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POST COMMUNIST COUNTRIES OF CENTRAL EASTERN EUROPE FACING MIDDLE INCOME TRAP PROBLEM. PRELIMINARY FINDINGS BASED ON STATISTICAL DATA AND SOME FACTOR ANALYSES FOR 1990–2014

INTRODUCTION

There is a growing need and interest coming from academic circles as well as a need and demand for expertise coming from government officials responsible for our economic policy – to identify the causes of the Central Eastern Europe Countries, namely: Poland, Czech Republic, Slovakia, Hungary, Romania and Bulgaria, significant growth and convergence slowdown since ca 2007/8 in relation to many old EU members. The process of the convergence slowdown has been visible also vis-à-vis other OECD countries – non EU members like: countries of Anglo-Saxon socio economic model or countries of Far East Asia and most of the remaining OECD members like: Chile, Israel, Turkey or Switzerland. With respect to this later group we could observe noticeable if not significant divergence tendencies as well.

The convergence slowdown or divergence phenomenon indicate clearly that there have been a number of structural problems facing countries of this part of Europe – new EU member states, causing, as a result, a middle income trap situation. This means, if the observed tendency is to continue, the CEE countries are to remain in a second level development category or peripheral position vis-à-vis some EU or OECD – non EU countries for many years, if not decades, to come. The observed tendency create a challenge to both economist and politicians responsible for economic policy directions in these countries. One should underline that the growth and convergence slow-

down and even divergence process is a relatively new phenomenon for these countries, and it has come as a surprise to many economists and experts on the subject matter, because it has emerged after slow but steady CEEC's real convergence growth, as observed since these countries successful systemic transformation after 1990 and, especially, due to these countries entrance into EU in 2004 and 2007 respectively. The last fact has had accelerated rate of CEEC's GDP growth and, as the result, pushed the convergence process up as well, at least until 2008. In other words, due to these two extremely important factors (systemic transformation and benefits coming from EU accession) the CEEC's have moved up or converge from ca average 40% of EU GDP pc ppp average in 1990 to 55% of that level in 2007 – according to the World Bank or OECD estimates[1].

The after 2007/2008 growth and convergence slowdown is, in our understanding, a very dangerous phenomenon because, if it is to continue for the next several years and there are not measures to reverse it or implemented right ones on time, the current will drive the CEEC's into a middle income trap (defined by 40 to 70% of the OECD GDP per capita ppp average) for decades as it has had taken place with respect to many Latin American countries like Argentina or Brazil years before, or as it has happened to some ambitious countries of Far East Asia like Thailand or Malaysia for some time ago as well.

To tackle with the above mentioned tendencies in this paper we have concentrated on two sets of main aspects, basically:

The first one, which is to take most of author attention, relates to the growth and convergence process in CEEC's as observed since the beginning of the systemic transformation process in 1990 until now (2014). It consists of statistical analyses of the convergence process especially after the year 2007/2008 when the first significant growth and convergence process and progress has broken down. We have monitored and analyzed the convergence process by dividing the period of 1990–2014 into 3 sub periods: 1990–2003, 2004–2007 and 2008 and 2014. The sub periods relate respectively to: systemic transformation phase, EU membership rents or benefits and, after 2008 – the after crises period due to a visible slowdown occurrence.

The second subject area of the analyses, to be touched upon in less developed manner, relates to the problem of identification and possibly calibration of some causes of the CEEC's convergence slowdown after 2007/8. Since it has been a highly recognized fact that a success in real convergence for the

[1] World Bank, 2015; OECD, 2014.

countries of the middle and/or high income level is Total Factor Productivity – TFP dependent, therefore the decision was to concentrate and analyze some of the CEEC's growth determinants such as investment, education and research and development expenditures mostly.

CEEC'S CONVERGENCE AND MIDDLE INCOME TRAP PROBLEM

1. CEEC'S CONVERGENCE PROBLEMS AS PART OF THE WORLD WIDE DISCUSSION ON DEVELOPMENT THEORY AND DEVELOPMENT POLICY

No doubts the process of economic or real convergence has become a widely discussed issue especially in reference to advances of the emerging economies which have made big progress to converge with the developed West or developed North in recent decades. The debate on middle income economies and middle income trap especially has become the issue a bit later, a decade ago or so when some countries evidently stopped developing, at least in terms of real convergence progress towards the developed ones. A number of valuable research studies appeared in relation to some Latin American countries which had a good chance to catch up with developed countries, like Argentina or Brazil, but have failed[2]. Similar studies have been conducted with respect to some ambitious development programs of countries of Far East Asia like Malaysia, Thailand, Indonesia or the Philippines which also failed to reach their goals[3]. Much of the research work has been done and/or supported by international financial institutions like, Asian Development Bank – ADB[4], the World Bank Development Research

[2] E.P. Caldentey (2012), *Income Convergence, Capability Divergence, and the Middle Income Trap: An Analysis of the Case of Chile*, Springer Science Business Media.

[3] S. Yusuf, K. Nabeshima (2009), *Can Malaysia Escape the Middle-Income Trap? A Strategy for Penang*, The World Bank Development Research Group, Policy Research Working Paper 4971; J. Felipe (2012a), *Tracking the Middle-Income Trap: What is It, Who is in It, and Why? Part 1*, „Asian Development Bank", No. 306.

[4] I.e. J. Felipe (2012b), *Tracking the Middle-Income Trap: What is It, Who is in It, and Why? Part 2*, „Asian Development Bank", No. 307; B. Eichengreen, P. Donghyun, S. Kwanho (2013), *Growth slowdowns redux: new evidence on the middle-income trap*, NBER Working Paper Series, Working Paper 18673.

Group and Inter – American Development Bank[5], as well as by OECD-Development Centre[6].

The problems has become especially interesting, if not intriguing, in view of a great success of other ambitious countries like Korean Republic, Taiwan, Singapore or Hongkong which tried to catch up and successfully converged proving that real convergence is possible in real world, not only in theory – provided the country would embark herself onto intelligently structured industrial policy and remain consistent and persistent for a certain, rather long time period[7].

In contrast to the above discussion on convergence problems of the emerging economies, the CEEC's convergence or catch up process has not been discussed in the same way. The prevailing opinion was that the systemic transformation in these post-communist countries which unchained previously frozen entrepreneurial spirit in these newly privatized, opened to international trade economies, would secure fast growth and prosperity fairly quickly, especially when reinforced by these countries expected and then completed integration into EU in 2004 and soon after in 2007 (Bulgaria, Romania). The visible growth and convergence success of Poland especially, the biggest country in the group, secured the optimistic vision and opinion on the convergence process and progress in CEEC's as a group.

However, as we will see from the analyses laid down below in this article, the CEEC's have encountered some significant structural problems which resulted in a slowdown of real convergence since 2008 when measured against EU or OECD total. The negative tendency has been especially visible when we have measured CEEC's growth vis-à-vis selected EU or OECD – non EU members, In the latter case we have noticed for some years even a slight yet important divergence process when we compared GDP growth rates with those of EU North (i.e. Germany or Sweden) or most of OECD – non EU members like countries of Anglo-Saxon model. The same divergence trend

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5 S. Yusuf, K. Nabeshima (2009), *Can Malaysia…*, *op. cit*.

6 I.e. A. Jankowska, A.J. Nagengast, J.R. Perea (2012), *The Middle-Income Trap: Comparing Asia and Latin American Experiences*, OECD Development Centre, „Policy Insights", No. 96.

7 See K. Lee (2013), *Schumpeterian Analysis of Economic Catch-up Knowledge, Path-Creation, and the Middle-Income Trap*, Cambridge University Press; K. Lee, B.-Y. Kim, Y.-Y. Park, E. Sanidas (2013), *Big business and economic growth: Identifying a binding constraint for growth with country panel analysis*, „Journal of Comparative Economics", No. 41; E. Paus (2012), *Confronting the Middle Income Trap: Insights from Small Latecomers*, Springer Science Business Media.

has been observed since or even earlier when CEEC's GDP growth rates have been compared with similar growth indicators of other relatively small or medium size OECD countries like: Chile, Switzerland, Israel or Turkey, which simply grew faster that most of CEEC's at that period.

The point is that the CEEC's slowdown and/or divergence process since 2008 has not been widely discussed yet, both because it has come as a kind of the surprise, given previously observed success story and because it is a fairly new and not well recognized problem yet. So far only very few analytical reports started to tackle with the issue[8] and/or some research papers published in Hungary and Czech Republic mostly pointed at the issue[9] referred to that. We believe this research work and this article will make the CEEC's recent convergence and the emerging middle income problems better known and recognized at least.

2. CEEC'S CONVERGENCE TOWARDS EU IN 1990–2014 AND SOME SELECTED OECD COUNTRIES – NON EU MEMBERS; STATISTICAL ANALYSES AND PRELIMINARY FINDINGS

2.1. CEEC's convergence vis-à-vis EU total; need to enrich the picture

When taking the first glance into the CEEC's real convergence towards EU-15 in 1990–2013 (Graph 1) one may conclude, that most of the countries of the group converged during the period. The progress has been most visible with respect to Poland and Slovakia, less impressive with respect to the Czech Republic and Hungary and almost invisible with respect to Bulgaria and Romania if we take the whole period into account.

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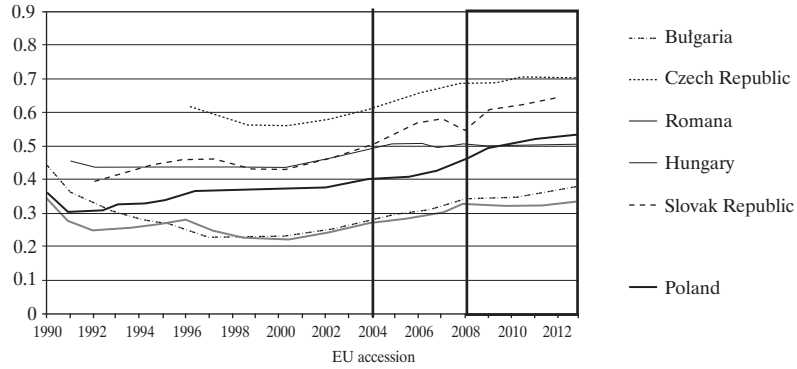
[8] European Bank for Reconstruction and Development (2013), Transition Report 2013; Fundacja Gospodarki i Administracji Publicznej (2014), *Konkurencyjna Polska. Jak awansować w światowej lidze gospodarczej? Rekomendacje*, Kraków; M. Golonka, L. Gyorgy, K. Krulis, Ł. Pokrywka, V. Vano (2015), *Middle-Income Trap in V4 Countries? – Opening thesis*, The Kosciuszko Institute; M.-J. Radło, D. Ciesielska (2013), *Polska w pułapce średniego dochodu? Perspektywy konkurencyjności polskiej gospodarki i regionów*, Diffin.

[9] I.e., Z. Gal (2015), *Interdependence between Core and Peripheries of the European Economy: Secular Stagnation and Growth in the Western Balkans*, Paper presented at First World Congress of Comparative Economics, Rome 25–27 June 2015.

Another first glance observation relates to visible distinctive sub- periods in the CEEC's convergence process namely: period of 1990–2004, 2004–2008, and period since 2008 until 2014.

Graph 1

CEEC* countries convergence with EU-15 since 1990**



* **CEEC:** Bulgaria, Romania, Czech Republic, Hungary, Slovak Republic, Poland
** **EU-15:** Sweden, Finland, Germany, Denmark, UK, Austria, Ireland, Italy, Spain, France, Greece, Portugal, Luxembourg.

Source: own calculations based on the IMF, 2015.

During the first period, which we will call systemic transformation phase, CEEC's have moved from centrally planned economies based on public ownership into more and more market oriented ones based on private ownership, as well as shifting from foreign trade state monopoly towards open trade policy run by private companies and individuals. The process, as we know it, has unleashed a lot of previously frozen entrepreneurial energy and has started to reduce inefficiency in old publicly owned industrial structures but it has evolved different ways in these countries based on the individual countries preferences with respect to the speed and/or character of the chosen economic policies after 1990, bringing some times unexpected negative results, for example in terms of the efficiency of the newly formed private sectors vis-à-vis old state ones both in manufacturing as well as in agriculture[10].

[10] See J.C. Brada, A.E. King, C.Y. Ma (1997), *Industrial economics of the transition: determinants of enterprise efficiency in Czechoslovakia and Hungary*, Oxford University Press, Oxford Economic Papers 49; J.C. Brada, A.E. King (1993), *Is Private Farming More Efficient than Socialized Agriculture?*, Wiley, „Economica", Vol. 60, No. 237.

These problematic gains due to systemic transformation from state to market economies have been most striking in Bulgaria, Romania as well as in the Czech Republic, the countries where we could observe divergence rather than convergence in 1990–2004 (Table 1).

Table 1

GDP per capita for CEEC*, 1990 and 2004, % of GDP of EU total

	1990 (%, PPP)	**2004 (%, PPP)**
Hungary	45.49	49.27
Poland	36.16	39.75
Slovakia	39.3 (in 1992)	50.28
Czech Republic	62 (in 1992)	60.97
Bulgaria	44.37	27.29
Romania	34.65	27.45

* **CEEC:** Bulgaria, Romania, Czech Republic, Hungary, Slovak Republic, Poland.

Source: own calculations based on IMF, 2015.

The second period in the CEEC's convergence process in symbolically marked by 2004 when most of the CEEC's have become EU members[11] and therefore we will call the phase – the EU rent period. Symbolically, because the effects/rents related to CEEC's membership have started to take place even earlier, ca 2000, when the pre-accession agreements indicated clearly that the Countries have already embarked on institutional convergence process with EU[12], setting a safe ground for international investors which resulted, ultimately, in a significant FDI inflow into CEEC's economies and the acceleration of growth at that time.

The other obvious benefits of the either expected or real EU membership related to: free access to EU markets for CEEC's exporters (i.e., Poland has gotten duty free access to EU markets when Poland-EU accession agreement had been signed and approved by all EU member counties in 1994), EU assistance programs which could reach up to 4% of GDP of CEEC's, and free movement of people including systematically implemented legal work permits for the outflow of labor, easing the dramatic, in some countries, unemploy-

[11] Bulgaria and Romania jointed in 2007.

[12] Acquis Communautaire.

ment problem as well as resulting in substantial money transfers coming from emigrants into the mother countries, i.e., Poland has been receiving from 5 to 7 billion US$ annually from the remittances since EU membership[13].

The positive effects of the facts and factors, in addition to the rents coming from more and more mature systemic transformation process (mostly thanks to the progressing privatization processes, open trade benefits and on-going institutional adjustments) resulted in significant GDP growth acceleration in these countries (see Table 2).

Table 2

GDP pc growth in CEEC* in 2004–2013 (%)

	2004	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
Bulgaria	6.56	5.96	6.47	6.91	5.75	–5.01	0.66	1.98	0.49	1.07
Czech Republic	4.95	6.44	6.88	5.53	2.71	–4.84	2.30	1.96	–0.81	–0.70
Hungary	4.79	4.26	3.96	0.51	0.88	–6.55	0.79	1.81	–1.48	1.53
Poland	5.14	3.55	6.19	7.20	3.92	2.63	3.70	4.76	1.76	1.67
Romania	9.12	4.29	8.72	6.26	7.86	–6.80	–0.94	2.31	0.35	3.50
Slovakia	5.24	6.54	8.26	10.68	5.45	–5.29	4.83	2.70	1.60	1.42

* **CEEC:** Bulgaria, Romania, Czech Republic, Hungary, Slovak Republic, Poland.

Source: own calculations based on the World Bank, 2015.

As we could see from the above data on GDP growth rates the CEEC's have experienced an unprecedented fast GDP growth in 2004–2007, which made them being considered the group of "fast growing countries", that is the countries where" growth of GDP pc had been growing for seven or more years at an average annual rate of 3.5%"[14]. This criterion can be applied because when we take the year 2000 as a base year the average rate of growth in CEEC's for the 2000–2007 period was estimated at 4.62%[15].

[13] See Main Statistical Office data – GUS, 2014.

[14] B. Eichengreen, P. Donghyun, S. Kwanho (2013), *Growth slowdowns…*, *op. cit*.

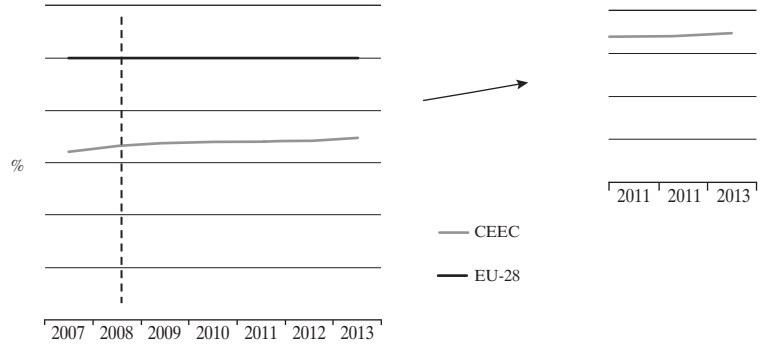
[15] World Bank, 2015.

The problem is that the happy growth era of 2000–2007 and 2004–2007 in particular, has dramatically ended in the after 2007 peiod bringing most of the CEE's convergence almost to a stop. This has come to the surprise for the economists, politicians and expert alike[16].

The declining CEEC's GDP growth rates since 2008 contributed to the convergence slowdown as illustrated on the graph 6 below which demonstrate the process vis-à-vis EU-28 (Graph 2). The trend could be even more striking when we take into account that EU GDP total or EU-28 at present equals EU-15 or Old EU plus relatively poor 11 countries of post-communist Europe plus Malta and Cyprus which, taken together, weighted down the EU-28 average as a reference point and thus making the CEEC's convergence process easier for to be continued.

Graph 2

CEEC's real convergence vis-à-vis EU-28 in 2008–2013 (EU = 100%)



Source: own calculations based on the World Bank, 2015.

In other words, the almost flat CEEC's convergence line indicate, that subtracting CEEC's, Malta and Cyprus from EU GDP total would make the convergence line really flat. This fact suggested further investigation into the CEEC's convergence process to be measured more detailed way by segmenting EU total into smaller, more representative units (Graph 3).

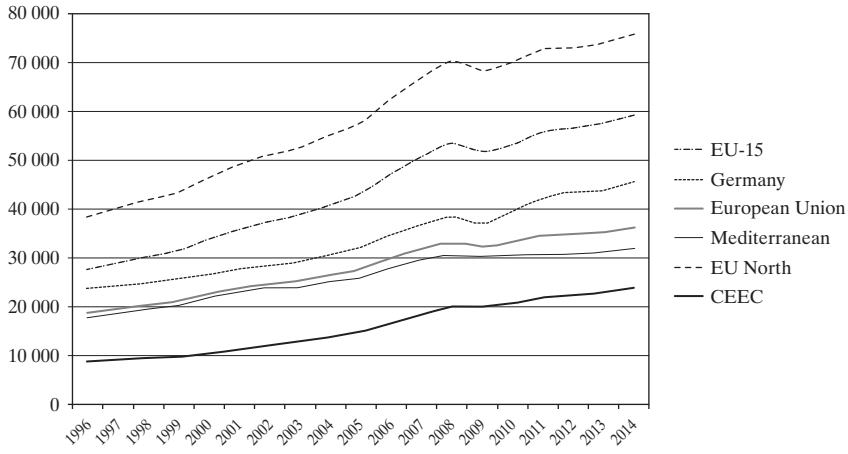
[16] I.e., see European Bank for Reconstruction and Development (2013), Transition Report 2013.

2.2. CEEC's convergence towards EU North and selected EU countries

The other factor which made CEEC's convergence vis-à-vis EU total easier to be achieved has been the phenomenon of the EU Mediterranean countries negative and/or relatively slow growth for most of 2008–2013 period. This phenomenon contrast with relatively positive growth rates of most of the rest of EU-15, which we could call EU-North, and which comprise of the Scandinavian countries, Austria, Germany, Belgium, The Netherlands, UK, Ireland and Luxemburg (Graph 3).

Graph 3

EU GDP per capita, PPP, current international $ by selected members in 1996–2014



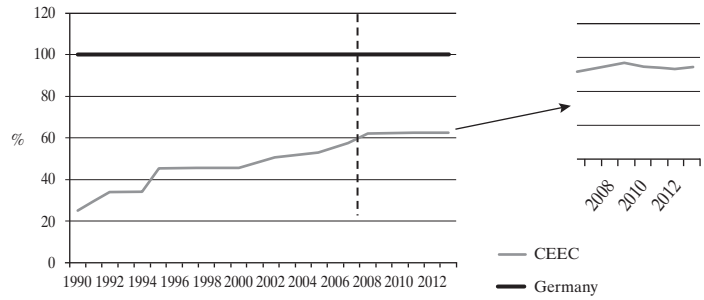
Mediterranean: Italy, Spain, France, Greece, Portugal
EU North: Sweden, Finland, Germany, Denmark, UK, Austria, Ireland, Netherlands, Belgium
EU-15: Sweden, Finland, Germany, Denmark, UK, Austria, Ireland, Italy, Spain, France, Greece, Portugal, Luxembourg, Belgium, The Netherlands

Source: own calculations based on the World Bank, 2015.

With respect to some of these countries, like for example the main trade and investment partner of CEEC's – namely Germany, we could notice a divergence process to occur at that time (Graph 4).

Graph 4

CEEC's GDP pc ppp as a percent of Germany, current US$



Source: own calculations based on the World Bank, 2015.

As we could observe, the Mediterranean countries as a group, having had negative and/or very slow GDP growth rates at that period, have become the only EU area against which the CEEC's could claim a substantial progress in real convergence process (Table 3).

Table 3

Deltas between GDP per capita for CEEC's and given groups of EU countries in 2008–2014 (US$)

	2008	2014	Difference	Result
Mediterranean*	10 608.32	8 166.47	–2441.85	Convergence
EU North**	50 324.08	51 907.82	1583.73	Divergence
EU-15***	20 881.74	19 622.01	–1259.72	Slight convergence
EU	13 116.18	12 388.52	–727.66	Convergence

* **Mediterranean**: Italy, Spain, France, Greece, Portugal
** **EU North**: Sweden, Finland, Germany, Denmark, UK, Austria, Ireland, Netherlands, Belgium
*** **EU-15**: Sweden, Finland, Germany, Denmark, UK, Austria, Ireland, Italy, Spain, France, Greece, Portugal, Luxembourg, Belgium, The Netherlands

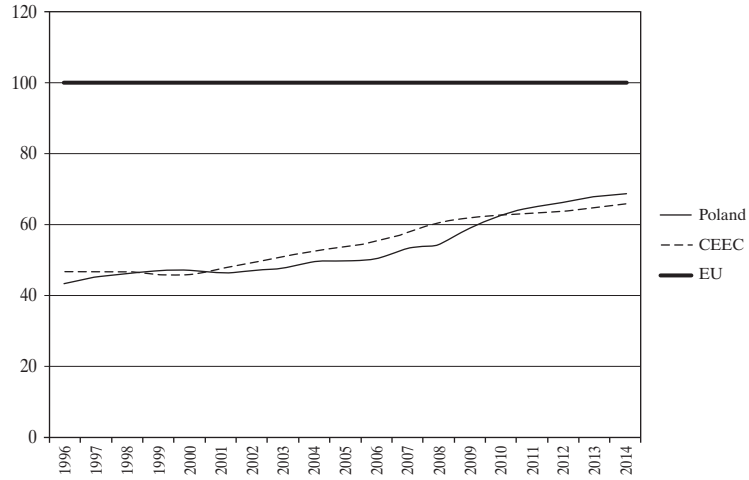
Source: own calculations based on the World Bank, 2015.

As the result of the simultaneous developments of the two opposite tendencies, namely: relatively fast EU – North growth and negative and/or very slow growth of the Mediterranean countries (see Table 4), and given a visible CEEC's growth slowdown at that period – the CEEC's convergence towards

EU total and EU-15 has been reduced significantly with some minor positive difference with respect to Poland and/or Slovakia (Graph 5).

Graph 5

EU and CEEC's GDP per capita, PPP, current international $ in 1996–2014. UE = 100%



Source: own calculations based on the World Bank, 2015.

2.3. CEEC's convergence towards OECD and OECD – non EU members; need to broaden the picture

An obvious conclusion coming from the preliminary findings on CEEC's convergence vis-à-vis EU is that the analyses should be more diversified with respect to reference points because taking EU total as well as OECD total as we will see below, which incorporates most of the EU countries, may be misleading as we have seen when measuring CEEC's convergence vis-à-vis EU North and/or EU Mediterranean. Another reason for changing and diversifying the reference points as to measure the CEEC's convergence more broadly and/or properly is the growing discrepancy between EU and OECD and/or OECD – non EU members. At that period of our analyses (2008–2013), EU total GDP grew at the speed of – 0,07% annually, whereas OECD grew at 0.65% and OECD – non EU members grew at the speed of 2.22% (Table 4).

Table 4

OECD, OECD – non EU, EU, CEEC's GDP growth rates in 2008–2013 (in %)

Country name	2008	2009	2010	2011	2012	2013	Average
Australia	3.7	1.73	1.96	2.32	3.73	2.51	2.66
Bulgaria	5.75	–5.01	0.66	1.98	0.49	1.07	0.82
Canada	1.18	–2.71	3.37	2.96	1.92	2.0	1.45
Chile	3.29	–1.04	5.75	5.84	5.46	4.23	3.92
Czech Republic	2.71	–4.84	2.3	1.96	–0.81	–0.7	0.10
Germany	1.05	–5.64	4.09	3.59	0.38	0.11	0.60
EU	0.48	–4.41	2.12	1.76	–0.49	0.12	–0.07
Hungary	0.88	–6.55	0.79	1.81	–1.48	1.53	–0.50
Israel	3.5	1.9	5.75	4.19	3.0	3.25	3.60
Japan	–1.04	–5.53	4.65	–0.45	1.75	1.61	0.17
Korea Rep.	2.83	0.71	6.5	3.68	2.29	2.9	3.15
Mexico	1.4	–4.7	5.11	4.04	4.01	1.39	1.88
New Zealand	–1.62	–0.25	1.44	2.22	2.18	2.47	1.07
OECD	0.2	–3.56	2.93	1.72	1.24	1.38	0.65
Poland	3.87	2.62	3.71	4.77	1.82	1.71	3.08
Romania	7.86	–6.8	–0.94	2.31	0.35	3.5	1.05
Slovak Republic	5.45	–5.29	4.83	2.7	1.6	1.42	1.79
Turkey	0.66	–4.83	9.16	8.77	2.13	4.19	3.35
United States	–0.29	–2.78	2.53	1.6	2.32	2.22	0.93
CEEC	4.42	–4.31	1.89	2.59	0.33	1.42	1.06
OECD non EU	1.36	–1.75	4.62	3.52	2.88	2.68	2.22
United Kingdom	–0.33	–4.31	1.91	1.65	0.66	1.66	1.38
Ireland	–2.61	–6.37	–0.28	2.77	–0.31	0.17	1.53

Source: own calculations based on the World Bank, 2015.

When picking up particular group of countries for comparisons, i.e., OECD – non EU members, we could observe that the EU total position worsened vis-à-vis OECD – Anglo-Saxon overseas and towards most of small

and medium OECD countries like: Switzerland, Chile, Israel or Turkey, as measured by the GDP pc differences which have been growing in favor of OECD – non EU members or has reduced EU surplus position vis-à-vis Chile, Switzerland, Turkey and Israel at that time (Table 5).

Table 5

EU's GDP per capita as a percent of chosen groups of OECD in 2008–2013

	2008	2009	2010	2011	2012	2013	Difference
EU as a percent of OECD	95,39622	95,72201	95,02841	95,28129	94,2046	93,50856	–1,88765
EU as a percent of Anglo--Saxons	85,12826	82,6821	83,74479	83,51517	82,3274	81,03086	–4,0974
EU as a percent of Chile, Switzerland, Turkey, Israel	121,2514	119,5474	115,9634	112,378	110,0993	108,5745	–12,6769

* OECD non EU: Australia, Canada, Switzerland, Chile, Japan, Korea Rep., Mexico, New Zealand, Turkey, USA,

* Anglo-Saxons- overseas: USA, Canada, New Zealand, Australia

Source: own calculations based on the World Bank, 2015.

In view of the above discrepancies in GDP growth rates between EU and OECD total and towards particular groups of OECD members countries we tried to check the position of CEEC's not only against OECD total but towards OECD – non EU, as well as by group of countries, namely: OECD countries of Anglo-Saxon economic system characteristics and other fast growing economies like: Chile, Switzerland, Turkey or Israel as to have a better picture of the CEEC's convergence process in the global rather than regional environment as well. In these analyses we have consciously omitted Far East Asia Tigers (South Korea, Taiwan, Singapore and Hongkong) because the Asian countries have already left CEEC's behind years before with no chance to catch-up for CEEC's given their almost twice as high growth rates in 1990–2013[17].

[17] World Bank, 2015.

Analyzing data on GDP growth rates contained in the Table 4 we can see that the OECD – non EU members have been growing at the pace of 2.22% annual average in 2008–2013 as compared to 1,06% for CEEC's. Similar negative deltas we may find comparing CEEC's GDP growth rates towards those of either OECD – Anglo-Saxon overseas or towards Switzerland, Israel or Turkey to mention few of fast moving countries – OECD – non EU members. As the result, in that period, we have found the divergence process well under way rather the convergence one as experienced by the CEEC's prior to 2008 (Table 1 and 2). That may suggest that CEEC's have reached a kind of plateau or "glass selling" in their development path as measured by the real convergence process and progress as a criterion. If the convergence process cannot be revived than we must admit that the CEEC's have got stuck in the middle income trap as many Latin American or some Far East Asian countries have done it years before.

3. The danger of being stuck in the "Middle income trap"; are CEEC's already in it and/or can they get out it and if-when?

The danger of being stuck in the middle income trap brings several problems to be investigated further. First, we should choose and justify adequate definition of middle income level and middle income trap for the CEEC's. Secondly, we should try to analyze the chances to get out of it defining time horizon under the provision that the present economic conditions and economic trends are not changed much. This will be done by simple extrapolations of present trends until say 2025 or ten years from now. The third part of our analyses will relate to identification and analyses of the TFP determinants which have been critical for CEEC's growth and convergence process so far and which could determine these countries further growth and convergence process as well. The last part of the investigation is based on econometric model and is to be done in the second part of our analyses below as has been indicated earlier.

3.1. Defining "Middle income trap – MIT" for CEEC's; choosing the reference point

Majority of development economists and/or experts on convergence and/or middle income trap when looking into proper definition of the phenom-

enon refer in most cases to standard definitions used by the World Bank which sets certain GDP level brackets either in nominal or ppp US$ as reference points, adjusting these levels and brackets every some time[18]. Our problem and proposal however is not whether the country or group of countries has moved from "low middle income" into "upper middle income" or from "upper middle income" into "high income countries" but what is the country position vis-à-vis her "club members" (i.e. OECD) or regional partners and/or integration unit members (i.e. EU members), and whether the country can maintain and/or change the position in a given time horizon indicating her ability to converge with the best of the given reference point or not. This approach which we have chosen is similar to that as presented by Jesus Felipe i.e. (Felipe 2012b) and we believe it is more adequate to the problem the CEEC's countries have been facing since the 2008 as discussed earlier above. Obviously, we should choose the two reference points as most right simply because when we discuss the CEEC's convergence process and the countries are both the EU members and OECD members for most part (Romania and Bulgaria still waiting) we will refer to their natural and most important economic environment. The choice or dilemma whom to choose EU and OECD total as reference points is secondary, because EU total and OECD GDP pc total are almost at the same level and the rates of growth of the two Units have been almost identical for the last 25 years with the small difference in the last few years only in favor of OECD.

The choice of EU and/or OECD is also obvious for political reasons because CEEC's by joining both organization membership and EU especially, aimed at institutional convergence which were to lead, with assistance of EU various financial programs, to the real convergence over time, thus making these countries valuable if not equal members of the two organizations in terms of standard of living over time as well.

Under these assumptions and following the above mention reasoning we have decided to use both reference points, EU first and OECD next, especially as to compare CEEC's performance to OECD – non UE members as well and assess CEEC's convergence over time.

The brackets chosen for both reference points are the same as well. We decided to choose 40% to 70% of the GDP pc ppp level as the frame for

[18] According to The World Bank definition (the so called Atlas method using Gross National Income – GNI as a measure), middle income status refer to countries of between 1 005 US$ for low middle income, up to 12 075 US$ of GNI per capita for upper middle income group. More than 12 076 US$ pc means high income country status (World Bank, 2015).

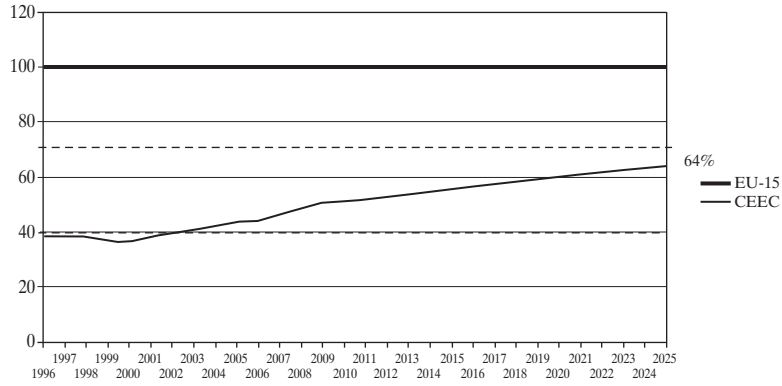
middle income level for EU and OECD or better say – "middle income position within the group".

Finally, we decided to extrapolate the trend of GDP growth of CEEC's in 2008–2013 up to 2025, or for the next ten years to come, and place the results against the same extrapolations done for EU and OECD total and OECD – non EU members respectively until 2025 (see note on methodology under Graph 9).

As the first reference point in our CEEC's convergence predictions until 2025 we have chosen EU 15 as to avoid the deformation or/misleading effect coming as the result the new EU members with their lover GDP pc and thus making convergence targets easier to gain. As illustrated by data presented on graph below the CEEC's countries may reach ca 64% in 2025 of the EU 15 level as oppose to 67% for EU total (Graph 6).

Graph 6

Forecasted GDP per capita for CEEC with respect to EU-15 (2014–2025) based on the growth trends 2008–2013



Note: While constructing the following graphs the next methodology was followed:
First, we determine our reference point, which we use to evaluate the performance of CEEC. For instance, let us consider that we have chosen OECD member states as our reference point.
The data for GDP per capita (in current international $) during 1996–2013 for both groups of countries is taken from World Bank Database.
To estimate the values for the period of 2014–2025 the following procedure is used:

1. Calculate the nominal increase in values for each consequent year from 2008–2013 – delta.
2. Calculate the average of all the nominal increases in values (all deltas) – avrdelta.
3. To get the estimated value for any year from 2014–2025 add the avrdelta to the previous year. For instance, 2014 = 2013 + avrdelta.

Source: own calculations based on the World Bank, 2015.

Now the percentage ratio of CEEC to OECD member states can be calculated for any year. In order to do this, one should divide the value of CEEC over the value of OECD and multiply by 100%.

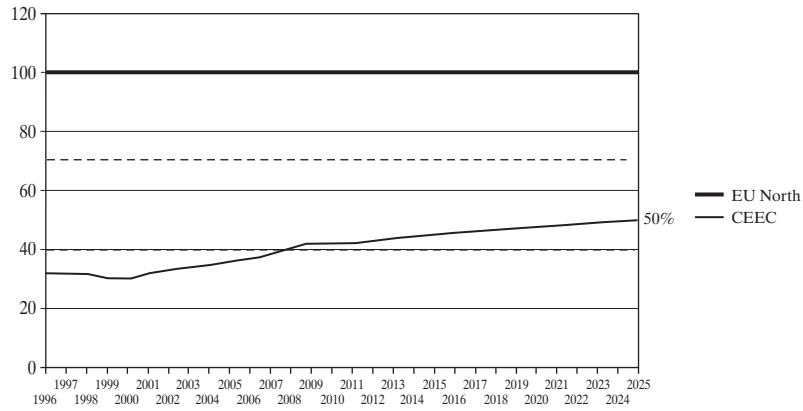
Thus, the values of OECD in each year are considered as 100% and the CEEC percentage ratio is calculated as mentioned above.

As a result, we get the graph which consists of a straight line at level of 100% (which is an illustration of chosen reference point) and a curve which demonstrates a rate of growth of CEEC in comparison to chosen reference point (in percentage points).

But in reference to EU North, CEEC's will reach, ceteris paribus, only 50% of these countries level in 2025 (Graph 7).

Graph 7

Forecasted GDP per capita for CEEC with respect to EU North (2014–2025) based on the growth trend 2008–2013



Source: own calculations based on the World Bank data, 2015.

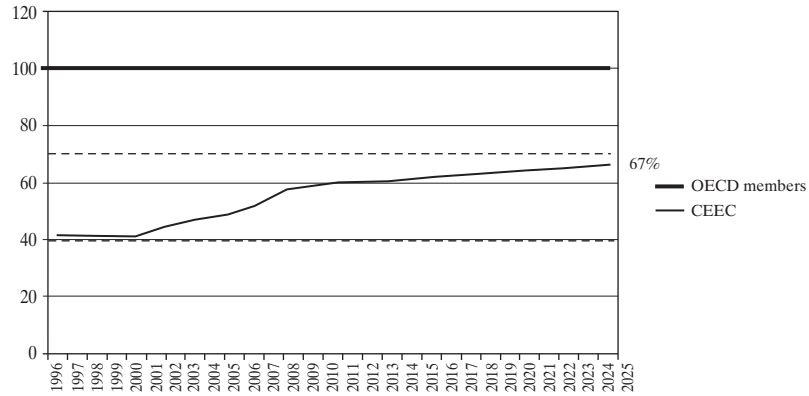
The ca 50% of the EU North GDP pc ppp that the CEEC's countries could possibly achieve by 2025 means that the countries will remain in middle income group brackets for decades to come, leaving little hope for escaping the trap.

As for OECD total and OECD – non EU members the prognosis is not encouraging either.

The prediction for CEEC's convergence towards OECD total the level the CEEC's could reach are around 67% of the OECD GDP pc level, slightly lower yet similar to the calculated for EU GDP pc in that year (Graph 8).

Graph 8

Forecasted GDP per capita for CEEC with respect to OECD members (2014–2025) based on the growth trend 2008–2013

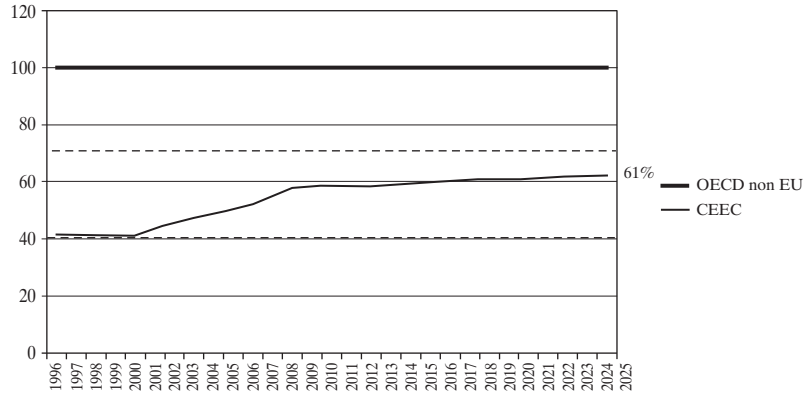


Source: own calculations based on the World Bank, 2015.

As for OECD – non EU members the situations is even worse because the CEEC's may reach only slightly over 60% of the OECD – non EU members level in 2025 at most (Graph 9).

Graph 9

Forecasted GDP per capita for CEEC with respect to OECD non EU (2014–2025) based on the growth trend 2008–2013



Source: own calculations based on the World Bank, 2015.

The above mentioned predictions of ours are against many and, at times dominant notions, about the CEEC's convergence as undeniable and/or nonreversible ongoing process, eliminating successfully the development gap between these countries and EU 15 over time. The positive notions have been popularized by some World Bank economists[19] and politicians especially in reference to Poland because the country have had relatively high growth rates and, in addition, had successfully survived the financial crises which hit EU in 2006–2007. The convergence scenarios built at that time even when taken in moderate or negative versions secured growth and/or convergence position well above our prediction as illustrated above[20]. Very few experts or analysts have had the opposite view, similar to ours[21].

4. Looking for causes of the CEEC's convergence slowdown: some hints on GDP growth determinants and its changes

As indicated in introduction to this paper its main aim is to point at the new phenomenon which is a significant CEEC's convergence slowdown after 2008. This has been done in the first part of this paper by providing a number of statistical data which have illustrated this trend. In this second part, an in depth analyses of factors or determinants of the CEEC's growth slowdown process are to be touched upon only partially and occasionally[22]. Yet, some preliminary observations and analyses provided in this, second part, indicate clearly that the negative CEEC's growth tendency started to be better recognized and understood when data on corporate investment started be found as falling at that time as well (Graph 10) and data on unemployment in the CEEC's started to grow as the result (see Graph 11).

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19 See i.e. M. Piątkowski, *The 'Warsaw Consensus': The New European Growth Model*, paper presented during the Kozminski University Seminar, 2014.

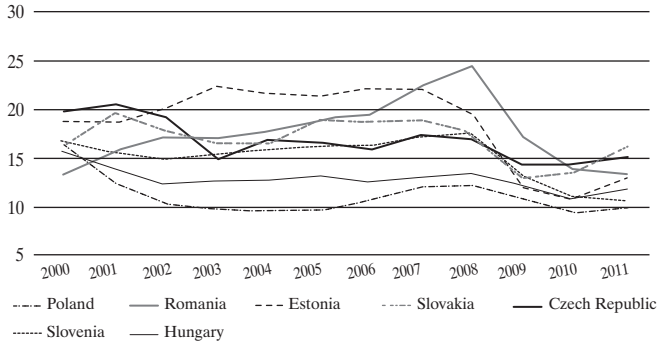
20 See i.e. McKinsey Report, 2015.

21 I.e. see EBRD, 2013, Kosciuszko Foundation, 2015.

22 For the extended version of the in depth analyses of the CEEC's growth determinants with the use of the econometric model see: W. Bieńkowski and W. Grabowski – presentation delivered at the First World Congress of the Comparative Economic Associations at TRE University in Rome in June 2015.The paper based on the presentation is under review now at the Journal of Comparative Economics and is expected to be published there soon.

Graph 10

Corporate investment as percentage of GDP in selected countries

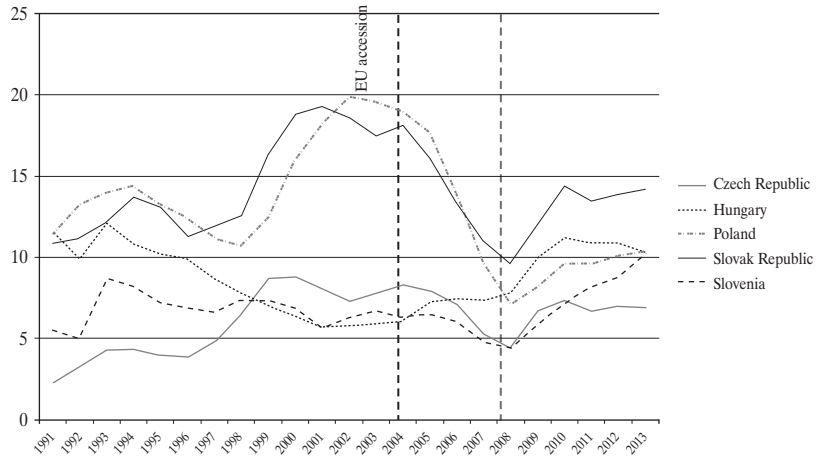


Source: EUROSTAT, 2015.

The data depicted on Graph 10 indicate clearly how big was the impact of the worldwide financial crises on the CEEC's economies. The impact combined with the internal, structural weakness of the CEEC's resulted in significant reduction of investment, including FDI in these countries.

Graph 11

CEEC's unemployment level (in % to total population) in 1991–2013



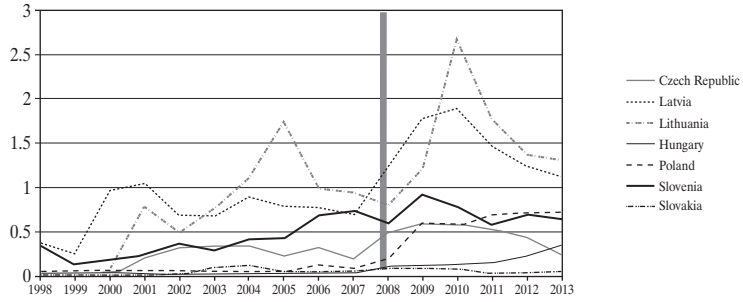
Source: own calculations based on the World Bank, 2015 and ILO Geneva 2015.

Data depicted in Graph 11 in turn indicate and explain how this negative investment trend and growth reduction in CEEC's translated into the increase of unemployment in these countries. After significant unemployment reduction at the time when the CEEC's have been entering EU, the financial crisis in USA and soon after in Europe as well as the internal structural problems have reversed the positive trend dramatically.

As the result of the growth and investment slowdown which brought unemployment rise, yet another plaque has started to be a problem, namely the CEEC's emigration has started to grow rapidly which has been easing unemployment on one hand, however, the weak point of the current is the dangerous age composition of the labor outflow, because the dominant groups of the emigration consist of mostly of young and middle aged educated people first of all (see Graphs 12 and Graph 13 below). This negative tendency of the brain and men power drain generally, given overall negative demographic tendencies in these countries, create a very powerful brake on the economies of these countries. These negative effects will be especially painful in years or decades to come diminishing CEEC's growth potential dramatically[23].

Graph 12

Emigrants as a percent of total population in selected CEEC countries

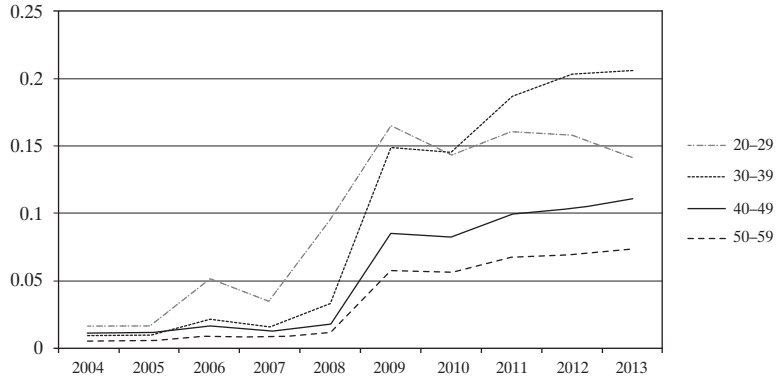


Source: Eurostat, 2015.

[23] B.B. Bakker, Paper on Demographic factor and its impact on CEEC's growth potential Presentation given during NBP – ONB 15-15 October 2015 seminar titled Boosting EU Competitiveness – The Role of the CESEE Countries.

Graph 13

Emigrants by group of age for Poland (% of total population)

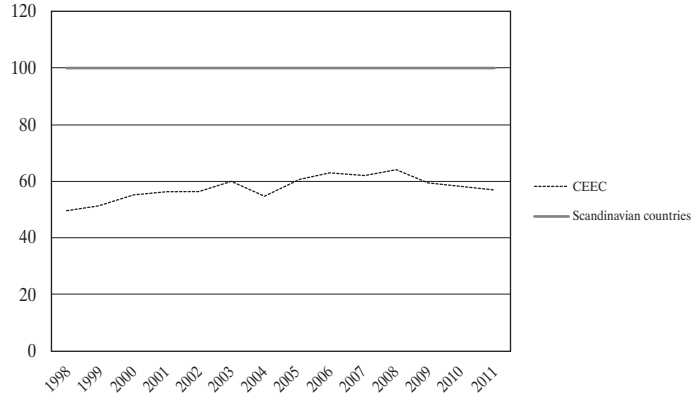


Source: Eurostat, 2015.

Another factors which has scaled down CEEC's growth and effectiveness for that matter has been a relatively low level of education, both with respect to the share of expenditures on education in GDP compared to ie., Scandinavian countries (see Graph 14 below) as well as with respect to the quality of it as exemplified in annual university rankings[24].

Graph 14

CEEC's expenditures on education compared to expenditures in Scandinavia



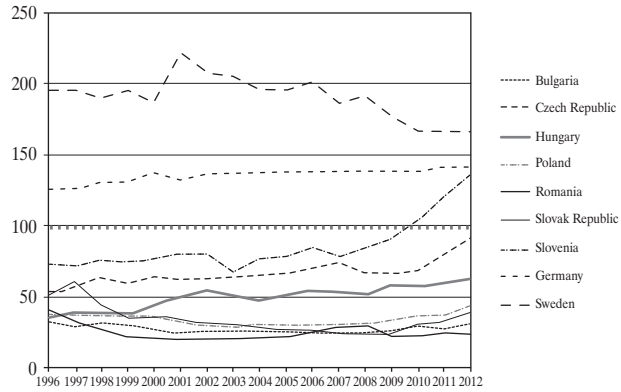
Source: own calculations based on the World Bank, 2016.

[24] See annual report by Shanghai University Ranking or the Times – Thomson Reuters Reports on University Rankings, 2007–2014.

Another factors which has scaled down CEEC's growth and effectiveness for that matter has been a relatively low level of innovativeness resulting from very low level of expenditures laid down for research and development – R&D in these countries since the beginning of the systemic transformation process, staying at the level well below 1% of GDP in these countries as opposed to Germany or Sweden where it has been 3–4 times higher for decades (Graph 15). This negative tendency has been changing in recent years, yet the level difference of the expenditures compared to EU countries is still huge, hampering growth, effectiveness and competitiveness greatly.

Graph 15

Research and development expenditures as % of GDP in CEEC's countries vis-à-vis R&D expenditures in Germany and Sweden in 1996–2012

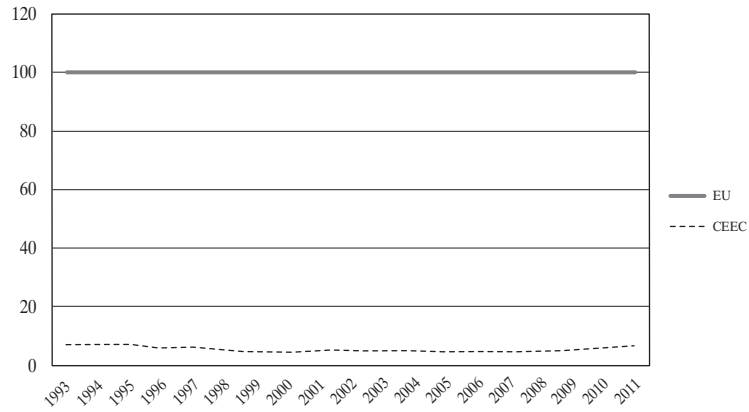


Source: OECD, 2014.

As the result of the low quality of the university education in CEEC's as well as the result of the permanent low level of the R&D expenditure in relation to GDP in these countries it comes as no surprise that innovativeness level as measured by relatively small numbers of patents show the striking difference as compared to the same indicators in the EU countries (see data depicted on Graph 16).

Graph 16

Patent applications, residents. CEEC's as a percent of EU total numbers



Source: own calculations based on the World Bank, 2016.

In view of the above facts and figures it comes as no surprise that given the low level of investment and low level of technological effort in CEEC's theirs export composition consist mostly of medium and low tech goods as opposed to the old EU or other OECD export composition where high tech goods represent from 30% to 50% share of their total exports. As we can see from the data depicted in graph 19 below most of CEEC's countries don't reach these levels. What is more, some of them like Hungary or the Czech Republic have been even scaling down their export composition with respect to the high tech goods share in their exports total. Slovakia and Poland has experienced some minor improvements in 2007–2014 period, yet the ca 7% high tech goods share in Poland's total exports indicate clearly an innovation gap with respect to old EU or other OECD[25]. That is one of the most visible indicators of being a secondary or peripheral economic partner in importance in international transactions, indicating CEEC's big chance to remain in the middle income trap for years to come. Unless there is a significant change in the economic policy direction in these countries aiming at improving growth conditions based on business environment conducive to innovativeness, the CEEC's competitiveness will remain at low level as being based on low labor cost inputs rather than being on innovativeness and efficiency high tech based, leaving these countries where they are with little chance to converge and efficiency high tech based with little chance to converge

[25] GUS, 2015.

towards EU or OECD – non EU members. This thesis can be confirmed by the data of the CEEC's on these countries high tech goods share in their total exports indicating clearly that the share is very low compared to old EU countries or OECD where the share is sometimes several times higher exceeding 30& for most developed OECD countries[26]. As we can see from data depicted in Table 6 below the high tech goods share in most CEEC's don't reach this level and in Poland, for example, has not reached even 8% yet (see Table 6).

Table 6

CEEC's high-tech trade as a percentage of their total in 2007–2014 as measured by RCA index methodology/SITC. Rev. 4

		2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Poland	Exports	3.000	4.300	5.700	6.000	5.100	6.000	6.700	7.700
	Imports	9.300	9.900	11.800	11.600	10.200	10.500	10.800	11.300
Bulgaria	Exports						3.800		3.900
	Imports	6.600	6.300	7.200	7.500	7.800	8.900	6.900	7.500
Czech Republic	Exports	14.100	14.100	15.200	16.100	16.400	16.100	15.100	15.300
	Imports	15.500	15.100	17.400	19.000	17.400	16.900	16.400	17.200
Hungary	Exports	21.300	20.200	22.200	21.800	20.900	17.300	16.300	14.400
	Imports	18.700	17.100	19.800	20.300	18.800	17.600	16.900	15.000
Slovakia	Exports	5.000	5.200	5.900	6.600	6.600	8.200	9.600	9.700
	Imports	10.300	9.800	10.600	10.900	12.700	15.300	16.500	16.500
Romania	Exports	3.500	5.400	8.200	9.800	8.800	6.300	5.600	6.400
	Imports	8.400	8.700	10.800	12.200	10.800	9.600	10.100	10.000

Source: own calculations based on the Eurostat, 2016.

The data in table 6 confirm our quick yet comprehensive review of the factors of growth and weak competitiveness indicators of the CEEC's in recent years explaining why there has been the visible CEEC's convergence slowdown causing the middle income trap problem as depicted and indicated in respective graphs and tables on CEEC's earlier in this paper.

[26] WTO, 2015.

Conclusions

Results of the analysis of the CEEC's performance of the Gross Domestic Product per capita or convergence process show that the convergence of the Central and Eastern European countries with the world economy slowed down after the global financial crisis started significantly suggesting a typical situation when the respective group of countries enter the so called "middle income economy trap".

In the first part of our analyzes, based mostly on a in depth statistical investigation, we have found out that though countries under consideration had relatively high GDP growth rates after 2000 and after the EU accession in 2004 especially, yet soon after, that is in the period of the global financial crisis 2007–2008, their GDP slowdown was very significant. What is more, the slow yet continued CEEC's convergence towards EU total at that 2008–2013 period can be attributed mostly to the very deep recession in some Euro area, mostly in the Mediterranean countries, rather than to their relatively good economic performance. In fact, when we measured CEEC's performance vis-à-vis EU North, namely such countries as Germany or Sweden during 2008–2013 period, even some divergence tendencies could be observed. Similar negative tendencies has been observed after 2008 especially when comparing the CEEC's growth results with analogous figures for other world economies such as OECD – non EU members, in example the Anglo-Saxon countries overseas such as USA, Canada, Australia and New Zealand or other OECD members such as Switzerland, Chile, Israel or Turkey, not to mention the Far East Asia Tigers such as Republic of Korea or Taiwan which has had twice or three time higher GDP growth rates compared to CEEC's at that period. By extrapolating the above trends we came to conclusion that by the year 2025 the CEEC's position vis-à-vis the respective group of countries will change in an insignificant way leaving these countries at peripheral territory of the developed world as depicted by the respective reference points in our analyzes. We have called the situation a typical middle income level trap which, by the way, is not in accord with the prevailing view as represented by majority of experts on the issue[27].

[27] See 15–16 October 2015 National Bank of Poland – NBP and Oesterreichische National Bank – ONB conference in Warsaw titled "Boosting EU Competitiveness – The Role of the CECEE Countries" for example when most the speakers representing also World Bank, OECD and EU, preached CEEC's as a EU GDP and competitiveness growth frontrunners or champions/

As suggested in the later part of the article (Part 4), the observed CEEC's slowdown in convergence results from relatively low rates of growth of the Total Factor Productivity factors such as low investments generally and low innovativeness of these countries (especially Poland and Romania). The low innovativeness in turn comes as the result low level of CEEC's expenditures on education combined with low level of R&D expenditures compared to GDP which, in turn, brings a very low number of patents and the Central and Eastern European countries vis-à-vis EU or OECD. Under the circumstances it comes as no surprise that the share of high tech goods in export composition in these countries exports total is very low and in some cases has been even declining in recent years, indicating competitiveness problem. In fact these countries competiveness has been mainly low labor costs driven, which is not a sufficient condition for maintain a long-term ability to compete. No doubts these are one of the main causes of the growth and convergence problem slowdown. In order to advance and not being stuck in the middle income trap, these countries should spend less money on consumption and more money on investment, quality of education and on research and development.

Bibliography

Agenor P.-R., Canuto O., Jelenic M. (2012), *Avoiding Middle-Income Growth Taps*, „The World Bank Economic Premise", November 2012, No. 98.

Bakker B.B., *Paper on "Demographic factor and its impact on CEEC's growth potential" Presentation given during NBP – ONB 15-15 October 2015 seminar titled Boosting EU Competitiveness* – The Role of the CESEE Countries.

Bieńkowski W., Grabowski W. (2015), *Central Eastern European countries and the middle income trap – the case of Poland*, Paper presented at First World Congress of Comparative Economics, Rome 25–27 June 2015.

Brada J.C., King A.E., Ma C.Y. (1997), *Industrial economics of the transition: determinants of enterprise efficiency in Czechoslovakia and Hungary*, Oxford University Press, Oxford Economic Papers 49.

Brada J.C., King A.E. (1993), *Is Private Farming More Efficient than Socialized Agriculture?*, Wiley, „Economica", Vol. 60, No. 237.

Caldentey E.P. (2012), *Income Convergence, Capability Divergence, and the Middle Income Trap: An Analysis of the Case of Chile*, Springer Science Business Media.

Eichengreen B., Donghyun P., Kwanho S. (2013), *Growth slowdowns redux: new evidence on the middle-income trap*, NBER Working Paper Series, Working Paper 18673.

European Bank for Reconstruction and Development (2013), Transition Report 2013.

Felipe J. (2012a), *Tracking the Middle-Income Trap: What is It, Who is in It, and Why? Part 1*, „Asian Development Bank", No. 306.

Felipe J. (2012b), *Tracking the Middle-Income Trap: What is It, Who is in It, and Why? Part 2*, „Asian Development Bank", No. 307.

Fundacja Gospodarki i Administracji Publicznej (2014), *Konkurencyjna Polska. Jak awansować w światowej lidze gospodarczej? Rekomendacje*, Kraków.

Główny Urząd Statystyczny 2014 and 2015,Warsaw, Poland – Respective volumes on GDP and Poland's Foreign Trade performance.

Gal Z. (2015), *Interdependence between Core and Peripheries of the European Economy: Secular Stagnation and Growth in the Western Balkans*, Paper presented at First World Congress of Comparative Economics, Rome 25–27 June 2015.

Golonka M., Gyorgy L., Krulis K., Pokrywka Ł., Vano V. (2015), *Middle-Income Trap in V4 Countries? – Opening thesis*, The Kosciuszko Institute.

Jankowska A., Nagengast A.J., Perea J.R. (2012), *The Middle-Income Trap: Comparing Asia and Latin American Experiences*, OECD Development Centre, „Policy Insights", No. 96.

Lee K. (2013), *Schumpeterian Analysis of Economic Catch-up Knowledge, Path-Creation, and the Middle-Income Trap*, Cambridge University Press.

Lee K., Kim B.-Y., Park Y.-Y., Sanidas E. (2013), *Big business and economic growth: Identifying a binding constraint for growth with country panel analysis*, „Journal of Comparative Economics", No. 41.

McKinsey &Company (2015), *Poland 2025: Europe's new growth engine*.

Paus E. (2012), *Confronting the Middle Income Trap: Insights from Small Latecomers*, Springer Science Business Media.

Piątkowski M. (2014), *The 'Warsaw Consensus': The New European Growth Model*, paper presented during the Kozminski University Seminar.

Radło M.-J., Ciesielska D. (2013), *Polska w pułapce średniego dochodu? Perspektywy konkurencyjności polskiej gospodarki i regionów*, Diffin.

Yusuf S., Nabeshima K. (2009), *Can Malaysia Escape the Middle-Income Trap? A Strategy for Penang*, The World Bank Development Research Group, Policy Research Working Paper 4971.

Post communist countries of Central Eastern Europe facing middle income trap problem. Preliminary findings based on statistical data and some factor analyses for 1990–2014

Summary

The main aim of the paper is to illustrate and analyse growth and convergence process of the countries of Central and Eastern Europe, CEE, namely: Poland, the Czech Republic, Hungary, Slovakia, Bulgaria and Romania in the 1990–2014 period. The countries, after a successful growth and catch-up process as observed over most of the transformation period of 1990–2007, have suddenly, since 2008, slowed down their convergence process vis-à-vis some old EU member countries and especially vis-à-vis the non EU OECD member counties like the countries of the Anglo-Saxon socio-economic model and several countries of Far East Asia. The process of the slowdown, if it is to continue, will make most of the countries of the region being stuck in the middle income trap level defined as 40–70% of the GDP *per capita* level of the reference countries, i.e. the old EU or the non EU OECD members, for many years to come. An attempt to identify and analyse some main causes of the economic growth and the convergence slowdown of CEE countries is to be undertaken in this paper as well.

Postkomunistyczne kraje Europy Środkowo-Wschodniej w obliczu pułapki średniego poziomu rozwoju. Wstępna diagnoza problemu na podstawie danych statystycznych i analiz z lat 1990–2014

Streszczenie

Celem tego opracowania jest ilustracja i analiza procesów wzrostu oraz konwergencji krajów Europy Środkowo-Wschodniej, konkretnie: Polski, Czech, Słowacji, Węgier, Bułgarii i Rumunii w okresie 1990–2014. Wymienione kraje, po okresie pozytywnych wzrostów i postępującej konwergencji widocznych w okresie transformacji w latach 1990–2007, wyraźnie spowolniły swój wzrost po roku 2008, zmniejszając widocznie proces konwergencji vis-à-vis krajów „starej" UE, a jeszcze bardziej względem krajów OECD nie będących członkami Unii, czy wiodących krajów Dalekiej Azji. Ten proces spowolnienia, jeśli będzie kontynuowany, uczyni kraje tego regionu Europy

zakładnikami tzw. „pułapki średniego poziomu rozwoju", rozumianej jako przedział między 40% a 70% poziomu PKB *per capita* krajów referencyjnych, w naszym przypadku krajów „starej" UE 15 czy krajów OECD nie będących członkami UE. W prezentowanej pracy pojęta została także pewna próba identyfikacji i analizy czynników zaobserwowanego spowolnienia wzrostu i mało satysfakcjonujących postępów w realnej konwergencji krajów Europy Środkowo-Wschodniej.

Посткоммунистические государства Центрально-Восточной Европы перед лицом «ловушки» среднего уровня развития. Предварительный анализ проблемы на основании статистических данных и исследований 1990–2014 годов

Резюме

Целью данного исследования является иллюстрация и анализ процессов снижения роста развития и конвергенции государств Центрально-Восточной Европы, в частности, Чехии, Словакии, Венгрии, Болгарии и Румынии в 1990–2014 годах. Перечисленные страны, после периода позитивных изменений и прогрессивной конвергенции, отмеченных во время трансформации в 1990–2007 годах, переживают снижение роста своего развития после 2008 года, что заметно замедляет процесс конвергенции vis-à-vis по сравнению с государствами прежнего ЕС, а тем более по отношению к государствам OECD (ОЭСР), не являющимся ни членами ЕС, ни ведущими государствами Дальней Азии. Если процесс снижения будет продолжаться, государства данного европейского региона будут заложниками так называемой «ловушки» среднего уровня развития, понимаемой как интервал между 40% и 70% уровня ВВП на душу населения референционных государств, в данном случае государств прежнего ЕС-15, или государств OECD (ОЭСР), не являющихся членами ЕС. В представленном исследовании предпринята также определённая попытка идентификации и анализа факторов отмечаемого снижения роста развития и малоутешительных сдвигов в реальной конвергенции государств Центрально-Восточной Европы.