which increase the difficulties for one of the main capitals contributing to economic development, respectively the human capital.

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