JGPG (2015) 4: 3-16
DOI 10.14666/2194-7759-4-1-001
PAPER

Economic EU Convergence of Albania and Other Balkan Countries

Ermelinda Meksi • Ermelinda Xhaja

Abstract This paper aims to assess the real economic convergence among eight Balkan countries except Slovenia, with three of them being European Union (EU) members, and among the thirteen newest member countries of the EU. The convergence is analysed in view of income convergence, in terms of beta (β) and sigma (σ) convergence to estimate the tendency of disparities on income per capita among the countries under review in the study. The methodology used employs the classical model of economic growth, referring to Solow and further researches elaborated in late 1980s and early 1990s by Barro and Sala-i-Martin. The main findings are summarized as follows: 1) the Balkan countries have converged among themselves and toward EU. The new EU member states have also experienced convergence of their income among them and with the EU; 2) the speed of convergence has been higher in those countries that have started with the lowest levels of GDP per capita. The speed of convergence has diminished in the late 2000s demonstrating the impact of the global financial and economic crisis; 3) the estimated time gap of Albania to converge with the poorest members of EU and EU itself is considerable, thus more efforts and reforms have to be dedicated to Albania to promote economic development and accelerate the speed of convergence.

Keywords Economic convergence - Economic growth - Statistics of income convergence - Economic integration

JEL Classification F15 - F43 - O47

Ermelinda Meksi (✉) • Ermelinda Xhaja
Faculty of Economics, Tirana University, Albania
e-mail: e_meksi@yahoo.com; ermegjika@outlook.com

Introduction

Albania started negotiations for a Stabilisation and Association Agreement (SAA) in 2003, in the context of its political integration agenda with the European Union. The SAA was signed in June 2006. The process of negotiations with the EU, however, and Albania's efforts to comply with obligations required before the candidate status is granted, continue. The journey towards European integration until a country's accession in the EU is a long one, pending on the fulfilment of the so-called Copenhagen criteria[1] such as:

- stable institutions guaranteeing a functioning democracy, the rule of law, respect for human rights and protection of minorities;
- a functioning market economy and the capacity to cope with competition and market forces in the EU;
- Adopting the acquis communitaire, and the ability to take on and implement effectively the obligations of membership, including adherence to the aims of political, economic and monetary union.

In this context, integration is linked with laying the foundations to assure a sustainable growth and approach the advanced economies of the Union. The catching up or economic convergence means that a country is on the right path to integration, as it has established strong institutions and sound macro-economic and fiscal policies to support such convergence and facilitate business activity. Several empiric studies have tested the cross-sectional convergence among countries in different regions. From our preliminary research regarding convergence in Albania, Ancona (2007) has included Albania among the set of Mediterranean countries in an attempt to estimate the convergence of income per capita for the period 2000-2004. This paper concludes that, for 2000-2004, the growth rate in Balkan countries aspiring the EU accession stands higher than the EU average. They are apparently converging but the process is not coordinated. In the same paper, with this rate, Albania would need 40 years for its GDP per capita to catch up Italy's GDP per capita.

The aim of this paper is to go into deeper application and analysis of the convergence theory for Albania and the Balkan region by assessing the speed of economic growth as a precondition for the convergence of income and calculate whether it has contributed to diminishing differences in income vis-à-vis the EU.
This convergence is seen in two regional perspectives: a) among the Balkan region;

1 Copenhagen Criteria document link http://europa.eu/rapid/press-release_DOC-93-3_en.htm?locale=en

and b) among the 13 last members[2] of the EU. The discussion will be based on the classical approach of economic convergence for developing countries. Data used in this paper are taken from the World Bank Data, IMF World Economic Outlook and UN Data. The indicator we use is GDP per capita in PPP (current international dollar) for the period 1995 - 2012. The data for 2013 are not yet available in the mentioned sources. The countries included in the analyses are: Albania, Bosnia-Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Macedonia, Malta, Montenegro, Poland, Romania, Slovakia, Slovenia and Serbia. The GDP per capita in PPP is converted in natural logarithm as suggested by literature for easy calculations and derivation of standard deviation. GDP per capita in PPP for Serbia for 1995-1996 and Montenegro for the 1995-1999 are proxy calculations of the authors based on the current value of GDP per capita in those years (UN Data) converting in PPP, by using the Serbian PPP conversion rate of the year 1997. Data are elaborated through SPSS 12 programme.

Theoretical framework

One of the most important models of economic growth is the Solow model (1956). The main assumption of the model, with regard to diminishing returns of the capital, supports the presentation of three important derivations, such as: a) a less developed economy (with a lower GDP per capita) tends to grow faster than a more developed one; b) the growth rate tends to diminish as the economy develops; c) if the economies share the same features, the less developed economy will tend to converge its revenue to the developed ones. The convergence model gives insights into the developing countries by implying that, if they can fulfil some preconditions in terms of political and economic stability, good governance, business climate, they can accelerate their development process and converge with the developed countries or a steady state. Although the economic theories predict convergence, empirical evidence has not always confirmed that.[3] A negative coefficient in the GDP per capita growth equation indicates that poor countries, on average grow, faster than richer ones. This, however, does not necessarily imply a shrinking of the distribution of per-capita income, because unexpected disturbances can take a country above or below its growth path.

The neoclassical production function of Cobb-Douglass provides the relation between the output and the production factor, including the level of technology:, $Y_{(i,t)}=A_i \bullet K^{\alpha}_{(i,t)} \bullet L_{(i,t)}^{(1-\alpha)}$ where $Y_{(i,t)}$ is economy i's aggregate output at time t, $K_{(i,t)}$and $L_{(i,t)}$ are the stock of capital and labour in that economy respectively, and A_i is the level of technology. The basic equation of Solow model that describes the drive of

2 Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lethonia, Malta, Poland, Slovakia, Slovenia in 2004; Bulgaria and Romania in 2007; and Croatia in 2013.

3 Barro, Sala-I-Martin (1991)

the economy toward the steady states is given as following:

a $\bar{k}_t = sf(k_t) - (n + x + \delta)k_t$ (1a) or $\bar{k}_t = sf(k_t) - (n + x + \delta)k_t$ (1b)

where: (1)

k - capital per unit of effective labour

$\bar{k}$ - increase of capital per effective labour unit

g_k - growth rate of capital

n - growth rate of population

x - rate of exogenous technical progress

δ - rate of capita depreciation

s - saving rate

f(k) - production function

Based on the Solow model, and Cobb Douglass production function, Barro and Sala-i-Martin (1990)[4] have approximated the transitional growth process in the neo-classical model as following:

$$(1/T)\cdot\log(y_{it}/y_{i,t-T}) = x_i^* + \log(\hat{y}/\hat{y}_{i,t-T})\cdot(1 - e^{-\beta T})/T + \mu_{it} \quad (2)$$

Where, i indexes the economy, t indexes time, $y_{i,t}$ is per capita output, x* is the steady state per capita growth rate $\hat{y}_{it}$, is output per effective worker, $\hat{y}_i$* is the steady state level of output per worker, T is the length of observations interval, the coefficient β is the rate of convergence, and μ_{it} is an error term. The coefficient β indicates the rate at which $\hat{y}_{it}$ approaches to the steady state. The aim of many empirical researches in the recent years has been to evaluate the value of β through a simplified equation of rate of growth[5]:

$$g_y \approx \beta(\ln y^* - \ln y_t) \quad (3)$$

The parameter β gives information on the speed of convergence or the distance from the steady state, covered annually. To calculate β in a cross-country analysis of empirical data the following regression equation is used:

4 Barro, Robert J., and Xavier Sala-i-Martin. 1990 "Economic Growth and Convergence across the United States", Working Paper 3419;

5 Real Economic convergence in the EU accession countries – Matkowski, Zbigniew, Prochniak Mauriusz (2004)

$$\frac{1}{T}\ln\frac{y_T}{y_0} = \alpha_0 + \alpha_1 \ln y_0 \quad (4)$$

This equation allows to estimate whether there is a convergence trend or not. The dependent variable is the average annual growth rate of real GDP per capita between period T and 0, while the independent variable is GDP per capita level in period 0. If the slope of regression is negative (parameter α_1), then β convergence exists, as the GDP growth rate is negatively correlated with the initial income level. This confirms that the less developed economies in the region grew faster than the more developed economies.

Then, we can calculate the value of β from the following equation.

$$\beta = -\frac{1}{T}\ln(1+\alpha_1 T) \quad (5)$$

In addition to β coefficient for defining the concept of convergence, the classical literature presents another concept that is σ convergence. The σ convergence involves a decline over time in the cross-sectional dispersion of per capita income. Beta (β) convergence is a precondition to have σ convergence, but is not always the vice versa. [6]The concept of σ convergence can be defined as a group of economies are converging in the sense of σ, if the dispersion of their real per capita GDP levels tends to decrease over time:

$$\sigma_{t+T} < \sigma_t \quad (6)$$

Where σ_t is the time t standard deviation of $\log(y_{i,t})$ across countries i.

Income Convergence among Balkan Countries and new EU members

The convergence among Balkan countries is estimated by considering some similarities in their economic and political development in the frame of their commitment to EU integration. The initial year of the research is 1995, when Balkan countries and CEE countries started to show some positive signs of economic recovery, following the collapse of communism. Bulgaria, Croatia and Romania, already EU members, are also included in the group of countries in the Balkan region, with the aim of verifying the convergence in this region, its speed, distance of the so-called emerging economies in the Balkan countries from those that are now EU members, and how has the EU membership influenced the growth rates of these three countries.

Bulgaria and Rumania accessed the EU in 2007 where the GDP per capita in PPP was respectively USD 12,521 and USD 13,160 consisting in 41% and 43% of the GDP per capita of the European Union in that year. In addition, for comparison, the speed of convergence is estimated in the other set of countries of the thirteen newest EU members.

6 Xavier Sala Martin (1995)

- β convergence

The concept of β convergence relates to poor economies growing faster than rich ones. The higher β, the greater the responsiveness of the average growth rate to the gap between y* and $y_{(0),}$ thus the faster the convergence to the steady state. To estimate if there is β converge in this group of countries we will use the regression equation (4), where the dependent variable is the average annual growth per each country for the period 1995 – 2012, and the independent variable is the log natural of 1995 GDP per capita per each country, as described in Table

Table 1 Average annual growth and GDP per capita in Balkan countries 1995 – 2012

Country	Albania	Bosnia-Herzego-vina	Bulgaria	Croatia	Romania	Macedo-nia, FYR	Montene-gro	Serbia
Average annual growth	0,07	0,11	0,06	0,05	0,07	0,05	0,06	0,04
GDP per capita in PPP (1995)	2759	1291	5533	7979	4802	4764	5370	5901
Ln 1995 GDP per capita	7.92	7.16	8.62	8.98	8.48	8.47	8.59	8.68

Using the dataset in the table 1 the regression results are given in the table 2, where is also calculated β through the equation (5).

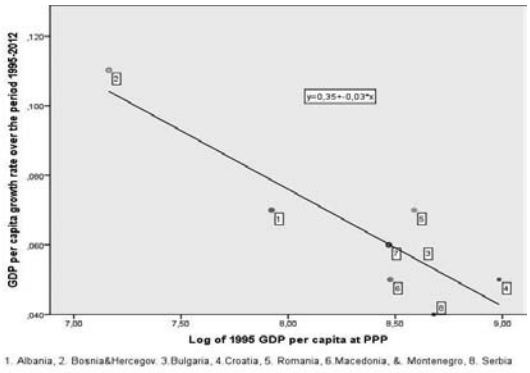
Table 2 Regression results for β convergence

Period	α_0	α_1	$t_{\alpha 0}$	$t_{\alpha 1}$	R^2	β-conv.	Beta
1995-2012	0,348	-0,034					
	-0,001	-0,003	5,969	-4,876	0,779	Yes	0,053

The regression equation resulting is *y= 0,348 + (-0,034)x* . In the brackets under the coefficient is the standard error, while the significance of the regression test is respectively 0,001 for the constant and 0,003 for the slope of regression. The regression's results confirm the existence of β convergence given that α_1 has a negative value. Therefore, the negative relation between the growth and the initial level of income per capita is confirmed. The average annual growth for the EU countries, during this period, has been 4%, confirming again that the less developed Balkan region grew more rapidly in the period 1995-2012.

The positioning of the countries toward each other and the regression line are shown in the regression plot in Figure 1.

Figure 1 GDP per capita growth rate during 1995-2013 and the Log of 1995 GDP per capita



As shown in Table 1 and confirmed in the scatter plot in Figure 1 countries experiencing the highest growth are Bosnia-Herzegovina and Albania, the poorest countries with the lowest level of GDP per capita in PPP in 1995, respectively USD 1,291 and USD 2,759. The β convergence is significant to 5,3% and relatively fast compared to the general trend of 2% reported by empirical studies for bigger regions and group of countries in Barro and Sala-i-Martin (1992).[7] Referring to the 72 rule, with this speed of growth Albania would need approximately 14 years to double its 2012 GDP per capita to reach the amount of USD 18,806.8 in PPP. However, in the last six years the average growth rate of Albania has been 2,4%, while IMF projections for the next four years are around 3,5%. At this rate of growth, the time gap for Albania would be greater than 14 years to double its GDP per capita.The same analysis for the β convergence is done for the thirteen new members of EU for the period 1993 – 2012, to understand the pace of their convergence. Table 3 shows the data set used for calculating the regression equation for this group of countries. Table 4 shows the regression's results over the period 1995-2012 for the new members of EU, including Croatia that accessed the EU in 2013, and the regression plot is shown in Figure 2.

Table 3 Average GDP per capita growth and GDP per capita in 1995

Country	Average growth of GDP per capita	GDP per capita 1995	Ln 1995 GDP per capita
Bulgaria	0,06	5532,634	8,62
Croatia	0,05	7979,095	8,98
Cyprus	0,04	15410,26	9,64
Czech Republic	0,04	13389,71	9,5

7 Sala-i-Martin (1995)

Country	Average growth of GDP per capita	GDP per capita 1995	Ln 1995 GDP per capita
Estonia	0,08	6319,758	8,75
Hungary	0,05	8978,469	9,1
Latvia	0,08	5390,036	8,59
Lithuania	0,08	6202,273	8,73
Malta	0,04	7412,832	9,64
Poland	0,06	5370,01	8,91
Romania	0,07	13010,05	8,59
Slovak Republic	0,06	8305,502	9,02
Slovenia	0,04	15376,58	9,47

Table 4 Regression results for 13 new EU member countries

Period	α_0	α_1	$t_{\alpha 1}$	$t_{\alpha 0}$	R	β-conv.	Beta
1995-2012	0,377	-0,035					
	-0,051	-0,006	-6,326	7,462	-0,886	Yes	0,055

The regression equation is *y= 0,377 + (-0,035)x* and the results are supported by a p value of 0,000013 and 0,000056. The negative α_1 confirms the existence of β convergence equal to 5,5%. Thus the less developed economies that have started from really low GDP per capita have increased their GDP per capita faster than the developed economies (as it is mentioned above, the average annual growth for the EU is calculated at 4% for this period). Also, the speed of convergence is slightly higher than the Balkan countries of 5,3%, even though the latter have started from a lower level of GDP per capita. In a study of 2004 of Matkowski and Prochniak, the β parameter of the eight CEE countries that accessed the EU in 2004 was estimated for the period 1993-2003 at 3,4%. As it will be explained in the next section, accession to EU has accelerated the convergence speed for these countries, thanks to access to other resources, not available for other non-EU countries in the Balkan region. Figure 2 shows that Latvia, Bulgaria and Romania have started at the same approximate level of GDP per capita in 1995, the poorest in this set of countries but the β convergence is more confirmed in Latvia's case, where the average growth has been impressive. This result is confirmed also by the substantial increase of the weight of GDP per capita of Latvia in the studied period, as explained in the next section.

Figure 2 GDP per capita growth rate over 1995-2012 and the log GDP per capita in 1995 as the initial period of analysis

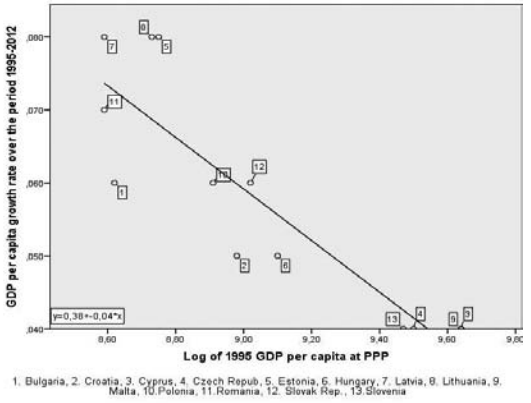
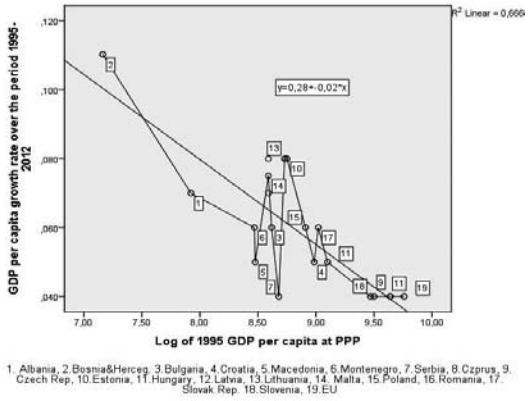


Figure 2 shows a negative correlation between the average annual GDP per capita growths rate over 1995-2012 and the initial GDP per capita level. The points on the chart indicate the position of individual countries and the distance between them gives a clue on the disparities among the Balkan countries as well as among the new members of EU. Following the logic of our analysis, to see if the β convergence has affected the disparities of incomes per capita in the Balkan counties, we analyse the behaviour of the other parameter, σ convergence.

- σ convergence

Our empirical analysis confirmed the β convergence among Balkan countries as well as among the new member countries of EU. Figure 3 shows all eighteen countries under review and the EU's aggregated value of GDP per capita. The chart gives an insight on the differences in the development and the income per capita among the countries under review. Again, the negative relation among the initial level of income and the growth rate is confirmed, albeit at a lower speed (β=2,2%), given that the set of countries is more diversified in the development stage. Growth is higher for less developed countries in Europe such as Bosnia-Herzegovina and Albania. However, to estimate if their income per capita has converged with other countries in the Balkans and its situation against the EU, the σ parameter is assessed by calculating the standard deviation for the log of capita per GDP.

Figure 3 GDP per capita growth rate over 1995-2012 and the log of 1995 GDP



The calculations are done for the group of Balkan countries for the period 1995-2012. The σ convergence exists if the trend line slope of the regression of deviations of log GDP per capita and the time period has a negative coefficient, meaning that income dispersion tends to diminish. The regression results for σ are presented in Table 5 and Figure 4.

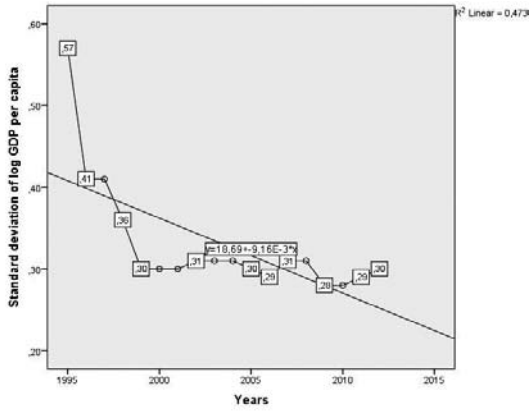
Table 5 Regression results for σ parameter

Period	α_0	α_1	$t_{\alpha 0}$	$t_{\alpha 0}$	R	σ-conv.
1995-2012	18,7	-0,009				
	-4,844	-0,002	3,859	-3,79	-0,688	Yes

The findings are supported by the regression statistics of p=0,001 parameter α0, p=0,002 for the slope of regression and R= -0,688. The results confirm the negative relation in the regression and the existence of σ convergence. As shown in the regression plot in Figure 4, for the initial period of the study the dispersion has been enormous as the period till the decline rate of divergence, following this trend till year 2000. For the period 2000-2012, the pace of decline in standard deviation has slowed substantially. In his study for the convergence of Mediterranean economies, Ancona (2007)[8] projected the growth rates for 2010 and 2015 for the countries in the Mediterranean, including those aspiring EU accession, concluding that the income per capita will further diverge. However, the set of countries in this study is different, and the results differ. What can be derived, however, is that the convergence has been substantial until 2000, while for the rest, it has remained in a certain stagnation + 1-2 points.

8 Ancona Giovanni (2007) "Le economie mediterranee tra convergence e divergenza" " [Mediterranean economies between convergence and divergence], Istituto Italiano di Cultura, Barcelona, 2007.

Figure 4 Standard deviation of GDP per capita 1995-2012



In our study, we have also calculated the ratio of GDP per capita of each Balkan country vis-à-vis EU GDP per capita for the period 1995-2012.

Table 6 Ratio of GDP per capita of Balkan Countries to EU GDP per capita

Year\ Country	Albania	Bosnia-Herzego-vina	Bulgaria	Croatia	Macedonia	Montene-gro	Romania	Serbia	**average of Balkan**
1995	0,16	0,07	0,32	0,46	0,28	0,27	0,31	0,34	0,27
1996	0,17	0,14	0,26	0,5	0,27	0,19	0,32	0,33	0,27
1997	0,15	0,18	0,26	0,51	0,27	0,18	0,29	0,3	0,28
1998	0,16	0,19	0,28	0,51	0,27	0,19	0,27	0,3	0,27
1999	0,18	0,2	0,28	0,49	0,27	0,25	0,26	0,26	0,27
2000	0,18	0,2	0,29	0,5	0,27	0,3	0,26	0,26	0,28
2001	0,19	0,2	0,29	0,51	0,25	0,29	0,28	0,27	0,29
2002	0,19	0,21	0,32	0,53	0,25	0,29	0,3	0,28	0,29
2003	0,2	0,21	0,34	0,55	0,26	0,3	0,32	0,28	0,31
2004	0,21	0,22	0,35	0,56	0,27	0,31	0,35	0,3	0,32
2005	0,22	0,23	0,37	0,57	0,29	0,31	0,36	0,32	0,33
2006	0,23	0,24	0,38	0,58	0,3	0,36	0,39	0,33	0,35
2007	0,23	0,25	0,41	0,61	0,3	0,41	0,43	0,33	0,37
2008	0,26	0,27	0,44	0,63	0,33	0,43	0,49	0,36	0,4
2009	0,28	0,27	0,45	0,62	0,35	0,42	0,5	0,36	0,41
2010	0,27	0,27	0,45	0,59	0,36	0,42	0,51	0,35	0,4
2011	0,27	0,28	0,47	0,61	0,35	0,42	0,51	0,35	0,41
2012	0,28	0,27	0,47	0,61	0,35	0,42	0,53	0,35	0,41

When considering the share of the average of Balkan GDP per capita to EU GDP

per capita, we see a substantial increase for the period under review but almost stationary for the last four years. An explanation can be the impact of the 2008 economic global crises on the Balkans , which hit the Balkans in 2009 and continues to date . The GDP growth rate for the EU for 2008-2012 was 1,3%, whereas for Albania the average growth rate of GDP per capita was 2,6% , apparently lower than the 5,3% average rate estimated by the regression of Beta convergence in the period 1995-2012.

Estimation on the convergence time gap

Hence, based on the above sections' calculations, we may project the time needed to catch up with some of the new members of EU. We will consider Bulgaria with the lowest GDP per capita in the EU area and its 2007 level of GDP per capita as the steady state to achieve.

Returning to the regression equation for Beta convergence, $\frac{1}{T}\ln\frac{y_T}{y_0} = \alpha_0 + \alpha_1 \ln y_0$ we use the results of the regression in Table 1. The GDP per capita of Bulgaria will be used, as at the moment of accession in 2007, and as the poorest country in the Union entering with the lowest GDP per capita value. The time needed for Albania in this case to catch up the GDP per capita of Bulgaria in 2007 would be seven years, considering the GDP per capita of 2012 as initial level.

But the growth rate in the last five years has differed from results of Table 1; the annual has been estimated to average 2,6% . If we consider a simplified formula $y_t = y_0(1+g)^T$ (7) for calculating the GDP per income growth, we can derive the time needed T to the desired yt with the formula $T = log_{(1+g)}(y_t/y_0)$. In this case, Albania with 2,6% speed of growth will needed 11 years to catch up the GDP per capita level of Bulgaria.

But, if we consider also the growth rate of EU using the IMF projections for the period 2013-2019 at the average rate of 1.5%, the estimation for catiching up will differ. For Albania we consider the average rate of 3.5 based on IMF projections for the same period. Based on formula (7), we adjust it as below:

$$y_{T,\,EU} = y_{2012,EU}(1+g)^T = y_{T,Alb} = y_{2012,Alb}(1+g)^T$$

As a result, Albania would need 70 years for its income per capita to converge with the EU.

Conclusions

The findings of the research confirmed the existence of Beta (β) convergence, so the less developed countries have grown faster than the developed countries for the period 1995 – 2012. However, the speed of convergence has been higher in the thirteen new members of the EU than in the Balkan countries. This conclusion can be analysed further in view of political, institutional and economic reforms that the

countries accessing the EU have undertaken. In the Balkans, Bosnia-Herzegovina and Albania have experienced the highest growth rates starting from the lowest level of GDP per capita, but the most impressive is Bosnia's progress. In 2012, its income per capita converged with Albania, toward EU income per capita in 2012. The empirical results have confirmed the sigma (σ) convergence, thus the disparities in the income per capita among Balkan countries against the EU have diminished, demonstrated by the reduction of the standard deviation of GDP per capita. The speed of reduction has been higher in the early years of the period under review for most of the countries, in particular for Bosnia-Herzegovina and Albania. Since 2000 a slow pace of diminishing trend and stagnant, in certain periods, has been noted. In the meantime, after accession, in EU new member countries the disparities in the income per capita have diminished faster.

With the actual rate of growth, in order to catch up with Bulgaria's the lowest level of GDP per capita at the moment of accession, in 2007, Albania would need 14 years. To converge with EU, it would need some 70 years. It is a long period of time. Therefore, Albania needs to reflect on the set of policies and reforms to create room for further economic development. The establishment of strong and reliable institutions, political stability, and promotion of business climate are the first steps that can guide the further economic convergence and welfare of Albanian people.

References

Ancona G (2007) Le economie Mediterranee tra convergenza e divergenza [Mediterranean economies between convergence and divergence], Istituto Italiano di Cultura, Barcelona

Sala-i-Martin X (1990) Lectures Notes on Economic Growth(I): Introduction to the Literature and Neoclassical Models, Nber Working Papers Series, Working Paper No.3563

Barro RJ, Sala-i-Martin X (1990) Economic Growth and Convergence across the United States, Working Paper 3419

Barro RJ, Sala-i-Martin X (1991) Convergence across states and regions, Brookings Papers on Economic Activity

Xavier Sala-i-Martin (1995) The Classical Approach to Convergence Analysis Economics Working Paper 117

Barro RJ, Sala-i-Martin X (1992) Convergence, Journal of Political Economy, Vol. 100, No. 2, Apr, (1992)

Barro, Robert J (2001) Economic Growth in a Cross section of Countries The Quarterly Journal of Economics, Vol. 106, No. 2. (May, 1991): 407-443

Matkowski Z, Prochniak M (2004) Real Economic convergence in the EU Accession countries International Journal of Applied Econometrics and Quantitative Studies Vol.1-3 (2004)

Financing for Development, Case of Albania (2007) Ermelinda Meksi, briefings organized by Parliamentarian for Global Action, New York, October 23-24, 2007

Economics of Development, sixth edition by Dwight H. Perkins, Steven Radelet, David l. Lindauer

Weil DN (2012) Economic Growth, 3rd edition

Mankiw G, Romer D, Weil DN (1992) A contribution to the Empirics of Economic Growth

Caselli F (2006) The Marginal Product of Capital, IMF Working Paper

IMF World Economic Outlook (2013)

Kuadri Makroekonomik Fiskal 2015- 2017, Ministria e Financave [Macroeconomic and fiscal framework 2015 - 2017, Albanian Ministry of Finance]

World Banka Data

UN Data