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ECONOMIC GROWTH IN THE BALKAN AREA: AN ANALYSIS OF ECONOMIC β-CONVERGENCE

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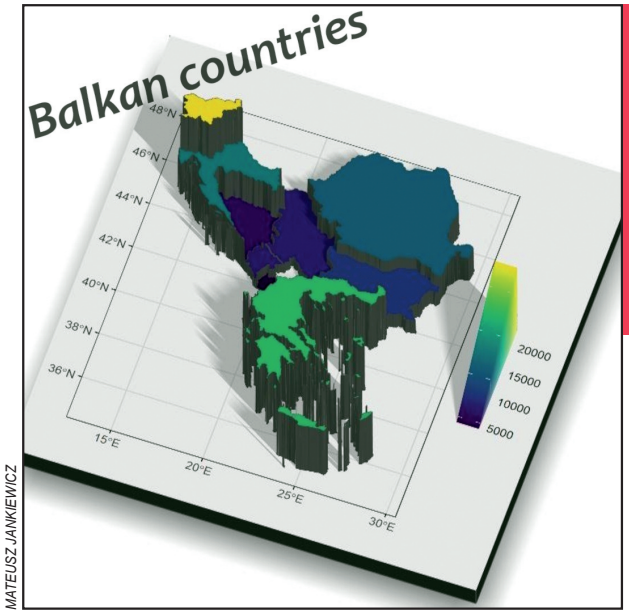

3D spatial differentiation of GDP per capita in Balkan countries.

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Economic growth in the Balkan area: An analysis of economic β-convergence

ABSTRACT: The Balkan countries undergoing the transition must advance their economies to be more competitive. The aim of this paper is to analyse economic growth with a primary focus on the analysis of economic convergence in the Balkan region in the period of 1997–2020. The research analyses the following Balkan economies: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Greece, Montenegro, North Macedonia, Romania, Serbia, and Slovenia. This study applies Gross Domestic Product (GDP) as a measure of economic growth and is based on the neoclassical economic growth model: the Solow's convergence concept. The results show that the Balkan countries experienced economic convergence with a speed of 1.82% in the cross-sectional model and 7.87% in the panel data model. It means that the initially less developed economies noted higher economic growth than those richer.

KEYWORDS: Balkan countries, economic growth, β-convergence, geography

Gospodarska rast na Balkanu: analiza gospodarske β-konvergence

POVZETEK: Balkanske države v tranziciji morajo za večjo konkurenčnost izboljšati svoja gospodarstva. Namen tega prispevka je analizirati gospodarsko rast s poudarkom na analizi ekonomske konvergence na Balkanu med letoma 1997 in 2020. Raziskava analizira gospodarstva naslednjih držav: Albanije, Bosne in Hercegovine, Bolgarije, Hrvaške, Grčije, Črne Gore, Severne Makedonije, Romunije, Srbije in Slovenije. Kot merilo gospodarske rasti je uporabljen bruto domači proizvod (BDP), analiza pa temelji na neoklasičnem modelu gospodarske rasti – tj. Solowovem konceptu konvergence. Rezultati kažejo, da je hitrost ekonomske konvergence balkanskih držav znašala 1,82 % v presečnem modelu in 7,87 % v modelu s panelnimi podatki. To pomeni, da so na začetku manj razvite države doživljale višjo gospodarsko rast kot bogatejše.

KLJUČNE BESEDE: balkanske države, gospodarska rast, β-konvergenca, geografija

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1 Introduction

The studies on economic growth have been widely elaborated in the literature. The idea of real convergence has gained momentum in economic theory since the early 1950s. It is an economic phenomenon that concerns the process of equalization of the level of economic indicators (often economic growth measured by Gross Domestic Product (GDP) per capita) of various economies to a common average. The economic convergence hypothesis is based on the existence of certain mechanisms through which the process of equalizing wealth levels between different economies exists (Rey and Le Gallo 2009; Sachs and Warner 1995; Yin, Zestos and Michelis 2003). With the idea of economic convergence comes the so-called catch-up effect, meaning that less developed economies achieve a higher (faster) economic growth than richer countries (Amable 1993; Bourdin 2015; de la Fuente 1995).

The convergence process should be at the heart of the political debate as it generates numerous positive aspects with the main one, which is decreasing the gap between the rich and the poor (it creates more middle-income class). One may also ask a different question: what would happen without convergence? What would be the problems that countries lagging behind should address? The biggest issue here would be growing disparities which would induce brain drain and brain waste (better opportunities in the rich economies so the poor ones would 'lose' human capital, very often talented and well-educated), which could cause many structural problems in the long term. There are also many other factors that the poorest economies should work on, like i.e., improving the quality of institutions, education, investing in infrastructural projects, etc. Unfortunately, economic convergence cannot be taken for granted as there are many cases of the existence of the opposite scenario, which is called economic divergence (Broadberry 2013; Palier, Rovny and Rovny 2018; Petrakos, Kallioras and Anagnostou 2011; Pritchett 1997; Upchurch 2012). This results in the opposite effect of the catch-up one: the relative level of development in the richest units is higher than in the poorest ones. It implies growing disparities in the economic wealth of countries.

Previous studies on economic development and growth in the Balkan, which according to the historians, consists of eleven countries: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Greece, Kosovo, Montenegro, North Macedonia, Romania, Serbia, and Slovenia (Crampton 2002) and Western Balkan (Bosnia and Herzegovina, Croatia, Kosovo, Montenegro, North Macedonia, Serbia) regions imply that some particular problems need to be addressed. One of them is demography which is strongly affected by emigration (Baldwin-Edwards 2004; King and Oruc 2019; Malaj and de Rubertis 2017; Petreski et al. 2017). Balkan countries have experienced the so-called brain drain: many people leave these countries for better economic conditions (Bartlett et al. 2016). There are also cases of underemployment and brain waste, meaning that people also accept working in a different sector, often requiring fewer skills than they used to work back home (Uvalic 2008; 2011). In addition, there is also an issue of depopulation and regional peripheralization in the Balkans (Borsi and Metiu 2015; Lukić et al. 2012; Lulle 2019; Mickovic et al. 2020).

Hence, economic security is a key challenge that Balkan economies, especially Western Balkans, must address to advance their economies and be more competitive (Zeneli 2014). Problems with poverty, unemployment, and inequalities need to be resolved. These economies should focus on accelerating socioeconomic reforms, modernization, and institutional transformation as a remedy. Moreover, deeper regional cooperation and integration with the EU market are called to allow them to catch up with technologies and the level of marked-oriented institutions. This all would positively result in their economic development. In addition, the Balkan economies should work on: (1) their remittances to be more oriented to investment instead of personal consumption; (2) building more business zones and improving their business environment, tackling corruption, and increasing government effectiveness, especially the rule of law so they can attract the Foreign Direct Investment (FDI); (3) fostering the process of automation and digitalization since domestic enterprises are usually far from the competitive market in comparison to foreign firms (Jushi et al. 2021; Nedić et al. 2020; Ziberi and Alili 2021).

Since not all Balkan countries are a member of the European Union (EU), it is interesting to see if EU membership might also be a factor that fosters economic development. An exciting research approach was offered by Velkovska (2021), who used the Kuznets curve approach and found that being an EU member correlates to lower income inequality, so it implies better redistribution efforts rather than in the case of being outside the EU. Moreover, in all Balkan countries, the results showed that the Kuznets curve is flatter at starting stages of economic growth, with income inequality decreasing at later stages of economic development.

This paper, therefore, focuses on an important research gap on economic growth, and in particular the concept of convergence, in the Balkan area. Hence, it is vital to formulate the following research question: Did the Balkan countries converge over time in terms of economic growth? The presented literature analysed the potential problems that the Balkan countries need to work on in order to develop their economies; from now on, the question is whether these countries converge, meaning if they are getting more and more similar in terms of economic growth.

2 Data and methods

Data used in this research concern the GDP per capita levels and come from the World Bank database (https://data.worldbank.org/). The World Bank database contains information about various macroeconomic indicators across all countries. Among these indicators are such that characterise economic, social and environmental conditions of territorial units. The analysis is conducted for 10 Balkan countries in the years 1997–2020 (excluding Kosovo due to a lack of data before 2008). The period 1997–2020 is the longest available period at the moment.

The analysis in this research is based on the convergence concept created by Solow (1956) on the grounds of the neoclassical economic growth model. In particular, β-convergence cross-sectional and panel data models are estimated. This allows for checking the presence of the catching-up effect of wealthier economies on poorer ones (Barro and Sala-i-Martin 1992).

The cross-sectional Ordinary Least Squares (OLS) β-convergence model is estimated and verified in the first step of the investigation. The general form of the absolute convergence model is as follows (Arbia 2006):

$$\ln\left(\frac{GDP_{T,i}}{GDP_{0,i}}\right) = \alpha + \beta \ln\left(GDP_{0,i}\right) + \varepsilon_i, \tag{1}$$

where $GDP_{0,i}$ and $GDP_{T,i}$ denote the Gross Domestic Product per capita levels in the first and the last year of analysis, respectively, α and β are the structural parameters of the model, but εi denotes the random component. The parameter β signalizes whether the convergence process occurs. Negative and significantly different from 0 estimate of β points out that the absolute convergence is said to be favored by the data. This denotes that poorer countries grow faster than rich ones and also that they all converge to the same *steady-state* level of GDP per capita (Arbia 2006).

Based on the model (1), the speed of convergence and *half-life* time as fundamental convergence characteristics can be appointed. Speed of convergence (b) evidences the level of inequalities between units reduced in one year. *Half-life* time statistic (t_{hl}) shows what time is needed to mitigate current inequalities by half. Statistics b and t_{hl} are calculated as follows (Arbia 2006; Ben-David 1996):

$$b = -\frac{\ln(1+\beta)}{T}, \tag{2}$$

$$t_{hl} = \frac{\ln 2}{b}, \tag{3}$$

where β – as above, T – difference between the last and the first year of investigation.

The β-convergence model estimated based on the cross-sectional data has some disadvantages that cause an increase in interests of convergence models based on the panel data. Firstly, this is the approach which does not show full dynamic of the cross-country distribution of GDP per capita because of considering GDP levels only in two extreme years of the investigation. In this approach, countries seek to the same *steady-state* level. Panel data models allow including individual characteristics of territorial units (individual effects) that cause differentiation of the *steady-state* level (similarly as the conditional convergence).

Moreover, in the cross-sectional OLS regression, it is not possible to include the variable describing the technological progress. In panel data models, the differentiation of constant allows taking into account the differences in technology (Chambers and Dhongde 2016). The technological progress can also include the time variable which cannot be implemented to the cross-sectional models.

Therefore, the next part of the research contains the economic convergence analysis based on the β-convergence panel data model. In panel data models, time between the first and the last years of the research is not omitted such as in the cross-sectional OLS model. The dynamics in the whole period is taken into account. The advantage of this approach is the availability of including the technological differences between countries in the form of individual effects. Moreover, panel data models help correct the bias generated by omitted variables and heterogeneity in the classical cross-sectional regression (Arbia, Basile and Piras 2005). The general form of the model is as follows:

$$\ln\left(\frac{GDP_{i,t}}{GDP_{i,t-1}}\right) = \alpha + \beta \ln\left(GDP_{i,t-1}\right) + \varepsilon_{i,t}, \tag{4}$$

where $GDP_{i,t}$ and $GDP_{i,t-1}$ are the GDP *per capita* level in time t–1 and t respectively, α, β, $\varepsilon_{i,t}$ – as above. Model (4) can be equivalently written as:

$$\ln\left(GDP_{i,t}\right) = \alpha + (1 + \beta) \ln\left(GDP_{i,t-1}\right) + \varepsilon_{i,t}, \tag{5}$$

In this case, the convergence occurs if the estimate of the 1+β is from interval 0,1 and is statistically significant. For the panel data model, the speed of convergence is evaluated using the following formula:

$$b = -\ln(1 + \beta). \tag{6}$$

Whereas *half-life* statistic is evaluated the same as in the cross-sectional approach – using formula (3). The speed of convergence evaluated based on the panel β-convergence model is higher than this evaluated considering cross-sectional data. This is the result of presence of short-term fluctuations between extreme years of the research. Moreover, including the individual effects induces an upward bias in the estimate of convergence coefficient. This is the result of the differentiation of *steady-state* levels to which countries seek with the same speed. The convergence to individual equilibrium is faster than to common *steady-state* level. Model (5) is the first-order autoregressive model, so the stationarity of the response and explanatory processes is required. In order to check the presence of the unit root in the processes, the test proposed by Levin, Lin, and Chu (2002) is used. This is one of the tests dedicated to panel data. The alternative hypothesis of this test is that the unit root is absent in the processes.

The quality of each model is verified with adequate diagnostic tests. In the cross-sectional model, homoscedasticity and normality of model residuals are required. Therefore, this research applies tests proposed by White (1980) to verify the homoscedasticity of residuals, and Doornik and Hansen (2008) to check the consistency of the residuals' distribution with the normal distribution. In panel data models, the most desirable characteristic is the lack of the residuals' serial autocorrelation. This is verified with the test proposed by Arellano and Bond (1991).

Finally, the switching β-convergence panel data model is estimated to check whether the convergence in the groups of EU and non-EU countries occurs. The model is as follows:

$$\ln\left(GDP_{i,t}\right) = \alpha^1 + \alpha^2 + (1 + \beta^1) \ln\left(GDP^1_{i,t-1}\right) + (1 + \beta^2) \ln\left(GDP^2_{i,t-1}\right) + \varepsilon_{i,t}, \tag{7}$$

where $GDP^1_{i,t-1}$ and $GDP^2_{i,t-1}$ are values of GDP per capita in the first and the second regime, respectively. The first regime relates to EU countries and in the second regime non-EU countries belong.

The absolute β-convergence model considered in this research has a few limitations that are necessary to point out. Firstly, the differences in the population growth rates and savings rates between countries are not included. In the light of the Solow's (1956) neoclassical growth model, these processes significantly influence the economic convergence. Moreover, the assumption about the common steady-state level can be wrong because of the differences in the individual characteristics of countries. However, Balkan countries are quite homogenous, so in this research the common steady-state level is admissible. Other limitation, unrelated with the concept of the convergence, is time range of the study. The newest available data of GDP levels in the World Bank Database came from 2020. Therefore, the impact of COVID-19 pandemic on the convergence process is not able to discuss.

3 Results

Figure 1 shows the tendencies of the GDP per capita level in selected countries in the period of 1997–2020. A continuous upward trend in the GDP per capita level characterizes most countries from 1997 to 2020. The exception is Greece, where an increasing tendency was observed only until 2007. Next, the financial crisis dated in the years 2007–2009 caused a considerable decrease in GDP per capita to the level from the first year of analysis. In the years 2012–2019, values of the considered process in Greece were at a similar level. Short-term negative changes in the economic growth associated with the financial crisis could be observed in Croatia, Montenegro, Romania, and Slovenia. In 2020 GDP per capital level in some of the countries (Croatia, Greece, Montenegro, North Macedonia, Romania and Slovenia) slightly decreased compared to its level from the previous year. It could be the first consequence of the COVID-19 pandemic, which started in 2019.

Table 1 shows values of GDP per capita in the extreme years of the study and its growth rate in the period of 1997–2020. In 1997 the highest level of considered process was noted in Greece (16,972.72 USD). However, due to instability in its tendency, the growth rate of GDP in the selected period was only 1.88%. Other countries showed a much higher growth rate concerning economic growth. The consequence of this situation is that Slovenia's GDP per capita at the end of the considered period was higher than Greece's. The lowest level of GDP per capita in both years was observed in Albania. Simultaneously, one of the highest growth rates was noted there. It is worth noticing that two countries (Greece and Slovenia) were initially characterized by a much higher GDP per capita than the others.

Figure 2 presents the spatial differentiation of GDP per capita in four chosen years of an investigation. The years 1997 and 2020 are chosen as two extreme years of the research. In turn, 2004 is the year

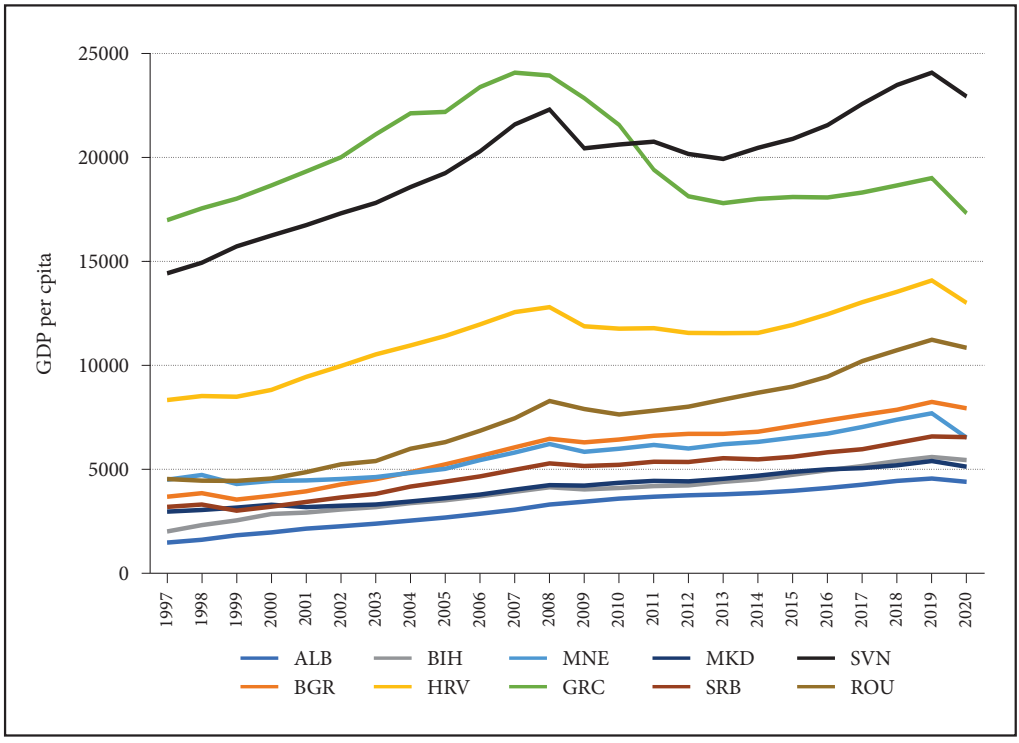


Figure 1: Tendencies of the GDP per capita level in Balkan countries in the years 1997–2020.
Note: ALB – Albania, BGR – Bulgaria, BIH – Bosnia and Herzegovina, HRV – Croatia, MNE – Montenegro, GRC – Greece, MKD – North Macedonia, SRB – Serbia, SVN – Slovenia, ROU – Romania.

of Slovenia's accession to the EU structures, and 2012 is the first year of the economic slowdown after the recovery from the financial crisis between 2008 and 2009. Due to a small number of territorial units, countries are divided into two groups. The first group contains states with GDP per capita values below the median, and the second – the others. The spatial differentiations of the considered process are almost the same in every presented year. Only Bulgaria and Montenegro changed groups from 2004 onwards compared with the first year of research. Bulgaria moved to the group of countries with higher GDP per capita, differently than Montenegro. Moreover, most of countries in the EU (Croatia, Greece, Romania, and Slovenia) characterise higher than median level of GDP per capita in the whole analysed period.

Figure 3 shows the dependence between GDP per capita in the first year of investigation and its growth rate in the period of 1997–2020. The negatively sloped regression line shows that lower economic growth rates characterized countries with a higher level of GDP per capita in 1997. Based on the relationship shown in Figure 3, we can suppose that the economic convergence between selected countries occurs.

The supposition about economic convergence can also be formulated based on the maps in Figure 4. The map on the left presents the GDP per capita level in Balkan countries in 1997, whereas the map on the right shows its growth rate in the period of 1997–2020. Countries with a higher level of GDP per capita in 1997 had, on average, a lower growth rate.

The first step of the investigation contains the analysis of β-convergence based on the cross-sectional data. Models were estimated in two periods: (1) 1997–2019 and (2) 1997-2020. The choice of periods is associated with the start of the COVID-19 pandemic and its impact on the convergence process.

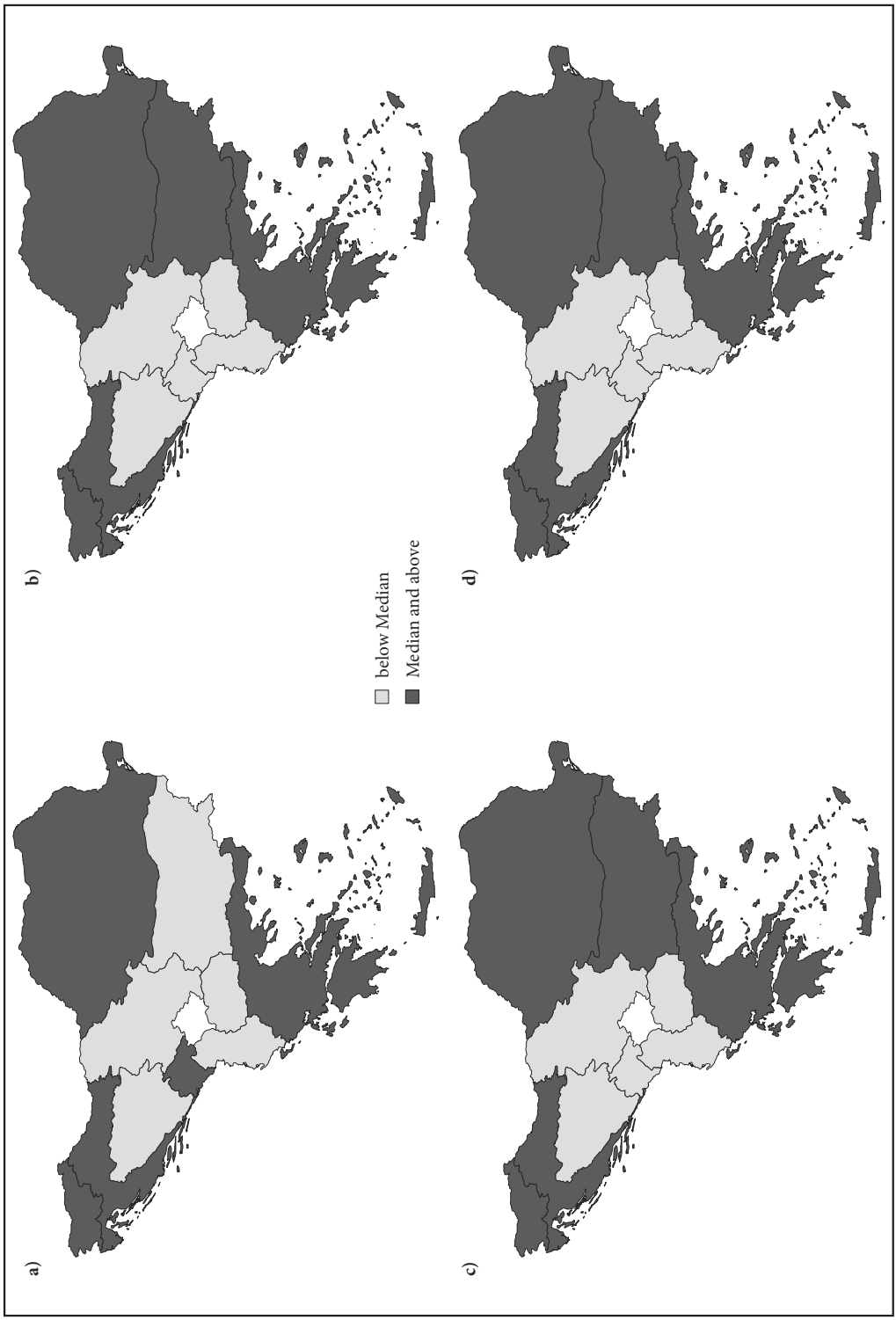
Table 2 presents the results of the estimation and verification of cross-sectional β-convergence models in periods 1997–2019 and 1997–2020. In both cases, parameter β is negative and statistically significant. It is caused by the GDP per capita level in selected Balkan countries to converge to the same steady-state level. Values of statistic b show that in one year, inequalities in the considered process are reduced by 1.68% and 1.82% based on the data from the period 1997–2019 and 1997–2020, respectively. It implies that half of the current inequalities will be reduced in almost 41 and 38 years, respectively. Both models have desirable characteristics that refer to homoscedasticity and normality of residual distribution. Changes in the GDP per capita in 2020 caused a slight acceleration of the convergence process based on the cross-sectional data approach.

Table 3 contains the results of the estimation and verification of panel data β -convergence models in the periods 1997–2019 and 1997–2020. Analysis was preceded by testing the unit root presence in the GDP per capita panel data using the Levin-Lin-Chu (LLC) test. For both periods, values of test statistics allowed us to reject the zero hypothesis about unit roots in the formation of GDP per capita level. Therefore, the results of the model's estimation can be considered reliable. The parameter estimate $(1 + \beta)$ is less than one in both models, and the parameter is statistically significant. It causes economic convergence between Balkan countries, based on data from 1997–2020. The panel data approach shows that inequalities in the

Table 1: GDP per capita levels in extreme years of the analysis and its growth rate.

Country	GDP per capita (constant 2015 USD)		
	1997	2020	Growth rate
Albania (ALB)	1464.30	4390.06	199.81%
Bulgaria (BGR)	3674.93	7920.91	115.54%
Bosnia and Herzegovina (BIH)	2001.18	5433.15	171.50%
Croatia (HRV)	8322.96	12986.24	56.03%
Montenegro (MNE)	4486.78	6512.62	45.15%
Greece (GRC)	16972.72	17292.63	1.88%
North Macedonia (MKD)	2954.52	5115.92	73.16%
Serbia (SRB)	3180.51	6540.72	105.65%
Slovenia (SVN)	14415.78	22915.15	58.96%
Romania (ROU)	4526.06	10828.45	139.25%

Figure 2: The spatial differentiation of GDP per capita in Balkan countries in the years 1997 (a), 2004 (b), 2012 (c), and 2020 (d). ► p. 98


a)
b)
c)
d)
below Median
Median and above

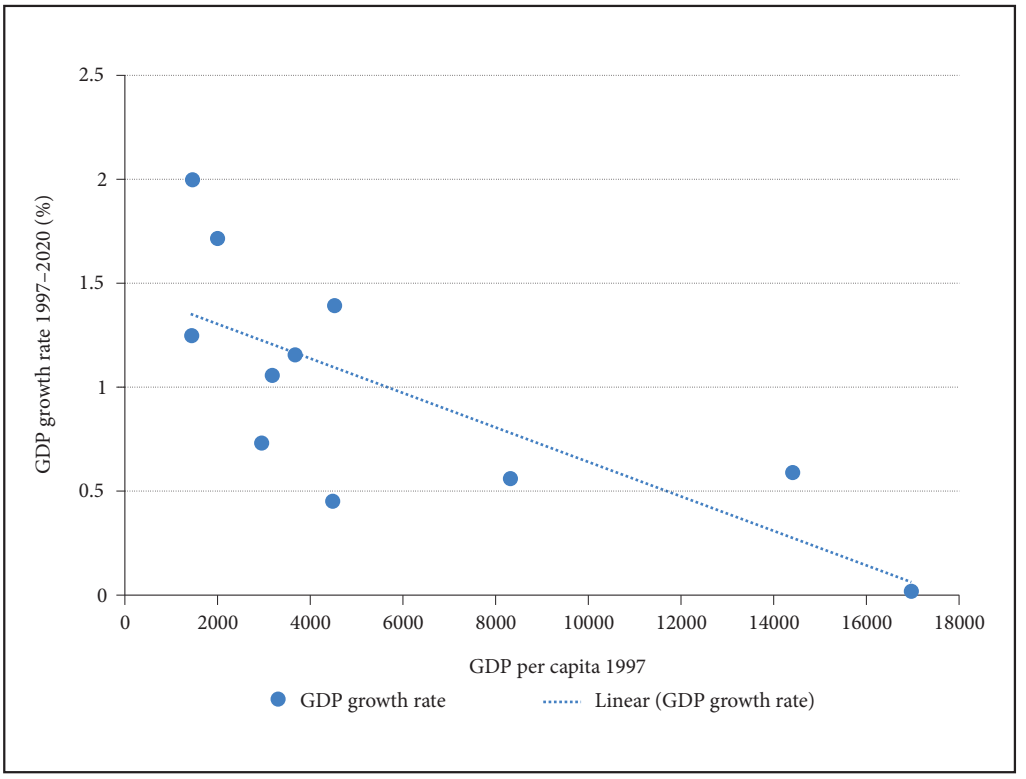


Figure 3: The dependence between GDP per capita in 1997 and its growth rate in the period of 1997–2020.

Table 2: The results of estimation and verification of cross-sectional β-convergence models.

Parameter	1997-2019			1997-2020		
	Estimate	t-Statistics	p-value	Estimate	t-Statistics	p-value
a	3.39	5.99	≤ 0.05***	3.52	5.36	≤ 0.05***
β	–0.32	–4.79	≤ 0.05***	–0.34	–4.41	≤ 0.05***
			Diagnostics			
R^2	0.74			0.71		
White test	0.91 (0.64)			1.43 (0.49)		
D-H test	0.32 (0.85)			0.32 (0.85)		
b	0.02			0.02		
t_{hl}	41.32			38.06		

Notes: (1) D-H denotes Doornik and Hansen normality test; (2) Numbers in brackets refer to p-values of tests statistics;*** – parameter statistically significant at the 1%.

GDP per capita level can be reduced faster than in the cross-sectional approach. The time needed to reduce current inequalities by half decreased to about 7 and 9 years in the period of 1997–2019 and 1997–2020, respectively. Speed-up of the convergence process refers to increasing inequalities between units which are reduced in one year to 9.43% and 7.87%, respectively. The results of the Arellano-Bond test point out the lack of second-order autocorrelation in the models' residuals.

Compared to the models based on the cross-sectional data, changes in the GDP per capita level in 2020 slightly cause inhibition of the convergence process. Conclusions based on the panel data approach are more reliable due to consideration of changes in the whole period, not only in two extreme years of the analysis. The inhibition of economic convergence between Balkan countries is connected with the first

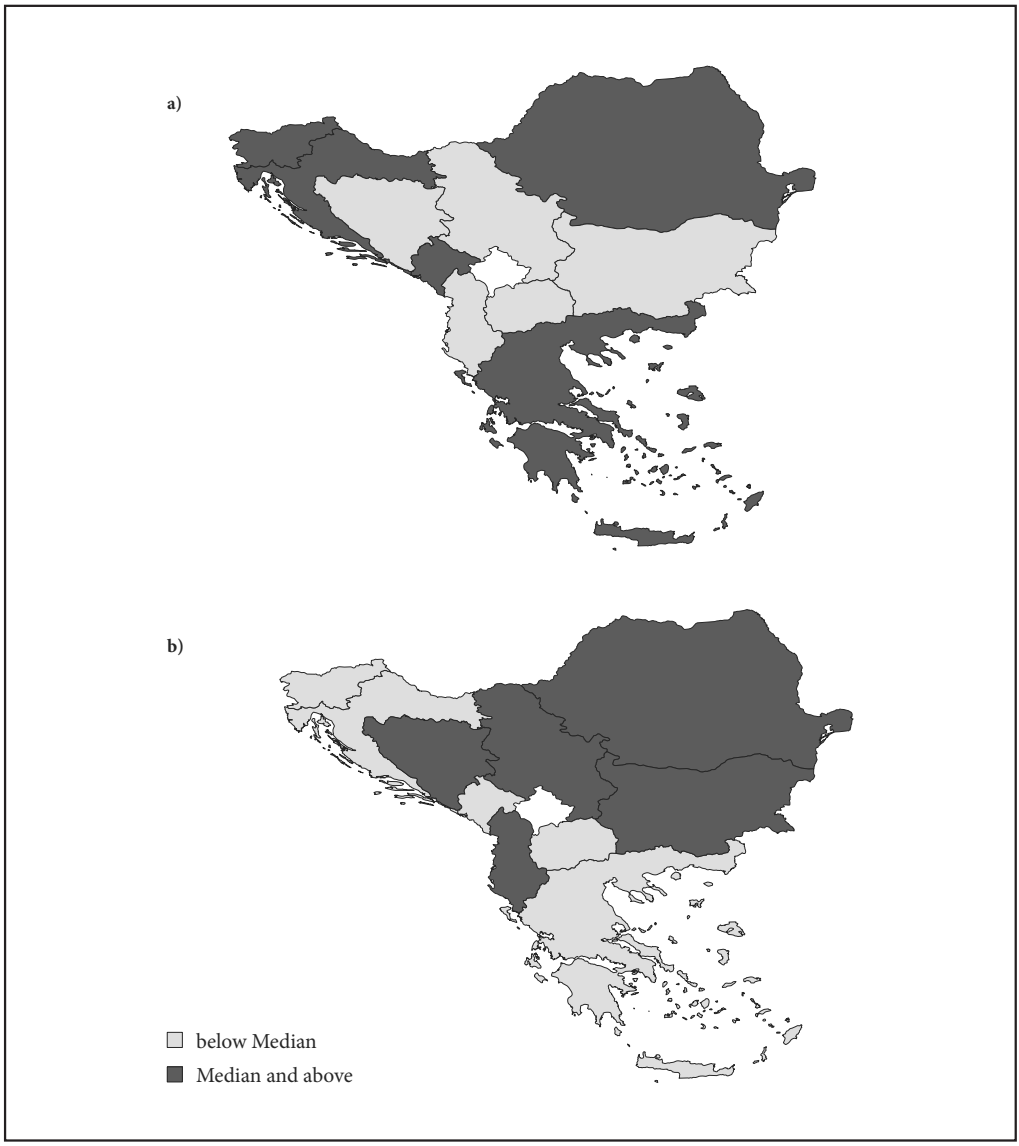


Figure 4: The spatial differentiations of GDP per capita level in 1997 (a) and its growth rate in the period of 1997–2020 (b).

negative results of the COVID-19 pandemic, which are observable for some of the considered countries, especially since this breakdown appeared after a continuous upward trend visible for the previous few years.

Table 4 presents the results of estimation and verification of switching panel data β-convergence models. They consider two separate regimes of countries. The first regime contains Balkan countries that belong to the European Union. In the second group non-EU countries are included. In the period of 1997–2019 the estimates of parameters $1 + \beta^1$ and $1 + \beta^2$ have similar values 0.98 and 0.95, respectively, and they are statistically significant. Values of parameters below one testify that the convergence process occurs in both groups of countries. It is worth noting that the process speeds up considering data in the period of 1997–2020. The time needed to reduce existing inequalities by half falls from nearly 32 to nearly 28 years and from 14 to 11 years for EU and non-EU countries, respectively. It is the opposite situation than for the whole area, where the convergence slowed down adding one year to the investigation. The relatively large difference between speed of convergence in the first and the second period in case of non-EU Balkan countries is caused by the most negative effects of the COVID-19 pandemic in the countries with the highest level of GDP per capita, e.g. Montenegro. This causes that units can become more similar in the shorter time.

Moreover, the half-life time statistics is higher in the analysis with regimes. This can result from share the whole area into more homogenous groups. High similarity of units and relatively stable differences in time between them cause that the time needed to become more and more similar is longer.

Table 3: The results of estimation and verification of panel data β -convergence models.

Parameter	1997-2019			1997-2020		
	Estimate	z-Statistics	p-value	Estimate	z-Statistics	p-value
a	0.81	0.79	0.43	0.68	0.78	0.44
$1 + \beta$	0.91	7.62	≤ 0.05***	0.92	9.19	≤ 0.05***
			Diagnostics			
A-B(1) test		−2.10 (0.04)			−2.21 (0.03)	
A-B(2) test		−0.40 (0.69)			−0.70 (0.48)	
b		0.09			0.08	
t_{hl}		7.35			8.81	

Note: A-B(n) refers to Arellano and Bond n-order autocorrelation test; *** – parameter statistically significant at the 1%.

Table 4: The results of estimation and verification of switching panel data β-convergence models.

Parameter	1997–2019			1997–2020		
	Estimate	z-Statistics	p-value	Estimate	z-Statistics	p-value
a^1	0.23	4.15	≤ 0.05***	0.25	4.22	≤ 0.05***
a^2	0.43	5.04	≤ 0.05***	0.53	5.88	≤ 0.05***
$1 + \beta^1$	0.98	166.50	≤ 0.05***	0.98	152.60	≤ 0.05***
$1 + \beta^2$	0.95	93.43	≤ 0.05***	0.94	86.49	≤ 0.05***
			Diagnostics			
b^1		0.02			0.02	
t^1_{hl}		31.75			27.80	
b^2		0.05			0.06	
t^2_{hl}		14.40			11.20	

Note: *** – parameter statistically significant at the 1%. Number 1 is related to the EU countries, number 2 is related to the non-EU countries.

4 Discussion

Fortunately, in this study, the process of economic convergence in the Balkans in 1997–2019 and 1997–2020 occurred with the speed of: (i) for cross-sectional data 1.68% and 1.82%, respectively, (ii) for panel data 9.43% in 1997-2019 and 7.87% in 1997–2020. Hence, there is no agreement on what should be a reference point for the speed of convergence. Some indicate an average rate of convergence of around 2% per year in a cross-sectional approach (Barro et al. 1991; Barro and Sala-i-Martin 1992); others emphasize that there is no 'natural' rate of convergence and deny the existence of the previously mentioned 2% rate of convergence (Abreu, De Groot and Florax 2005; Arbia, Le Gallo and Piras 2008; Mur, López and Angulo 2010). However, numerous studies confirm that the convergence rate for the panel data should be higher – accounting for 5.6% (Barro and Sala-i-Martin 1995), around 6% (Islam 1995), or even 10% (Caselli, Esquivel and Lefort 1996).

Próchniak and Witkowski (2013) analysed 25 European transition countries, including the Balkans, from 1960 to 2009. The results indicated the β-convergence in the group of all considered countries conditioned by economic growth factors occurred with the speed of 1.5–2.0% percent annually. In a different study, the rate of convergence for the Balkans was 2.6% in 1989–1993 and 2.2% in 1994–2005 (El Ouardighi and Somun-Kapetanovic 2007). Another study proved that from 2004 to 2013, the Western Balkans and the EU converged (GDP per capita) at 2.17% (Siljak and Nagy 2018). This study confirms that the Balkan countries are converging in economic terms, which is a positive sign. However, the speed of convergence is different depending on the data applied in the research. For cross-sectional data, the process results are below expectations of 2% as Barro and others (1991) indicated. However, the panel data model shows optimistic outcomes of around 8–9% convergence speed per annum.

Hence, it is difficult to decide which approach should be chosen for the analysis (therefore this paper applied both). One can argue that a panel estimate of convergence is preferable. The idea of convergence is defined as a dynamic concept, which may be difficult to capture with cross-sectional analysis (Das 2002).

Policymakers should therefore focus on addressing the issue of economic growth in the Balkan countries since their convergence level – although is sufficient, it is definitely not extraordinary. Thus, these countries should focus on foster the factors of economic growth, which include: quality institutions (property rights, dependable legal system, honest government, competitive market, political stability), creating new incentives for growth (better conditions for doing business, more efficient spending on R&D), and factors of production including: human and physical capital, organization, technological knowledge (Cowen and Tabarrok 2021; Helpman 2009). Nevertheless, it is important to underline that non-EU Balkan countries converge faster than the EU Balkan ones. This is an optimistic prognostic, especially taking into consideration their EU aspiration and candidate or potential candidate status.

5 Conclusion

The paper researched an essential economic growth phenomenon, the β-convergence model, in the Balkans in the periods of 1997–2019 and 1997–2020. The results from cross-sectional β-convergence models showed an economic convergence process between Balkan countries with speeds ranging from 1.68% to 1.82% in the analysed periods. Considering panel data, the results imply that the convergence process not only exists but is also much faster. The speed of the convergence process accounts for 9.43% in 1997–2019 and 7.87% in 1997–2020.

The results clearly proved the existence of economic convergence in the Balkan economies. It indicates that the countries with an initially lower level of economic growth are on the way to catching up with these wealthier economies at the starting point. The pace of the catching-up process is not impressive, so although the convergence process occurs, its results imply that there is still a long way ahead for the poorer economies to catch up.

Further research on this topic may include the more developed comparative analysis between the convergence of the EU and non-EU members within the Balkans, using, e.g., the club-convergence approach. It would also be an explorative topic to know whether the Balkans' economies converge with the remaining EU economies and their average. Moreover, the conditional convergence will be considered. Finally, as new data will be published, the research may focus on the COVID-19 impact on economic convergence in the Balkans.

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