

INVESTMENT AND ECONOMIC GROWTH ON MEDIUM AND LONG TERM

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Abstract

In line with the economic growth theory and how economic history demonstrated, investment is one of the main factors of a sustainable long term growth. Today when globalisation phenomenon is extending and the risk to return to a crisis period is still a persistent perspective, to stimulate the investment (from domestic and foreign sources) is one of the major problems of ensuring a long term growth. Following some of our previous studies regarding the correlation between investment and economic growth in European Union, based on macroeconomic available published data and on recent forecasts of specialised institutions from international organisations (IMF, EU, WB), we try to design few alternative scenarios for the future dynamics in Romania and its place in EU.

Keywords: European Union, convergence, GDP, economic growth, regional convergence,

JEL classification codes: O52, O47, R12

1. Introduction

Starting with Solow model (1956), the major role of investment in achieving a firm and stable long run economic development has been entered by more than a half of century in the core of standard economics. All around the world, economists from developed countries and from developing countries tried to support empirically the theoretical model or even to develop it. At the beginning of 90's, many studies, initiated by Barro and other economists, extended the research regarding the impact of investment by including the transition economies from Central and Eastern Europe and the problem of convergence, particularly in EU (Barro and Sala-i-Martin, 1991 and 1995; Levine and Renelt, 1992; Mankiw et al., 1992; Yin et al., 2003; Crespo and Fontoura, 2007, Monfort, 2008; Petrakos et al., 2011, etc.). One effect of globalization is that the accent has been moved from domestic saving, as main source of investment, to the movement of capital, to the FDI as carrier of knowledge and technical progress, to the financial market as a more flexible (but also more risky) source of investment. Today is generally accepted that every forecasting study or scenario must take into account the necessary effort of investment in order to accelerate economic growth.

In this article we report a number of research results, coming from some of our recent studies, mostly dedicated or related to the problem of convergence in EU (Albu, 2006, 2012, 2013, 2014, and 2016; Raileanu-Szeles and Albu, 2015; Albu and Caraiani, 2016). Firstly we present new trends demonstrated in matter of convergence in EU and analyse of Romanian position in this context. Then, after a short presentation of the particularities of the relation between investment and growth in EU, we focussed on building few scenarios of economic growth in Romania, as part of European Union, having as horizon the next two decades.

2. General convergence process in EU

The general economic convergence in EU is one of the basic premises for future development of less developed countries like Romania is. After 2000, in EU it was a continuous convergence between the two groups of countries, EU11 (former communist countries from Eastern part of Europe) and EU15 (old members of EU).

On the one hand, the level of GDP per capita (in euro PPS) in EU11 increased from 44.4% of average EU level in 2000 to 65.7% in 2014. On the other hand, the ratio between GDP per capita in EU15 and the average at EU level decreased from 116.0% to 108.9%. Moreover, a convergence in absolute terms was registered (the difference between the two groups of countries decreased from a maximum level of 14594 euro GDP per capita in 2006 to 11807 euro per capita in 2014).

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During the period, only inside of EU11 it was a trend of convergence, in EU15 being one of divergence. However, as it is shown in Figure 1, the discrepancy among countries within EU11 still continue in 2014 to be higher than inside of EU15 ($\sigma\%$ being the variation coefficient).

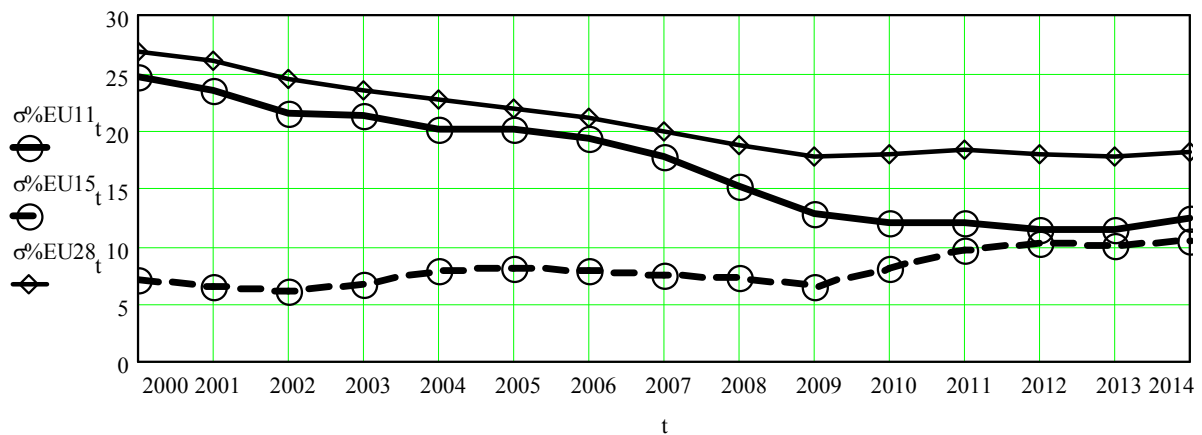


Figure 1

Source: Eurostat data and own computations (see also, Albu, 2016)

Available data at regional level (272 regions according to NUTS2 database) can facilitate a more refined analysis of the convergence process in EU. Using such information, during the period 2000-2013, the average level of GDP per capita in EU (expressed in PPS) increased from 19.2 thousand euro, in 2000, to 26.6 thousand euro, in 2013. The value of coefficient of variation (estimated by each year of the period) decreased from 33.1% in 2000 to 28.3% in 2013. At the level of EU, it was demonstrated a strong fundamental inverse correlation (-0.882) between the two variables, GDP per capita and its coefficient of variation, as it is shown in Figure 2 (yM is average GDP per capita in EU and $\sigma\%$ - the variation coefficient).

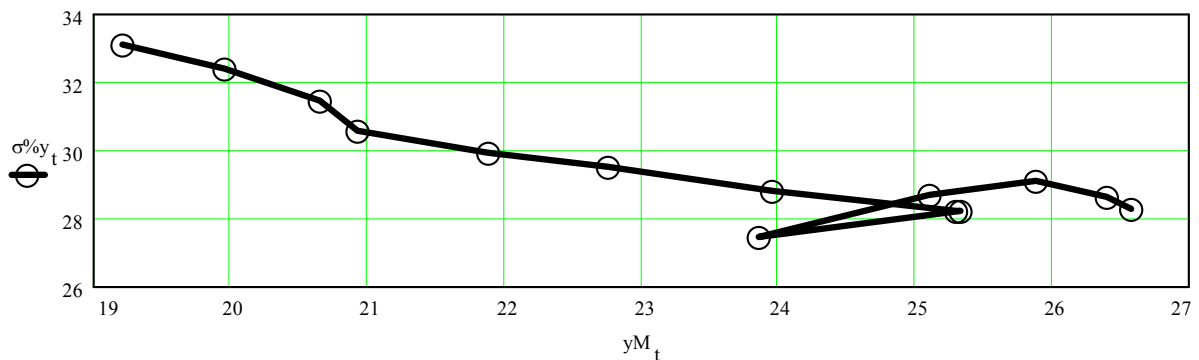


Figure 2

Source: Eurostat data and own computations (see also, Albu, 2016)

However, inside of a country, the convergence among its regions can evolve in a different manner than at the level of EU. Based on some recent studies (Albu, 2016), we are presenting here only few conclusions. Thus, there are at least two opposite forces in matter of regional convergence inside of a country, depending on the part in which that country is located at a given moment against the average GDP per capita in EU or equivalent against the value 1 of the variable "g" (g being the ratio between the average GDP per capita in a country and the average GDP per capita in EU). Taken into account the initial level of variable g (in 2000) and the changes (during the period 2000-2013) in its level (Δg) and in the variation coefficient ($\Delta\sigma$), can be highlighted the following typology:

a) Countries having an initial low level of variable g ($g < 1$), which registered a higher growth of GDP per capita than the average growth in EU ($\Delta g > 0$), but this was accompanied by a divergence among their regions ($\Delta\sigma > 0$). This was the case of all countries in EU11. As example, in Figure 3 is presented the dynamics in case of Romania.

b) Countries having an initial low level of variable g ($g < 1$), which registered a smaller growth of GDP per capita than the average growth in EU ($\Delta g < 0$), but also a divergence among their regions ($\Delta \sigma > 0$). Here is only the case of Greece.

c) Countries having an initial low level of variable g ($g < 1$), which registered a smaller growth of GDP per capita than the average growth in EU ($\Delta g < 0$), but this was accompanied by a convergence among their regions ($\Delta \sigma < 0$). This was the case of Portugal and Spain.

d) Countries having an initial high level of variable g ($g > 1$), which registered a smaller growth of GDP per capita than the average growth in EU ($\Delta g < 0$), but this was accompanied by a convergence among their regions ($\Delta \sigma < 0$). Here are included Austria, Belgium, and Finland.

e) Countries having an initial high level of variable g ($g > 1$), which registered a smaller growth of GDP per capita than the average growth in EU ($\Delta g < 0$), but also a divergence among their regions ($\Delta \sigma > 0$). Here are included Denmark, France, Ireland, Italy, Netherlands, Sweden, and UK.

f) Countries having an initial high level of variable g ($g > 1$), which registered a higher growth of GDP per capita than the average growth in EU ($\Delta g > 0$), but also a convergence among their regions ($\Delta \sigma < 0$). Here is only the case of Germany.

To note, the presented typology of convergence could be interpreted as covering a complex dynamics in line with the well-known curve of Kuznets (U-inverted curve) (Kuznets, 1955).

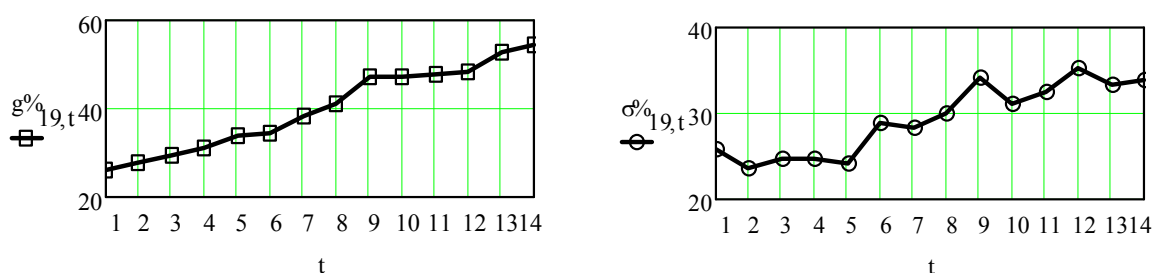


Figure 3

Source: Eurostat data and own computations (see also, Albu, 2016)

3. Romania's current position in the EU and recent dynamics

Romania currently ranks the following positions in the European Union (UE28): 7 as population, 9 as surface, 10 as dimension of economy (total GDP, in PPS), but only 27 as development level (GDP per capita). One of the main causes is the backwardness through the structure of the economy.

In matter of structural differences and low economic efficiency, as compared to EU average, could be noted, as follows: a large share of agriculture in employment (29% versus 5% in the EU); productivity per person employed in agriculture represents only 22% of the national average (last position in EU); in rural areas, where 47.2% of the population is living, there are no significant economic activity apart from agriculture, which leads to very low income (in Germany, for example, in rural areas live more than 26% of the population, but agriculture represents only 1.6% of total employment); as the share of services sector in total employment, Romania ranks last in the EU (42% versus 72% EU average); as the share of industry in employment (29%), Romania is placed over the UE average (23%), but the productivity is much lower than the EU average; one of the reasons is poor capital endowment, reflected by a coefficient of capital (the ratio between capital and GDP) of around half of the EU average (2.7) (in Germany, for example, the value is about double the average EU); etc.

However, during the last decade and a half there was a strong trend of convergence towards the average level of income in EU. Thus, while in 2000 the GDP per capita (in Euro PPS - Purchasing Power Standard) represented only 26.3% of the EU average, in 2015 it reached more than 55%. This trajectory was possible because, during the considered period, the growth of GDP per capita in Romania was more than double (2.128) than the growth of the average level in EU (the average annual rates were 8.5% for Romania and only 2.4% in case of EU).

For the next period, assuming an annual rate of 1.5% for the EU, in Romania it may achieve a per capita GDP equal to the European average just over 42 years in case of a rhythm double annually (3.0%), but only over 17 years if the annual rate in Romania should be 3.5 times higher, i.e. 5.3% per year, which corresponds to maintaining the same ratio between the two annual growth rates recorded in the period 2000-2013 (i.e. 8.52/2.39).

Indeed, the changing international context and the framework of EU policies must be taken into account. Thus, the global crisis has seriously affected significantly and delayed EU convergence programme. During past years there are new trends in the global economy, new risks, but also new opportunities for the Romanian economy. It is trying to invigorate economic growth by new policies of the EU (this time emphasizing on the stable and sustainable development), starting from the fact that the growth will not return to dynamics registered before the crisis.

In order to align to the convergence programme promoted by the EU, Romania through its own convergence programme needs to meet the key indicators set out in The Strategy Europe 2020. It will guide the evolution of Romanian economy in the short term (with implications on the social and environmental problems) while ensuring the prerequisites for continuing a favourable dynamics in the medium term (until 2025).

At present, although it is considered that Romania meets the nominal convergence criteria, they will continue to be priorities for government policies and the European Central Bank. Insofar and real convergence will reach a satisfactory degree, joining the Euro zone may be started (2019 is still planned in official documents).

4. The need for a massive investment effort

A rapid pace of economic growth in Romania can only be achieved through investments (as with most countries of the world during periods of expansion, see Japan's experience in the past, "Japanese miracle", or China today, "Chinese miracle" and the countries of western Europe after the world war II).

Infrastructure investments will be decisive, including by the fact that they can facilitate the connections of poor areas to the economic circuits and hence the growth in income of households (in Romania was registered in the last decade a significant divergence in regional profile in matter of per capita income).

The main sources for massive investment effort will be provided by domestic savings (people, companies and government), but also through smart policies to attract productive foreign capital (not just for consumption of imports). Financial market (now being only in an incipient stage), together with the banking system, will play a key role in ensuring efficient resource of capital, in draining of the savings and other financial availabilities to investment and finally to the productive activity.

In order to illustrate the impact of investment effort on economic growth, in Figure 4 is presented schematically a simple model and in Figure 5 two images (surface plot and contour plot) of the correlation $y-\alpha-r$ for countries in EU for the period 2000-2014 (where: y is GDP per capita, in thousand euro PPS; α – investment share in GDP, as %; r - the average annual growth of GDP, as %).

The Relation between investment and growth

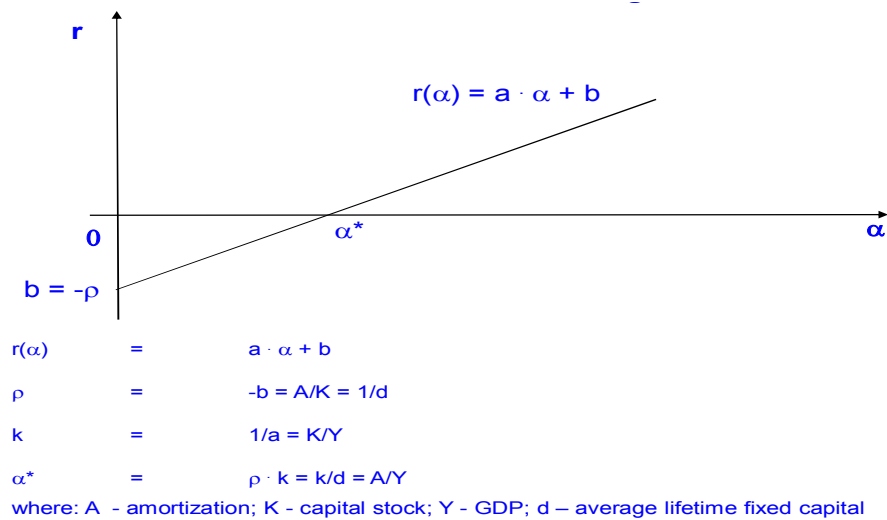


Figure 4

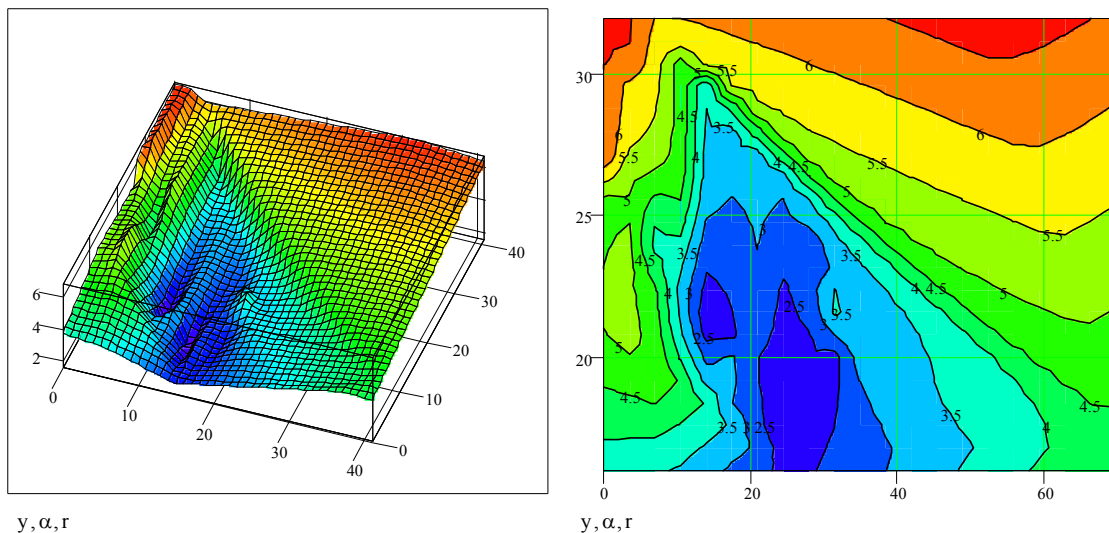


Figure 5

Source: Eurostat data and own computations

In Table 1 are presented the estimated parameters for countries of EU for the period 2000-2014 (where: y_M is the average GDP per capita, in thousand euro PPS; α_M – investment share in GDP, as %; r_M – the average annual growth of GDP, as %; β_M – the average investment efficiency, as ratio between $\Delta Y/I$, Y being GDP, and I – investment). Some result estimates at the level of EU are as follows: $a = 0.248 = 1/k$ ($k = 4,027$); $b = -\rho = -2.185\%$; $\alpha^* = 8.8\%$; $\text{corr}(\alpha_M, y_M) = -0.554$; $\text{corr}(y_M, r_M) = -0.446$; $\text{corr}(\alpha_M, r_M) = 0.508$. Moreover, in Figure 6 is presented graphically the correlation between the investment share in GDP and the growth, both of them as %, at the level of EU (r_{Me} is the estimated regression line).

Table 1

		1		1		1		1	
1	Austria	1	30.093	1	24.0	1	2.6	1	10.7
2	Belgium	2	28.495	2	23.3	2	2.6	2	11.2
3	Bulgaria	3	9.176	3	26.0	3	4.9	3	18.8
4	Croatia	4	13.805	4	24.9	4	3.6	4	14.3
5	Cyprus	5	23.005	5	21.1	5	3.5	5	16.4
6	CzechRep	6	19.092	6	28.8	6	3.6	6	12.5
7	Denmark	7	29.775	7	21.3	7	2.4	7	11.1
8	Estonia	8	14.421	8	30.6	8	6.0	8	19.6
9	Finland	9	27.575	9	23.1	9	2.4	9	10.4
10	France	10	26.958	10	22.4	10	2.4	10	10.5
11	Germany	11	28.054	11	20.0	11	2.7	11	13.5
12	Greece	12	20.736	12	21.6	12	1.3	12	6.1
13	Hungary	13	14.745	13	23.4	13	3.9	13	16.7
14	Ireland	14	32.560	14	22.4	14	4.0	14	17.8
15	Italy	15	25.648	15	20.5	15	1.4	15	7.1
16	Latvia	16	12.206	16	29.1	16	5.6	16	19.1
17	Lithuania	17	13.274	17	22.1	17	6.3	17	28.5
18	Luxembourg	18	60.149	18	18.8	18	4.4	18	23.3
19	Malta	19	19.712	19	20.3	19	3.3	19	16.0
20	Netherlands	20	32.163	20	21.0	20	2.3	20	10.9
21	Poland	21	13.147	21	21.2	21	5.3	21	24.8
22	Portugal	22	18.723	22	22.2	22	2.4	22	10.8
23	Romania	23	9.406	23	26.5	23	7.4	23	27.8
24	Slovakia	24	15.377	24	26.0	24	5.6	24	21.7
25	Slovenia	25	19.973	25	26.0	25	3.0	25	11.5
26	Spain	26	23.607	26	26.2	26	3.3	26	12.4
27	Sweden	27	29.969	27	22.7	27	2.8	27	12.5
28	UK	28	27.708	28	17.8	28	2.3	28	13.0

Source: Eurostat data and own computations

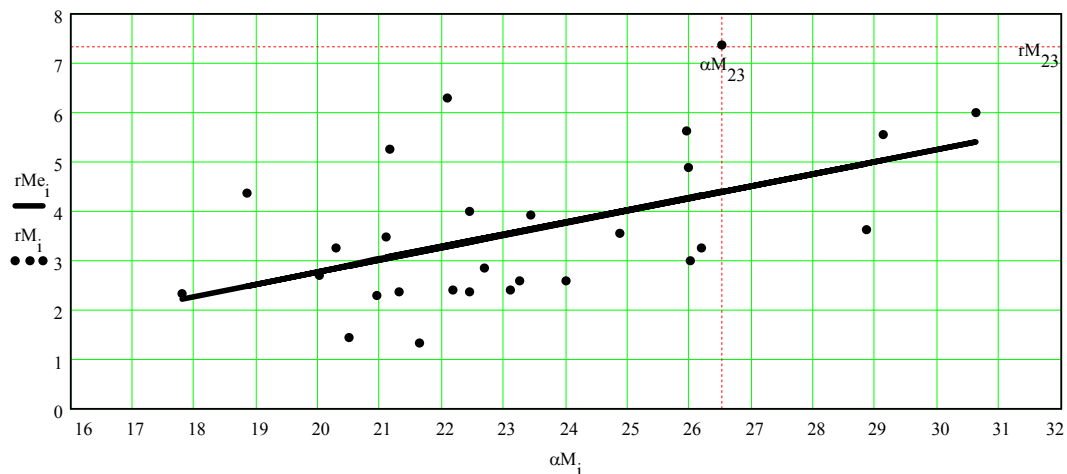


Figure 6
Source: Eurostat data and own computations

In order to highlight the important role of FDI on economic growth, we estimated, for EU, the correlation between FDI per capita and GDP per capita, using a Saturation Growth-Rate Model. Graphical representation of this correlation for 2010 is shown in Figure 7 (where y is GDP per capita, x - the stock of FDI per capita, y^E - the estimated theoretical curve, and i representing EU countries). A similar regression model we used for Romania to build forecast scenarios up to 2020.

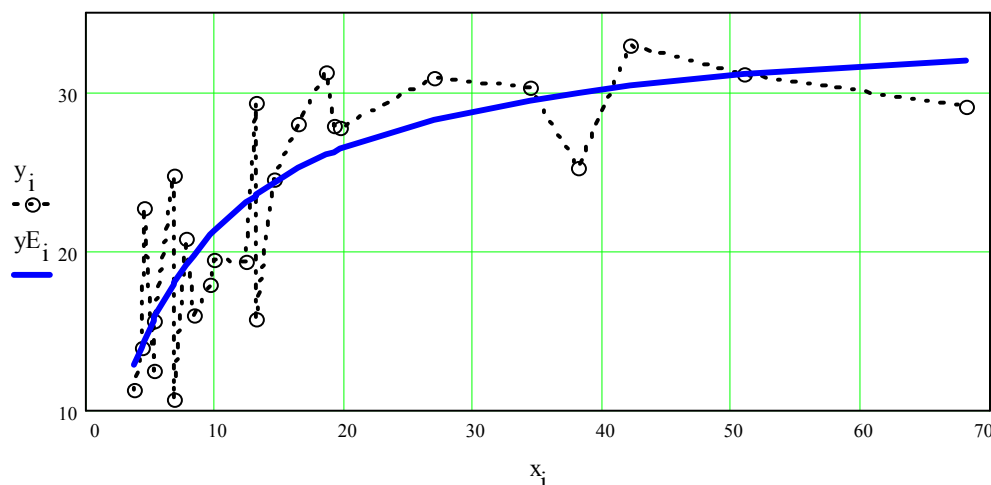


Figure 7

Source: Eurostat data, CIA World Factbook data and own computations (see also, Albu et al, 2016)

5. Perspectives on medium and long term

In this section of the study, we start by presenting a number of assumptions that then are taken into account to the building of forecast scenarios, as follows:

- The vision for economic development and quality of life in Romania on medium and long term is based primarily on EU membership, on the existence and development, according to background documents, of the strategies and policies that peg future dynamics.
- The Strategy Europe 2020 foreshadows what will be the place of Romania in EU. Therefore, the dynamics of macroeconomic indicators derived from Strategy goals is taken into account when we are formulating hypotheses and scenarios.
- In line with the targets for Romania in the Europe 2020 Strategy and a number of other elements derived from recent policies of the EU (such as the cohesion or absorption of funds allocated from the Community budget, the launch of the procurement widespread financial assets by the ECB, Quantitative Easing, or so-called Investment Juncker Plan), in the national convergence programme for the period 2015-2018 are presented in detail the dynamics of key macroeconomic indicators until near the end of the decade.
- Other studies and forecasts regarding the dynamics of macroeconomic indicators that we have had in establishing assumptions and development scenarios for future periods were those developed by the World Bank, IMF, OECD, European Commission, UN, ILO etc., using as time horizon 2020 for most macroeconomic indicators and even longer horizons for indicators of demographic dynamics.
- Our own studies on correlations between the main macroeconomic variables, estimated based on historical trends, tried to substantiating of assumptions and implications of scenarios proposed for future economic growth in Romania.
- Given the interest in estimating future position of Romania in EU, it was necessary in parallel to formulate assumptions and development scenarios for the EU economy.
- Depending on the basic assumptions necessary to build simulation models to estimate parameters that control the future dynamics were developed several scenarios. For instance, in relation to the degree of Romania's economic integration in EU, we defined two main scenarios: one assuming a medium speed of it integration in EU, reflected by the accession

later in the Euro zone (2022-2023), V1, and the other providing a higher speed of integration and an earlier accession in Euro zone (2019- 2020), V2.

- As much as the forecast horizon is extended and uncertainty is increasing, we were forced to consider less accurate assumptions and a smaller number of macroeconomic variables.

For a short horizon of time, up to 2020, our scenarios are based on two versions for the GDP forecast: one based on the Convergence Programme, referring only for the period 2015-2018, and other one that was developed based on statistical data from the IMF forecast, April 2015 (which in turn uses data from the OECD, World Bank and Penn World Tables), expressed in international dollars at Purchasing Power Parity (up to 2020), converted by us in euro PPS equivalent. According to the second version, in Figure 8 is presented the spatial distribution of GDP per capita in 2020 compared to 2000 as a percentage of average in UE28, as two stylized maps of the EU (were Cyprus, Malta and Luxembourg were excluded). The corresponding data (as GDP per capita in PPS; UE28=100) for years 2000, 2014 and 2020 are presented in Table 2.

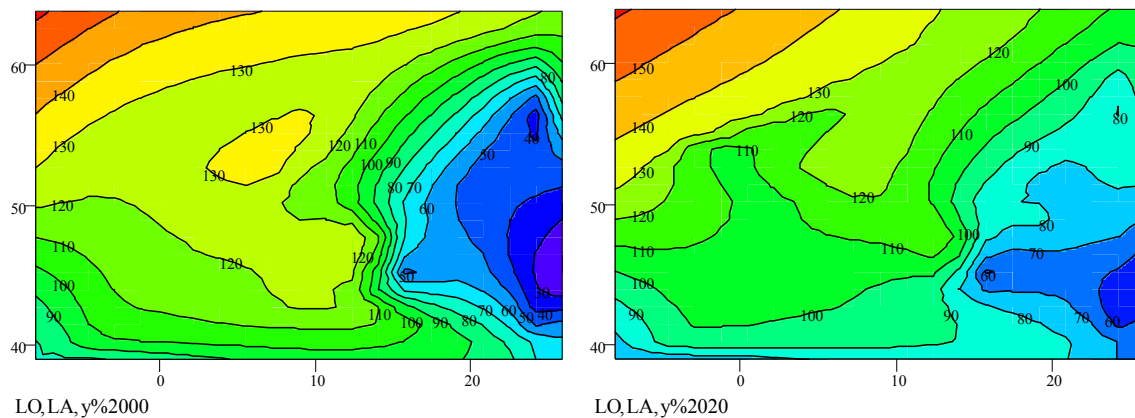


Figure 8

Source: Eurostat data for 2000, IMF forecast data for 2020, and own computations.

According to IMF forecast, data presented in Figure 9 show how the convergence between EU11 and EU15 will continue up to 2020 (this time data are as GDP per capita in PPP; UE28=100): EU11=46.9% in 2000 and 72.0% in 2020; EU15=115.3% in 2000 and 107.1% in 2020.

Romania has improved its position in the hierarchy of the UE28 on the absolute value of GDP (expressed in PPS): from 16th place in 2000, to 15th in 2001 (ahead of Finland), to 14th in 2004 (ahead of Denmark), 12th in 2007 (exceeding the Czech Republic and Portugal), 11th in 2010 (surpassing Greece) and the 10th since 2013 (when exceeded Austria). This position is expected to be improved after 2020, when the probability of exceeding Sweden and Belgium will become significant (for instance, after IMF forecast, in 2020 Romania's GDP in absolute terms will represent 94% of Sweden's GDP and 93% of Belgium's GDP). Rank 8 is likely to be the Romania's rank also at the horizon 2035 (the country on position 7th in 2020, the Netherlands, can not be exceeded at this horizon; for instance, in 2020 it is expected that the Romania's GDP to represent only 55% of the GDP of Netherlands).

Regarding GDP per capita in UE28 Romania advanced from the last position in 2000 to the 27th position in 2006 (ahead of Bulgaria).

Table 2

	2000	2014	2020 (est.)
Austria	130.5	125.2	119.1
Belgium	124.7	116.6	111.7
Bulgaria	28.5	44.9	46.9
Croatia	49.3	59.4	59.0
Cyprus	91.0	82.0	77.5
CzechRep	71.7	82.3	85.5
Denmark	130.7	122.7	123.7
Estonia	42.7	73.3	81.8
Finland	116.7	110.0	105.8
France	118.7	108.2	105.3
Germany	117.3	123.3	120.6
Greece	84.7	72.2	78.9
Hungary	53.2	67.4	70.7
Ireland	130.6	132.8	136.0
Italy	117.7	97.6	91.6
Latvia	35.5	63.4	72.1
Lithuania	38.1	73.9	84.4
Luxembourg	248.6	253.3	231.5
Malta	86.4	86.4	90.9
Netherlands	139.4	129.0	127.6
Poland	46.8	69.0	77.2
Portugal	78.8	77.7	76.0
Romania	25.4	55.4	67.5
Slovakia	49.4	75.4	81.5
Slovenia	79.0	82.3	82.9
Spain	96.5	93.6	96.0
Sweden	129.5	124.9	125.5
UK	120.7	108.4	108.2

Source: IMF data and forecast and own computations.

By 2020, according to estimates, Romania will perhaps exceed as GDP per capita (in PPS) only Croatia (in 2018). Given the estimated levels for EU countries in 2020, in view of the horizon 2035, Romania may exceed as the level of GDP per capita few countries, such as Hungary, Latvia, Portugal, Poland, Cyprus, Greece, Slovakia, Estonia, Slovenia Lithuania and the Czech Republic, whose estimated values for 2020 are below 30,000 euro (not so far from the level of 21,004 euro expected for Romania). Thus, in case of the most optimistic scenario, Romania may be placed on the 15th position in EU, which would mean a historic success for it. In Figure 10 is presented the evolution of the GDP per capita in Romania related to the EU average (as %) described by the two scenarios, V1 and V2.

Both scenarios suppose, as a precondition, the modernisation of economic structures. As prerequisite is the modernization of rural economic life and agricultural production, in order to strengthen the role of this sector in the overall development of the country but it will be a qualitative contribution and an important increase in productivity. The share of agriculture in GDP and especially in employment should be significantly reduced. As a consequence, the contribution of the tertiary sector and of the performing creative industries will increase.

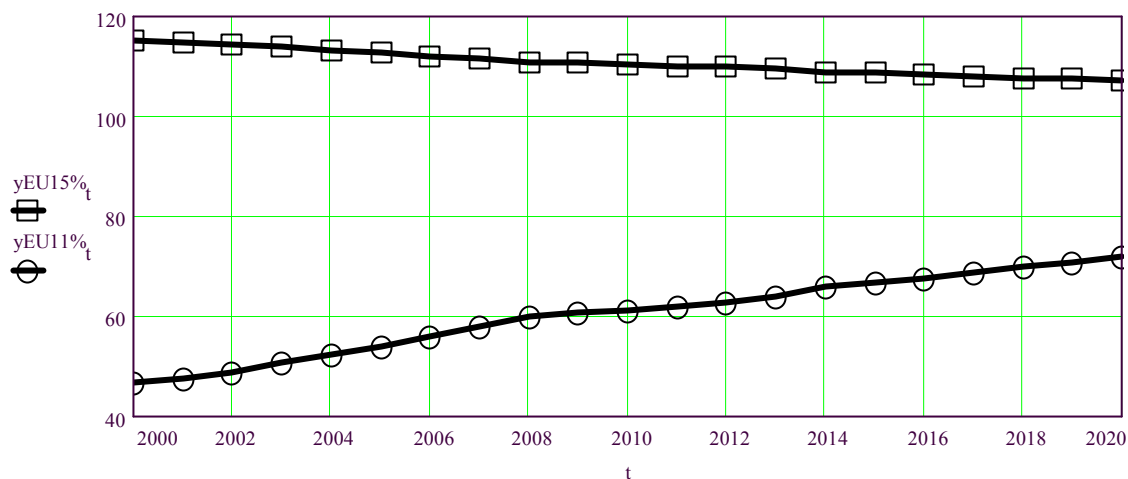


Figure 9

Source: Eurostat data for 2000 and 2014, IMF forecast data for 2020 and own computations (see also, Albu and Caraijani, 2016).

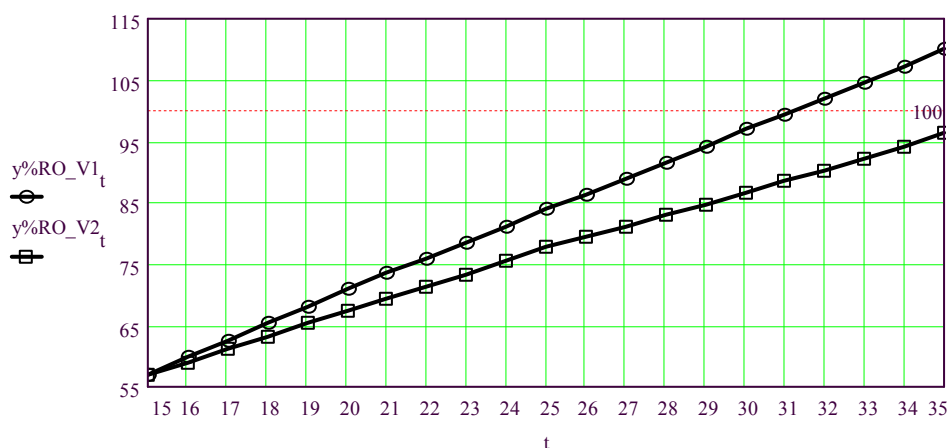


Figure 10

Source: Eurostat data and own computations (see also, Albu et al., 2016)

Sectoral targets should be compulsory since at present still there are large differences from the standard structure for a modern economy in EU. To illustrate such differences in case of Romania, in Figure 11 are shown the major changes in employment structure in EU for a long period (where the sectors are denoted by na% - agriculture, ni% - industry, and ns% - services). Moreover, in this Figure, using cross-sectional data, are shown the estimated trajectories for the three major sectors of an economy going in correlation with the growth of GDP per capita (all EU countries during the period 2000-2011 were considered; theoretical trajectories are noted as na%_E, ni%_E, and ns%_E) (details about the estimations models and methodology can be found in Albu, 2012 and Albu et al, 2012).

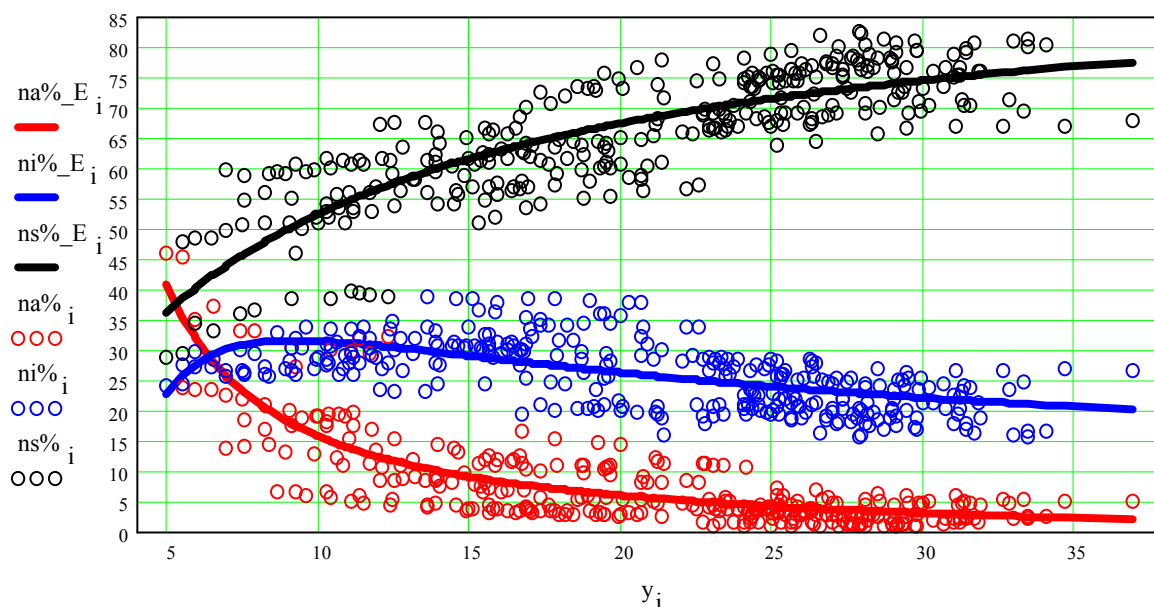


Figure 11

*Source: Eurostat data and own computations
(see also, Albu, 2012, Albu et al., 2012, and Albu et al., 2016).*

We can see, when GDP per capita is growing to higher values, how the share of agriculture in employment tend asymptotically to a value under 5%, and the share of services tend to a value over 75%. For instance, in 2014, the shares in employment and respectively in GDP of the three economic sectors in Romania were as follows (as %): agriculture - 27.9 / 5.4; industry - 28.2 / 27.3; services - 43.9 / 67.3.

Empirical data show that in case of high share of agriculture in employment, which generally denotes a weak level of economic development, labor productivity per person in this branch represents only a small fraction of the national average level of productivity. For instance, during last decade, in Romania the share of agriculture in employment was 28-30% (the highest value in the EU) and labor productivity in this sector represented only 19-22% of the average level of productivity in the whole economy (for comparison, productivity in industry was 96-117% compared to the national average and that of services 144-154%). In France, a country considered an agricultural power in Europe, the share of agriculture in employment was only 2.5-3% and labor productivity in this branch represented 56-69% of the average level of productivity in the French economy as a whole (for comparison, productivity in industry represented 87-91% of the national average, and productivity in services 104-105%).

Using published data, we estimated for the EU (excluding Malta and Cyprus) relationship (inverse) of the share of agriculture in total employment ($na\%$, as the independent variable on the horizontal axis) and productivity in this sector as compared to the national average productivity ($wa\%$, as a dependent variable on the vertical axis). Based on the estimates we built a theoretical function expressing the correlation between the two variables, $wa\%(na\%)$, which is represented graphically in Figure 10. Also, on the chart there are marked the actual values of recorded variables for Romania, $na\%R$ and $wa\%R$ and respectively for France, $na\%F$ and $wa\%F$ (details about the estimations model and methodology can be found in Albu et al., 2012).

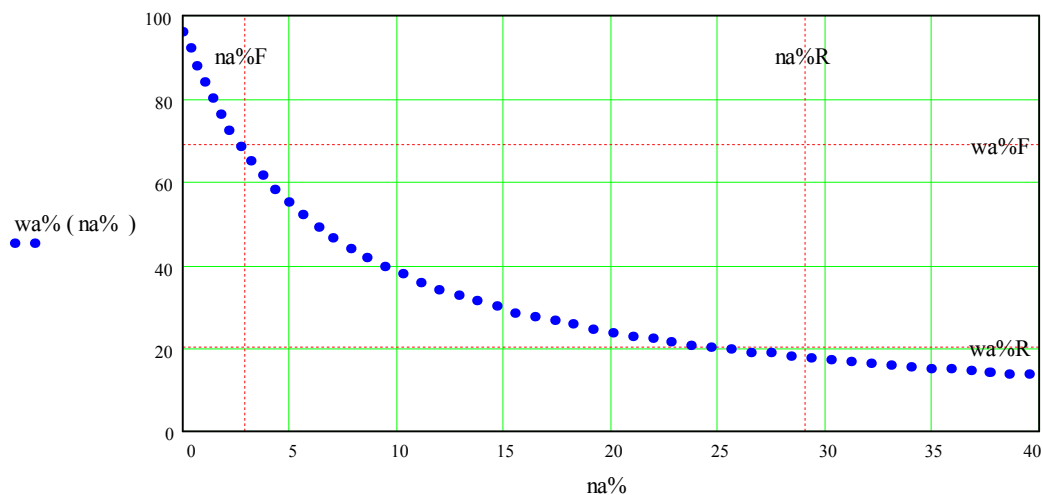


Figure 12

Source: Eurostat data and own computations (see also, Albu et al., 2012, and Albu et al., 2016)

Transition to a modern agriculture, while diminishing its importance in the national economy, will contribute decisively to reducing seasonal fluctuations, which affects currently the dynamics of GDP inside of a year, in Romania. Thus, against a backdrop of significant shares in GDP of agriculture, due to seasonal fluctuations there are large differences between levels of quarter GDP (the largest gap in EU). For instance, there are years when GDP in the fourth quarter is by a quarter higher than it is in the first quarter of the year. These fluctuations have a negative impact on the overall economic activity, on the planning of activities and budget exercise in a year, on the income received by a significant number of people, on the export activity, on transport and other services etc. Estimates for Romania show that the annual reduction with one percentage point in the share of agriculture in total employment could have the effect of supplementation with 1.1 percentage points of annual growth of GDP.

6. Conclusions

After 2000, a significant general convergence was demonstrated in EU. However, there opposite tendencies inside Eastern group of countries and inside of the group of old members in EU. Moreover, by analysing deeper, at the regional level, inside of each country from EU11 generally has been manifested a strong divergence process. At least after 2000, this could be explained by the following rule: there are two opposite forces in matter of regional convergence inside of a country, depending on the part in which the country is located related to the average GDP per capita at the level of EU or equivalent against the value 1 of the ratio between the average GDP per capita in a country and the average GDP per capita in EU. In case of countries located on the left side, when their GDP per capita increase faster than the average EU level, as a rule, the regional divergence will register. In case of those located on the right side, when their GDP per capita increase slower than the average EU level, a regional convergence predominates.

According to the proposed scenarios (built in line with the theory of economic growth and convergence and based on empirically demonstrated correlations after 2000 in EU), Romania could be placed on a better position in EU at the horizon 2035: rank 8 as economic power (GDP in absolute terms) and around rank 15. In the same time, a structural convergence will be achieved in Romania, comparing to the predominant economic structure in EU.

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