ABOUT REAL CONVERGENCE IN ROMANIA

Bogdan Daniel, Floroiu[1]

Abstract: *Regional convergence is one of the fundamental objectives of the EU Cohesion Policy, through assistance from the Structural Funds, the underlying economic efficient drawing up a strategy to support disadvantaged countries and regions. Thus, a high degree of convergence leads to a lower level of support for bridging economic.*

Romania meets the convergence criteria set by the Maastricht Treaty in June 2014 but still this is not enough. The nominal convergence criteria can not be met in a sustainable manner without competitiveness, financial stability and fiscal balance. Even if the real convergence criteria are not so clear and measurable indicators have not as if nominal convergence does not mean that this indicator is less important. The goal is to reduce structural differences between regions and countries, and social and territorial cohesion

In terms of real convergence, assessed by discrepancies with the EU average GDP per capita expressed in purchasing power standard (PPS), Romania has progressed significantly in the last two years, currently standing at about 55% of the average EU-28. Experience the new Member States which joined the euro underlines that such a goal is realistic insofar as the report of the EU average GDP per capita exceeds 60%.

In such conditions, the chance of countries like Romania to achieve real convergence with the EU is closely linked not only by increasing the stock of physical capital, but also stimulate the development of the two factors - knowledge and human capital - their increasing contribution to achieving higher growth rates. Should not be neglected dimension of development disparities between regions, as Romania is the EU country with the greatest disparity between regions.

Membership of the EU has acted as a catalyst for real convergence in Romania, but GDP per capita in PPS is still below levels in other Member States when adopting the single currency. In these circumstances, Romania must develop macroeconomic policies to stimulate economic competitiveness, develop all regions, to attract foreign direct investment and external grants.

Key words: *real convergence; EU; GDP; regional; PPS;*

JEL Classification: O47

1. LITERATURE REVIEW

Regional convergence is one of the fundamental objectives of the EU Cohesion Policy, through assistance from the Structural Funds, the underlying economic efficient drawing up a strategy to support disadvantaged countries and regions. Thus, a high degree of convergence leads to a lower level of support for bridging economic.

Solow's model (1956) was the basis for the construction and development of new variants of models (Lucas, Barro, Sala-i-Martin, Quah etc.) in order to gradually approach the new alternatives to the real conditions of the economy.

New variants of models of convergence as distinct factors taken into account human capital, technological and institutional state program and the effects they produce in the economic system.These effects externalities flows (spillovers) into the economy in a special way, that on others than the direct producers. The effects are much larger than necessary inputs to produce them or their remuneration amount.

Typically, intangible factors, non-quantifiable (knowledge, skills or professional qualifications, technological and managerial skills, information, innovation, know-how etc.) are spilled and / or inputs are incorporated into quantifiable tangible. Such spillovers seem to be generated by investment in human capital (Lucas, 1988) or the two investment categories for physical capital and human capital (Romer, 1986).

The new approaches to convergence have enlarged the area of research and the methods and tools of scientific investigation. The realistic interpretation of trends in the evolution of savings into the state of convergence and the rate at which the economies achieve convergence have been proposed and econometric testing the new calculation tools and models, as indicators

1 Ph.D., bogdan.floroiu75@yahoo.ro

(Sala-i-Martin, 1996), dynamic neoclassical model (Mankiw, Romer, Weil, 1992; Islam, 1995; Bassanini, Scarpetta, 2001), stochastic convergence model (Lee et al, 1997). Econometric parameter shows the speed of the convergence when the parameter is negative and showing a tendency of convergence or divergence, as this indicator shows restriction or respectively increasing dispersion of the sample of analyzed data.

Mankiw, Romer and Weil (1992) and Islam (1995), revealed that the economies with an income level low initial tend to grow faster than income economies initial high after they entered into the model as control variable savings rate and population growth rate, and Barro, Sala-i-Martin, Blanchard and Hall (1991) took into account, in addition, capital mobility, labor migration, etc.

Instead of alternative econometric methods refers to the formation, behavior and evolution of so-called groups of convergence (convergence-clubs). Who first made reference to such a process was Baunmol (1986).

The idea was taken up and developed theoretically and empirically researched by Quah, Bernard, Durlauf and Galor (1996), Mihăescu (2003) etc. Quah states that conventional theory (neoclassical) convergence and empirical research results based on this theory conceal the presence of convergence and polarization of rich and poor countries. Increasingly their opinion is that convergence is not and can not be a single process for all countries and regions, but a multipolar one.

In such conditions, the chance of countries like Romania to achieve real convergence with the EU is closely linked not only by increasing the stock of physical capital, but also stimulate the development of the two factors - knowledge and human capital - their increasing contribution to achieving higher growth rates.

2. REAL CONVERGENCE IN EU

Economic growth in Romania is among the highest in the EU and is forecast to remain above potential in 2016 and 2017.

Romanian Government remains committed to adopting the euro. A specific date will be determined after carrying out a timetable for transition to the euro, which will be completed by the next edition of the convergence program, while taking into account the criteria of nominal and real convergence.

Romania meets the convergence criteria set by the Maastricht Treaty in June 2014 but still this is not enough.

The nominal convergence criteria can not be met in a sustainable manner without competitiveness, financial stability and fiscal balance.

Even if the real convergence criteria are not so clear and measurable indicators have not as if nominal convergence does not mean that this indicator is less important.

The goal is to reduce structural differences between regions and countries, and social and territorial cohesion. The most widely used in this respect, for tracking progress gross domestic product is real convergence in PPS.

Moreover, real convergence of Romanian economy continued in the years of crisis, the pace of GDP per inhabitant being throughout the period 2010 - 2015 by more than 2 percentage points higher than the EU as a whole.

In terms of real convergence, assessed by discrepancies with the EU average GDP per capita expressed in purchasing power standard (PPS), Romania has progressed significantly in the last two years, currently standing at about 55 % of the average EU-28.

Experience the new Member States which joined the euro underlines that such a goal is realistic insofar as the report of the EU average GDP per capita exceeds 60%.

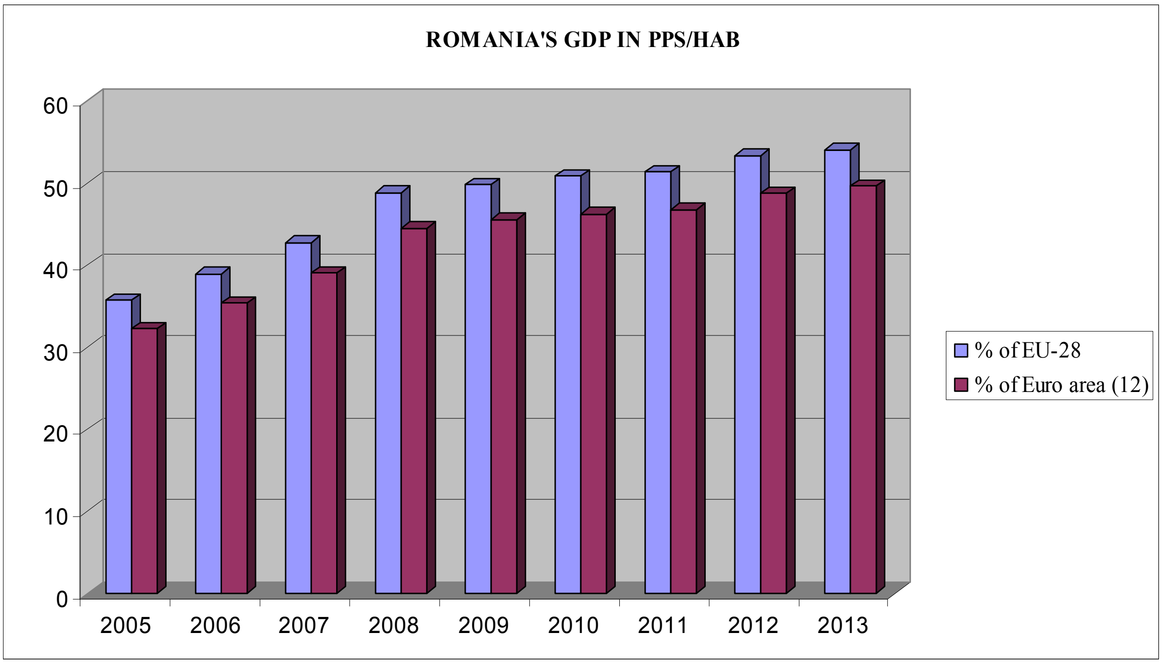

Figure no. 1 Romania's GDP weight in EU-28 and Euro area (12)
Source: by author on Eurostat database
http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do

In line with economic developments explained in the program, Romania will reach real convergence in 2018 to about 65%, with the prospect that by 2020 GDP per capita in PPS in Romania to represent 70% of the EU-28.

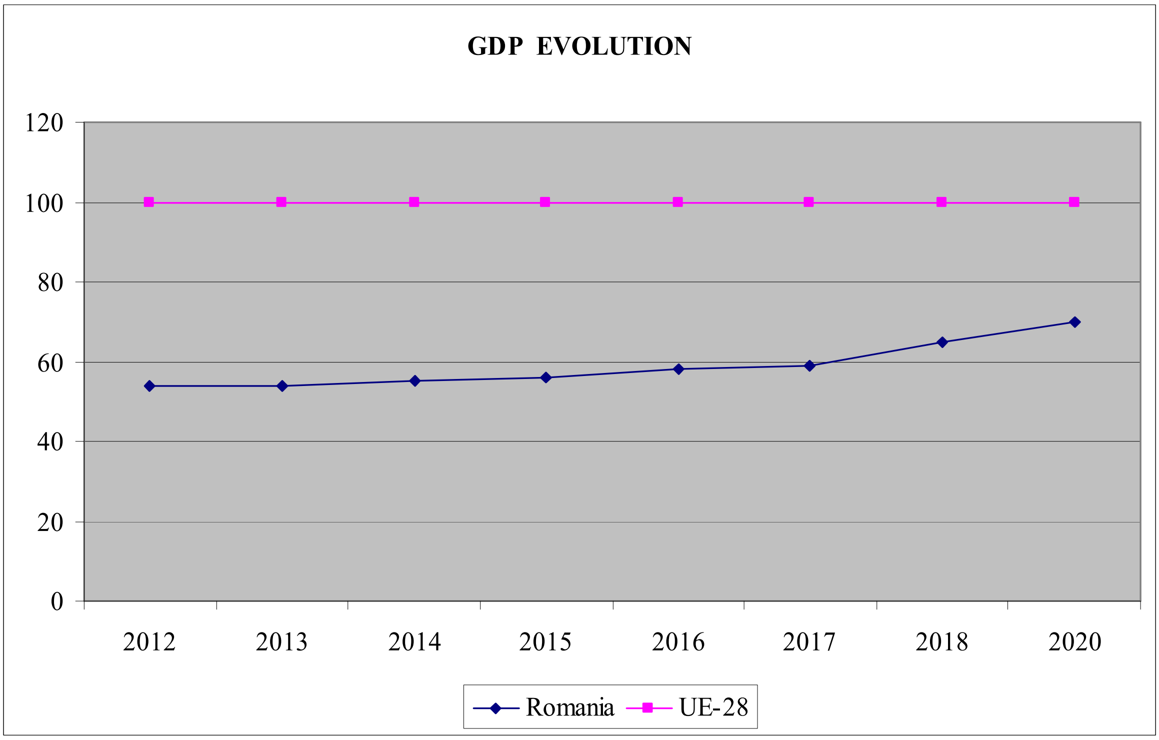

Figure no. 2 Prospects for GDP per inhabitant in PPS
Source: by author on Eurostat database from The Gouvernment of Romania, Convergence programme 2016-2019, april 2016

For the analysis of real convergence of Romania with the EU, determine the length of the period needed to achieve equalization in perspective, the absolute level of average annual income per capita of Romania (VR) with the EU 15 (VE).

The balance may take place in a reasonable period of time, unless Romania will achieve average annual growth rates ($\bar{r}_R$) superior to those achieved by the EU-15 ($\bar{r}_E$) ie ($\bar{r}_R$) > ($\bar{r}_E$).

To determine the period of convergence, we start from the simple relations on increasing GDP / capita of the two entities with initial levels and annual average rates different growth:

$$V_{tR} = v_R\left(1+\bar{r}_R\right)^t$$

$$V_{tE} = v_E\left(1+\bar{r}_E\right)^t$$

Convergence is achieved when the two values are equal relations above, according to the relation:

$$v_R\left(1+\bar{r}_R\right)^t = v_E\left(1+\bar{r}_E\right)^t$$

By logarithmating and rearranging the terms, determine the time (t) in which the convergence (balance) of two entities in the GDP / capita:

$$t = \frac{\log v_E - \log v_R}{\log(1+\bar{r}_R) - \log(1+\bar{r}_E)}$$

Based on this formula, we calculate time in years, Romania will catch up (in terms of the GDP / capita based on PPS in euro) EU-15 and the two EU leaders - Belgium and Germany.

Table no. 1 The time taken to achieve convergence with Romania EU15, Belgium and Germany

Initial level of GDP /capita 2013		Annual average growth rates of EU-15, Belgium and Germany between 2004-2013	Number of years (t) to achieve convergence in variations of average annual growth rates in Romania			
EU-15 Belgium Germany	Romania		3%	4%	5%	6%
v_E=28.000	v_R=13.900	$\bar{r}_{UE}$=0.9%	34	23	18	14
v_{Be}=30.500	v_R=13.900	$\bar{r}_{Be}$=1.5%	54	32	23	18
v_{De}=32.000	v_R=13.900	$\bar{r}_{De}$=1.3%	50	32	23	18

Source : by author on Eurostat database

According to the table at an average annual rate of increase of 3%, Romania would need 34 years to reach the EU-15, 54 years to achieve the level of Belgium or 50 years to reach Germany .

At an annual growth rate of 6%, Romania would need 14 years to reach the level of the eurozone or 18 years to reach Belgium and Germany.

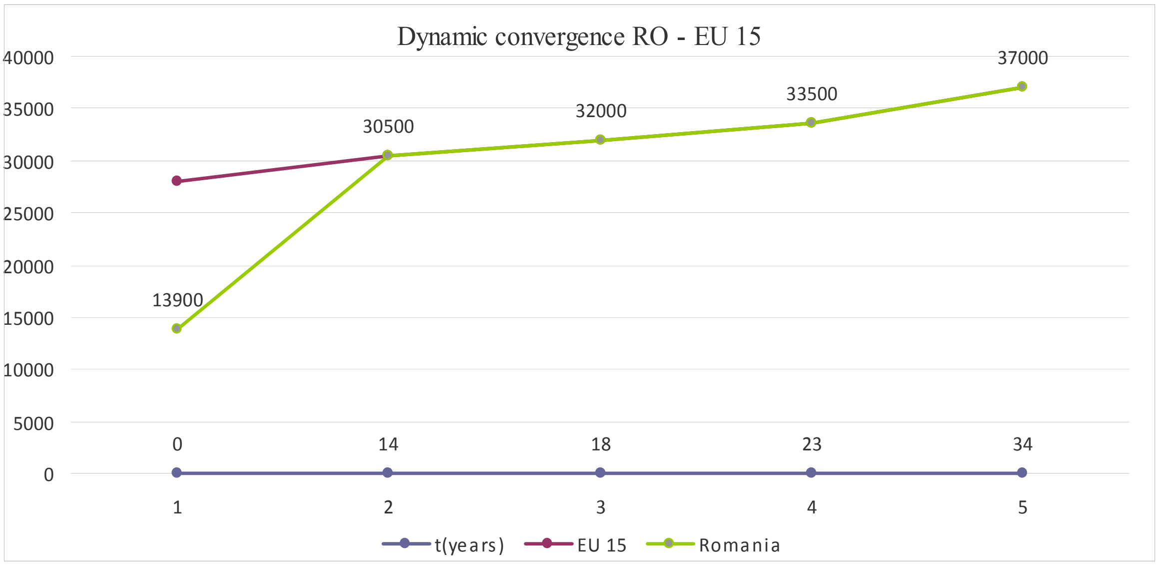

Figure no 3 Dynamic convergence RO – EU 15

Source: by author on Eurostat database

3. REGIONAL REAL CONVERGENCE

In 2011, the eurozone countries agreed to take a number of measures of the Euro Plus Pact. It reflects the interdependence of their economies and intention to ensure better coordination of national economic policies. The pact was signed by six countries outside the euro zone: Bulgaria, Denmark, Latvia, Lithuania, Poland and Romania.

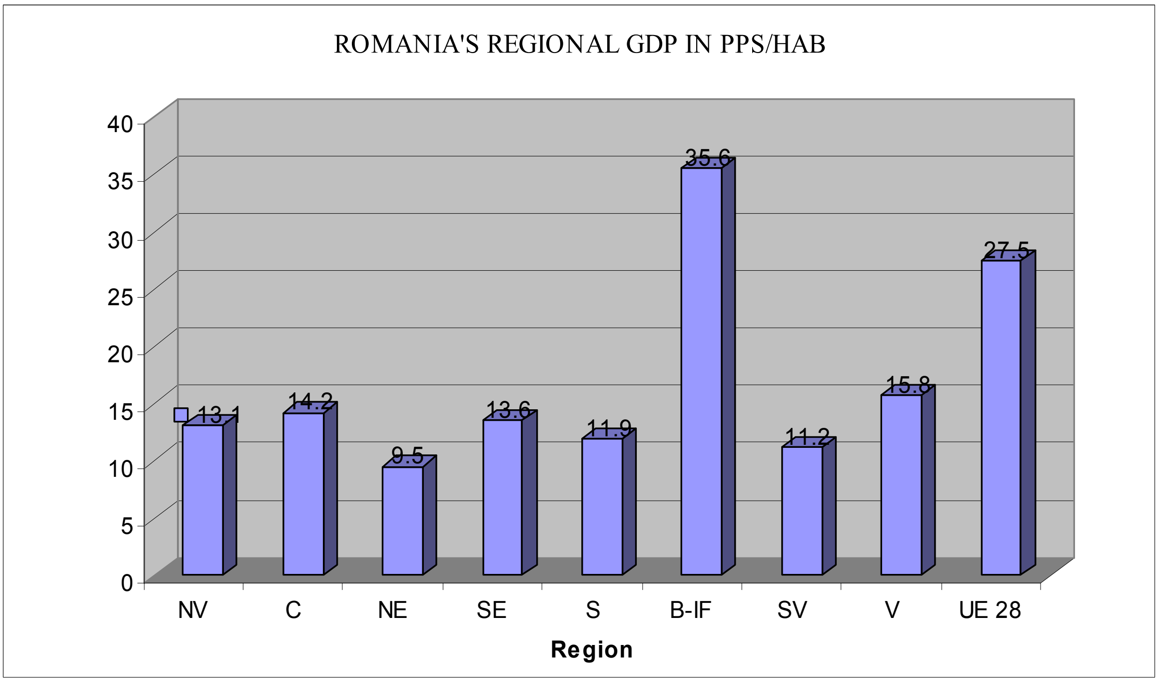

Figure no. 4 GDP in PPS/HAB 2014 by NUTS 2 regions

Source: by author on Eurostat database

The main aim of the pact is to improve competitiveness and promote growth and economic convergence among countries participating. It focuses on the areas which are primarily the responsibility of Member States, such as competitiveness, employment and sustainable public finances.

To improve the understanding of territorial Competitiveness at the regional level, the European Commission has developed the Regional Competitiveness Index (RCI) which shows the strengths and the Weaknesses of each of the EU NUTS 2 Regions. According to Country Competitiveness Index 2013 (CCI), Romania occupies the last position.

Should not be neglected dimension of development disparities between regions, as Romania is the EU country with the greatest disparity between regions (figure no 4).

Based on the formula used by Sala-i-Martin, we calculated the standard deviation:

$$\sigma_t = \sqrt{\frac{1}{n}\sum_{i=1}^{n}\frac{(x_{it}-\bar{x}_t)^2}{\bar{x}_t}}$$

Based on GDP in PPS/inhabitant in the regions to the countries of Central and Eastern notice to all regions of the countries surveyed, the standard deviation value increases, and thus the disparity grows. Romania records the biggest intranational disparity (60%) closely followed by the Czech Republic. Bulgaria, although recorded in 2014 GDP in PPS lower by 25% than Romania, is in a much better situation with a degree of disparity much lower (40%).

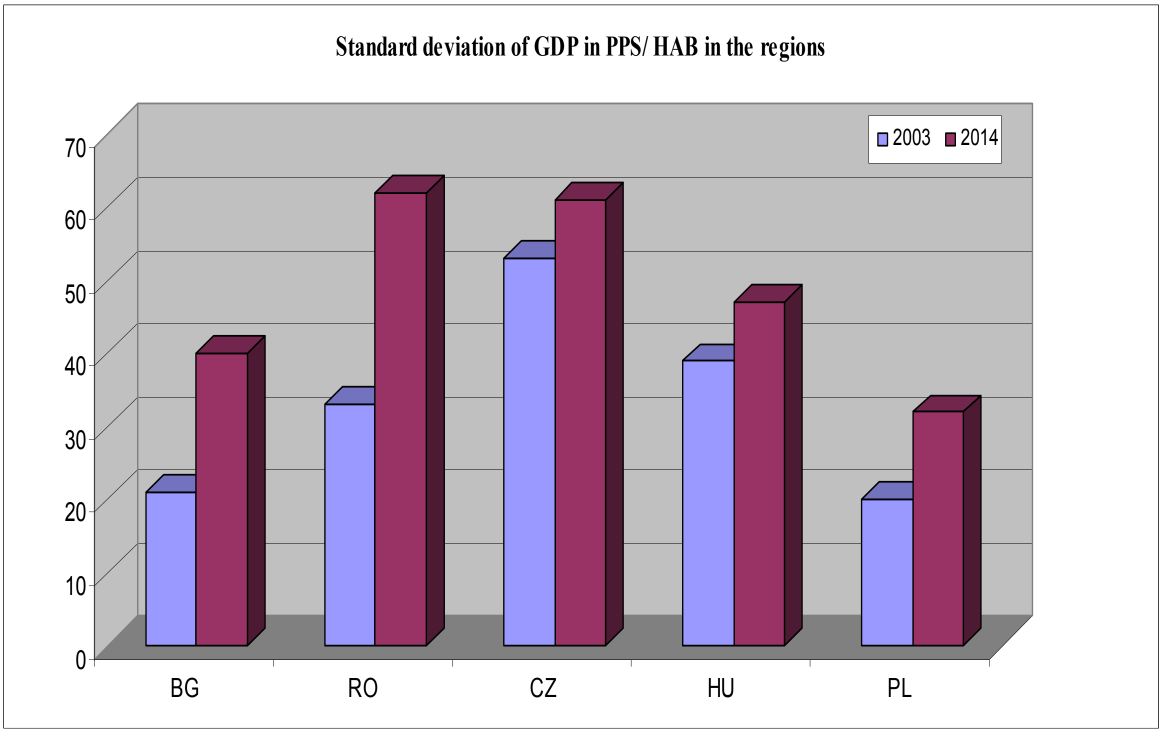

Figure no. 5 Standard deviation of GDP in PPS/ HAB in the regions of countries

Source:by author on Eurostat database, standard deviations were calculated using data on GDP PPS/hab in the regions of each country (NUTS 2)

Of the 45 regions analyzed North-East Region had in 2014 a GDP in PPS of only 9.500, less than that recorded only three regions in Bulgaria.

The other countries in the region are in a relatively better situation. Which is worrying for the whole sample analyzed and in particular for Romania, is currently raising these disparities compared to 2003. The decrease of disparities must be made through attracting European funds deprived areas.

Table no. 2 Regional disparity index

	2007	2008	2009	2010	2011	2012	2013
TOTAL ECONOMY	100	100	100	100	100	100	100
North-West Region	96.3	91.0	92.3	90.3	88.4	92.9	89.9
Central Region	100	96.7	98.3	97.6	96.1	101.5	97.1
North-East Region	62.6	62.3	63.2	62.1	60.5	66.2	64.8
South-East Region	81.3	80.3	81.2	83.1	83.0	90.4.	93.5
South Muntenia Region	81.3	82.8	86.3	83.9	83.7	80.9	82.0
Bucharest Ilfov Region	235.5	260.7	241.9	247.6	265.9	245.6	243.9
South-West Oltenia Region	76.6	75.4	76.9	77.4	78.3	79.4	77.0
West Region	112.1	113.1	112.9	114.5	114.0	113.2	108.6

Source: by author on Eurostat database

We can see that there is enough disparity between regions, and regional disparity indeces were significantly reduced only in West, Central and North-West Region. In Bucharest Ilfov convergence to the national average improves, and in the other regions remain relatively the same.

One of the strategic objectives of ROP 2007-2013 was stopping the growth of interregional disparities in terms of GDP per capita. Absorption rate was 73.5% at May 31, 2016.

The new Regional Operational Programme (ROP) 2014-2020 succeeds the Regional Operational Programme 2007-2013 and is one of the programs that Romania will be able to access EU structural funds and investment from the European Regional Development Fund (ERDF). We have a total allocation of 8.25 billion euros (compared with 4.7 billion euro allocated ROP 2007-2013) and together with other ROP program 2014-2020 sets the overall objective of economic competitiveness and improve living conditions of local communities and regional business development through support, infrastructure and services for sustainable development of regions, so that they can effectively manage their resources and their potential for innovation and assimilation of technological progress.

For the next programming period (2014-2020) is recommended:

- ❖ Strategic partnership supporting projects with a major impact local/regional or national level, to stimulate potential beneficiaries to take an active role in the development and implementation of development policies of local/ regional;
- ❖ Promote partnership at local level especially for complex projects (such as those who have financed the Axis 4, DMI 4.2) and local authorities to stimulate small-scale establishment of partnerships;
- ❖ Improving the legal framework of regional development and related legislation enabling consistent implementation and ownership of development policies at regional level;
- ❖ Financial allocation to developing regions to take account of regional and focus on the types of interventions and demonstrated a significant impact on the balanced development of regions.

European Commission proposes drawing up a new policy on legal migration in the current social and economic context marked by deep crisis of more than 1 million illegal immigrants enter Europe only in 2015 (more than 4 times compared to 2014). Among the main objectives considered:

- Blue Card Directive revision;
- Establishing a platform dedicated to cooperation with Member States, trade unions and business on economic migration;
- Remittances cheaper, faster and safer;
- Development of a "system of expressions of interest" verifiable criteria that will be used to automatically make an initial selection of potential migrants;
- Increase of development aid to countries of origin.

In September 2015, the Romanian Government approved by Government Decision, the National Immigration Strategy for the period 2015-2018. The declared aim of the strategy is to ensure a better asylum procedure and reception conditions more appropriate.

In the National Immigration Strategy 2015-2020 were established following general policy objectives:

- Promote legal migration benefits all parties: the Romanian society, immigrants and their countries of origin;
- Strengthening the legality of third-country nationals staying in Romania and proper enforcement of removal and restrictive measures;
- Improving national asylum system in order to improve standards and ensure compliance with national laws, European and international rules;
- Romania's active participation in the efforts of the international community and Member States of the European Union to finding durable solutions for persons in need of international protection and social integration of third-country nationals. In this respect, the policy on social integration of citizens of third countries aims at enabling persons who are resident or domiciled in Romania have baggage minimum knowledge and skills, mainly by Romanian language courses, programs cultural orientation and counselling to enable them to access the services and social policies in conditions similar to those for Romanian citizens.

4. CONCLUSIONS

Providing a relatively high degree of sustainable convergence prior to euro adoption, and not only the fulfillment of the Maastricht criteria is essential for successful participation in the euro.

Membership of the EU has acted as a catalyst for real convergence in Romania, but GDP per capita in PPS is still below levels in other Member States when adopting the single currency.

In these circumstances, Romania must develop macroeconomic policies to stimulate economic competitiveness, develop all regions, to attract foreign direct investment and external grants.

Bibliography

1. Banca Nationala a Romaniei, *Conferinta "Romania's Path Towards Euro*: Convergenta reala vs. convergenta nominala", Mugur Isarescu, Bucuresti, 20 aprilie 2015.

2. Barro Robert J., Xavier Sala-i-Martin, 1992, *Convergence,* The Journal of Political Economy, vol. 100, No. 2 (April), 223–251.

3. Bassanini Andrea, Stefano Scarpetta, 2001/II, *The Driving Forces of Economic Growth: Panel Data Evidence for the OECD Countries*, OECD Economic Studies, No. 33.

4. European Comission, *Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on standards for the qualification of third-country nationals or stateless persons as beneficiaries of international protection, for a uniform status for refugees or for persons eligible for subsidiary protection and for the content of the protection granted and amending Council Directive 2003/109/EC of 25 November 2003 concerning the status of third-country nationals who are long-term residents*, Brussels, 13.07.2016, COM(2016) 466 final.

5. European Comission, *Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on the conditions of entry and residence of third-country nationals for the purposes of highly skilled employment*, Strasbourg, 7.06.2016, COM(2016) 378 final

6. Grossman Gene M, Helpman Elhanan, 1994, *Endogenous Innovation in the Theory of Growth,* Journal of Economic Perspectives, vol. 8, No. 1, Winter, 23–24.

7. Guvernul Romaniei, *Programul de Convergenta 2016-2019*, aprilie 2016.

8. Guvernul Romaniei, *H.G. nr. 780/2015 pentru aprobarea Strategiei nationale privind imigratia pentru perioada 2015-2018 si a Planului de actiune pe anul 2015 pentru implementarea Strategiei nationale privind imigratia pentru perioada 2015-2018*, septembrie 2015.

9. Iancu, Aurel, 2004*, Convergenta Reala,* Studiu realizat în cadrul Programului CEEX – Proiect nr. 220, Convergenţa economică şi rolul cunoaşterii în integrarea UE.

10. KPMG Bucuresti, *Actualizarea evaluării intermediare a Programului Operațional Regional 2007 – 2013,* Contract de prestare de servicii nr. 50/29.04.2013, Raport de evaluare – versiune finală Aprilie 2014.

11. Lucas Robert E. Jr., 1988, *On the Mechanics of Economic Development*, (în vol. Economic Development and Growth Papers), Journal of Monetary Economics, 22, 3–42.

12. Mankiw Gregory, David Romer, David N. Weil, 1992, *A Contribution to the Empirics of Economic Growth,* The Quaterly Journal of Economics, vol. 107, No. 2, May, 407–437.

13. Mihăescu Flavius, 2003, *Convergența între economiile central şi est–europene,* în Daniel Dăianu şi Mugur Isărescu (coordinators), Noii economişti despre tranziția în România, colecția Bibliotecii Băncii Naționale, Bucureşti.

14. Quah Danny T., 1996, *Twin Peaks: Growth and Convergence in Models of Distribution Dynamics,* The Economic Journal, vol. 106, No. 437 (July), 1045–1055.

15. Romer Paul M., 1986, *Increasing Returns and Long-Run Growth,* The Journal of Political Economy, vol. 94, No. 5, (October), 1002–1039.

16. Sala-i-Martin, Xavier, 1996, *A Classical Approach to Convergence Analysis,* The Economic Journal, vol. 106, No. 437 (July), 1019–1036.

17. http://ec.europa.eu/economy_finance/eu/countries/romania_en.htm

18. http://ec.europa.eu/eurostat/web/regions/data/database