CROSSING THE CHASM FROM DIVERGENCE TO CONVERGENCE IN AN ENLARGED EUROPEAN UNION

Dumitru Miron[1] and Ana-Maria Holobiuc[2]
[1) 2)] *The Bucharest University of Economic Studies, Romania*
E-mail: dumitru.miron@rei.ase.ro; E-mail: anamaria_holobiuc@yahoo.com

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Abstract
European Union is still considered a unique economic and political actor that have challenged the principles of economic integration in the last half of century. With the advancement of the integration process and the accession of the countries from Central and Eastern Europe, decision makers and academic community were interested in studying if the desiderate of economic convergence could be achieved in the enlarged European Union. Although initially, researcher focused their attention on nations, it seems that more and more studies are dedicated to convergence between regions. The main purpose of this paper is to study convergence between regions at NUTS 2 level by taking into consideration two determinants: GDP per capita and disposable income of households. In order to capture the economic landscape of European Union, we have used the neoclassical growth model concepts – σ- and β-convergence – and we have divided the regions depending on the geographic location in three main clusters: North-Western, Southern and Central and Eastern Europe. The results of our paper suggests that the regions from Central and Eastern Europe experienced a significant speed of catching up both in terms of GDP per capita and households' disposable income between 2000 and 2016. In contrast, the regions from North-Western and Southern Europe experienced modest economic performances. Overall, the results of our research suggest that although the objective of convergence has not been achieved so far, the Central and Eastern European regions have been made significant progresses in terms of catching up.

Keywords
Real convergence, European Union, NUTS 2 statistical regions, σ-convergence, β-convergence

JEL Classification
O11, O40, R11

Introduction

The European Union has represented a unique economic and political actor that was established in the second half of the last century as custom union and which sharply advanced until today to the stage economic and monetary union. Although at the beginning, the European Economic Community consisted only of six countries, it has sooner expanded until it encompassed the majority of the states from the European continent. The enlargement with the countries from Central and Eastern Europe has created both costs and benefits for the European Union, mainly in the field of convergence. In this respect, one of the most debated topics in the Academic forums and governmental institutions is referring to the capacity of the new entrants to catch up in terms of economic variables, in order to promote cohesion at Community's level. The main purpose of this paper is to examine convergence between the NUTS 2 statistical regions of the European Union between 2000 and 2016, using the models popularized by the neoclassical growth theory: β- and σ-convergence. In order to test the convergence hypotheses, we have taken into consideration two main determinants – GDP per capita and disposable income of households, by dividing the regions depending on the geographic location in three main groups: regions from North-Western, Southern and Central and Eastern Europe.

Literature Review

The enlargement process that started in the early '70s and continued in 2000s has created both challenges and opportunities for the European Union. On the one hand, some voices argued that the advancement of the integration process would create a stronger position of the European Union in the global economic and political landscape. On the other hand, there were also spectators of the process of regional integration that considered that the influence of the European Union would be threatened with the accession of the developing countries from Central and Eastern Europe. Nowadays, one cannot say if the advocates or the opponents were right. However, one of the main challenge for the European Union in the 21st century is to assure a sustainable level of convergence. Although in the early stages of the integration process, analysts were interested in studying the economic convergence between nations, they recently shifted their attention to the regional dimension.

Taking into consideration its complexity, convergence has been studied taking into consideration different facets. Artelaris et al. (2010), Neven and Gouyette (1995), Geppert and Stephan (2005) and Goecke and Hüther (2016) have studied income convergence. Geppert and Stephan (2005) found evidences in favour of convergence between EU (15), but rejected the absolute convergence hypotesis for regions. Geppert and Stephan concluded that divergences still persist as the capital regions have improved their position in respect to the other regions due to the agglomeration forces that attract high-value activities in these geographic locations.

From another point of view, Ritzberger Grünwald and Schreiner (2018) studied convergence in the New Member States from Central and Eastern Europe, concluding that the accession to the European Union had a defining role in improving the economic determinants and strengthening the political and social environments. However, despite the remarkable economic growth recorded during the transition period and after the accession, the goal of convergence has not been achieved so far. Despite the progresses experienced at national level, Artelaris et al. (2010) demonstrated that the gaps between regions in Central and Eastern Europe have expanded after the collapse of the communist regime in '90.

Other researchers focused their attention on macroeconomic indicators, such as labour productivity (Martino, 2015), compensation of employees (Naz et. al, 2017) or a mixture of economic determinants (Niebuhr and Stiller; 2004). Analysts such as Canova (2004) were interested to find evidences in favour of club convergence, while Del Campo et al. (2008)

studied the possibilities of clustering the NUTS 2 statistical regions, taking into consideration four socio-economic criteria (demography, economy, employment rate and education).

Methodology and Results

The main purpose of this paper is to study convergence at regional level, taking into consideration two macroeconomic determinants - the GDP per capita and the disposable income of households - in the NUTS 2 regions between 2000 and 2016. In this respect, we have tested the hypotheses of the neoclassical growth model, which were elaborated in the studies of Solow (1956). On the one hand, β-convergence implies that the poorer regions grow faster that the developed ones. On the other hand, σ-convergence illustrates if the catching-up process is accompanied by the reduction of dispersion between regions. We have divided the NUTS 2 regions depending on the geographic location in 3 three main clusters: North-Western, Southern and Central and Eastern Europe.

Figure no. 1 illustrates the average growth rate experienced by the regions from NUTS 2 level between 2000 and 2016. According to our calculations, the regions from Romania experienced the highest catching-up speed between 2000 and 2016: Bucuresti – Ilfov (10.65%), Nord-Vest (10.4%), Vest (10.36%), Sud – Muntenia (10%), Sud-Est (9.85%), Centru (9.56%), Sud-Vest Oltenia (9.27%) and Nord-Est (9.18%). Other regions from Central and Eastern Europe recorded significant GDP growth rates: Yugozapaden (9.9%), Bratislavský kraj (9%), Eesti (8.6%), Yuzhen tsentralen (8.36%), Západné Slovensko (8.26%), Latvija (8.25%) and Stredné Slovensko (8.14%). The regions from North Western Europe recorded average GDP growth rates between 2000 and 2016, ranging from 6.12% (Southern Ireland) to 0.1% (Outer London – South). As far as the Southern cluster is concerned, the results of β-convergence model suggest that the catching-up speed was between 4.45% (Malta) and 0.26 (Sterea Ellada). To sum up, we found evidences in favor of the β-convergence hypothesis as poorer regions from European Union experienced higher GDP growth rates than the developed ones.

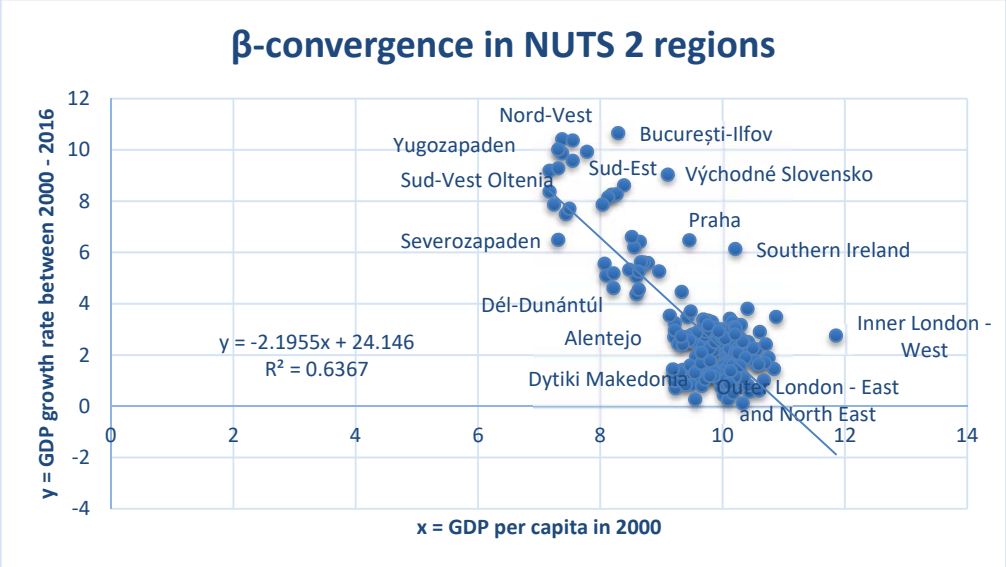

Fig. no. 1 β-convergence in regions at NUTS 2 based on GDP per capita (2000 – 2016)

Source: Authors' processing based on data provided by Eurostat

In order to test if the catching-up process of the poorer countries was accompanied by a decrease of discrepancies between regions, we have tested the σ-convergence hypothesis. In

this respect, figure no. 2 illustrates the evolution of the coefficient of variation between 2000 and 2016. The gaps in GDP per capita decreased within all three main clusters of regions – North Western, Southern and Central and Eastern Europe. The income gaps between North-Western Europe reduced with almost 50%, while in Southern Europe with 73%. In the Central and Eastern Europe, the divergences between regions decreased with 42%. Within this group, the regions included in the Euro Area recorded a higher speed of convergence than the regions which are part of countries that haven't adopted yet the single European currency. Consequently, the coefficient of variation decreased with 53% in case of the former and 44% for the latter. Overall, we have found evidences in favor of the σ-convergence hypothesis for all three cluster of regions and the two subgroups from Central and Eastern Europe. Consequently, the results of our study suggest that the gaps between and within the regions established at NUTS 2 level have been diminished since 2000.

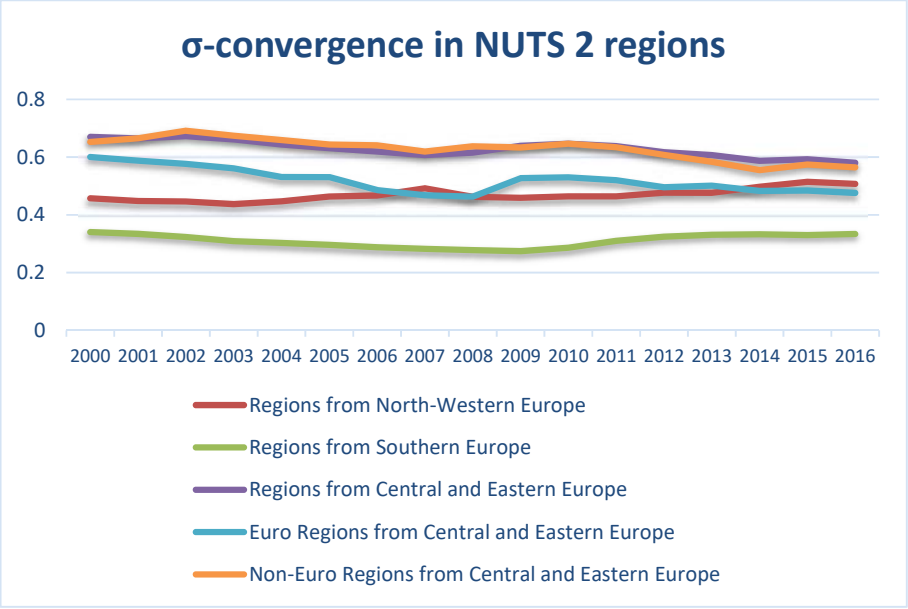

Fig. no. 2 σ-convergence in regions at NUTS 2 based on GDP per capita (2000 – 2016)
Source: Authors' processing based on data provided by Eurostat

Figure no. 3 illustrates the performances of the NUTS 2 regions in terms of catching-up of households' disposable income between 2000 and 2016. According to our calculations, the most impressive growth rates of the household's disposable income were recorded, as in the case of GDP per capita, by the regions from Central and Eastern Europe. The leader in terms of catching-up were the Romanian NUTS 2 regions, namely: Bucuresti-Ilfov (11.7%), Sud-Centru, Nord-Vest and Vest (9%), Sud-Muntenia (8.87%) and Sud-Est (8.4%). Moreover, in the regions Yugozapaden (Bulgaria) and Bratislavský kraj (Slovakia) the disposable income of households significantly increased during the analyzed period with 9.5% and respectively, with 8.3%. Income catching-up was also experiences by the regions from Estonia – Estonia (8.2%), Slovakia - Stredné Slovensko and Západné Slovensko (8%) and Letonia – Latvija (7.8%). Consequently, the catching-up speed was higher in the capital regions than in the peripheral ones. The regions from North-Western Europe recorded average income growth rates ranging between 0.2% (West Midlands- United Kingdom) and 3.6% (Southern Ireland). In contrast, the Southern regions recorded modest economic performances, and even negative growth: Sterea Ellada (-1.3%) and Dytiki Makedonia (-1.4%). Overall, we found evidences

in favor of the β-convergence hypothesis, as the poorer regions from Central and Eastern Europe recorded higher households' disposable income growth rates than developed ones from Western Europe. Moreover, the growth in GDP per capita in this cluster of regions was accompanied by the increase of disposable income of households.

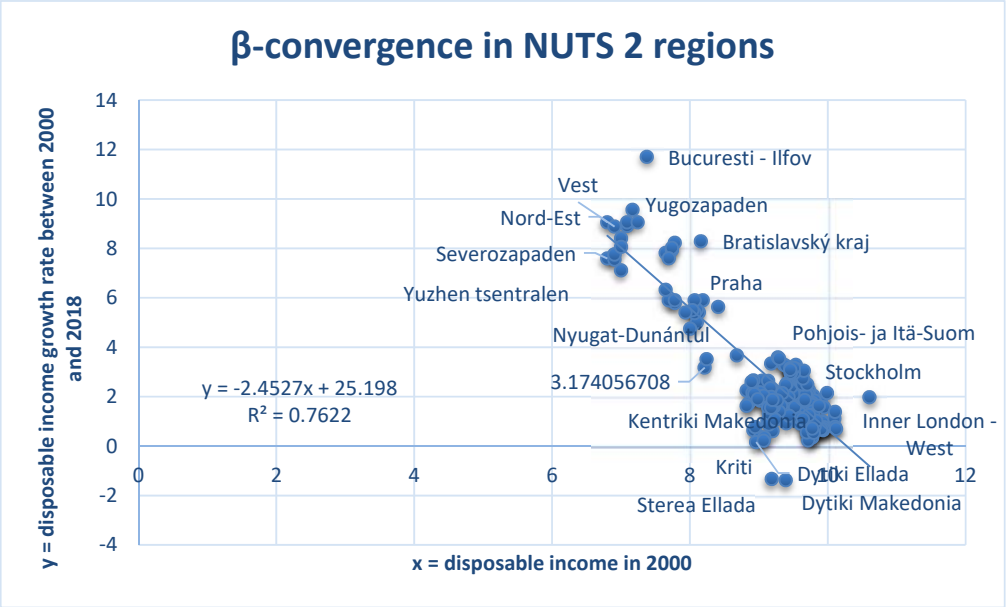

Fig. no. 3 β-convergence in regions at NUTS 2 based on households' disposable income (2000 – 2016)

Source: Authors' processing based on data provided by Eurostat

Figure no. 4 depicts the σ-convergence of the NUTS 2 regions between 2000 and 2016 for three cluster of regions: from North-Western, Southern and Central and Eastern Europe. We have also divided the Central and Eastern Europe in two sub-groups in order to study if the adoption of the single currency enhanced convergence. According to our calculations, the gaps in terms of households' disposable income diminished in North-Western regions with 15%. In the Southern regions, the discrepancies in households' disposable income slightly decreased during the analyzed period with 4%. In contrast, in Central and Eastern Europe, the income gaps with reduced with almost 35% between 2000 and 2016. The regions from the Central and Eastern Countries included in the Euro Area recorded even a faster speed of convergence, as the discrepancies decreased with more than 60%. In contrast, in the regions from the countries that have not still adopted the single currency the coefficient of variation decreased with 32%. To sum up, we found evidences in favor of the σ-convergence for all the regions established at NUTS 2 level. It seems that between 2000 - 2016, the most significant speed of catching up for was experienced by the regions from Euro Central and Eastern European countries.

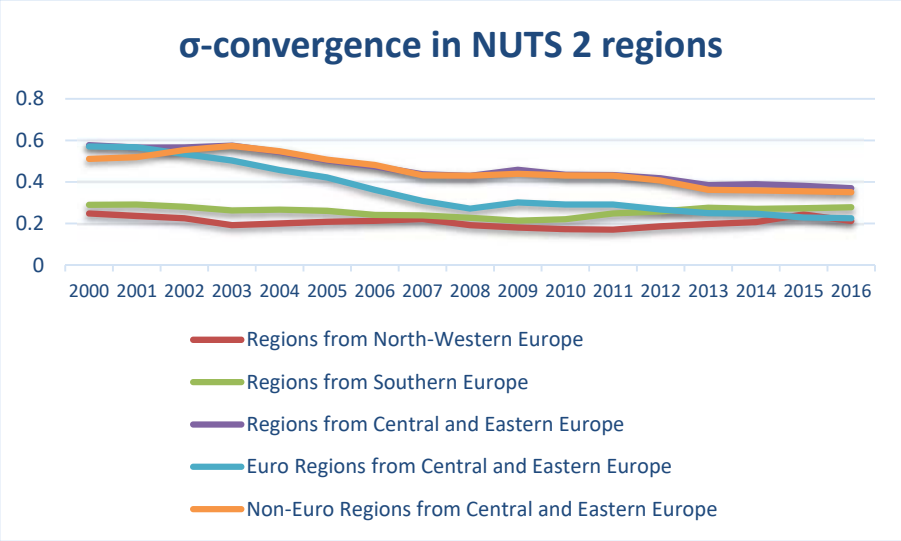

Fig. no. 4 σ-convergence in regions at NUTS 2 based on disposable income of households (2000 – 2016)

Source: Authors' processing based on data provided by Eurostat

Conclusions

In conclusion, the main purpose of this paper was to study real convergence in European Union, by taking into consideration the evolution of GDP per capita and disposable income of household between 2000 and 2016. In order to examine if the regions are catching up or in contrast, are diverging, we have used the neoclassical growth model concepts, σ-and β-convergence for a panel comprising the regions established at NUTS 2 level. We have divided the regions from European Union in three clusters, based on geographic location: North-Western, Southern and Central and Eastern Europe. The results of our study suggest that Central and Eastern European regions from NUTS 2 level are making important steps in terms of convergence. The highest catching-up speed both in terms of GDP per capita and disposable income was recorded in the regions from Romania. Overall, our study suggests that the convergence process will continue in the Central and Eastern Europe regions and that the growth in GDP per capita was accompanied by the improvement of the households' disposable income. However, the desiderate of convergence has not been achieved so far at Community's level and the trends between geographical regions are still divergent. While the Central and Eastern European cluster is making important steps in terms of convergence, the growth rates in North-Western and Southern Europe remain modest.

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