

## **Patterns of the Western Balkans' convergence toward the EU since 2004**

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The Western Balkan states are on the path toward European Union (EU) membership. Before they become full members, they will have to fulfil certain criteria to assimilate into the EU and achieve convergence. In this paper, the authors aim to investigate whether the states converge toward the EU-27+1 after the 2008/2009 financial crisis. To do so, the relationship between the gross domestic product (GDP) per capita growth rate and selected macroeconomic variables is econometrically tested using ordinary least squares (OLS) semilog regression based on cross-sectional data for the 2004–2018 period and three subperiods: 2004–2008, 2009–2013, and 2014–2018. The subdivision is made to test the effects of the 2008/2009 financial crisis on the convergence process. The empirical results show that poorer economies grow faster than richer economies. The convergence rates range between 1.6% and 4.3%. The negative effects of the crisis have been identified only for absolute convergence. This research demonstrates that the conditional convergence process is faster, indicating that the countries differ in their structures. The results imply that Western Balkan countries should open their economies to more trade, as this has a positive impact on per capita growth, while the inflation rate, unemployment rate, general government debt, and level of corruption should be decreased.

**Keywords:**

$\beta$ -convergence,  
Western Balkans,  
European Union,  
financial crisis,  
economic growth

## Introduction

The main purpose of this study is to analyze whether the Western Balkan states – namely, Albania, Bosnia and Herzegovina, Montenegro, North Macedonia, and Serbia – converge toward the Member States of the European Union (EU-27+1). The analyzed period is 2004–2018; therefore, the United Kingdom is included in the analysis, while Kosovo is excluded due to a limitation of the study, namely, the lack of data availability.

Convergence is defined as a tendency of poor economies to grow faster than rich economies in per capita terms (Barro–Sala-i-Martin 1992), and it is a condition for efficient and successful integration (Palánkai 2010: p. 20).

Throughout its history, the European Union (EU) has focused on assimilating its member states. With the first enlargement in 1973, when Ireland joined, and future enlargements with Greece, Portugal, and Spain, the European Community recognized the need to provide financial assistance to less-developed regions and created the European Regional Development Fund (ERDF). Less-developed regions are the regions whose gross domestic product (GDP) per capita is below 75% of the EU average (EP 2022).

With the fall of the Berlin Wall in 1989, former socialist countries of Central, Eastern, and South Eastern Europe (CESEE) started their transition process from a centrally planned economy to a market economy, and for most of them, EU membership was the ultimate goal. To become successful member states, countries must fulfil the Copenhagen criteria (1993), which include economic, political, and institutional criteria. The objective of the criteria fulfilment is that a country must be able to take on obligations of EU membership (EC 2019) but also to assimilate into the rest of the EU and to be able to function as a member state. For a successful transition process, resources and investment are needed to improve and maintain competitiveness, develop infrastructure, improve the condition of the environment, build institutions, harmonize legislation and policies, compensate for losses and be able to pay obligations to the EU (Palánkai 2010). The EU made this process easier by giving access to preaccession funds to countries that were in the accession process, and once they became member states, they gained access to cohesion funds. The EU's approach has been successful because poorer new member states have become high-income economies, and the EU has delivered to its citizens some of the highest living standards and lowest levels of income inequality in the world (Ridao-Cano–Bodewig 2018).

The economic convergence process within the EU has been the focus of economic literature since the early 2000s. Many authors have found that the Member States of the EU converge (Yin et al. 2003, Jelnicar–Murmayer 2006, Forgó–Jevcák 2015, Matkowski et al. 2016, Grela et al. 2017, Cieślík–Wciślík 2020, Nagy–Šiljak 2022, Jena–Barua 2022, Kovács et al. 2022, Sanli–Arslan 2023). However, the process is heterogeneous, as the Member States converge faster than regions (Cavenaile–

Dubois 2011, Grzelak–Kujaczyńska 2013, Głodowska 2015, Žuk–Li 2018). Recently, the negative effects of the 2008/2009 financial crisis on convergence have been confirmed (Merler 2016, Stoica et al. 2019, Rapacki–Próchniak 2019, Pipień–Roszkowska 2019, Bisciari et al. 2020), as well as the negative effects of the COVID-19 pandemic (Fedajev et al. 2022). The countries of Central and Eastern Europe (CEE) converge toward more developed EU countries, as the large investments in CEE manufacturing sectors and the related catch-up effect are the main convergence drivers. Therefore, the differences among EU member states cannot be narrowed down to a simple perception of a deep East–West divide, and the basic classification into old member states and postcommunist economies is no longer valid (Szép et al. 2022: p. 159). On the other hand, southern EU countries have failed to converge due to low manufacturing investments in Portugal, Greece, and Spain, and weak institutions in Italy and Greece have caused their lagging behind in productivity growth (Petrović–Matić 2023).

While the focus is still on convergence within the EU, the candidate and potential candidate countries' convergence process has also been investigated, but not to the same extent. They do not attract the attention of researchers, and their importance is neglected (Angelidis–Koulakiotis 2022: p. 192). Therefore, the aim of this study is to analyze whether Western Balkan countries converge toward the EU in the 2004–2018 period and to determine the speed of this process. Special emphasis of the analysis is placed on the effects of the 2008/2009 financial crisis on the convergence process, while the paper also examines whether the countries started to catch up afterward. To analyze the effects of the crisis on the convergence process of the Western Balkan countries toward the EU-27+1, three subperiods are included in the research: the precrisis subperiod (2004–2008), the crisis subperiod (2009–2013), and the postcrisis subperiod (2014–2018). The process has already been investigated regarding this specific group of countries; therefore, the novelty of this research is that it includes 2009–2013 as the crisis period and 2014–2018 as the postcrisis period. In addition, it incorporates subperiods of the same length, 5 years. This is one of the reasons why the study is limited to the period of 2004–2018. The other reason is that the COVID-19 pandemic was an exogenous shock to the economy with negative consequences. Economies started recovering the following year, but the Russian invasion of Ukraine caused another crisis. Therefore, in future research, it will be possible to analyze the impacts of the two crises on the convergence process in comparison with the 2008/2009 crisis.

The hypotheses of this research are as follows:

H1: Western Balkan countries converge toward EU-27+1 in every analyzed period.

H2: The Western Balkans were catching up with the EU-27+1 in the postcrisis period.

H3: The Western Balkans and EU-27+1 differ in their structure, as the conditional convergence rates are higher than the absolute convergence rates.

The subhypotheses are that the Western Balkan countries form a cluster and that at least one variable is a determinant of growth in each analyzed period.

The paper is organized as follows: presents the economic and political background of the Western Balkan countries; the methodology of the convergence analysis is presented, followed by the discussion of the empirical findings on absolute and conditional  $\beta$ -convergence.

### **Economic and political background of the Western Balkans**

The Western Balkan countries are considered to be the next group to join the EU. The official relations between the region and the EU started in 1999 when the Stabilization and Association Process (SAP) was launched. The European future of the region was declared in Thessaloniki in 2003, when it was reaffirmed that all SAP countries were potential candidates for EU membership (EC 2003). By 2014, North Macedonia, Montenegro, Serbia, and Albania were declared candidate countries. Bosnia and Herzegovina was granted a candidate status on December 15, 2022. Kosovo is still a potential candidate for membership. All countries signed the Stabilization and Association Agreement (SAA) with the EU, and except for Kosovo, they have a visa-free regime with the EU. The accession negotiations with Montenegro and Serbia started in 2012 and 2013, respectively. In March 2020, the European Council decided to open accession negotiations with Albania and North Macedonia.

The Association Agreements (AA) were first designed for CESEE countries in the early 1990s. An association agreement is a bilateral agreement between the EU and a third country, and it serves as the basis for implementation of (EC 2023b) and the legal framework for the accession process (EC 2023c). The CESEE countries signed the agreements between 1994 and 1999, and they joined the EU in 2004 and 2007. The SAA was specifically designed for Western Balkan countries. They constitute the framework of relations between the EU and the Western Balkan countries for the implementation of the SAP. The agreements are adapted to the specific situation of each partner country. They establish a free trade area between the parties, they identify common political and economic objectives and encourage regional cooperation (EC 2023d). The SAA is signed for an indefinite period, and its aim is the formal accession of a country to the EU in a transition period of 6 to 10 years (DEI 2023). North Macedonia signed the SAA in 2001 (the same year as Croatia), followed by Albania in 2006, Montenegro in 2007, Bosnia and Herzegovina and Serbia in 2008, and Kosovo in 2015, and these countries will not be ready to become EU members any time soon. Therefore, Western Balkan countries (including Croatia) approached the EU more slowly than CEE countries (Stojčić et al. 2018).

Western Balkan countries share a similar economic history with CESEE countries. Both groups had centrally planned systems; i.e., all decisions regarding economic

activities were made by a central government that was run by one party, the Communist Party. The characteristics of the system were the absence of democratic institutions and that the economy was state-owned; the government decided on what should be produced and in what quantity. The government also provided inputs for the production process. If the quota could not be fulfilled, the quality of products had to be sacrificed, which made these economies less competitive. Trade and investment were limited, and prices were also determined by the government and not according to the law of supply and demand (Berend 2016). The socialist countries had obsolete technology because their development policy was import substitution industrialization. To go through the transition process, countries must adopt the export substitution industrialization model and modernize technology. As the socialist system was artificially sustained, once it collapsed, the countries faced hyperinflation, high unemployment, low competitiveness, and they did not have any trade partners.

The countries of the Western Balkans, except Albania, together with Slovenia and Croatia, were part of Yugoslavia. Yugoslavia and other socialist economies had the same origins, but after the Tito-Stalin split in 1948, Yugoslavia adopted a more flexible system of socialism. Companies in Yugoslavia were still state-owned, but they had a self-management economic system and not pure government ownership, which was introduced in the 1950s. The system added a level of participatory decision-making that was unknown in other state socialist countries and produced managers, unionists, and bureaucrats who had the required skills and were habituated to seeking accommodation between economic and social considerations. Yugoslavia's market socialism placed reliance on markets to guide both domestic and international production and exchange (Bohle–Greskovits 2007: p. 452). In theory, the rhetoric of self-management proclaimed unlimited rights for workers; in practice, economic rights were limited to decisions such as relative wages, while the state still had control over dictating wages and hiring and firing managers (Flaherty 1992: p. 99). The system seemed successful until the late 1970s, but in the last years before the dissolution, many of the problems besetting other socialist economies – stagnation, international debt, enterprise inefficiency, and inflation – emerged (Estrin 1991: p. 187).

The CESEE countries were successful because they opened their economies to more trade and investment, and they became competitive (Palánkai 2010). They went through the transition process successfully and joined the EU in 2004<sup>1</sup>, 2007<sup>2</sup>, and 2013.<sup>3</sup> Eight new member states have adopted the Euro as their currency, i.e., they joined the Eurozone.<sup>4</sup> The Western Balkan countries should go through the transition

<sup>1</sup> The countries that joined the EU in 2004 are the Czech Republic, Cyprus, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovenia, and Slovakia.

<sup>2</sup> Bulgaria and Romania joined the EU in 2007.

<sup>3</sup> Croatia joined the EU in 2013.

<sup>4</sup> Slovenia joined the Eurozone in 2007, followed by Cyprus and Malta in 2008, Slovakia in 2009, Estonia in 2011, Latvia in 2014, Lithuania in 2015, and Croatia in 2023.

faster – even though the process was slowed down by wars in the region in the 1990s – because they can learn from the experience of the CESEE countries. The CESEE countries joined the EU after less than 15 years of transition; the process has lasted for more than 25 years in the Western Balkans. Western Balkan countries are lagging behind in their development process. They have made little progress toward becoming a functioning market economy (EC 2019), and they are less competitive than EU Member States (Siljak 2022).

Unlike the CESEE countries, the successor states of former Yugoslavia did not attract enough foreign direct investment (FDI) after the transition process began. FDI flew first to those former socialist economies whose initial supply structures had been relatively complex (i.e., intensive in technologically sophisticated physical capital and human skills). As a consequence, the Visegrád countries – namely, the Czech Republic, Hungary, Poland, and Slovakia – which already specialized in the automobile, machinery or electronics industries during late socialism (Csaba 1984), could expect larger inflows of industry-specific FDI than the states where the sector was virtually absent (Bohle–Greskovits 2007: p. 457). Centralized ownership means that someone can more easily privatize firms and receive foreign ownership. However, self-management requires converting into state ownership first and then going through the privatization process. This process, along with the wars, slowed privatization in the Western Balkans. Wars in the region in the 1990s, together with conflicts and political instability that emerged later, were among the reasons for a lack of FDI and the delay regarding the beginning of the transition process. Without attracting FDI, transition economies cannot become functioning market economies, which is one of the Copenhagen criteria. To function as EU member states, the Western Balkan countries, apart from being market economies, must achieve macroeconomic stability, be competitive, and have access to foreign finance (Palánkai 2010), which will help them in the transformation process. These factors lead to convergence.

Several studies have investigated the convergence process of the Western Balkan region toward the EU and its groups in the past 15 years. There was no convergence in Yugoslavia, but it developed once the countries gained independence (Bičanić et al. 2016). El Ouardighi–Somun–Kapetanovic (2007) analyzed the process in the period 1989–2005. The conclusion was that the countries converged, the process was slow, and income inequality increased. Tsanana et al. (2013) and Gockov–Antovska (2019) drew the same conclusion regarding the convergence process toward the EU-15 member states. On the other hand, Botrić (2013) and Stanišić et al. (2018) found no convergence between the two groups. The region converged toward the CESEE countries in the period 1993–2005, and the main drivers of convergence were total factor productivity growth and capital deepening (Borys et al. 2008).

The Western Balkan states converge toward the EU, but the process has been slow and negatively affected by the 2008/2009 financial crisis (Siljak–Nagy 2018, Meksi–Xhaja 2017) because there was a much stronger absolute convergence in the 2000–2008 period than in the 2009–2016 period (Krstevska 2018). The 2008/2009

financial crisis had different effects on the convergence process of the Western Balkan region toward different groups of the EU. The crisis had a negative effect on convergence toward the old member states (Nagy–Siljak 2019). However, the countries converged toward the new member states at a higher rate during the crisis period compared to the precrisis period (Siljak–Nagy 2019a).

## Methodology and data

### Metodology

The analysis on convergence, which implies that poorer countries achieve higher growth rates than richer countries, was popularized by Baro–Sala-i-Martin (1992). Based on the Solow neoclassical growth model (1956), they analyzed convergence across the 48 contiguous U.S. states during different subperiods between 1840 and 1988. They found that poor states tended to grow faster in per capita terms than rich states, and the speed of convergence appeared to be at approximately 2% per year, regardless of the time period. There are two types of economic convergence:  $\sigma$ - and  $\beta$ -convergence. Sigma convergence is a simple measure of convergence that analyzes whether the dispersion of per capita GDP decreases over time.  $\beta$ -convergence is a more complex analysis. There are two types of  $\beta$ -convergence: absolute and conditional.

If it is assumed that countries do not differ in their structures, they converge toward the same steady state. This convergence is absolute. The  $\beta$ -coefficient, which captures the rate at which countries move toward the steady state, is obtained through a simple linear regression analysis. The regression model (Equation 1) contains one dependent and one independent variable. The dependent variable is the growth rate of per capita GDP, and the independent variable is per capita GDP in purchasing power parity (PPP) terms in the initial year of the analyzed period, computed in a natural logarithm. We test for absolute convergence and estimate the following linear-log model:

$$Y_{i,0,T} = \alpha_i + \beta \log(Y_{i,0}) + \varepsilon_i \quad (1)$$

where  $\beta$  – the convergence coefficient,  $Y_{i,0,T}$  – the average annual growth rate of per capita GDP for country  $i$ ,  $Y_{i,0}$  – per capita GDP at PPP for country  $i$  at the beginning of the analyzed period 0,  $\alpha_i$  – a constant,  $\varepsilon_i$  – the stochastic error of the equation,  $T$  – the end of the time interval.

Convergence occurs if the  $\beta$ -coefficient is negative; i.e., it must show a negative relationship between the growth rate and the initial per capita GDP. If it is positive, then countries diverge, or richer countries grow faster than poorer ones.

The  $\beta$ -coefficient can be used to calculate the half-life of convergence, i.e., the number of years that it takes for the income gap to be cut in half. The half-life of convergence is calculated using the following formula (Rapacki–Próchniak 2019: p. 8):

$$t^* = - \frac{\log 0.5}{\beta} = - \frac{0.6931}{\beta} \quad (2)$$

If countries differ in their structures, they converge toward a different steady state, and their convergence is conditional. The difference between the absolute and conditional convergence analyses is that the conditional convergence model (Equation 3) represents an augmented absolute convergence model. The dependent variable remains the same, and the model includes the initial per capita GDP, but it also includes various economic, sociopolitical, and institutional variables as independent variables. In this research, the independent variables, economic openness, inflation rate, general government debt, unemployment rate, and Government Integrity Index are included in the conditional convergence model to analyze the determinants of per capita growth.

$$Y_{i,0,T} = \alpha_i + \beta_1 \log(Y_{i,0}) + \beta_2 EO_{i,0,T} + \beta_3 Inf_{i,0,T} + \beta_4 Debt_{i,0,T} + \beta_5 Unemp_{i,0,T} + \beta_6 GI_{i,0,T} \varepsilon_i \quad (3)$$

where EO – the economic openness rate, Inf – the inflation rate, Debt – the general government debt rate, Unemp – the unemployment rate, GI – Government Integrity Index.

Theoretically, economic openness and government integrity have a positive impact on per capita growth, while general government debt, the inflation rate, and the unemployment rate have a negative impact. We analyze the areas that should be improved during the transition process because empirical research can serve as a recommendation when governments are deciding on policies that should be implemented to achieve higher growth rates and, eventually, faster convergence.

The analyzed period is 2004–2018, with three subperiods: the precrisis subperiod (2004–2008), the crisis subperiod (2009–2013), and the postcrisis subperiod (2014–2018). The subperiods are included so that we can test whether the 2008/2009 financial crisis had a negative effect on the convergence process in the analyzed group of countries, i.e., to test the research hypothesis that the Western Balkans were catching up with the EU-27+1 in the postcrisis period. The analyzed groups of countries are presented in Table 1.

Table 1

#### Analyzed groups of countries\*

Western Balkans	Albania, Bosnia and Herzegovina, Montenegro, North Macedonia, Serbia
CESEE	Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia
EU-13	Bulgaria, Croatia, Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia, Slovenia
EU-14+1	Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, the United Kingdom

\* EU-13 and EU-14+1 form EU-27+1.

To investigate relevant model diagnostics, we test for heteroskedasticity and proper functional form for all models, and we also test for multicollinearity for conditional convergence models. Heteroskedasticity is tested using the Breusch–



Pagan test, which tests the null hypothesis that the variances are constant. The Ramsey RESET test, which tests the null hypothesis that the model has no omitted variables, is used to test the proper functional form. The variance inflation factor (VIF) is used to test if there is a correlation between independent variables.

## Data

This research follows the classical approach to convergence analysis developed by Sala-i-Martin (1996). The models are estimated using ordinary least square (OLS) regression based on cross-sectional data; therefore, the average values for the analyzed periods are used. The cross-sectional data are used because they are free of the distortions caused by business cycles, as well as various demand-side and supply-side random shocks that deviate the economy from a path toward the steady state (Vojinović et al. 2009: p.127).

The analysis is based on annual data. Table 2 presents the descriptive statistics for the variables used in the estimation of the convergence models in the 2004–2018 period. The dataset includes thirty-three countries listed in Table 1.

Table 2

### Descriptive statistics

Variable	Description	Mean	Standard deviation	Minimum	Maximum
Per capita GDP growth	Annual percentage growth rate of GDP per capita based on constant local currency	2.23	1.56	-0.66	4.84
Log (initial per capita GDP)	Natural logarithm of per capita GDP at the beginning of the analyzed period	9.85	0.62	8.59	11.07
Economic openness	A sum of exports and imports as a percentage of GDP	116.5	61.97	53.92	345.42
Inflation rate	Measured by the Harmonized Index of Consumer Prices	2.32	1.19	0.97	7.07
General government debt	Measured as a percentage of GDP	58.03	29.68	7.3	148.05
Unemployment rate	Measured as a percentage of labor force	10.78	6.09	4.94	30.43
Government integrity	Measured on a scale from 0 to 1; the lower value indicates a more corrupt government	0.59	0.20	0.31	0.93

*Source:* Authors' calculations based on World Bank (2022), European Commission (2022b), International Monetary Fund (2022), Heritage Foundation (2022) data.

The data for per capita GDP growth rates, per capita GDP in 2004, 2009, and 2014, and economic openness are obtained from the World Bank database, whereas the World Economic Outlook database provides the inflation rate. The data for

general government debt and the unemployment rate are derived from the European Commission database, while the data for the Government Integrity Index are obtained from the Heritage Foundation database.

## Empirical results and discussion

In this paper, we analyze absolute and conditional  $\beta$ -convergence between the Western Balkans and the EU-27+1. To test the effects of the 2008/2009 financial crisis on the convergence process, the analyzed 2004–2018 period is divided into three subperiods: 2004–2008, 2009–2013, and 2014–2018.

### Absolute $\beta$ -convergence

$\beta$ -convergence represents a negative relationship between the per capita GDP growth rate and per capita GDP at the beginning of the analyzed period; i.e., it occurs when countries with lower per capita GDP achieve higher per capita GDP growth rates. If the countries are moving toward the same steady state,  $\beta$ -convergence is absolute. We estimate eight regression models in this research: four absolute convergence models (Models 1-4) and four conditional convergence models (Models 5-8). Table 3 presents the absolute convergence rates in the analyzed periods.

Table 3

#### Absolute convergence of the Western Balkans toward the EU-27+1

Denomination	Model 1	Model 2	Model 3	Model 4	Model 4'
	2004–2018	2004–2008	2009–2013	2014–2018	2014–2018
	$\beta$ (t)				
Log of initial per capita GDP	–1.90*** (–6.36)	–3.37*** (–7.49)	–1.61*** (–3.04)	–0.98 (–1.56)	–0.98 (–1.58)
Half-life	36	20	43	–	–
F statistics (p value)	40.47 (0.0000)	56.17 (0.0000)	9.22 (0.0048)	2.44 (0.1281)	2.50 (0.1242)
Number of observations	33	33	33	33	33
Number of panel observations	495	165	165	165	165
F statistics (p value)	40.47 (0.0000)	56.17 (0.0000)	9.22 (0.0048)	2.44 (0.1218)	2.50 (0.1242)
R <sup>2</sup>	0.5663	0.6444	0.2292	0.0731	0.0731
Breusch–Pagan test	0.4846	0.2141	0.3729	0.0045	

\* Indicates significance at the 0.10 level, \*\* indicates significance at the 0.05 level, \*\*\* indicates significance at the 0.01 level.

Source: Authors' calculations based on World Bank (2022) data.

The regression results show that the  $\beta$ -coefficient for the analyzed group of countries in the 2004–2018 period is negative (–1.90) and statistically significant at the p value of 0.0000. The Western Balkan countries converge toward the EU-27+1

at a rate of 1.9% per year, which is lower than the benchmark of 2% from the Barro–Sala-i-Martin (1992) findings, and it will take 36 years for the per capita GDP gap between the Western Balkans and the EU-27+1 to be cut in half. A slower convergence process of the Western Balkan countries toward the EU Member States is confirmed by El Ouardighi–Somun–Kapetanovic (2007), Meksi–Xhaja (2017), and Gockov–Antovska (2019). The convergence rate is the highest in the precrisis period, 3.4%, and it decreases to 1.6% in the crisis period. The  $\beta$ -coefficient for the postcrisis period is negative but not statistically significant. The results are not surprising, considering that in the 2014–2018 period, the average growth rate in the Western Balkans was 3.6%, which is higher than the EU-14+1 average, 0.9%, but almost the same as the average rate of the CESEE countries (3.4%). In 2004, the average Western Balkan per capita GDP was 47.4% of the CESEE average, and the ratio increased by only 3.9 percentage points in 2018. Between 2004 and 2018, the average per capita GDP of the Western Balkans increased from 29.2% of the EU average to 39.4%. Based on the empirical results, it can be concluded that the financial crisis had a negative impact on the convergence process, but the countries did not start to catch up in the postcrisis period. Therefore, we reject the first and second research hypotheses.

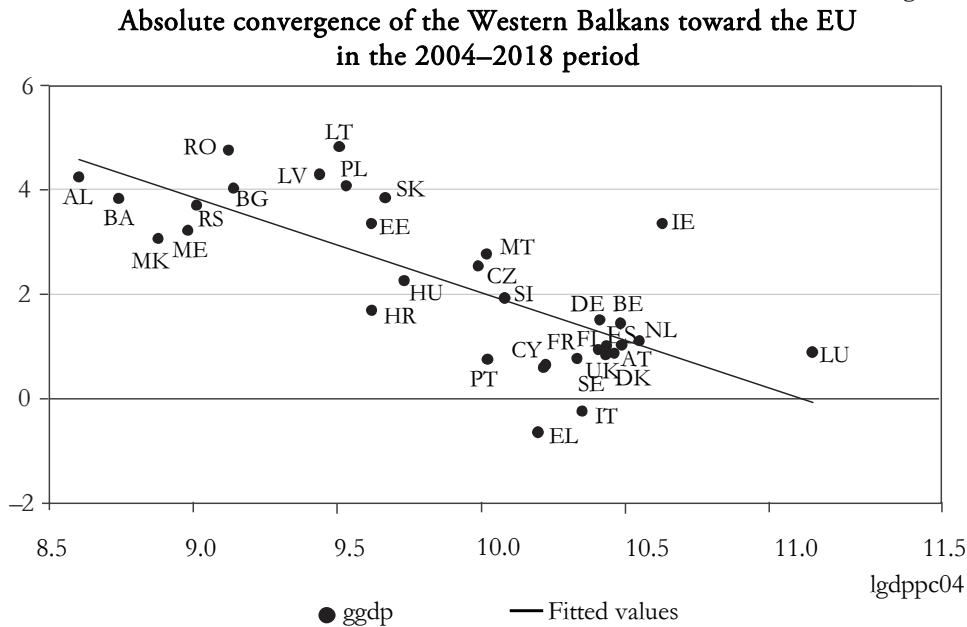
The problem of heteroskedasticity is detected in the postcrisis model. When a regression model with a heteroskedasticity robust standard error (Model 4<sup>1</sup>) is estimated, the problem of heteroskedasticity is corrected. The results remain unchanged.

There is a relatively weak fit of Model 4 to the data. The coefficient of determination (R-squared) has a low value, (0.0731), indicating that only 7.31% of the variability of the per capita GDP growth rate is explained by the initial per capita GDP level. Figure A1 (Annex) shows that there is a higher degree of heterogeneity among the analyzed countries in the postcrisis period compared to the entire analyzed period; i.e., the countries are more scattered around the regression line, which is consistent with the low R-squared value.

Figure 1 supports the regression results for the 2004–2018 period. The figure plots per capita GDP at the beginning of the analyzed period (X-axis) against the average per capita GDP growth rate (Y-axis).

The regression line or the line of fitted values has a downward (negative) slope, indicating a negative relationship between the two variables, i.e., convergence. The figure shows that the Western Balkan states converge as a club. The countries are positioned in the upper left corner. However, they are not the best performing countries in the analyzed group, as several CESEE countries have higher or similar per capita GDP growth rates in the analyzed period. Most of the EU-14+1 countries form a cluster, but there is a high degree of heterogeneity among the EU-13 Member States, and they form several clubs. Cyprus is the only new Member State that forms a cluster with old Member States.

Figure 1



*Notes:* abbreviations of countries: European Union (EU): Belgium (BE), Greece (EL), Lithuania (LT), Portugal (PT), Bulgaria (BG), Spain (ES), Luxembourg (LU), Romania (RO), Czechia (CZ), France (FR), Hungary (HU), Slovenia (SI), Denmark (DK), Croatia (HR), Malta (MT), Slovakia (SK), Germany (DE), Italy (IT), Netherlands (NL), Finland (FI), Estonia (EE), Cyprus (CY), Austria (AT), Sweden (SE), Ireland (IE), Latvia (LV), Poland (PL), United Kingdom (UK). EU candidate countries: Bosnia and Herzegovina (BA), Montenegro (ME), North Macedonia (MK), Albania (AL), Serbia (RS).

*Source:* Authors' calculations based on World Bank (2022) data.

### Conditional $\beta$ -convergence

While absolute  $\beta$ -convergence assumes that countries move toward the same steady state, if countries move toward different steady states, convergence is conditional. In this research, we estimate four conditional convergence models (Models 5–8) and include the following macroeconomic variables in the analysis: economic openness, the inflation rate, general government debt, the unemployment rate, and the Government Integrity Index. Table 4 presents regression results for the conditional convergence analysis in the selected group of countries.

The regression results show that the Western Balkan states converge toward the EU Member States in conditional terms in every analyzed period. The conditional convergence rates are higher than the absolute rates, indicating that countries converge toward different steady states, i.e., that they differ in their structures. Therefore, we do not have enough evidence to reject the third research hypothesis. The highest convergence rate is detected in the crisis period, while the lowest rate is in the entire analyzed period. This research shows that all macroeconomic variables

are determinants of per capita GDP growth in at least one analyzed period. The variables are included in the convergence analysis because they represent the areas that the countries must change or improve during the transition process.

Table 4

### Conditional $\beta$ -convergence of the Western Balkans toward the EU-27+1

Denomination	Model 5 2004–2018	Model 6 2004–2008	Model 7 2009–2013	Model 8 2014–2018
	$\beta$ (t)			
Log of initial per capita GDP	–2.18*** (–3.36)	–2.54*** (–2.95)	–4.26*** (–3.78)	–3.15* (–1.87)
Economic openness (%)	0.005 (1.66)	0.002 (0.42)	0.01* (1.75)	0.01** (2.15)
Inflation rate (annual %)	0.02 (0.11)	0.25** (2.12)	0.03 (0.16)	–0.89* (–1.71)
General government debt (%)	–0.02** (–2.26)	–0.03*** (–3.58)	–0.01 (–0.65)	0.003 (0.22)
Unemployment rate (%)	–0.07** (–2.21)	–0.07 (–1.67)	–0.07 (–1.52)	–0.14* (–1.87)
Government Integrity Index	–0.10 (–0.06)	–1.82 (–0.99)	5.94** (2.42)	1.58 (0.44)
Number of observations	33	33	33	33
Number of panel observations	495	165	165	165
F statistics (p value)	19.21 (0.0000)	27.67 (0.0000)	5.54 (0.0008)	2.74 (0.0340)
R <sup>2</sup>	0.8160	0.8646	0.5613	0.3870
Breusch–Pagan test	0.3851	0.6583	0.2506	0.2196

\* Indicates significance at the 0.10 level, \*\* indicates significance at the 0.05 level, \*\*\* indicates significance at the 0.01 level.

Source: Authors' calculations based on World Bank (2022), European Commission (2022b), International Monetary Fund (2022), Heritage Foundation (2022) data.

The regression results show that economic openness has a positive impact on per capita GDP growth, which is confirmed by Kaitila (2005), Szeles–Marinescu (2010), Stoica et al. (2019), and Popovic et al. (2020). The Western Balkan states are relatively open economies. Their average economic openness rate in the analyzed period is 93.1%, lower than in both EU-13 (134.9%) and EU-14+1 (108.4%) Member States. Together with Moldova, they are members of the Central European Free Trade Agreement (CEFTA), and their main trade partner is the EU (67% of the region's exports and 58% of its imports). Other major trade partners are CEFTA states, China, Turkey, and Russia. The goods that the countries of the Western Balkans mostly trade with the EU are machinery and transport equipment, manufactured goods classified chiefly by material, miscellaneous manufactured articles, and chemicals and related products (EC 2020a). However, production, which is diversified, is still hampered by

obsolete technology, and many products do not fulfil the EU criteria; therefore, exports are limited.

After the collapse of socialism and the dissolution of Yugoslavia, the countries faced hyperinflation. For most countries, inflation was stabilized in the mid or late 1990s. Theoretically, it is expected that inflation would have a negative impact on growth. However, a small amount of inflation is always desirable, and it has a positive effect on growth in the precrisis period. The positive effects of inflation on growth are confirmed by Hasanov (2010) and Kryeziu–Durguti (2019). In the 2004–2008 period, the average inflation rate of the Western Balkans was 4.8%, 0.1 percentage points lower than in the EU-13 group. It is important to mention that some of the EU-13 countries joined and were preparing to join the Eurozone in this period<sup>5</sup> and one of the convergence criteria each country must fulfil before it adopts the euro, as its currency is price stability (EC 2022a). In the postcrisis period, the inflation rate has a negative impact on growth, which is in accordance with the studies conducted by Yin et al. (2003), Rapacki–Próchniak (2009), and Vojinović et al. (2009). The average rate decreased to 1.0% in the Western Balkans, but it was slightly higher than the rate in the EU Member States (0.8%).

Theoretically, an increase in general government debt should have a negative impact on economic growth; i.e., it should slow it down, which is confirmed by this research and by Szeles–Marinescu (2010), Yin et al. (2003), Checherita-Westphal–Rother (2012), and Dobrinsky–Havlik (2014). An unanticipated increase in the debt-to-GDP ratio hurts the real GDP level for countries with a high initial debt level and a rising debt trajectory over the five preceding years (de Soyres et al. 2022). The Western Balkan states did not inherit high general government debt from the previous system. The average general government debt rate in most Western Balkan countries is below 60%, which is another convergence criterion. However, a matter of concern is that the rate has increased by almost 19 percentage points between the precrisis and the postcrisis period. The Western Balkan states are members of International Financial Organizations (IFOs), such as the International Monetary Fund (IMF), the World Bank (WB), the European Bank for Reconstruction and Development (EBRD) and the European Investment Bank (EIB), and these organizations are among the largest foreign creditors of the Western Balkan states. The countries also take bilateral loans from other countries.

Unemployment has a negative effect on GDP growth, which is based on the fact that the increased workforce produces more goods and services (Soylu et al. 2018: p. 97). One of the biggest problems for Western Balkan economies is the migration of the labor force abroad, mostly to EU countries, due to high unemployment or low living standards in the Western Balkan countries. After the collapse of socialism, the system in which full employment of labor resources was the main advantage

<sup>5</sup> Slovenia joined the Eurozone in 2007, followed by Cyprus, and Malta in 2008, Slovakia in 2009, Estonia in 2011, Latvia in 2014, and Lithuania in 2015.

(Zhurauliou et al. 2023), and during the wars in former Yugoslavia, many state-owned companies went bankrupt, and workers lost their jobs. In the 1990s, the companies were not privatized, and unemployment rates reached double digits. The countries do not attract FDI as much as they should, which also affects their economies and the labor force. In the 2004–2018 period, the average unemployment rate in the Western Balkans was 22.2%, almost three times higher than that in the EU. The lowest rate in the region is in Albania (15.2%), perhaps thanks to the absence of the legacy of the Yugoslav employee self-management model (Dabrowski–Myachenkova 2018: p. 7); it is only 1.9 percentage points lower than the highest rate in the EU (in Spain). The highest rate is in North Macedonia, 30.4%. Unemployment has a negative impact on per capita growth in every analyzed period, except in the crisis period. The negative impacts of unemployment on GDP growth are confirmed by Fagerberg–Verspagen (1996), Carmeci–Mauro (2002), and Siljak–Nagy (2019b). In 2018, the majority of first residence permits to people from the Western Balkans were issued by Croatia and Slovenia (75.2% and 71.6% of all first residence permits, respectively). Migration to the EU is the lowest in Montenegro, as this is the only country that is not among the first five nationalities whose citizens were granted a residence permit in the EU Member States (EC 2020b).

As most important decisions in socialist countries were made by the central government, these countries did not have functioning institutions. Building stable institutions that will guarantee democracy, the rule of law, human rights and respect for and protection of minorities is one of the Copenhagen criteria (EC 2023a). The longer the countries were under socialism, the worse their property rights institutions are, and their level of corruption is also higher (Uberti 2018). In this research, we use the Government Integrity Index as an institutional variable, as several studies have shown that efficient institutions have a positive effect on economic growth (Rodrik et al. 2004, Redek–Sušjan 2005, Acemoglu et al. 2005, Aralica et al. 2018). This research confirms their findings, as the index is a determinant of growth in the crisis period. On average, the Western Balkan states are more corrupt than the EU Member States. Between the precrisis and postcrisis period, the index value increased in the region (from 0.31 to 0.39), indicating that the countries have made some progress in the fight against corruption. In the EU, the value remained the same (0.63). In 2020, the most corrupt country in the Western Balkans was Albania (0.39), while the least corrupt was Montenegro (0.48), with an index value slightly higher than the lowest value in the EU (Bulgaria, 0.44). The least corrupt country in Europe was Finland (0.96).

The empirical results show that the financial crisis did not have a negative effect on the conditional convergence process of the Western Balkans toward the EU member states. The countries converge in every analyzed period, but the convergence rate during the crisis is the highest. The lowest rate is detected during the precrisis period.

## Conclusion

This paper investigates the absolute and conditional convergence process of the Western Balkan states toward the EU-27+1. The analyzed period is 2004–2018; therefore, we include the United Kingdom in the analysis. To test the effects of the 2008/2009 financial crisis on the absolute and conditional convergence process, we include three subperiods in this research: the precrisis period, the crisis period, and the postcrisis period.

The empirical results suggest that there is absolute convergence between the Western Balkan states and the EU-27+1 in every analyzed period except the postcrisis period. Even though the crisis did have a negative effect on the absolute convergence process, the countries did not start to catch up in the postcrisis period because some of the EU-13 countries, which have higher per capita GDP, had higher per capita growth rates. Based on the empirical results, we reject the first and second research hypotheses.

The countries converge in conditional terms in every analyzed period. The conditional convergence rates are higher than the absolute convergence rates, indicating that the countries differ in their structures, which is as expected. Therefore, we do not have enough evidence to reject the third research hypothesis. The convergence process during the precrisis period is slower than that during the crisis and postcrisis periods. All included macroeconomic variables are determinants of per capita growth in at least one analyzed period. Economic openness and government integrity have a positive impact on per capita growth, while general government debt and the unemployment rate have a negative impact. The inflation rate has both positive and negative impacts on growth, depending on the analyzed periods.

Although other studies have also investigated the convergence process of the Western Balkans toward the EU, our approach is novel in that we include the precrisis, crisis and postcrisis subperiods in the analysis. Most studies consider the period after 2009 as a postcrisis period, even though most EU economies did not start recovering before 2013. The main limitation of this research is the availability of data. It would be valuable to analyze and compare the convergence process before the CESEE countries joined the EU. Since the datasets for current transition countries are incomplete for the period prior to 2004, it is impossible to conduct this research. According to the European Commission methodology, Kosovo is part of the Western Balkan region. However, it was excluded from this analysis because the dataset for unemployment and government integrity is incomplete for the 2004–2018 period. The importance of efficient institutions on growth has been identified by different studies. Therefore, the study could be extended to the analysis of the effects of institutions on the convergence process. We included the Property Rights Index and the Judicial Effectiveness Index in the original conditional convergence model, but the variables had to be excluded due to a high degree of multicollinearity with the



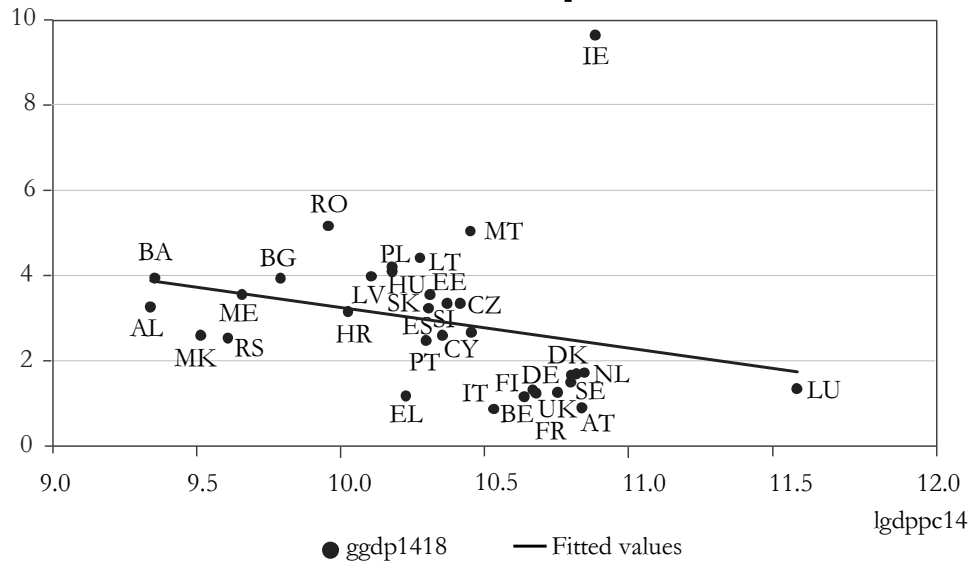
Government Integrity Index. Accordingly, we had to exclude these variables from the analysis, which is another limitation of this study. While using cross-sectional data is a classic approach to convergence analysis, in the next stage of our research, we will extend the research to using a panel data analysis. This research can be extended to other groups of countries, such as the Eastern Partnership or, specifically, Georgia, Moldova, and Ukraine, the countries that signed Deep and Comprehensive Free Trade Agreements (DCFTA) with the EU. Additionally, the comparison of the effects of a recession (the crisis of 2008/2009) and stagflation (the crisis caused by the COVID-19 pandemic and the war in Ukraine) should be analyzed in the future.

Empirical results can serve as a recommendation for policy-makers when they are formulating policies that should lead to higher growth rates and a faster convergence process. According to this research, the countries of the Western Balkan region should open their economies to more trade and decrease general government debt, inflation, and unemployment, as these variables impact per capita growth in at least one analyzed period. While the Western Balkan countries had a good starting point, their convergence process was slowed down after the 2008/2009 financial crisis, even though they were not affected by it to the same extent as the EU Member States. Quantitative indicators show that Western Balkan countries have the potential to grow faster. However, qualitative indicators, such as institutional efficiency, or in the case of these countries, inefficiency (Siljak 2022), will hamper economic growth, slow down the convergence process, and consequently delay the transition. This research has also shown that government integrity has a positive impact on growth, which is in line with other researchers' findings based on the international literature and findings of international organizations (such as the OECD 2023). Developing efficient institutions that will decrease corruption and improve the rule of law and democracy will help countries attract FDI (Siljak 2022, Siljak–Nielsen 2023), which is crucial if they want to eventually go through the transition process. Without FDI, countries cannot modernize their technology, create jobs, open the economy to new markets, and become a competitive functioning market economy. Another limitation of this study is that FDI was not included in the conditional convergence model. The variable was initially included, but it was not statistically significant; i.e., it did not have an effect on growth, which is not a surprise since investment in the region is limited and mostly in the service sector (Estrin–Uvalic 2013).

## Annex

Figure A1

**Absolute convergence of the Western Balkans toward the EU  
in the 2014–2018 period**



Note: See Figure 1 for country abbreviations.

Source: Authors' calculations based on World Bank (2022) data.

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