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The Balkan Countries in the Process of European Integration: Is there a Convergence Process?

Abstract

Balkan countries have been rapidly changing since 1990's. In spite of some Balkan countries (such as Turkey and Greece) were relatively stable in 1990s, there was war in Serbia, Montenegro, Croatia, Bosnia-Herzegovina, and Macedonia. Some former socialist countries (Bulgaria, Slovenia and Romania) and Greece became full member of EU, after the rugged process. The others have been struggling for this aim. In this process, all Balkan countries have some political, economic and social challenges. The aim of this paper is to investigate whether or not economic convergence among Balkan countries in the process of European Integration in the period of 1997-2007. To test convergence, we use approach of Barro and Sala-i Martin. Our study indicates that there is no convergence among Balkan countries in the process of European Integration in the period of 1997-2007.

Key words: Balkan Countries, European Integration, Convergence, Divergence.

Introduction

Balkan countries have been rapidly changing since 1990's. In spite of some Balkan countries (such as Turkey and Greece) were relatively stable in 1990s, there was war in Serbia, Montenegro, Croatia, Bosnia Herzegovina, and Macedonia. Some former socialist countries (Bulgaria, Slovenia and Romania) and Greece became full member of EU, after the rugged process. The others have been struggling for this aim. In this process, all Balkan countries have some political, economic and social challenges. We are interest in economic challenges about Balkan countries, especially deal with level of per capita income of these countries in this study.

Mostly Balkan countries have low per capita GDP (Gross Domestic Product). For example Albania has $1677 per capita GDP in 2007; Bosnia and Herzegovina has $2044; Bulgaria has $2401; Macedonia has $2061; Montenegro has $2269; Romania has $2595 and Serbia has $1780. Exclusively Greece ($15052), Croatia ($5794), Slovenia ($13333) and Turkey ($5053) have relatively bigger than aforementioned countries' per capita GDP. It is normally expected that EU (European Union) membership process support to improving per capita GDP. In the next stages, we search this expectation about Balkan countries.

This paper is organized as follows: the next section describes concept of convergence. Section 3 explains literatures about convergence. Section 4 introduces the data set. Section 5 gives estimation results about beta (absolute and conditional) convergence and sigma convergence. The last section provides some concluding remarks.

What is convergence?

Convergence concept is defined as poorer economies tend to grow at faster rates than richer economies. According to this concept all economies should in the long run converge in terms of per capita income and productivity. It is supposed that developing countries have the potential to grow at a faster rate than developed countries.

The issue of economic convergence at national and regional level has been worked by a lot of researchers in recent years. There are two concepts of convergence as β-convergence and δ convergence. The seminal articles of Barro and Sala-i-Martin (1991, 1992, and 1995) and Mankiw *et al.* (1992) and then numerous studies have investigated β-convergence and δ-convergence between different countries and regions.

β-convergence is being investigated in two parts. These are absolute β-convergence and conditional β-convergence. If all economies are structurally identical and have access to the same technology, they are characterized by the same steady state, and differ only by their initial conditions. This is the hypothesis of absolute β-convergence. The concept of conditional β-convergence is used when the assumption of similar steady-states is relaxed. Note that if economies of countries have very different steady states, this concept is compatible with a persistent high degree of inequality among countries.

At the same time, there is β-convergence in a cross-section of economies if we find a negative relation between the growth rate of income per capita and the initial level of income. If poor economies (or regions) tend to grow faster than rich countries (or

regions), there is absolute β-convergence. The concept of conditional β-convergence is used when the assumption of similar steady-states is relaxed (Sala-i Martin 1996-a).

δ-convergence can be defined as follows: A group of economies (or regions/provinces) are converging in the sense of δ if the dispersion of their real per capita GDP levels tends to decrease over time. This form uses two different types of variables: Standard deviation and the coefficient of variation of the log of per capita income (Rey and Montouri 1999). The existence of β-convergence will tent to generate δ-convergence (Sala-i Martin 1996-b). We can say that β-convergence is necessary but not enough for δ-convergence.

Because of the aim of this study estimates whether existence of β-convergence, we shows only details belong to β-convergence. β-convergence is represented as follows:

$$\ln\left(\frac{y_{i,t+T}}{y_{i,t}}\right) = \alpha + \beta \ln(y_{i,t}) + \varepsilon_{i,t}$$

where $y_{i,t}$ is the per capita income of country (or region/province) i at year t, α is constant and β is coefficient. If β has negative sign, this situation shows convergence. The growth rate between period t and t + T is the dependent variable and the log of per capita income in the initial t period is the independent variable.

Estimating β<0 from the above cited equation, we can conclude that less developed economies show faster economic growth rate. Thus,

$$\text{If } \beta < 0 \begin{cases} y=0 \Rightarrow Absolute\, convergence \\ y\neq 0 \Rightarrow Conditional\, convergence \end{cases}$$

According to absolute convergence concept, it is accepted that whole countries have same conditions as technologic level, institutional structure and saving rate. But conditional convergence approach includes new variables (for example, in our study: urban population as % of total, foreign direct investment net inflows as % of GDP) that reflect differences between economies.

We examine conditional convergence and explanatory variables are inserted on the right hand side of the equation (1). We investigate the period of 1995-2001 following the empirical works of Barro and Sala-i-Martin (1991, 1992, and 1995) and we use equation (2):

$$\ln\left(\frac{y_{i,t+T}}{y_{i,t}}\right) = \alpha + \beta_0 \ln(y_{i,t}) + \beta_1 U_{(i,t)} + \beta_2 F_{(i,t)} + \varepsilon_{i,t}$$

where $U_{(i,t)}$ is the urban population (as % of total) in the country *i* at year *t*, $F_{(i,t)}$ is the foreign direct investment (FDI) net inflows (% of GDP) in country i at year *t*.

Literature

Chatterji (1992) showed that there are two mutually exclusive convergence clubs—one for the 'rich' and one for the 'poor' where the division between rich and poor is endogenously determined. Neven and Gouyette (1995) estimated convergence in output per head across regions in the European Community, for the period 1975-1990. Their study indicates that the distinction between the north and the south of the European Community is likely to be more relevant in the analysis of growth patterns than the distinction between the centre and the periphery. Furthermore the population of the southern regions responds much more slowly to wage and unemployment differences.

Quah (1996) occur that geographical factors are found to matter more than national – macro ones; but both are important for explaining inequality dynamics in regional convergence process of Europe. Barro et al. (1995) found that samples of open economies, such as the US states, converge only slightly faster than samples of more closed economies, such as the OECD countries. Bernard and Jones (1996) investigated the sources of aggregate labor productivity movements and convergence in the U.S. states from 1963 to 1989. Carlino and Mills (1996) obtained evidence for convergence for the U.S. states and regions during the 1929 to 1990 period after allowing for a break in the rate at which the various states and regions were converging in 1946. An important finding of this research is that the US states and regions achieved per capita earnings convergence by 1946. Chatterji and Dewhurst (1996) examined to test whether the counties and regions are converging in terms of GDP per capita in movements in the gross domestic product (GDP) per capita of English and Welsh counties and Scottish regions for the period 1977 to 1991 and for six sub-periods.

Rey and Montouri (1999) provided new insights as to the throughout the system of states, thereby complicating nature of regional income convergence patterns in the transitional dynamics of the overall convergence US period 1929-1994. Their study presented the first detailed evidence on the role of spatial effects in a regional income

convergence study. Bazo *et al.* (1999) applied β and δ convergence approach to the analysis of regional dynamics and convergence in the European Union (EU).

Soukiazis and Castro (2005) test convergence in living standards, productivity, investment and unemployment among the European countries by using panel data estimation techniques. Their study shows that the Maastricht rules and the Stability and Growth Pact have not been as significant as the European authorities would expect and even in cases where the Maastricht criteria had positive effects, these were modest. Mora et al. (2005) offer an optimum definition of convergence clubs. Their results show that European regions with high specialization in low-tech industries in 1985 present non-significant conditional convergence, whereas regions with lower specialization and situated further from the core experience higher rates. Markandya et al. (2006) investigate the relationship between the energy intensity in 12 transition countries of Eastern Europe and that in the EU15 countries.

Le Gallo and Dall'erba (2006) suggested a general framework that allows testing simultaneously for temporal heterogeneity, spatial heterogeneity and spatial autocorrelation in β-convergence models and their study based on a sample of 145 European regions over the 1980-1999 periods. The estimation results indicate the formation of a convergence club between the peripheral regions of the European Union.

Ramajo et al. (2008) estimated that by using a spatial econometric perspective, the speed of convergence for a sample of 163 regions of the European Union (EU) over the period 1981–1996. Their estimations indicate that over the analyzed period, there was a faster conditional convergence in relative income levels of the regions belonging to Cohesion countries (5.3%) than in the rest of the regions of the EU (3.3%). Kocenda et al. (2008) empirically examine the fiscal convergence of the recent ten European Union (EU) members using the Maastricht fiscal convergence criteria. The findings show poor fiscal performance in the European Union in general, suggesting that monetary unions do not necessarily encourage fiscal convergence for its members.

Pfaffermayr (2009) contrasts the spatial Solow model and Verdoorn's model on regional growth processes for 212 European regions covering the period 1980–2002. Estimation results this investigation demonstrate that in both models the speed of convergence also depends on the remoteness and the income gaps of all regions.

Descrıptıon of data set

Our dataset comes from the World Bank[1] WDI (World Development Indicators) Online. WDI (World Development Indicators) Online represents for each Balkan country the level of per capita income over 1997-2007, urban population (as % of

total) of the country in 1997 and foreign direct investment (FDI) net inflows (% of GDP) of a country's in 1997. This period that we use (1997-2007) is limited by data availability. Our study includes Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Greece, Macedonia, Montenegro, Romania, Serbia, Slovenia, and Turkey. But Kosovo is excluded in this study.

We select two variables (urban population and foreign direct investment) as explanatory variables. In the integration process to market economy, many countries are competing with each other to take more foreign direct investment. On the other hand, after Socialist system, it is being waited that urban population is increase.

Empirical results

Beta Convergence

To test absolute β convergence, regressions are estimated between the rate of growth of per capita income between 1997-2007 in the countries and the logarithm of their initial (1997) level of per capita income. Table 1 shows summary of the absolute beta convergence regression.

Table 1: Summary of the convergence regression (*) for the period of 1997-2007

	1997-2007
Coefficient	-0.006
t-value	-1.262
R square	0.15
Significant	0.239
(*)Results are through OLS - SPSS	

Empirical results indicate that the sign of β coefficient is negative, but it is statistically not significant during the period of 1997-2007. It means that divergence process stopped among Balkan Countries, however there is not any convergence process in this period.

The urban population (as % of total) of the country in 1997 and foreign direct investment (FDI) net inflows (% of GDP) of a country's in 1997 have been used as explanatory variables and introduced on the right hand side of the convergence equation. Adding explanatory variables did not make any differences for the evidence on convergence in regression 1 (see Table 2).

Urban population (as % of total) has negative coefficients but it is very close to zero. Foreign direct investment (FDI) net inflows (% of GDP) has positive coefficient. Therefore, the results of conditional convergence analysis show the absence of convergence between Balkan Countries.

Table 2: Convergence regressions (1997-2007) (*)

	Regression 1 (Absolute Beta Conv.)	**Regression 2 (Conditional Beta Conv. with explain. variables)**
Constant	0.089 (0.043)	0.103 (0.037)
Log of initial per capita	-0.006 (0.239)	-0.003 (0.547)
Urban		-0.0008 (0.174)
FDI		0.002 (0.397)
R square	0.150	0.381

(*) The significant values are in parentheses. Results are through OLS (Ordinary Least Squares) – SPSS.

[1] www.worldbank.org, The World Bank Group

Sigma Convergence

β-convergence is necessary but not enough for δ-convergence. In the results of regression analysis, we haven't found any evidence for β convergence (absolute or conditional). These results have been also giving a signal for absence of δ convergence in this period.

Standard deviation and variance is use to test whether or not sigma convergence. Theoretically increasing of standard deviation over time is showing that exist of divergence. If values of standard deviation are decreasing over time, there is convergence process.

Table 3: Descriptive Statistics for per capita GDP in the period of 1997-2009(*)

Years	N	Mean	Std. Deviation	Variance
1997	11	3329.17	3290.66	10828461.73
1998	11	3437.94	3385.69	11462903.92
1999	11	3473.66	3538.36	12520021.03

2000	11	3629.42	3685.08	13579871.53
2001	11	3719.46	3815.14	14555312.44
2002	11	3870.03	3955.10	15642863.96
2003	11	4028.48	4108.33	16878385.23
2004	11	4240.27	4265.95	18198412.99
2005	11	4432.07	4414.71	19489720.31
2006	11	4664.83	4598.64	21147541.93
2007	11	4914.78	4794.05	22982945.93

(*)Results are through SPSS.

Standard deviation value is (3290) in initial year, but its value is (4794) in the last year. According to Table 3, the values of standard deviation are increasing over time. Consequently there is divergence process in this period. We obtain similar results with beta convergence in Table 3 and Figure 1.

In addition to this, Figure 2 shows the values of variance that coherent result with standard deviation. It also shows divergence.

Figure 1: Standard Deviation in the period of 1997-2007

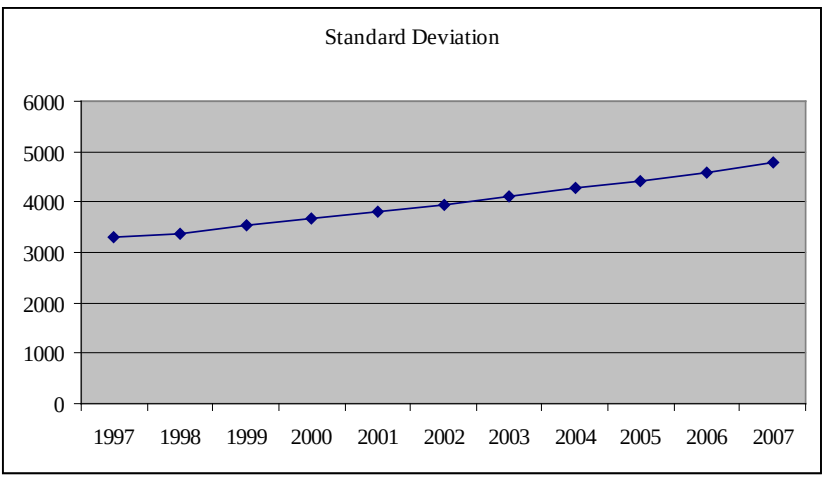
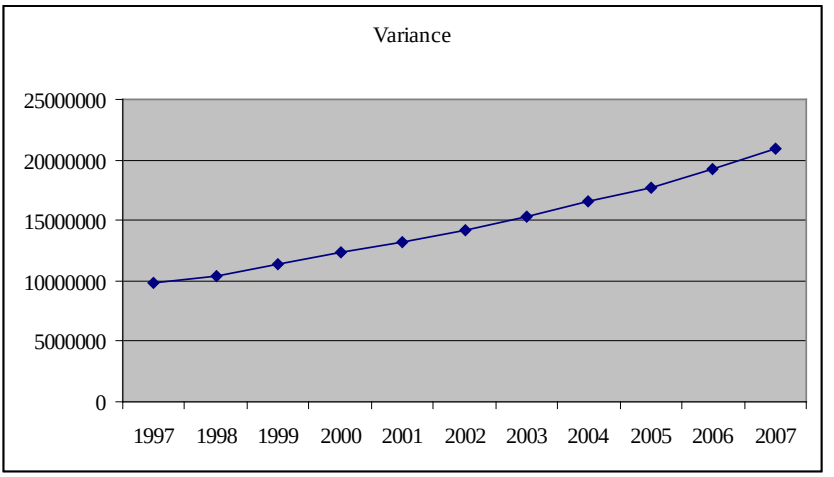


Figure 2: Variance in the period of 1997-2007



Concluding remarks

The main purpose of this study was to find whether or not convergence process among Balkan Countries in the process of European Integration in the period of 1997-2007.

Our results indicated that the sign of β coefficient was negative, but it was statistically not significant during the period of 1997-2007. According to these results, divergence process stopped among Balkan Countries, however there was not any absolute convergence process in this period. The results of conditional convergence analysis showed the absence of convergence among Balkan Countries.

Besides the values of standard deviation are increasing over time. For this reason, we stated that there was divergence process in this period.

Consequently, we found that EU membership process hasn't been positively affecting Balkan countries in terms of improvement of per capita GDP for the period of 1997-2007.

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