



REAL ECONOMIC CONVERGENCE – AN IMPORTANT CRITERION FOR EURO ADOPTION’S SCHEDULE IN ROMANIA

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Abstract

There are historical gaps regarding economic and social development between the nucleus of old European Union members (EU-15) and the new Central and Eastern Europe (CEE) member states. As a result, one of the EU main objectives is to minimize the discrepancies between countries and to assure their harmonious development, a process known as real convergence, which is long and will take place gradually (as stipulated by the Maastricht Treaty). The purpose of this research report is to analyze the trend of economic gaps between Romania and the EU and to measure the speed of real convergence and dispersion of income per capita in Romania compared with EU average and other 5 CEE countries, outside the Euro Area: Bulgaria, Czech Republic, Croatia, Poland and Hungary. Results are based on dynamic comparative analysis of the level Indicators (GDP per capita) in Romania, the EU-28 average and each of other five CEE outside the Euro Area. We will use the output of our analysis to advance 2 probable variants of the euro adoption schedule in Romania, according with real economic convergence dynamic, and with the assumption that nominal convergence criteria are fulfilled in 2015.

Keywords

Real convergence, economic gaps, euro, EU, Romania

1. Introduction

The real economic convergence is defined in a simple way as a process of catching-up between countries with lower level and those with higher levels of income, achieved by relatively faster economic growth in the countries that need to catch up with other economies (so-called catching-up economies). The real economic convergence is one of the important criteria for establishing the schedule of euro adoption, as it was also stressed by the Governor of the National Bank of Romania in his speech addressed in 2014: *"Achieving nominal convergence criteria appears as a required condition but not enough. The importance of achieving a relatively high degree of income per capita convergence before the time of euro adoption became evident"*. [Isarescu, Mugur" *Romania and adoption of the euro* ", 20 Feb. 2014]

Reducing the socio-economic gaps shall be carried out on the basis of the ability to absorb new technology, to attract capital and to participate in global markets ('beta convergence'). In the opinion of P. Praet, an ECB official, a way to begin a more sustainable convergence process in the near term, is through "reallocating resources where they are most productive" [1].

The goal of this research report is to assess the preparedness degree and the best time for Romania to join the Euro Area, in terms of the real economic convergence stipulated by the Maastricht Treaty.

2. Methodology

The study provides a comparative analysis of the intra-European economic and social gaps. The analysis is focused on the level Indicators (GDP per capita PPS) in 6 Central and Eastern European countries (CEE-6) which are not yet members of the Euro Area: Romania, Bulgaria, Croatia, Czech Republic, Poland and Hungary compared with the EU-28 average and the Euro Area (EA-18).

The analysis of economic convergence or divergence trend in Europe was set up for two distinct phases, a long and a medium term:

a) a *long term analysis* for the years 1870-2000 is outlining the evolution of economic gaps between the six Central and Eastern European countries (CEE-6), the Europe average and all Central and Eastern European Countries (CEECs) average. For this long term, our comparative analysis is based on GDP per capita (\$ 1990 international prices) data computed by S. Broadberry and A. Klein [2] for each country and region, in view of the changing borders of each in the period under review;

b) a *medium term analysis* for the 2001-2013 is outlining the change of the real economic convergence trend between the six CEE countries, EU-28 average and the Euro Area average (EA-18). The medium term analysis is based on the Eurostat data.

The advantage of the comparative analysis is to reveal long-term and medium term trends of real

economic convergence/ divergence, which can ensure the sustainability of economic and monetary integration of the six Central and Eastern European countries (CEE), including Romania.

3. Research results

3.1. Socio-economic profile of Romania

Romania became a Member State of the European Union in 2007. With a population of about 21 million in 2013, Romania is the seventh largest country of the EU-28, or the second, after Poland, between Central and East European members of the EU (CEECs-11). In terms of economic development, Romania is considered an emerging economy, a country with upper middle income. In 2013 Romania recorded one of the highest growth rates in the EU-28 (3.5%, being the second after Latvia), so the real GDP reached a record level of 142 billion euros (current prices), or 1% of real GDP of the EU-28 (0.5% in 2002). In the meantime, considering the level of GDP at purchasing power parity (285 billion dollars PPS), Romania is the 10th economy in the EU-28 or the third economy in the CEECs-11. The standard of living in Romania, measured by GDP per capita ((\$ 14 400 PPS in 2013)[3] recorded one of the biggest change to the EU- 28 average, reaching 54% of it compared to 35% in 2004.

Romania is not part of the Euro Area, and neither are the other 5 countries of Central and Eastern Europe (CEE-6): Bulgaria, Czech Republic, Croatia, Hungary and Poland. Each of these countries is rapidly approaching with fast steps in fulfilling the Maastricht criteria on nominal convergence (in 2014-15 for Romania, according to the official estimates), but there are still significant gaps relating to real convergence, which makes entry into the Euro Area to be risky for any of these national economies.

3.2. Reducing economic gaps or the long way of real economic convergence to the European Union

The real economic convergence within the EU-28 involves a faster pace of economic growth in Member States with a lower level of development than in those with higher level of development. Real convergence is usually measured by GDP per capita at purchasing power parity standard (PPS). Empirical researches carried out on the model of real convergence in Europe have taken into account only changes of GDP per capita (PPS) in the medium term. In this way only trends of economic convergence have been captured, with various speeds and amplitudes, resulting in models of convergent growth. But theoretical contributions brought by Myrdal, Prebisch, Iancu *et al.* changed vision of explaining real convergence processes. A new and influential School of thought focused on the concept of divergence, has shown the process of

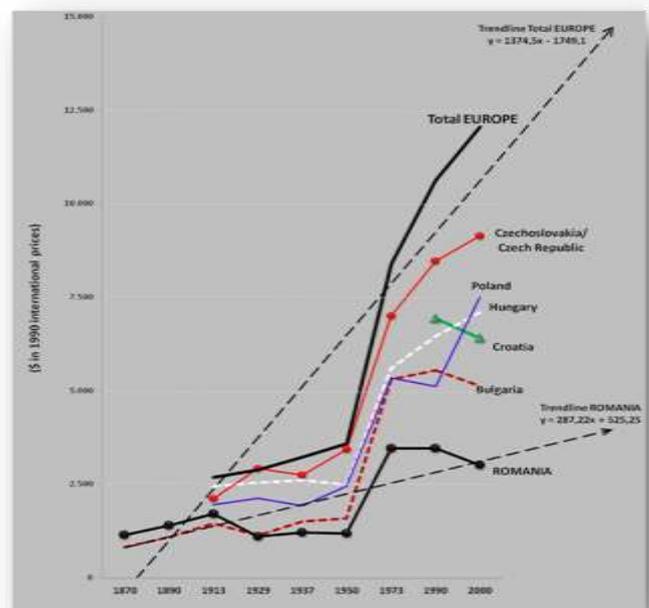
polarization and divergent relations between Centre and periphery. "This new current of thought has influenced European construction projects later through the adoption of European economic policy instruments" [4].

This new paradigm was taken into account by our analysis which we made on the long term (1870-2000) and on the medium term (the years 2000), with different results regarding the real convergence or divergence of the European economies.

3.2.1 Historical perspective shows a real economic divergence in Europe for 100 years

From the end of 19th century to the First World War a real economic convergence between the six countries of Central and Eastern Europe (CEE-6) was registered. From 1870 to 1913 there were relatively small gaps in economic development between the countries of CEE-6, measured by GDP per capita (\$ international prices 1990), and their level was slightly below the average of CEECs group. GDP per capita in Romania, for example, in the period 1870-1913 recorded 80-90% of the CEECs average, with a maximum of 90% in 1890.

Figure 1. GDP per capita gaps in Europe, 1870-2000 \$ international prices 1990)



Note: 1913-1990 Czechoslovakia; 1991-2013 Czech R.

Source: author based on GDP/capita data computed by S. Broadberry and A.Klein, 2011, and Eurostat

Economic development disparities have been relatively small, given slow penetration of Industrial revolution in Central and Eastern Europe up to the World War I, with

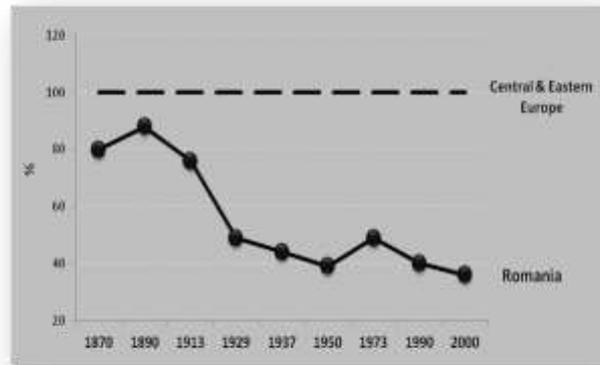
slightly effects on labor productivity. The comparative analysis shows a *club convergence* of CEE-6 countries, except Czechoslovakia, more vigorously involved in the process of industrialization. This process would make the difference between CEECs very soon after WWI.

After the First World War and especially after the Great Depression (1929-1933), differences in development in Europe began to increase slightly until the late 1950s when the European Economic Community was established. Economic disparities between CEECs and Europe then increased, reaching a maximum gap of GDP per capita (PPS) in 2000, with a real economic divergence trend (see Figure 1).

For 130 years, Czechoslovakia (i.e. the Czech Republic after 1990) recorded the highest levels of GDP per capita (PPS) compared with 5 other CEE countries, exceeding the CEECs average. However, since 1950 Czechoslovakia recorded an economic divergence trend compared with the European average, the gap gradually increasing in the years 1970s to 2000.

On the other hand, the analysis of GDP per capita changes in the CEE-6 resulted in a "*divergence club*" started in the year of the Great Depression and continued with different amplitudes until 1995, when systemic restructuring began to have positive effects on the Growth in CEE-6. Romania and Bulgaria have made exception, as the systemic crisis lasted all decade by 2000, and the gap has widened, reaching maximum differential of the whole analyzed period (for example, about 70 p.p compared with Czech Republic). Comparative analysis of GDP per capita in Romania and CEEC's average for 130 years (1870-2000) shows a trend of economic divergence after 1890 (Figure 2). Two great crises have dramatically affected the economic development of Romania in the period 1870-2000 and have led to a growing gap in relation to the Europe average and CEECs: the crises of 1929-33 and 1990-2000. The lowest GDP per capita differential between Romania and CEECs average is observed in 1890 (-12 p.p), while the largest differential in 2000 (-64 p.p). Throughout the period 1870-2000 it can be concluded that *in Romania's case there has been a trend of economic divergence with Europe (total) and Central and Eastern European countries, which lasted for more than 100 years.* Such a finding should contribute to a more realistic view, as the dispersion of real GDP per capita is not easily changed in the long and medium term. In addition, it was observed that the degree of industrialization made the difference between countries, which confirms the new strategic orientation (2013-2014) of the European Union towards the revival of the manufacturing in the EU.

Figure 2: Economic divergence trend between Romania and the CEECs average, 1870-2000



Source: authors based on GDP per capita (\$ International prices 1990) computed by S. Broadberry, A. Klein, and Eurostat

3.2.2. Significant changes toward real economic convergence during the pre-and post-accession of the Central and Eastern European countries to the EU

By establishing the common market, The Treaty of Rome (1957) had in mind the divergence in per capita income growth between different regions of the common economic area. So, "*the harmonious development of economic activities*" was set up as one of the Common Market's objective. It was considered that this objective will perform exclusively through market mechanisms. Subsequently, with the accession of Greece, Spain and Portugal, relatively poor countries (with the level of GDP per capita below the European Community average), it was found that the market mechanisms would not be sufficient to achieve real economic convergence, nor to raise the economic performance and catch up with the richer countries. As a result, specific tools of cohesion and solidarity were gradually introduced since 1993 (the Maastricht Treaty) in order to increase economic performance and reduce economic disparities between EU Member States, measured by the level of GDP per capita. The specific instruments acted as: a) *Structural Funds* for those regions of the Union with GDP per capita below 75% of the EU average; b) *the Cohesion Fund*, to assist Member States with GDP per capita below 90% of the EU average (EU-15) achieving economic performance and transition to Economic and Monetary Union. The Central and East European countries have benefited from 4 special preparatory programs (PHARE, ISPA, SAPARD and EAGGF) during the pre-accession to the EU (2000-2006) and from Structural Funds and the Cohesion Fund in time of accession.

The literature on real convergence makes distinction between two types of economic convergence: *beta-convergence*, which signifies the convergence speed or

the fact that poorer countries have faster economic growth than the richer ones, and as a result they are catching-up; the second type of economic convergence is *convergence-sigma* which means reduced dispersion of per capita GDP levels between different countries.

4. Indicators of real economic convergence speed in 2002-2013

- *The aggregate real GDP Growth rates in CEE-6 compared to the EU -28 average*

The period 2002-2013 is covering pre and post-accession of the CEE- 6 countries, including the years of global economic crisis. The computation of this indicator has allowed us to observe the speed of convergence in each country, without annual fluctuations, which is important especially during the global economic and financial crisis, which could distort conclusions on reducing disparities.

Aggregation of real GDP growth rates in the period 2002 - 2013 for each CEE country, the whole EU-28 and the Euro Area shows that while the EU-28 aggregate growth increased by 13 p.p, Poland, Romania and Bulgaria registered over 40 pp aggregate real GDP growth (see Figure 3). In other words, poorer countries, especially Romania and Bulgaria (along with Poland) had a higher rate of growth than the EU-28 average and even towards the Euro Area average, which leads to reducing gaps between them. The differential GDP growth rates in CEE-6 compared to the EU-28 ranges from minimum 4 p.p (Hungary) and maximum 30 p.p (Poland, Romania).

Figure 3: CEE-6 Comparative Real GDP aggregate growth rates, 2002-201



Source: authors based on Eurostat data, 2014

- *GDP per capita (PPS) growth as compared to the EU-28 average and the New Member States average*
 The comparative analysis of GDP per capita growth (PPS), Index 1995=100 shows that in the year 2000, only 3 of the 6 surveyed countries- Poland, Croatia and Hungary- have exceeded the EU-28 average and the New Member States average (NMS-13); after 2005,

the growth rate of GDP per capita has increased, so that each of the six CEE countries exceeded the average annual growth rate of GDP per capita in the EU-28. Romania, Poland and Bulgaria have exceeded also the New Member States average. The largest growth rate index in 2013 was registered by Romania compared with EU-28 average.

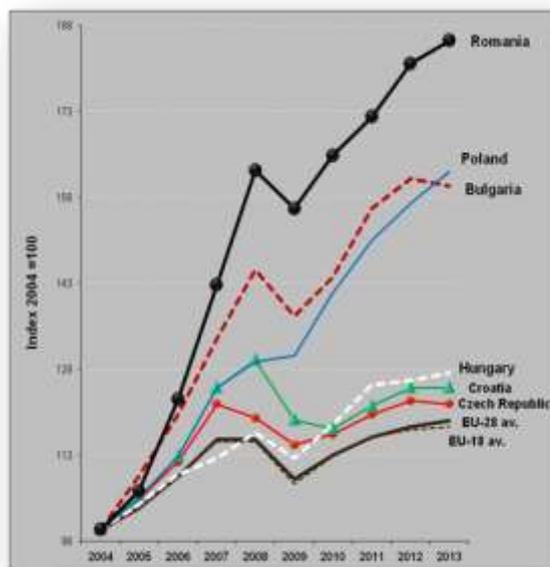
Table 1: GDP per capita growth, PPS (euro) in CEE-6 and EU-28

	Index 1995=100					
	1995	2000	2005	2008	2010	2013
Romania	100	104	165	244	238	292
Bulgaria	100	117	178	235	341	267
Czech R.	100	120	160	180	174	181
Poland	100	147	185	239	248	277
Hungary	100	137	189	213	212	220
Croatia	100	142	191	236	213	224
NMS-11	100	132	181	228	229	257
EU-28 av.	100	126	153	170	166	175

- *Index of GDP per capita growth speed and decline of gaps*

Comparative analysis of GDP per capita (PPS) growth speed index (2004 = 100) in CEE-6, EU-28 and Euro Area (EA-18) shows once more that from 2004 to 2013 Romania has the highest rate of convergence with the EU-28, followed by Poland and Bulgaria.

Figure 4: Index of GDP per capita (PPS) growth speed in CEE-6, EU-28, EA-18, in 2004-2013



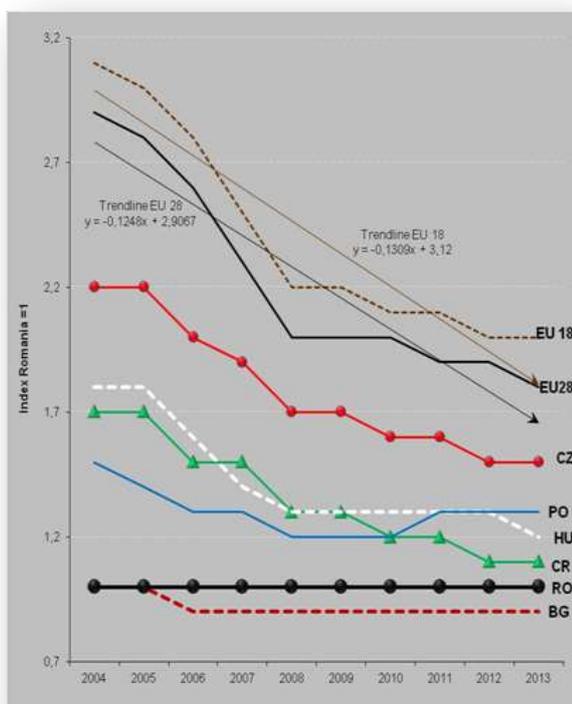
Source: computed on the basis of Eurostat data, 2014

5. Reducing GDP per capita dispersion between the CEE-6, EU-28, EA-18

- *Bridging the gap between GDP per capita in Romania, the EU -28 average and the CEE-6 in 2004-2013*

Comparative analysis of GDP per capita (Romania index = 1) reveals significant decrease of the gaps between Romania and the EU-28 average during 2004-2013. Most of the decrease was registered before the global crisis (2004-2008), and after that time it was gradual. The bearish trend has the significance of a real economic convergence between Romania and the EU.

Figure 5: Real economic convergence between Romania, the EU-28 average, EA-18, the CEE-6. GDP per capita (PPS), Index (Romania =1), 2004-2013



Source: computed on the basis of Eurostat data, 2014 and CN Prognoză, aprilie 2014

A comparison between Romania and EA-18, as well as between Romania and other CEE-6 countries also reveals a real economic convergence. Although declining, the largest gap is observed between Romania and the Euro Area average throughout the years 2004-2013.

- *Lower GDP per capita differential (PPS) between Romania, EU -28 and CEE-6*

The European Union has not established a threshold and there is no conditioning on the gap in GDP per

capita (PPP) between countries wishing to adopt the euro and the European average, so each country will determine when the gap would not adversely affect national economies. The experience of Central and Eastern European countries members of EA-18 shows that the GDP per capita differential was at least 12.7% in Slovenia and 36.2% in Estonia compared with EU-28 average. [5]

Table 2: Dynamic of the Differentials between GDP per capita in CEE-6 and the EU-28 (average), %

	EU-28 av.	Bulgaria	Czech R.	Croatia	Hungary	Poland	Romania
2002	100	68	26	46	39	52	70
2003	100	66	23	43	37	51	68
2004	100	65	22	42	37	50	68
2005	100	63	21	41	37	48	64
2006	100	63	20	41	38	49	63
2007	100	60	18	38	39	46	57
2008	100	56	19	35	36	44	51
2009	100	56	17	37	35	40	50
2010	100	56	19	40	34	37	49
2011	100	53	19	39	33	35	49
2012	100	53	19	39	33	33	47
2013	100	53	20	39	33	32	46

Source: authors based on Eurostat data, 2014

Most of the EU-28 Member States have a level of GDP per capita (PPS) between 70-130% of the European average (Luxembourg and Austria being on the first two places). Among Central and East European countries, the best performers are Slovenia and the Czech Republic (10-20% below the EU average), followed by Slovakia, Lithuania and Estonia (20-30% below the EU average). Bulgaria and Romania are on the last places (with 53% and respectively 46% below the EU-28 average in 2013).

According to Dobrinsky and Havlik' (2014), "In general, the decreasing disparities patterns considerably differ between countries and economic convergence process could not be considered guaranteed" [6]

Our analysis shows that CEE-6 countries preparing to adopt the euro in the future can be grouped into 3 groups according to the GDP per capita (PPS) differential achieved in 2013 compared to the EU-28 average: a) countries with a differential less than 20%: out of the six countries, only the Czech Republic performs into this group; b) countries with 30-33% differential: Poland and Hungary; c) countries with 39-53% differential: Croatia, Romania and Bulgaria.

6. Real economic convergence or reduced GDP per capita differential – an important criterion to establish euro adoption schedule

In Central and East European countries that have adopted the euro in 2011-2014, the GDP per capita (PPS) differential compared to the EU-28 average was: 36.2% in Estonia (2011) and 35.9% in Latvia (2014). In Romania GDP per capita (PPS) differential compared to the EU-28 average was 46% in 2013, about 10p.p. over Estonian or Lithuanian at the time of adopting the euro.

According with our deduction, to be a sustainable euro adoption in Romania, it would be necessary to decrease the GDP per capita differential by 10 p.p. compared with 2013 level, so the GDP per capita (PPS) to represent minimum 65% of the EU average.

On the other hand, a retrospective analysis reveals pre-crisis periods in which growth rate in Romania was high (5-8% yearly) and GDP per capita (PPS) differential dropped by about 10 p.p.: in 2004-2007, the differential decreased by 11 percentage points from 68% to 57%; in 2006-2008, the differential decreased by 12 pp. After the economic and financial crisis, Romanian growth rate outperformed EU-28 and EA-18 levels but GDP per capita (PPP) differential decreased more slowly, by 3 pp in 2011-2013.

Two probable scenarios for the Romanian schedule for adopting the euro

With the aim to reduce at least 10 p.p GDP per capita differentials compared to the EU-28, the scenarios have two variables: the economic growth rate and GDP per capita (PPS) in the coming years.

- Scenario I: If Romanian growth rates would be similar to those in 2002-2008, GDP per capita differential could be reduced by 10 p.p. to 35-36% of the EU-28 average within 3-4 years, until 2017.
- Scenario II: If relative actual slow pace of economic growth in Romania would continue in the coming years (around 3% / year, which however is higher than EU's growth rate), GDP per capita differential could reach 35-36% of the EU- 28 average in the next 9-10 years, i.e. after 2020.

In our opinion, the second scenario is more appropriate and most probable, with euro adoption around the year 2020. But even then, other determinants of the single currency adoption sustainability will be analyzed, which will cover more domestic inter-regional differences in Romania regarding the GDP per capita.

6. Conclusions

- Our research study examines the intra-European economic gaps in the years 2000 and for the first time in economic research provides a "historical" comparative analysis of economic disparities between

European countries over a period of 130 years, namely 1870 to 2000, to reveal the long-term trend of real economic convergence or divergence in Europe.

- In the first 30 years of the period 1870-2000 Romania registered a trend of real economic convergence, followed by 100 years of real economic divergence with Europe and Central and Eastern European countries under the influence of different degrees of industrialization in the European countries.
- In the medium term (pre and post-accession), CEE-6 operated significant changes to reduce economic disparities and intra-European real economic convergence.
- The speed of convergence of the CEE-6 in 2004-2013 has increased in each of the 6 countries.
- Romania, Poland and Bulgaria had the highest levels of GDP growth speed and GDP per capita (PPS) dispersion decrease.
- Based on the examples provided by Estonia and Lithuania regarding their real economic convergence at the time of euro adoption, we calculated and advanced 2 possible scenarios for euro adoption schedule in Romania: either the year 2017, or after 2020.
- In our opinion, the second scenario is more appropriate and most probable, with euro adoption around the year 2020. But even then, other determinants of the single currency adoption sustainability will be analyzed, which will cover more domestic inter-regional differences in Romania regarding the GDP per capita.

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