Real Convergence in the Euro Area.
Are the New Member States Catching Up or Falling Behind?

Ana-Maria Holobiuc
The Bucharest University of Economic Studies, Romania
anamaria_holobiuc@yahoo.com

Abstract

The establishment of the Economic and Monetary Union and the accession of the Central and Eastern European countries have created both opportunities and challenges for the regional group. Nowadays, one of the most pressing challenge for the European Union is to achieve long-term economic convergence between its Members. The main purpose of this paper is to examine real convergence in the Euro Area by focusing on the economic performances of the New Member States. In order to capture the evolutions that occurred in the Euro Area between 1995 and 2019, we have studied β- and σ-convergence models. The results of our study suggest that the New Member States included in the Eurozone have made considerable progress in terms of catching up, experiencing higher growth rates than the early adopters. While in the New Member States, the income gaps significantly decreased between 1995-2019, the early adopters experienced an opposite trend: divergence. Consequently, in spite of the positive path of the New Members, convergence remains a desirable goal for the Euro Area.

Key words: European Union, Euro Area, real convergence, β-convergence, σ-convergence
J.E.L. classification: O40, O52, O57

1. Introduction

After more than half a century since its establishment, European Union is still perceived as a unique actor in the global economic and political landscape. After the evolution of the regional integration process from custom union and single market to Economic and Monetary Union, another representative moment in the history of the European Union was the accession of the countries from Central and Eastern Europe and of the two Mediterranean islands at the beginning of the 21st century. Soon after joining the European group, seven of the New Member States also became part of the Euro family: Slovenia (2007), Cyprus and Malta (2008) Slovakia (2009), Estonia (2011), Latvia (2014) and Lithuania (2015). Taking into consideration the challenges that recently occurred both at regional and global level such as the economic and financial, sovereign debt and the migration crises, the New Member States that are not still part of the Euro Zone are analyzing the costs and benefits of joining the Euro Area. The main purpose of this paper is to study real convergence in the enlarged Eurozone by comparing two groups of economies: the early adopters of Euro (Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal, Spain) and the New Member States (Cyprus, Estonia, Latvia, Lithuania, Malta, Slovenia, Slovakia). In order to capture the economic landscape of the Euro Area, we have calculated the unconditional (absolute) convergence using β-convergence. Subsequently, we have studied if the income gaps between the New Euro Member States and the Old Member States diminished between 1995-2019, using σ-convergence.

2. Literature review

With the establishment of the Economic and Monetary Union at the end of the last century and the subsequent waves of expansion, theorists and policy makers have become increasingly interested in examining the costs and benefits of the Euro adoption. Although initially, analysts focused mainly on the Maastricht criteria, they have recently shifted their attention towards real convergence. In contrast with the Maastricht criteria, which are mainly considered as prerequisite for joining the Euro Zone, real convergence focuses on a wider set of determinants referring to the standard of living, quality of life, labor market, productivity, investment, trade and competitiveness. According to Šaroch et al. (2005), the Maastricht criteria overestimate the importance of monetary and financial indicators, to the detriment of the real determinants. From the perspective of Šaroch et al., meeting the nominal criteria represents the political will of the Member States to join this club, rather than reflecting the concrete economic measures taken to become part of the Euro Zone. Šaroch et al. considers that the Maastricht criteria could prove to be appropriate only for the developed European countries. In contrast, the efforts of the New Member States to meet the nominal criteria could lead to structural and monetary vulnerabilities in these economies, threatening the stability of the Community.

Analysts such as Diaz del Hoyo et al. (2007), Dyson (2007), auf dem Brinke (2015), Gros (2018), Franks et al. (2018) and Tokarski (2019) examined convergence in the European Union by focusing on the evolutions which took place in the Euro Area. Diaz del Hoyo et al. (2007) concluded that in spite of the high expectations which accompanied the introduction of the Euro currency, the benefits were not considerable in the field of real convergence, mainly for the New Member states from Central and Eastern Europe. In contrast, the analysts emphasized that the market-oriented reforms, which accompanied the pre-accession period, played a more important role in the catching up process of these economies than the adoption of the single currency. From another perspective, Franks (2018) considers that although income convergence is not a compulsory condition for the functioning of the Economic and Monetary Union, it remains a pillar of the European integration process, which can also strengthen the unity of the Euro economies. Moreover, Franks demonstrated that income convergence occurred in European Union (12) between 1960-1992, but it has lost its intensity with the creation of Economic and Monetary Union in 1992. At the same time, the economic and financial crisis had a significant impact on the early adopters of the Euro, eroding the gains accumulated over the past decades. Last, but not the least, Tokarski (2019) studied the nominal and real convergence in three founding Member States - Germany, France and Italy. According to the analyst, one of the main challenge for the European Union derives from the different economic, political and social backgrounds of its Members. The analyst pointed out that the divergences between the founding states are mainly determined by the different economic models and the degree of public intervention.

Lane (2006) analyzed the costs and benefits of the European single currency, concluding that that the introduction of the Euro represents "*a remarkable monetary experiment*" that hasn't achieved yet its objectives. Lane (2006) noted that the introduction of the single currency has increased the cyclical divergences between states. However, the adoption of the common currency has also brought a number of benefits, such as increasing the trade and capital flows, which generate significant prosperity gains for the group.

3. Research methodology

Real convergence is a complex process that can be analyzed taking into consideration a wide set economic determinants and methods. The hypothesis of economic convergence began to be studied using quantitative methods in the second half of the last century, analysts measuring the income gaps between developing and rich countries based on the convergence equation. Taking into consideration the scope of this paper, we have tried to study the absolute (unconditional) convergence, which assumes that the less developed economies experience higher productivity rates than the developed ones and consequently, higher growth rates. β-convergence aims a potentially negative relationship between the initial level of income of an economy and the subsequent growth rates, assuming that the poorer countries will grow faster than the developed

ones. According to the neoclassical growth model exponents, the growth rate is based on the higher profitability of the capital in the less developed countries. The equation of β-convergence under the absolute framework assumes that the growth rate in the analyzed period of time is explained by the initial level of income, so that a negative relationship between the two variables suggests the convergence process. β-convergence is accompanied by σ-convergence hypothesis, which presumes that income gaps between countries or regions decrease over time and finally disappear.

The equation used to test (absolute) β-convergence is presented below:

$$\frac{1}{T}\left[\frac{y_{it}}{y_{it-1}}\right] = a + \beta_1 ln(y_{io}) + \varepsilon \tag{1}$$

y_{it} and y_{i0} = income per capita in economy "i" in the years t and 0

σ-convergence has been calculated taking into consideration the coefficient of variation of the data sets. The indicator has been computed as follows:

$$\sigma_t^2 = \left(\frac{1}{n}\right)\sum_{i=1}^{N}[(y_{it}) - \mu_t]^2 \tag{2}$$

y_{it} = GDP per capita of economy "i"
μ_t = arithmetic average of y_{it}

$$\sigma = \sqrt{\sigma^2}, \quad CV = \frac{\sigma}{\mu} \tag{3}$$

4. Findings

The main objective of our paper was to study real convergence in the Euro Area by focusing on the evolutions which occurred in the New Member States. In this respect, Figure no. 1 illustrates the results of β-convergence, computed for 18 Member States of the Euro Area (taking into consideration the deviation from the European Union's average, we excluded Luxembourg from the quantitative study). Our analysis was based on the neoclassical growth model assumptions and the relevant indicators were determined taking into consideration the values of GDP per capita between 1995-2019.

Figure no. 1 compares the evolution of the annual growth rates between 1995-2019 with the initial levels of income of the Euro states. The negative slope of the trend line confirms that the countries with initial lower income experienced higher growth rates than the developed ones. Particularly, the Central and Eastern European states experienced a high catching up speed, ranging from 11% (Lithuania) to 4.4% (Slovenia). The majority of the initial adopters of the Euro experienced annual growth rates between 2.2% and 3.4%, with the exception of Ireland that had a higher speed of convergence reaching on average 7.8%. The catching up speed at Community's level was around 2.5% per year between 1995-2019, while in the Euro Area around 2.9%. As shown above, the New Member States from Euro Area showed the highest growth rates between 1995-2019. Overall, our analysis confirms the neoclassical growth model assumptions as the initial poorer Members experienced better economic performances than the developed Euro Area countries.

Figure no. 1. β-convergence in the European Union and Euro Area between 1995 and 2019
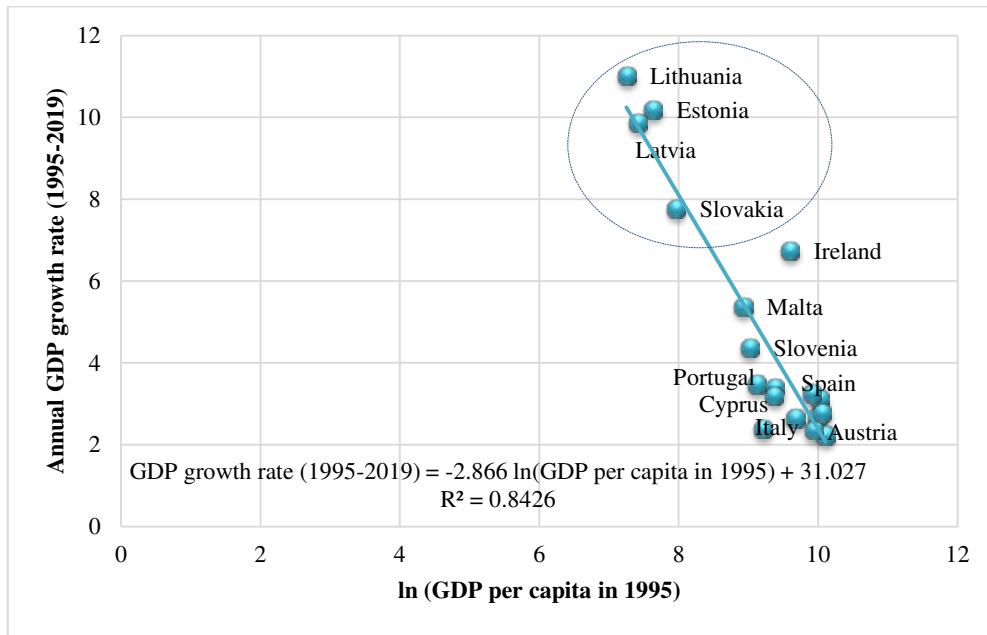
Source: Author's computation

In order to examine if the catching up process was accompanied by a reduction of the income gaps, we have tested the σ-convergence hypothesis. In this respect, we have studied the evolution of the coefficient of variation in two main groups - European Union and Euro Area – and two subgroups – Old Euro Member States (11) and New Euro Member States (7). Figure no. 2. illustrates that income disparities both within European Union and Euro Area decreased approximately at the same pace (27% between 1995 and 2019), although convergence remains higher at Community's level. However, the positive trend occurred within the Euro Area was determined by the improvement of the income distribution in the New Member States. In this subgroup of countries, β-convergence was accompanied by σ-convergence, as the income gaps between its seven Members decreased with 86% between 1995-2019. In contrast, in the Old Euro Member States occurred an opposite trend: the income divergences increased with 23%. Overall, our analysis suggests that income gaps between countries diminished in the last 25 years at aggregate level, with the New Member States seeing major improvements. However, a great challenge for the European Union is to ensure economic growth and cohesion for the early adopters of the single currency.

Figure no. 2. σ-convergence in the European Union and Euro Area between 1995 and 2019
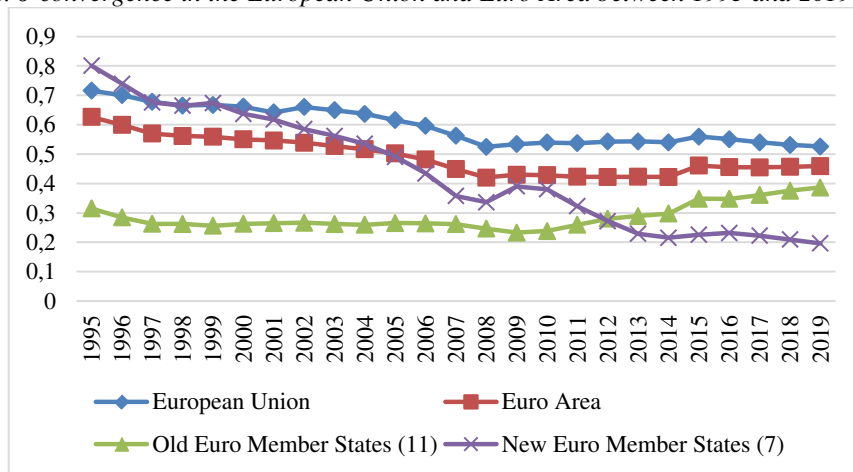
Source: Author's computation

5. Conclusions

The recent turmoil which occurred both at regional and global level emphasized the necessity to preserve the unity between the Members of the European Union. In the cotemporary economic and political landscape, maintaining convergence between the founders and the New Member States becomes increasingly challenging. The main purpose of this paper was to study real convergence in the European Union by focusing on the evolutions which occurred in the Euro Area between 1995-2019. In this respect, we have tested β- and σ-convergence, also conducting a comparative analysis between the New Member States and the early adopters of the Euro. Our study suggests that convergence occurred in the Euro Area in the last 25 years, the catching up speed being around 2.9% per year. The highest growth rates were recorded by the poorer New Member States from Central and Eastern Europe, as assumed by the β-convergence hypothesis. Moreover, we have found evidences in favor of σ-convergence, as the income gaps decreased also within European Union and Euro Area. However, σ-convergence was experienced only by the New Member States subgroup, which succeeded to reduce the internal income gaps with more than ¾. The early adopters of Euro exhibited the opposite process: increasing divergences between them. Overall, our study suggests that the New Member States are the main winners of the catching up process. In contrast, for the early adopters of the single currency, is becoming increasingly difficult to maintain economic growth and cohesion.

6. References

- auf dem Brinke, A., Henrik E. & Joachim F. V., 2015. What kind of convergence does the euro area need?, *Bertelsmann Stiftung and the Jacques Delors Institut* – Berlin [online] Available at: https://hertieschool-f4e6.kxcdn.com/fileadmin/user_upload/Convergence-Study-Final.pdf
- Diaz del Hoyo, J. L., Dorrucci, E., Heinz, F. F. & Muzikarova, S., 2017. Real Convergence in the Euro Area: A Long-Term Perspective, *ECB Occasional Paper* No. 203, ISBN: 978-92-899-2865-6. [online] Available at: https://www.ecb.europa.eu/pub/pdf/scpops/ecb.op203.en.pdf
- Dyson, K., 2007. Euro Area entry in east-central Europe: Paradoxical Europeanisation and clustered convergence. *West European Politics*. 30(3), pp. 417-442. 10.1080/01402380701276279.
- Eurostat, 2020. Database [online] Available at: https://ec.europa.eu/eurostat/data/database
- Franks, J. R., Barkbu, B. B., Blavy, R, Oman, W. & Schoelermann, H., 2018. Economic Convergence in the Euro Area: Coming Together or Drifting Apart? *IMF Working Paper* No. 18/10, ISBN: 9781484338490/1018-5941 [online] Available at: https://www.imf.org/en/Publications/WP/Issues/2018/01/23/Economic-Convergence-in-the-Euro-Area-Coming-Together-or-Drifting-Apart-45575
- Gros, D., 2018. Convergence in the European Union: Inside and Outside the Euro, *CEPS Policy Contribution*, Brussels: Centre for European Policy Studies [online] Available at: https://www.ceps.eu/ceps-publications/convergence-european-union-inside-and-outside-euro/
- Lane, P. R, 2006. The Real Effects of European Monetary Union. *Journal of Economic Perspective*, 20(4), pp. 47–66. 10.1257/jep.20.4.47
- Šaroch, S., Srholec, M. & Tomšík, V., 2005. Euro Adoption in the New EU Member Countries: Speed Limits on a One-Way Road. *Eastern European Economics*. 43(2), pp. 5-24. 10.1080/00128775.2005.11041102.
- Tokarski, P. (2019). Divergence and diversity in the Euro Area: the case of Germany, France and Italy. *SWP Research Paper* No. 6/2019. Berlin: German Institute for International and Security Affairs. 10.18449/2019RP06