Economic Convergence Between Central Eastern and Western European Union Member States

Jeleč Raguž, Mirjana; Bajt, Goran

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J. J. Strossmayer University of Osijek

ECONOMIC CONVERGENCE BETWEEN CENTRAL EASTERN AND WESTERN EUROPEAN UNION MEMBER STATES

Mirjana JELEČ RAGUŽ, Ph.D.
Josip Juraj Strossmayer University of Osijek,
Faculty of Tourism and Rural Development in Požega

E-mail: mjelecraguz@ftrr.hr

Goran BAJT
Agronom d.o.o.

E-mail: gbajt@vup.hr

Abstract

The main objective of this paper is to examine the real economic convergence among the Central and Eastern (EU11) and Western (EU14) European Union member states in the last twenty-six years (1995 - 2021). The main problem of this research is the economic disparities in the standard of living and wealth between EU11 and EU14 member states and the absence of a consensus among economists on whether those disparities are decreasing. The additional problem is that most papers study convergence based on PPP-based GDP per capita, which is not an accurate measure of households' material well-being. A more accurate measure of households' material well-being, in addition to PPP-based GDP per capita, is PPP-based actual individual consumption (AIC) per capita, which is the added value of this paper besides the analysis of the impact of the COVID-19 pandemic. For this study, data from secondary sources of the World Bank international database were used, whereby the data were converted into a per capita measure divided by the midyear population. The paper used descriptive statistics (standard deviation and coefficient of variation) and regression method (linear regression model) for analysis. The results prove the existence of a convergence process among EU11 and EU14 member states in the last twenty-six years, according to both indicators (GDP and AIC), even during the pandemic. The only divergence

period was during the global financial crisis (2009 and 2010). The problem is that the convergence process is prolonged and should be encouraged by the growth-enhancing country's economic policy, which is the main implication of this paper. The research limitation is a short period of research and analysis based on two economic indicators. Including a broader range of indicators, such as labor productivity and the employment rate, is a proposal for further scientific research.

Keywords: *economic convergence, economic indicators, European Union, Central Eastern EU member states (EU11), Western EU member states (EU14)*

JEL Classification: *D31, D63, F02, F15, F43, O11, O47*

1. INTRODUCTION

The European Union (EU) is a supranational association of twenty-seven European countries. Member countries are usually divided into EU14, Western and old EU member states (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain and Sweden) and EU13 as Central Eastern and new EU member states, countries that joined the EU in 2004 and after (Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia, and Slovenia). EU13, except Cyprus and Malta, are countries of the former planned economy, less developed, and with a lower standard of living than the Western EU14 member states. EU11 countries are the subject of the research in this paper. By joining the EU, the less developed Central and Eastern EU member states (EU11) expected an incentive for development and other benefits arising from the common market, standard EU policies, and EU funds.

The main problem of this research is economic disparities in the standard of living and wealth between EU11 and EU14 member states. By reviewing the literature, it is impossible to unequivocally conclude that the differences in income and wealth between the EU11 and EU14 member states have decreased over time. The research results vary across different countries, different indicators, different methods, and different periods. A literature review indicates that it is not possible to conclude generally that the wealth gap is decreasing.

Therefore, this paper aims to research whether the economic disparities in material well-being between EU11 and EU14 have decreased over the last 26

years and how the global pandemic has influenced those processes. The paper research whether the expectations of growth and development of the EU11 from EU membership have been realized. PPP-based GDP *per capita* (in constant international $) and actual individual consumption (AIC) *per capita* were fundamental indicators for calculating economic convergence. Since the existing scientific and professional literature mainly uses *per capita* GDP in the calculation of economic convergence, the inclusion of *per capita* AIC as a more accurate measure of the material well-being enjoyed by households (The World Bank, 2023c), besides the impact of the pandemic, an added value of this paper.

With the help of the literature review, the main hypothesis is defined: the development gap between EU11 and EU14 countries, measured by PPP-based GDP *per capita* and PPP-based AIC *per capita*, decreased over time (1995-2021). Therefore, this research focuses on the material well-being of European households and the gap trends between the two EU blocks after 1995. The additional hypothesis assumes that the reduction of the development gap between EU11 and EU14 is impaired during the COVID-19 pandemic.

For testing the hypotheses, data from secondary sources of the World Bank international database were used, whereby the data were converted into a *per capita* measure divided by the midyear population since the PPP-based AIC indicator does not exist in a *per capita* form. The paper used descriptive statistics (standard deviation and coefficient of variation) and regression methods (linear regression model).

The paper is structured into four parts. In addition to the introductory part, the second part presents some theoretical frameworks and a brief scientific and professional literature overview. The third part presents the methodological framework of the research and its results. The last part is the conclusion, in which the main implications of the paper are discussed.

2. LITERATURE REVIEW

2.1. Short Theoretical Framework of Economic Convergence

In economic theory, the convergence phenomenon refers to decreasing disparities in the achieved level of economic development between less developed and developed countries according to the primary economic data, such as GDP

per capita. Convergence usually occurs if less developed countries have faster income growth and other macroeconomic indicators than developed countries, whereby the income of the less developed countries converges with the income of developed countries.

In the literature, there are usually two concepts for determining the convergence rate among countries: ß (beta) convergence and σ (sigma) convergence. According to ß convergence, less developed countries achieve higher economic growth rates than developed countries and thus attain their level. This implies a negative relationship between the initial level of GDP *per capita* and its long-term growth rate. Simultaneously, ß convergence refers to absolute and relative ß convergence. Absolute convergence implies that all countries have different initial income levels but strive towards the same income level. Therefore, less-developed countries grow faster than rich countries towards the same income level. Relative ß convergence implies that countries strive for different income levels due to different levels of technology, savings rates, and population growth rates (different steady-states). Therefore, ß convergence occurs when less developed countries demonstrate faster growth than developed countries but at different income levels. According to σ convergence, differences in the achieved living standards, measured by GDP *per capita* or other similar indicators, decrease over time. Those concepts are complementary and closely related.

2.2. Brief Literature Review

Income convergence and the influence of membership in the European Union is a question that has attracted the attention of numerous economic theorists. On the one hand, some authors claim that the EU's new and less developed countries have faster growth than old and developed member states. As the main argument, they cite the diminishing returns to (adding) factors of production, in particular capital, i.e., the diminishing marginal product of capital (Vella, 2015; Matkowski, Prochniak & Rapacki, 2016; Glodowska & Pera, 2019). Followers of the neoclassical theory belong to that group of economists, whose founder is Solow (1956). According to them, if we assume that there are no technological changes, capital equipment increases if the capital growth is faster than the growth of the labor force. Since each worker is better equipped with capital, their productivity and *per capita* production increase. Thus the living standard also increases. The returns on newly added capital

increase rapidly at first but cannot generate long-run growth as the return rate on later investments will be gradually lower (diminishing returns to capital). Diminishing returns to capital means that as the economy has more and more capital, an additional unit of capital generates less and less output. Two computers per worker are unnecessary since the second will not increase worker productivity like the first (Jeleč Raguž, 2020: 255). Therefore, the traditional neoclassical model predicts per capita income convergence, regardless of initial income levels. Another variant of the neoclassical model assumes that technology changes and advances (Sato, 1966). Technological change implies that more products and services can be produced with the same labor and capital inputs. Technological changes lead to further growth in productivity, production per worker, wages, and living standards. Throughout history, neoclassicists argued that the convergence process does not occur due to technological progress since growth based on increasing the capital equipment of labor necessarily leads to convergence (diminishing returns).

On the other hand, authors such as Romer (1986) and Lucas (1988) dispute the existence of diminishing returns and emphasize the increasing returns of production factors, mainly due to the experience of rich countries in developing capital-intensive technology. Thus, they advocate the existence of divergent rather than convergent processes. The representatives of the endogenous growth theory belong to them, who deny the assumptions of the neoclassical theory and advocate constant or growing returns on capital. In addition to exogenously provided technological progress (neoclassical growth theory), they advocate endogenous sources of technological progress such as human capital (accumulated through formal education, learning through work, etc.), research and development (R&D) that includes externalities and public goods, etc. Endogenous growth theories imply the possibility of continuous growth since the growth rate is determined endogenously through knowledge, education, research & development (R&D), innovation, technological progress, etc. Accordingly, they deny the diminishing returns on capital and the necessary economic convergence represented by the traditional neoclassical growth model.

In the empirical literature, there are also disagreements about the existence of the convergence process between developed and less developed EU countries. On the one hand, some empirical studies prove the convergence. For example, Vella (2015) proved that poor countries (EU13) grow faster than rich countries (EU15) in terms of *per capita* income and convergence in the period

2000–2012. Matkowski et al. (2016) confirmed the existence of a clear-cut income-level convergence of the EU11 countries toward the EU15 throughout the 1993-2015 period. Borić (2017) proved the existence of convergence among NUTS 2 EU regions in the 1995-2015 period using the coefficient of variation (σ convergence). Marelli et al. (2019) confirmed a convergence process in EU28 in the 1995–2016 period and a divergence process in the old EU15 countries, which indicated higher growth rates in poorer countries. According to Mascherini et al. (2021), GDP *per capita* shows an upward divergence from 2009 to 2019 after an initial decrease in disparities in both measures in 2009, while convergence was present according to ß convergence, at a rate of 1.8% per year in the 2008-2016 period (Mascherini et al., 2021: 17). Glodowska and Pera (2019) confirmed that Central and Eastern European (CEE) countries developed following the ß convergence regarding the EU15 countries. Rapacki and Prochniak (2019) displayed in their study a clear-cut income-level convergence of CEE countries toward the EU15 in the 1995-2015 period.

In addition to studies in which convergence is proven, there are also studies in which the convergence process is not proven. Alongside Mascherini et al. (2021), who proved the divergence process among EU countries after 2009, other studies also question the convergence process. Chocholatá (2018) proved ß convergence among NUTS 2 EU regions from 2004 to 2014. However, σ convergence was not proved for the whole analyzed period – the divergence process occurred in the pre-crisis period (2004–2008) and during the last three analyzed years, i.e., 2012–2014. Radosavljević et al. (2020) observed a clear and dynamic convergence of the EU benchmarks in 2000–2008. However, the economic crisis interrupted that process in 2009, discontinuing the convergence between Southeastern Europe (SEE) and the EU after 2010. Bićanić and Deskar-Škrbić (2019) claimed that data indicates the convergence process in the EU countries before the last two expansions of the EU (before the EU11 countries joined the EU). However, there is insufficient data on convergence following the last two expansions.

Considering that scientific and professional literature does not provide clear conclusions about the convergence/divergence processes, the results of the studies mainly depend on the methods used, sample countries, and the analyzed periods. The following hypothesis will be tested: the development gap between EU11 and EU14 countries, measured by PPP-based GDP *per capita* and PPP-based AIC *per capita*, statistically significantly decreased over time

(1995-2021). The impact of the coronavirus pandemic on the processes mentioned above will also be examined. That is also the added value of this paper, i.e., adding a new indicator (AIC) to the analysis and examining the impact of the pandemic. So, the question is if the development gap between EU11 and EU14, regardless of certain ups and downs, has, on average, decreased or not thorough the time (1995-2021).

3. ECONOMIC CONVERGENCE AMONG THE EU11 AND EU14 COUNTRIES

3.1. Research Methodology

The main objective of this paper is to examine the real economic convergence among the Central and Eastern (EU11) and Western (EU14) European Union member states in the last twenty-six years (1995 - 2021). The problem is the inequality of people's standard of living which mirrors the EU's economic inequality, and the question is whether those inequalities are decreasing over time. The existence of convergence/divergence processes between EU11 and EU14 will be examined by ß and σ convergence.

B convergence among the mentioned EU blocs would exist if countries with a lower initial GDP per capita achieved higher economic growth rates over time and reached the level of more developed countries. It is calculated using the regression method, which analyses the relationship between the growth of GDP *per capita* in the observed period and its initial value. B convergence would exist if this relationship were negative and statistically significant. Countries with a higher initial GDP *per capita* should have lower growth rates and vice versa. In this paper, as the added value, the PPP-based actual individual consumption (AIC) *per capita* was added as a better measure of material well-being.

Σ convergence between the mentioned blocs would exist if the differences in GDP *per capita* absolute values between the mentioned blocs decreased over time. Otherwise, if the difference grows over time, the process of divergence is in effect. Σ convergence can be measured by standard deviation and coefficient of variation. If the standard deviation decreases over time, the income differences among the countries decrease, which favors convergence. Suppose the coefficient of variation (standard deviation divided by the arithmetic mean, multiplied by 100) decreases over time. In that case, income differences among

the countries are decreasing, expressed as a percentage, while divergence means the opposite.

Regarding the literature review, the main hypothesis of the paper was formulated: the development gap between EU11 and EU14 countries, measured by PPP-based GDP *per capita* and PPP-based AIC *per capita*, decreased over time (1995-2021). Therefore, this research focuses on the gap between material well-being and the standard of living in the EU11 and EU14 and its trends in the 1995-2021 period. The research should indicate if it is possible to conclude that, generally, those differences decreased in the last 26 years. The additional hypothesis assumes that the reduction of the development gap between EU11 and EU14 is impaired during the COVID-19 pandemic.

This study used data from secondary sources of the World Bank international database. The literature review found that GDP *per capita* expressed in purchasing power parity (PPP) was mainly used as an indicator for calculating the convergence/divergence process. GDP *per capita* at PPP eliminates price differences among countries and indicates the real purchasing power of households. However, the main disadvantage of that indicator is the inclusion of specific components and transactions that are arguably less relevant when valuing a household's current material well-being. For example, the GDP measure assigns high values to income-rich economies, such as investment hubs or resource-based countries, where household consumption accounts for a relatively small share of total GDP (The World Bank, 2023c). This is typical because profits account for a much larger national income than wages and salaries.

That is the main reason why, in addition to GDP *per capita*, PPP-based actual individual consumption (AIC) *per capita* is used in this paper's analysis of the convergence. GDP *per capita* is an indicator that is not an accurate measure of households' material well-being. Generally, AIC more accurately measures the population's standard of living, and GDP measures the economy's strength. PPP-based actual individual consumption (AIC) *per capita* addresses these shortcomings and provides a more accurate measure of the material well-being enjoyed by households in economies worldwide. AIC is the sum of the individual consumption expenditures of households, nonprofit institutions serving households (NPISHs), and the government. It accounts for goods and services consumed by households, irrespective of whether they were purchased and paid for by households directly, by the government, or by nonprofit organizations

(The World Bank, 2023c). *Per capita,* measures use a mid-year population. As there is no data for AIC *per capita* at PPP, data for PPP-based AIC (Households and NPISHs Final consumption expenditure, PPP (constant 2017 international $)) was taken from the World Bank database and then divided by the midyear population (according to the World Bank data) to obtain a *per capita* measure. So, for each country and each year, the value of the PPP-based AIC (in the constant international dollar) is divided by the number of inhabitants in the middle of that year. That is the added value of this paper, besides the analysis of the impact of the pandemic on the convergence/divergence processes. AIC *per capita* is usually highly correlated with GDP *per capita* because AIC is, in practice, the most significant expenditure component of GDP.

The paper will analyze and test the existence of convergence using the mentioned two indicators, PPP-based GDP *per capita* and PPP-based AIC *per capita*, whereby the analysis according to the second indicator represents the added value of this paper. Descriptive statistics (standard deviation, coefficient of variation), and regression method (linear regression model) were used for analysis in this paper. For the calculation of the mentioned statistical measures, Microsoft Excel was used.

3.2. Research Results

3.2.1. B convergence

The existence of ß convergence implies that less developed countries have faster economic growth rates than developed countries. Tables 1 and 2 present the GDP *per capita* at PPP in 1995 and 2021 and the average annual growth rate.

Table 1: Initial GDP *per capita* at PPP (constant 2017 international $) and average annual growth rate (1995-2021) in EU countries

Country	GDP *per capita* 1995	GDP *per capita* 2021	Average annual growth rate 1995-2021
Lithuania	10,640.4	39,305.6	10.36
Latvia	9,599.15	32,081.5	9.01
Ireland	32,615	102,496	8.24
Estonia	12,730.7	38,717.7	7.85
Poland	12,398.5	34,915.5	6.99
Romania	12,186.6	30,776.9	5.87
Slovak R.	13,219	31,866	5.43
Malta	19,766.2	44,658.7	4.84
Bulgaria	11,365.4	24,398.1	4.41
Croatia	15,073.6	31,635.8	4.23
Hungary	16,615.2	33,593.2	3.93
Slovenia	21,480.3	40,036.5	3.32
Czechia	22,758.6	40,741	3.04
Sweden	34,233.7	53,613.4	2.18
Finland	31,499.8	48,753.4	2.11
Cyprus	28,636.6	41,701.7	1.75
Luxembourg	80,379.1	115,683	1.69
Netherlands	39,498.1	56,617.4	1.67
Belgium	37,784.2	51,739.5	1.42
Germany	39,366.1	53,179.7	1.35
Denmark	43,015.7	57,962.7	1.34
Austria	40,425.4	54,121.2	1.3
Portugal	25,523.7	33,674.5	1.23
Spain	29,026	37,913.1	1.18
France	35,176.6	44,993.1	1.07
Greece	24,920.7	29,548	0.71
Italy	38,947.2	41,929.4	0.29

Source: Author's calculation based on The World Bank data (2022, 2023a).

Table 2: Initial average PPP-based GDP *per capita* (constant 2017 international $) and average annual growth rate (1995-2021) in EU11 and EU14

Countries blocks	Average GDP *per capita* at PPP 1995	Average annual growth rate 1995-2021
EU11	14,369.76	5.86
EU14	38,029.38	1.84

Source: Author's calculation based on the World Bank data (2022, 2023a).

Tables 1 and 2 indicate that new member states had generally higher annual average growth rates in the observed period than EU14.

B convergence will be calculated using the linear regression method based on the natural logarithm of the initial GDP ***per capita*** at PPP (constant international $) in the EU27 countries and their average annual growth rates. B convergence can be calculated based on panel data (annual GDP growth rates vs. GDP levels from the preceding year) and cross-sectional data (average annual GDP growth rates vs. GDP levels from the beginning of the period). In that model, the independent variable X is the log value of the initial GDP per capita at PPP. The dependent Y is the average real GDP growth rate (in the observed period).

According to Vojinović and Oplotnik (2008: 30-31), the formula for β regression based on cross-sectional data is:

$$\frac{1}{T} log \frac{y_{i,t}}{y_{i,0}} = a + b * log_{i,0} + \varepsilon_i \quad (1)$$

Where $\log y_{i,t}$ is a natural logarithm of GDP per capita at PPP in country i in year t, whereby 0 denotes the first year of the observed period, and t is the last one, i.e., T denotes the length of the observed period. *a* and *b* denote coefficients estimated from the linear regression model, and ε is an error term. Convergence occurs when $\alpha_1 < 0$, i.e. negative, indicating that higher initial income negatively affects the growth rate.

Table 3 presents the results of the regression analysis in the observed period. B convergence exists if *b* coefficient has a negative value and is statistically significant ($p<0.05$).

Table 3: Regression results for β convergence in the 1995-2021 period (according to the PPP-based GDP *per capita*)

	a	b	R^2	Significance F (P value)	Convergence
EU11	81.23	-7.87	0.79	<0.001	YES, significant
EU14	5.08	-0.30	0.00	0.883	YES, not significant
EU27	42.90	-3.90	0.55	<0.001	YES, significant

Source: Author's calculation based on the World Bank data (2022, 2023a).

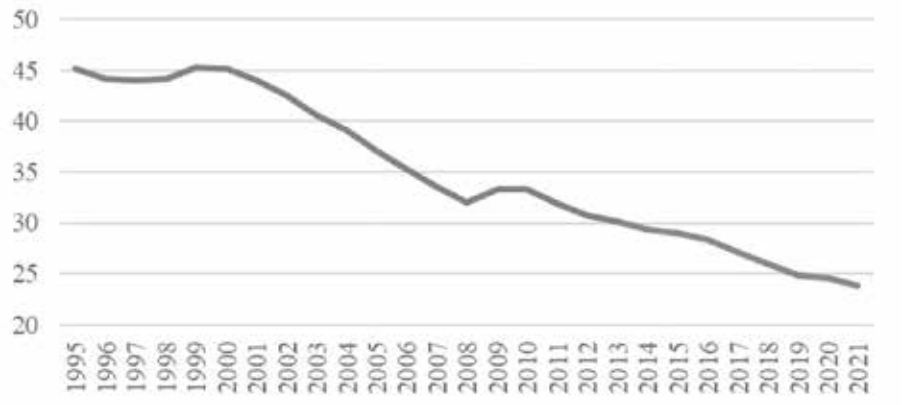
The *b* coefficient is the most significant in the regression analysis. If it has a negative value, it indicates a convergence process among the experimental group of countries during the analyzed period. Besides the negative *b* coefficient, statistical significance is also required ($p<0,05$). A positive *b* coefficient implies a divergence process among the observed countries. The coefficient *a* is a constant element – a value of GDP growth when the initial GDP is 0. It does not have a specific meaning and is only a regression value. R-Square (R^2) indicates the model's reliability. The highest model reliability is in the example of convergence among the EU11 countries (79%). The results in Table 3 may indicate the current process of gap reduction according to the PPP-based GDP *per capita* (in constant international $). However, the hypothesis should be tested further by σ convergence. The reason is that β convergence indicates only convergence/divergence within the observed group of countries, and this paper aims to examine the convergence/divergence processes between two groups of countries, EU11 and EU14, for which σ convergence will be used. Results of β convergence indicate a gap reduction between EU27, but σ convergence indicates the intensity of that process.

3.2.2. Σ convergence

Σ convergence exists if, over time, there is a tendency to decrease an income gap between the observed group of countries, EU11 and EU14. The existence of σ convergence is calculated using the standard deviation (SD) and coefficient of variation (CV) based on PPP-based GDP *per capita* (in constant international $) and PPP-based AIC *per capita* in the 1995–2021 period. The comparison should reveal the dynamics of the convergence or divergence process.

Further analysis will examine the existence of convergence/divergence between the analysed EU country groups (EU11 and EU14). In Figure 1, the CV between the research groups is calculated based on the average GDP *per capita* at PPP (in constant international $).

Figure 1: Coefficient of variation of PPP-based GDP *per capita* (constant 2017 international $) between EU11 and EU14 (1995-2021)



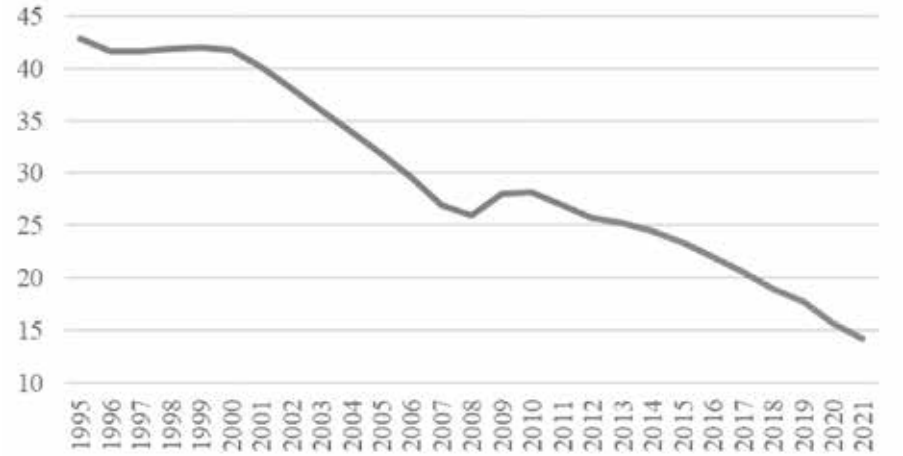
Source: Author's calculation based on the World Bank data (2023a).

Figure 1 shows that the convergence process based on *per capita* GDP between EU11 and EU14 can be noticed. The convergence started in the early 2000s and is almost continuous throughout the period, except for 2009 and 2010, i.e., during the global financial crisis. In 1995, the standard deviation was 45.15 percentage points of the arithmetic mean (average) of GDP *per capita* at PPP (CV=45.15), while in 2021, it was 23.83 percentage points. The deviations of GDP *per capita* from the average decreased by 21.32 percentage points over the 26 years. It is essential to point out that the convergence process was not disrupted by the COVID-19 pandemic in 2020 and afterward, according to the GDP *per capita*. According to the GDP *per capita*, the hypothesis is proven, i.e., the development gap between EU11 and EU14 countries, measured by PPP-based GDP *per capita*, has statistically significantly decreased over time (1995-2021).

However, although the convergence was proven, and there are some reasons for optimism, it has to be highlighted that the convergence process is very slow. The gap between the standard of living is still considerable. This does not give hope to the current EU11 residents since only their future generations will benefit from the EU membership.

Figure 2 presents the coefficient of variation (CV) based on PPP-based AIC *per capita*. AIC *per capita* presents better the well-being of households because it refers to their purchasing power, not the entire economy's strength.

Figure 2: Coefficient of variation of PPP-based actual individual consumption (AIC) *per capita* (constant 2017 international $) between EU11 and EU14



Source: Author's calculation based on the World Bank data (2023b).

According to the coefficient of variation based on AIC *per capita* at PPP, the convergence process is also evident. It started in the early 2000s and has continued till recently, without any negative effects of the COVID-19 pandemic. This means that the pandemic did not negatively affect the convergence process. In 1995, the standard deviation value was 42.87 percentage points of the arithmetic mean (average) of AIC *per capita* at PPP (CV=42.87), while in 2021, it was 14.23 percentage points. The deviations of AIC *per capita* from the average decreased by 28.64 percentage points over the 26 years. The results are very similar to the result of the CV based on GDP *per capita* at PPP. Only the divergence process in 2009 and 2010 is more pronounced with AIC *per capita* than regarding the GDP *per capita* at PPP. Another significant result of the research indicates that the disparities according to the AIC *per capita* are less pronounced than regarding the GDP *per capita* at PPP since CV in 2021. based on AIC *per capita* was 14.2, and the GDP per capita was 23.83 percentage points, from which it follows that the gap according to the actual individual consumption (AIC) per capita is less pronounced than the GDP *per capita*. Also, the convergence process was more significant regarding the AIC *per capita* than GDP *per capita*. The research results have proved the central hypothesis, i.e., the development gap between EU11 and EU14 countries, measured by PPP-based GDP *per capita* and PPP-based AIC *per capita*, decreased over time

(1995-2021). However, the second (additional) hypothesis has not been proved since the COVID-19 pandemic did not affect the convergence process.

4. CONCLUSION

The topic of convergence is a prevalent topic among economists. However, according to both theoretical and empirical studies, it is evident that there is no consensus among economists on the existence of the convergence process between EU11 and EU14 member states. The literature review showed periods of convergence among different EU country groups and periods of divergence. It has been nineteen years since the significant enlargement of the EU. This paper examined what is going on with the economic disparities between EU11 and EU14 member states in the last 26 years. The EU11 member states expected positive effects on economic growth and development of their economies due to the accession to the single market, EU standard policies, EU funds, and similar positive effects.

The research subject was the convergence or divergence process among EU11 (mainly transitional), and EU14 member states from 1995-2021. The process of convergence or divergence was examined using the fundamental macroeconomic indicators such as PPP-based GDP *per capita* (PPP), GDP growth rate, and, as a better measure of the well-being of European households, PPP-based AIC *per capita*. Methods used in the paper are ß and σ convergence, i.e., regression model, standard deviation, and coefficient of variation.

The research results have proved the central hypothesis and indicate the presence of a convergence process between the EU11 and EU14 EU member states in the 1995-2021 period. The process of convergence was disrupted only during the period of the financial crisis in 2009. Moreover, in 2010, but not by the COVID-19 pandemic, which is an important implication of this research, proof that this paper's additional hypothesis has not been proved. Also, the gap between the living standards of EU11 and EU14 citizens is smaller according to the AIC *per capita* than according to the GDP *per capita*, which is also an essential feature of the research since AIC *per capita* is a more accurate measure of the material well-being enjoyed by the EU households.

Particularly important to emphasize is that the convergence process is very slow and needs further encouragement by economic policy. The deviations of

GDP *per capita* from the average decreased by 21.32%, and the deviation of AIC per capita from the average decreased by 28.64% over the 26 years. This does not give hope to the current EU11 residents since only their future generations will benefit from the EU membership. Some solutions are growth-enhancing structural reforms and raising productivity and employment, i.e., labor force participation rates. To raise the productivity level, it is necessary to encourage FDI (direct foreign investment) and domestic productive investments. Effective economic policies should also be emphasized because of the inclusion of an effective reduction of the tax burden and financial and political stability. Additionally, having an efficient and independent judiciary and combat crime and corruption is crucial.

The fundamental implication of this paper is to increase the awareness of the economic convergence between EU11 and EU14, which is in line with the expectations of the EU11 countries and advocates of neoclassical economic theory. However, that process is extremely slow, indicating a need for more significant growth-enhancing structural reforms by economic policyholders in EU11 countries. It turns out that the effect of market liberalization and free movement of goods, services, people, and capital, EU's regional and cohesion policy, EU funds, and so on, are not enough.

The research limitation is a short period of research (26 years) and analysis based on two economic indicators. Including a broader range of indicators, such as labor productivity and the employment rate, is a proposal for further scientific research.

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