

Čerović, Slobodan; Knežević, Miroslav; Pavlović, Danijel

## Article

# The Effects of Tourism on the GDP of Macedonia, Montenegro and Serbia in the Process of European Integration

Amfiteatru Economic Journal

## Provided in Cooperation with:

The Bucharest University of Economic Studies

*Suggested Citation:* Čerović, Slobodan; Knežević, Miroslav; Pavlović, Danijel (2016) : The Effects of Tourism on the GDP of Macedonia, Montenegro and Serbia in the Process of European Integration, Amfiteatru Economic Journal, ISSN 2247-9104, The Bucharest University of Economic Studies, Bucharest, Vol. 18, Iss. 42, pp. 407-422

This Version is available at:

<https://hdl.handle.net/10419/169009>

## Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

## Terms of use:

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*



<http://creativecommons.org/licenses/by/4.0/>

## THE EFFECTS OF TOURISM ON THE GDP OF MACEDONIA, MONTENEGRO AND SERBIA IN THE PROCESS OF EUROPEAN INTEGRATION

Slobodan Čerović<sup>1\*</sup>, Miroslav Knežević<sup>2</sup> and Danijel Pavlović<sup>3</sup>

<sup>1) 2) 3)</sup> Singidunum University, Serbia

---

### Please cite this article as:

Čerović, S., Knežević, M. and Pavlović, D., 2016. The Effects of Tourism on the GDP of Macedonia, Montenegro and Serbia in the Process of European Integration. *Amfiteatru Economic*, 18(42), pp. 407-422

---

### Abstract

Tourism is a socio-economic phenomenon exerting considerable economic, social and political impact, thus securing itself an important position in the overall economic growth. The principal purpose of this paper is to present the effects of the EU integration process on tourist movements in Serbia, Macedonia and Montenegro during the period 2006-2014, as 2006 was the year when one of the surveyed countries initiated EU accession negotiations, and tourism sector contribution to GDP in these countries in the period from 2002-2013 based on the data available for these years. To that end, the authors have compared the relationship between the number of foreign tourist arrivals and overnight stays and the GDP rates in the surveyed countries. Upon reviewing the available sources, the authors have reached the conclusion that during the EU integration period, an increase in the number of foreign tourists and overnight stays positively correlated with the GDP growth. EU integration process has had a positive bearing on tourism movements in the surveyed countries. The panel regression method has shown that despite a continuous increase in the number of foreign tourist arrivals, tourism sector still makes a modest direct contribution to the overall economic growth of the surveyed countries (Serbia, Montenegro, and Macedonia). Also, the Granger causality test was applied to demonstrate that it is not possible to predict GDP values in any of the surveyed countries based on the tourism revenue growth, while tourism contribution to GDP in Macedonia and Montenegro can be predicted based on their GDP.

**Keywords:** tourism, economic growth, GDP, EU integration, panel regression

**JEL Classification:** L83, C42, C12, N74, O52

---

---

\* Corresponding author, Slobodan Čerović - scerovic@singidunum.ac.rs

## Introduction

Tourism industry, as a widely used expression, refers to a supposedly single entity operating across all places where tourism occurs (Leiper, 2008, p. 237). It is one of the largest and fastest growing industries in the world and a key driver that can contribute to sustainable development and growth, which according to Pigram and Wahab (2005), was the principal research aim of numerous authors. It refers to sustainable growth and tourism contribution to the overall economy and society, and sustainable use of resources and environment (Liu, 2003, p. 462). It exerts considerable economic, political, social and cultural impact, thus securing itself a prominent position in the overall socio-economic development. It has long been associated with the promotion of goodwill, understanding and peace (D'Amore, 1988), as well as with the growth of political power and prestige (Burns and Novelli, 2007). Namely, it is viewed as a means of promoting cultural understanding by bringing people from different cultural background together (D'Amore, 1988). Over the past few decades, tourism has exhibited a rather positive trend (Wang, Yan, and Li, 2012; Ma and Hassink, 2013; Temirbulatova and Borza, 2015). Despite the fact that it has been affected by several economic crises driven by various economic and non-economic circumstances, it has managed to recover quickly and record significant growth rates on a global scale. (Eugenio-Martin and Campos-Soria, 2014; Čerović et al., 2015). Accordingly, tourism industry has assumed a prominent position in the global economy in recent years (Lew, 2011; Sharpley and Telfer, 2014). Weaver and Lawton (2010) indicate that tourism is slowly but surely becoming a dynamic force in economies worldwide, while Holloway considers it the single most important economic activity in the world (Holloway, Humphreys and Davidson, 2009; Weaver and Lawton, 2010). The economic impact of tourism primarily reflects in tourism consumption (part of the GDP that tourists use for tourism purposes), which exerts considerable impact on the economy of the countries (Unković and Zečević, 2014). Globally, tourism has enabled the GDP spillover from the most advanced economies to those with lower GDP (Sekulović, 2012; Blanke and Chiesa, 2013). The aim of this study is to present the effects of the European integration process on tourism movements, and to elaborate on tourism sector contribution to generating GDP of Serbia, Macedonia and Montenegro during 2002-2013, which covers both the period prior to and following the date of signing the Accession Treaty for the surveyed countries. Macedonia was granted an official EU candidate status in 2005 (the Stabilization and Association Agreement was signed in 2001) (Graan, 2010). Upon separating from Serbia, Montenegro has also embarked on the road of European integration and has been holding the candidate status for EU membership since 2010 (Stabilization and Association Agreement was signed in 2007). Owing to its strong commitment to the EU integration through undertaking key reforms and fulfilling necessary requirements, (Lecheler and De Vreese, 2010), Serbia was also granted an official candidate status in 2012 (Stabilization and Association Agreement was signed in 2005). The authors shall attempt to analyse and compare the results obtained, and point out to differences in tourism sector contribution to the GDP of the surveyed countries.

## 1. The results achieved in tourism sector of Serbia, Macedonia and Montenegro

In order to identify possible variations in tourist movements in the observed countries during the European integration period, we shall give a brief overview of the results

achieved in the tourism sector in Serbia, Macedonia and Montenegro, mainly using the data on the number of overnight stays and tourist arrivals. (table no. 1)

**Table no. 1. Tourist arrivals and number of overnight stays in Serbia during the period 2006-2014**

	Tourist arrivals			Overnight stays		
	total	domestic	foreign	total	domestic	foreign
2006	1.889.771	1.420.929	468.842	6.407.225	539.1913	1.015.312
2007	2.306.558	1.610.513	696.045	7.328.692	5.853.017	1.475.675
2008	2.266.166	1.619.672	646.494	7.334.106	5.935.219	1.398.887
2009	2.018.466	1.373.444	645.022	6.761.715	5.292.613	1.469.102
2010	2.000.597	1.317.916	682.681	6.413.515	4.961.359	1.452.156
2011	2.068.610	1.304.443	764.167	6.644.738	5.001.684	1.643.054
2012	2.079.643	1.269.676	809.967	6.484.702	4.688.485	1.796.217
2013	2.192.435	1.270.667	921.768	6.567.460	4.579.067	1.988.393
2014	2.192.268	1.163.536	1.028.732	6.086.275	3.925.221	2.161.054

Source: Author's research based on the data of The Statistical Office of the Republic of Serbia, 2015

According to the Statistical Office of the Republic of Serbia (2015), slight oscillations could be observed in the overall number of tourist arrivals during the observed period. As can be seen, the structure of tourists has changed significantly (a steady rise could be observed in the number of foreign tourist arrivals, whereas the number of domestic tourists was persistently declining). During the period 2007-2010, a continuous drop was observed in the overall number of tourist arrivals in Serbia. In 2011 and 2012, a mild increase was recorded, and almost the same figures could be observed for the overall number of tourist arrivals in 2014, but with slightly modified structure compared to 2013. The number of domestic tourists (1.163.536) decreased by 8, 4%, while the number of foreign tourists (1.028.732) went up by 11, 6% (The Statistical Office of the Republic of Serbia, 2015).

Considering the number of overnight stays, a declining trend could be observed during the period 2008-2010. A slight increase was observed in 2011, while the number of overnight stays was fairly higher in 2012 than in 2010. An insignificant increase was observed in 2013 compared to 2012 (about 1.5%), followed by a new decrease in 2014 (around 7.5%) Based on the structure and growth rate of overnight stays, stagnation and a minor drop could be observed in the overall number of overnight stays and overnight stays of domestic tourists. However, a continuous growing tendency was recorded in the number of overnight stays of foreign tourists until 2013 (an increase of 65% compared to 2005), and was followed by a decrease in 2014 (due to the reduced number of arrivals). (table no. 2)

**Table no. 2. Tourist arrivals and number of overnight stays  
in Macedonia during the period 2006-2014**

	Tourist arrivals			Overnight stays		
	total	domestic	foreign	total	domestic	foreign
2006	499.473	297.116	202.357	1.917.395	1.474.550	442.845
2007	536.212	306.132	230.080	2.019.712	1.501.624	518.088
2008	605.320	350.363	254.957	2.235.520	1.648.073	587.447
2009	587.770	328.566	259.204	2.101.606	1.517.810	583.796
2010	586.241	324.545	261.696	2.020.217	1.461.185	559.032
2011	647.568	320.097	327.471	2.173.034	1.417.868	755.166
2012	663.633	312.274	351.359	2.151.692	1.339.946	811.746
2013	701.794	302.114	399.680	2.157.175	1.275.800	881.375
2014	735.650	310.336	425.314	2.195.883	1.273.370	922.513

*Source:* Author's research based on the data of the Republic of Macedonia State Statistical Office, 2015

Based on the Republic of Macedonia State Statistical Office (2015), a similar tendency could be observed as in Serbia, i.e., after the growth recorded during the period 2006-2008, a declining tendency could be observed in the number of tourist arrivals and overnight stays. Upon this three-year drop (2008-2010), a slight increase could be observed in the overall number of tourist arrivals in Macedonia in the period 2011-2014. As can be seen, despite the drop in the overall number of tourists in the previously given period, the number of foreign tourists was constantly growing, while the number of domestic tourists was declining each year. On the other hand, the number of overnight stays of domestic tourists was greater than the figures produced by foreign tourists in all of the surveyed years.

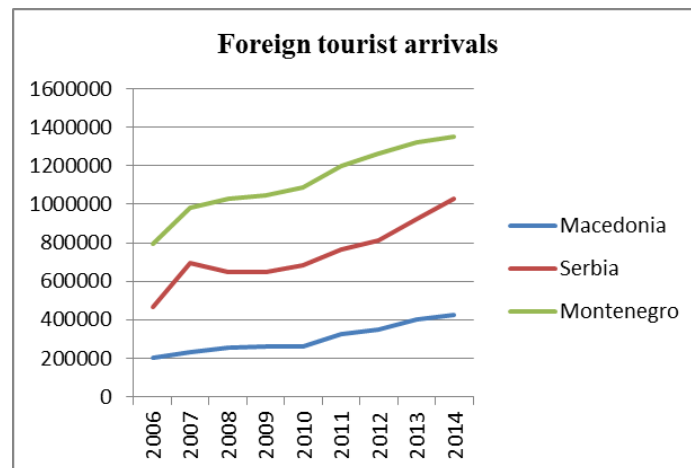
According to MONSTAT (2015) – the Statistical Office of the Republic of Montenegro – this country exhibits quite different pattern from the one observed in Serbia and Macedonia. Namely, Montenegro recorded an increase in the overall number of tourist arrivals, in particular foreign tourists, during the observed period (2006-2014). There was a slight drop in the number of domestic tourist arrivals in 2007 compared to 2006, as well as in 2013 and 2014. The same applies to the overall number of overnight stays, and the number of overnight stays of foreign tourists. In 2013 and 2014, domestic tourists realized lower number of overnight stays than in previous years. (table no. 3)

**Table no. 3. Tourist arrivals and number of overnight stays in Montenegro during the period 2006-2014**

	Tourist arrivals			Overnight stays		
	total	domestic	foreign	total	domestic	foreign
2006	953.961	156.857	797.071	5.936.270	909.607	5.026.663
2007	1.133.432	149.294	984.138	7.294.530	851.045	6.443.485
2008	1.188.116	156.904	1.031.212	7.794.741	828.462	6.966.279
2009	1.207.694	163.680	1.044.014	7.552.006	856.332	6.695.674
2010	1.262.985	175.191	1.087.794	7.964.893	987.033	6.977.860
2011	1.373.454	172.355	1.201.099	8.775.171	956.368	7.818.803
2012	1.439.500	175.337	1.264.163	9.151.236	1.008.229	8.143.007
2013	1.492.006	167.603	1.324.403	9.411.943	997.728	8.414.215
2014	1.517.376	167.079	1.350.297	9.553.783	957.127	8.596.656

Source: Author's research based on MONSTAT, 2015

The conclusion could be made regarding the tourist movements in these countries during the period 2006-2014 that regardless of the change in the overall number of tourist arrivals and overnight stays, a continuous growing trend could be observed in the number of foreign tourists and overnight stays. The results displayed in the figures below support the fact that the EU integration process has had a positive bearing on the foreign tourists' perception of the surveyed countries, as the number of foreign tourists significantly increased during the European integration period. (figures no. 1 and no. 2)

**Figure no. 1. Foreign tourist arrivals during the surveyed period (2006-2014)**

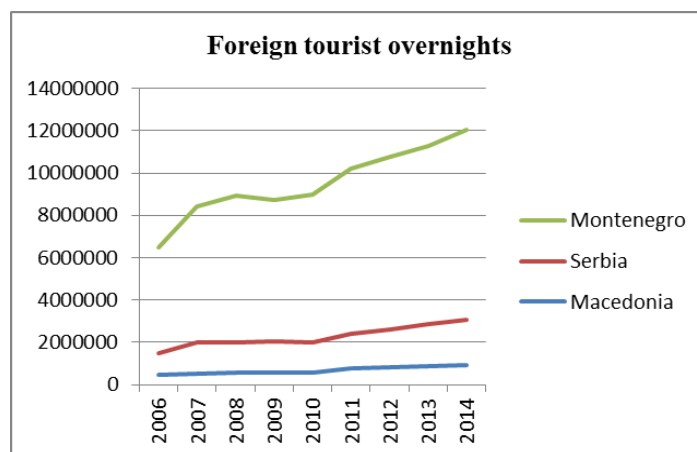


Figure no. 2. Foreign tourist overnight stays during the surveyed period (2006-2014)

## 2. Data and methodology

As stated in the introductory part, the purpose of this paper is to present the contribution of tourism sector to generating GDP of Serbia, Macedonia and Montenegro over the period from 2002-2013., as the most important phase in the EU integration process. Also, the authors aim to examine and compare the results obtained and indicate possible differences among the surveyed countries concerning the tourism sector contribution to the overall economic growth. The most widely used methodologies for performing such analyses are TSA (Tourism Satellite Account), CGE (Computable General Equilibrium) (Dupeyras and MacCallum, 2013; Brida, Pereyra and Devesa, 2008), panel regression (Lee and Chang, 2008; Eilat and Einav, 2004), VaR models (Oh, 2005) etc. Brida et al. (2008) have applied the modified methodology of Ivanov and Webster to Uruguay, Brazil, Mexico and Argentina, which uses the real growth rate of GDP per capita as a measurement of economic growth, and differentiates it from tourism generated GDP and GDP generated by other industries.

The panel regression model was implemented for the purpose of calculating tourism sector contribution to GDP in the surveyed countries. This method is commonly used to examine various effects on economic indicators (Dragos and Dragos, 2012). The main issue encountered in our study was the fact that neither Serbia nor the other two countries dispose of adequate and easily accessible data. Thus, we have used the data available on the results achieved in tourism sector, mainly relating to accommodation services (hotels), food and beverage services (restaurants), as the only available official sources obtained from official statistical agencies in the above-mentioned countries. We have used the statistics of several official institutions to collect necessary information, including the Statistical Office of the Republic of Serbia, the Statistical Office of Montenegro (MONSTAT) and the State Statistical Office of the Former Yugoslav Republic of Macedonia.

### 3. Results and discussion

The panel data analysis was performed with the aim to determine tourism sector contribution to generating GDP of the surveyed countries (Serbia, Macedonia and Montenegro) during the period 2002-2013. The data were collected on an annual basis and the analysis was carried out using the econometric software Gretl 1.10.2. (table no. 4)

**Table no. 4. Panel data descriptive statistics**

Variable	Variants	Arithmetic mean	Standard deviation	Minimum	Maximum
Country	overall	2	0.83	1	3
	between		1		
	within		0		
Years	overall	6.5	3.5	1	12
	between		0		
	within		3.61		
Total GDP	overall	11920676221.3	10360903149.5	131976800.0	32495259283.2
	between		11614881890.5		
	within		3967517507.3		
Tourism contribution to GDP <sup>†</sup>	overall	771471009.5	919315057.3	26284000.0	2653436624.3
	between		1048863485.0		
	within		310286058.9		

The panel contains data on three countries (Serbia, Montenegro and Macedonia), collected during the observation period from 2002-2013, which includes a total of 36 observations.

The total GDP in all three countries ranges from 131976800 to 32495259283.2 EUR, while tourism contribution to GDP varies from 26284000 to 2653436624.3 EUR. The variability of total GDP is greater among states (SD=11614881890.5) than when observed for each country separately (SD=3967517507.3). Likewise, the variability of tourism sector contribution to GDP is greater across states (SD=1048863485) than within one country (SD=310286058.9). (figure no. 3)

<sup>†</sup> The data were obtained from the national statistical offices whose methodologies are harmonized with the international recommendations for tourism statistics. These figures represent the only available official data.

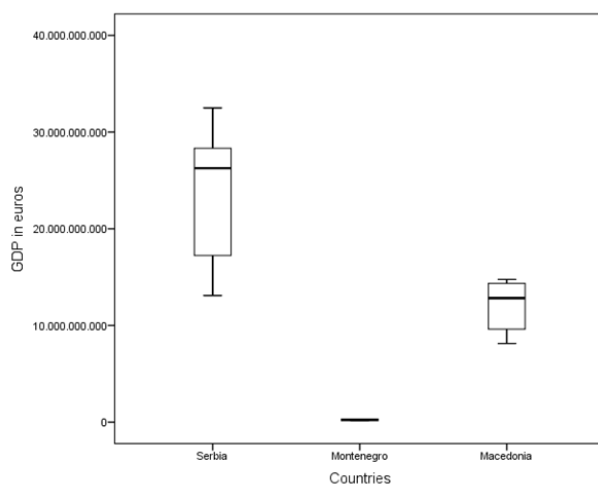


Figure no. 3. GDP by country

The mean value of GDP is highest in Serbia and lowest in Montenegro. In Serbia and Macedonia, the median is positioned in the upper half of the observed GDP values, which indicates that GDP value distribution has shifted to the left. The range of GDP values is the largest in Serbia and lowest in Montenegro. Extreme values could also be observed in these two countries.

Tourism contribution to GDP can be observed in figure no. 4. Such a tendency is particularly prominent in Montenegro, as it has the largest absolute value of tourism contribution to GDP. Serbia and Macedonia exhibit moderate growth rates with almost the same tourism contribution to GDP.

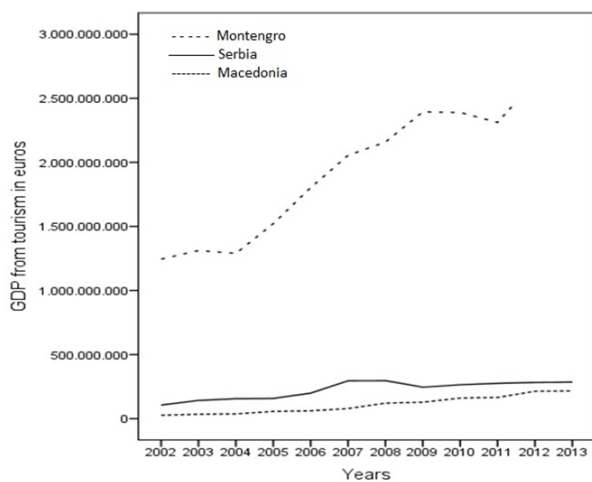


Figure no. 4. Tourism contribution to the GDP of Serbia, Montenegro and Macedonia during the period 2002 - 2013

Figure no. 5 presents the regression curve adjusted to the original data using the method of least squares. The figure shows significant deviations of empirical data from theoretical data, which indicates a rather weak relationship between these two variables ( $R = 0.114$ ). Three independent point groups can be identified in the diagram.

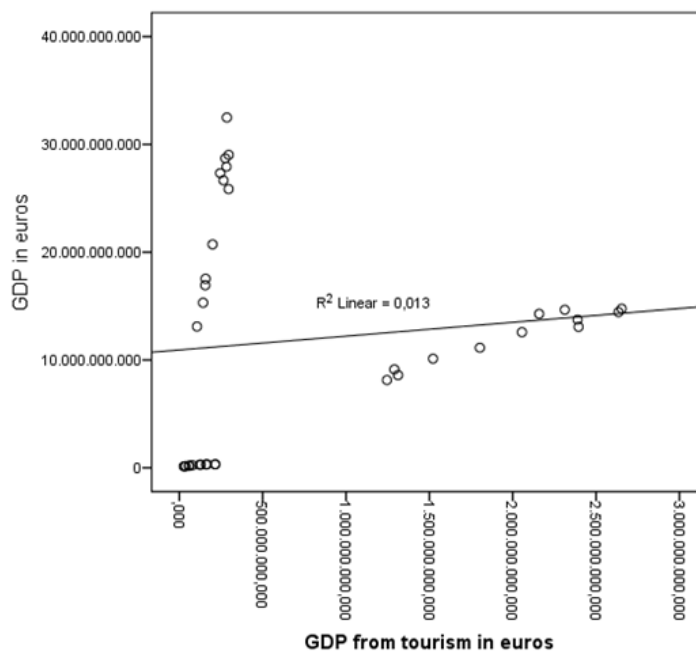


Figure no. 5. GDP and tourism share in GDP

#### 4. Model assessment

We have used the panel regression model to estimate tourism sector contribution to GDP:

$$Y_{it} = b_0 + b_1 X_{it} \quad (1)$$

Where:

Y – GDP

i – Country

t – Year

X – Tourism contribution to GDP

The results of regression coefficients and statistics are shown in table no. 5. The brackets display t-statistics for regression coefficient.

Table no. 5. Regression model assessment

Variable	Pooled OLS regression	Between	Fixed effects	Random effects
Tourism contribution to GDP	1.2835 (0.6684)	0.72689 (0.0658)	5.9092 ** (2.9479)	5.7441 ** (2.9466)
R2	0.01297	0.0043087	0.21357	0.20342
F	0.109	0.004		
p	0.744	0.958		
$\rho$			0.84	0.954
$\lambda$				0.937

The results show that the greater tourism contribution to GDP leads to greater GDP for all estimators. ODL estimator ( $F(1, 34) = 0.109$ ;  $p = 0.744$ ) shows that the additional EUR of tourism contribution to GDP increases the total GDP by 1.2835 EUR, when all data are considered together. Between estimator ( $F(1, 1) = 0.004$ ;  $p = 0.958$ ) shows that the average GDP is by 0.72689 EUR larger in countries whose tourism contribution to GDP is exceeding one EUR. However, the table shows that the common regression model and "between" estimator are not statistically significant.

The Durbin-Wu-Hausman test was used to determine which model assessment is more consistent, the fixed effects model or the random effects model. The results obtained by means of Hausman test ( $w = 0.23$ ;  $p = 0.63$ ) show that we reject the null hypothesis that both models are consistent, and we conclude that the appropriate model is the fixed effects model with the 95% confidence interval.

Based on the parameter assessment, we get the equation of the fixed effects regression model:

$$Y_{it} = 7361900000 + 5.90919X_{it} \quad (2)$$

The fixed effects estimator shows that every additional EUR of tourism contribution to GDP exceeding the individual average leads to GDP growth by 5.9092 EUR.

The model explains 21% of the variation of GDP within a country. The variations caused by individual differences among the states amount to 84%, while 16% can be attributed to the idiosyncratic error.

### The Granger causality test

The Granger causality test is a statistical procedure for determining whether one time series is useful for forecasting another one. This test is used herein to determine whether past values of tourism contribution to GDP can be used to predict GDP and vice versa. For the purpose of this analysis, panel data are distributed by observational units (countries), and

the matrix F -statistics was developed. In the upper diagonal part of matrix, we examine the null hypothesis that the previous value of tourism contribution to GDP is not useful for prediction of GDP, while in the lower diagonal part of matrix we examine the null hypothesis that the previous value of GDP is not useful for predicting tourism contribution to GDP. Three tests were performed for each country, with the independent variable lagged by one, two and three years. In order to determine the values of the Ganger test, software package R 3.2.1 and MSBVAR library were used.

The results show that GDP values can be used for predicting tourism contribution to GDP of Montenegro ( $F=5.296$ ;  $p=0.050$ ) and Macedonia ( $F=10.445$ ;  $p=0.012$ ) for variables with one-year lag, at the 5% error rate, which is not the case in Serbia. The tourism contribution to GDP with one-year lag is not considered useful information for predicting GDP in any of the surveyed countries. (table no. 6)

**Table no. 6. Granger causality test with one-year lag**

	Serbia		Montenegro		Macedonia	
	GDP	Tourism contribution	GDP	Tourism contribution	GDP	Tourism contribution
GDP		0.058 (0.816)		5.296 (0.050)		10.445 (0.012)
Tourism contribution	1.665 (0.233)		0.957 (0.357)		2.212 (0.175)	

If we analyse variables with a two-year lag, it is possible to use GDP level for predicting tourism contribution to GDP in Macedonia ( $F=6.152$ ;  $p=0.044$ ) at the 5% error rate, and Montenegro ( $F=4.095$ ;  $p=0.088$ ) at the 10% error rate. The tourism sector contribution to GDP with a two-year lag is not considered useful for predicting GDP in any of the surveyed countries. (table no. 7)

**Table no. 7. Granger causality test with a two- year lag**

	Serbia		Montenegro		Macedonia	
	GDP	Tourism contribution	GDP	Tourism contribution	GDP	Tourism contribution
GDP		1.905 (0.243)		4.095 (0.088)		6.152 (0.044)
Tourism contribution	2.624 (0.166)		0.043 (0.958)		2.802 (0.153)	

It is possible to rely on the GDP values for predicting tourism contribution to GDP in Montenegro ( $F=62.230$ ;  $p=0.016$ ) with a three- year lag and at the 5% error rate, whereas tourism contribution to GDP with a three-year lag cannot be used for predicting GDP in any of the surveyed countries. (table no. 8)

Table no. 8. Granger causality test with a three-year lag

	Serbia		Montenegro		Macedonia	
	GDP	Tourism contribution	GDP	Tourism contribution	GDP	Tourism contribution
GDP		1.204 (0.484)		62.230 (0.016)		2.566 (0.293)
Tourism contribution	1.144 (0.498)		0.351 (0.797)		5.945 (0.147)	

In order to present the positive effects of the EU integration process on foreign tourist movements in the surveyed countries and on the GDP growth, we have performed a comparative analysis of two models: the model displayed in Table 5 and the model which also includes the variable-number of years from the moment the country received the candidate. Multivariate models have advantages in ease of use, numerical stability, and accuracy of inference. This is one of the reasons for using the fixed effects regression model. In addition, fixing of time intervals is necessary to monitor and control the economic changes and tendencies in the market (e.g. macroeconomic shocks). The model efficiency was monitored and measured by means of Schwarz's Bayesian Criterion, whose absolute value reveals the model's success rate. Namely, lower absolute value indicates greater model efficiency. Special panel model was designed for Serbia, Montenegro and Macedonia, and the final results are presented in table no.9.

Table no. 9. Panel model for Serbia, Montenegro and Macedonia

Predictors	Information Criteria			FE	95% Confidence Interval	
					Lower Bound	Upper Bound
Number of foreign tourist arrivals to Serbia	-2 Log Likelihood	360,474	F=15,70, p=0,004	22041,9*  -4168,8	12428,5	31655,37
	Akaike's Information Criterion (AIC)	366,47				
	Hurvich and Tsai's Criterion (AICC)	372,47				
	Bozdogan's Criterion (CAIC)	369,71				
	Schwarz's Bayesian Criterion (BIC)	366,71				
Number of overnight stays of foreign tourists in Serbia	-2 Log Likelihood	360,324	F=15,85 p=0,004	10179,5* -1902,3	5792,81	14566,25
	(AIC)	366,32				
	(AICC)	372,32				
	(CAIC)	369,56				
	(BIC)	366,56				
Number of	-2 Log	347,857	F=16,64,	15439,6*	6713,9167	24165,388

Predictors	Information Criteria			FE	95% Confidence Interval	
					Lower Bound	Upper Bound
foreign tourist arrivals to Montenegro	Likelihood		p=0,004	-3783,9		
	(AIC)	353,857				
	(AICC)	359,857				
	(CAIC)	357,095				
	(BIC)	354,095				
Number of overnight stays of foreign tourists in Montenegro	-2 Log Likelihood	347,162	F=18,88 p=0,02	6813,8* -1567,9	3198,1766	10429,553
	(AIC)	353,162				
	(AICC)	359,162				
	(CAIC)	356,401				
	(BIC)	353,401				
Number of foreign tourist arrivals to Macedonia	-2 Log Likelihood	356,259	F=4,57, p=0,065	5412,9 -2530	-421,338	11247,275
	(AIC)	362,259				
	(AICC)	368,259				
	(CAIC)	365,497				
	(BIC)	362,497				
Number of overnight stays of foreign tourists in Macedonia	-2 Log Likelihood	357,181	F=1,46 p=0,261	747,9 -417,6	-215,0302	1710,9875
	(AIC)	363,181				
	(AICC)	369,181				
	(CAIC)	366,419				
	(BIC)	363,419				

Note: GDP-dependant variable; \*\*statistical significance level of 1%, \*statistical significance level of 5%; standard error is reported in parentheses;

It can be noted that during the EU accession period, the number of foreign tourist arrivals and the number of overnight stays of foreign tourists had positive effects on the dependant variable (GDP) in Serbia and Montenegro, while this was not the case for Macedonia. The results obtained indicate that the surveyed countries achieved greater number of foreign tourist arrivals and overnight stays in the period when they started complying with the EU accession criteria. This was in direct correlation with the increase of GDP in Serbia and Montenegro, while no such positive correlation could be observed in Macedonia.

## Conclusions

Tourism is a thriving industry in terms of growth and economic importance and it generates considerable economic, political, cultural and social effects. Nevertheless, the panel regression model implemented herein shows that despite the continuous growth in the number of foreign tourist arrivals, tourism still makes a modest direct contribution to the GDP of Serbia and Montenegro. On the other hand, no positive correlation could be observed in Macedonia between the number of foreign tourist arrivals and overnight stays and the increase of GDP. By means of the Ganger causality test, the conclusion was made

that GDP values in any of the surveyed countries cannot be predicted based on the tourism revenue growth, while tourism contribution to GDP in Macedonia and Montenegro can be predicted based on their GDP. The level of tourism contribution to the economic growth varies in the surveyed countries (the largest contribution of tourism to the overall economic growth is observed in Montenegro, as it has an access to the sea, Macedonia generates the lowest tourism contribution, while Serbia occupies the middle position). It is worth mentioning that all of the surveyed countries show a growing tendency in the number of foreign tourist arrivals. Thus, it is necessary to adjust the tourism supply with the international trends in the tourism market, in order to trigger positive effects on the economy as a whole. There is a positive correlation between the number of foreign tourists arrivals and the EU integration process (accession to the European Union affects the attitudes of foreigners, countries become more open and accessible, legal regulations are revised or amended, etc.). Therefore, it is possible to claim that there was a positive correlation between the growing tendency in the number of foreign tourist arrivals and overnight stays and GDP growth during the EU integration period in the surveyed countries. This does not refer to Macedonia where an increase in the number of foreign tourist arrivals and overnight stays was not statistically significant for the GDP growth. Accordingly, the process of fulfilling the EU accession criteria positively correlates with the increase in the number of foreign tourist arrivals. Thus, it can be assumed that the positive effects of meeting the EU accession criteria, particularly those related to GDP and membership in the European Economic and Monetary Union (EMU) can be achieved by increasing the tourism share to the GDP of a country. The tertiary sector, encompassing tourism, is the starting point, as one of the sectors with significant contribution to GDP (Durbarry, 2004). The scope of this study leaves space for further research that could include a comparative analysis of the results produced by the EU states and those generated by non- member states. Research limitations are reflected in the inability to perform quantitative measurement of other variables related to the EU integration process: e.g. stage in complying with accession criteria, speed in implementing reforms. Measurements based on additional qualitative variables and improvements of the current model are to be considered for further research.

## References

- Blanke, J. and Chiesa, T., 2013. *The Travel & Tourism Competitiveness Report*. Geneva: The World Economic Forum.
- Brida, J. G., Pereyra, J. S. and Devesa, M. J., 2008. Evaluating the contribution of tourism to economic growth. *Anatolia*, 2(19), pp. 351-357.
- Burns, P. M. and Novelli, M., 2007. *Tourism and Politics*. Oxford: Routledge.
- Čačić, K., 2013. *Poslovanje hotelskih preduzeća*. Beograd: Univerzitet Singidunum.
- Čerović, S., Knežević, M., Barjaktarović, D., Sekulović, N. and Đoković, F., 2015. The Impact of Economic Crisis and Non-Economic Factors on the Tourism Industry in Zlatibor. *The European Journal of Applied Economics*, 12(1), pp. 1-9.
- D'Amore, L., 1988. Tourism-the world's peace industry. *Journal of Travel Research*, 27(1), pp. 35-40.
- Dupeyras, A. and MacCallum, N., 2013. *Indicators for Measuring Competitiveness in Tourism: A Guidance Document*. s.l: OECD Tourism Papers, OECD Publishing.

- Durbarry, R., 2004. Tourism and economic growth: the case of Mauritius. *Tourism Economics*, 10(4), pp. 389-401.
- Dwyer, L., Forsyth, P. and Spurr, R., 2003. Inter-industry Effects of Tourism Growth: Implications for Destination Managers. *Tourism Economics*, 11(9), pp. 117-132.
- Eilat, Y. and Einav, L., 2004. Determinants of international tourism: a three-dimensional panel data analysis. *Applied Economics*, 36(12), pp. 1315-1327.
- Eugenio-Martin, J. L. and Campos-Soria, J. A., 2014. Economic crisis and tourism expenditure cutback decision. *Annals of Tourism Research*, iss. 44, pp. 53-73.
- Friis, K., 2007. The Referendum in Montenegro: The EU? s? Postmodern Diplomacy? *European Foreign Affairs Review*, 12(1), pp. 67-88.
- Graan, A., 2010. On the Politics of "Imidž": European Integration and the Trials of Recognition in Postconflict Macedonia. *Slavic Review*, pp. 835-858.
- Holloway, C. J., Humphreys, C. and Davidson, R., 2009. *The Business of Tourism*. London: Pearson.
- Lecheler, S. and De Vreese, C. H., 2010. Framing Serbia: the effects of news framing on public support for EU enlargement. *European Political Science Review*, 20(1), pp. 73-93.
- Lee, C. C. and Chang, C. P., 2008. Tourism development and economic growth: A closer look at panels. *Tourism management*, 29(1), pp. 180-192.
- Leiper, N., 2008. Why 'the tourism industry' is misleading as a generic expression: The case for the plural variation, 'tourism industries'. *Tourism Management*, 29(2), pp. 237-251.
- Lew, A. A., 2011. Tourism's role in the global economy. *Tourism Geographies*, 13(1), pp. 148-151.
- Liu, Z., 2003. Sustainable tourism development: A critique. *Journal of sustainable tourism*, 11(6), pp. 459-475.
- Ma, M. and Hassink, R., 2013. An evolutionary perspective on tourism area development. *Annals of Tourism Research*, iss. 41, pp. 89-109.
- MONSTAT Statistical Office of Montenegro, 2015. *Annual Data*. [online] Available at: <<http://www.monstat.org/cg/page.php?id=19&pageid=19>> [Accessed 13 October 2015].
- Oh, C. O., 2005. The contribution of tourism development to economic growth in the Korean economy. *Tourism management*, 26(1), pp. 39-44.
- Pigram, J. J., and Wahab, S. eds., 2005. *Tourism, development and growth: the challenge of sustainability*. s.l: Routledge.
- Republic of Macedonia State Statistical Office, 2015. *Gross Domestic Product*. [online] Available at: <[http://www.stat.gov.mk/GSearch\\_en.aspx?cx=005984792435174779271%3Av7t0sn-wu1a&cof=FORID%3A10&ie=UTF-8&q=GDP+in+real+price&sa=Search](http://www.stat.gov.mk/GSearch_en.aspx?cx=005984792435174779271%3Av7t0sn-wu1a&cof=FORID%3A10&ie=UTF-8&q=GDP+in+real+price&sa=Search)> [Accessed 15 October 2015].
- Sekulović, N., 2012. *Turizam u uslovima delovanja krize*. Beograd: Univerzitet Singidunum.
- Sharpley, R. and Telfer, D. J., 2014. *Tourism and development: concepts and issues*. s.l: Channel View Publications.

- Temirbulatova, M. and Borza, M., 2015. Multifunctional development of rural areas of Kazakhstan with the application of the unified model of tourism in the context of sustainable development and the green economy. *European Scientific Journal*, 11(1), pp. 200-216.
- The Statistical Office of the Republic of Serbia, 2015. *Data Latest indicators*. [online] Available at: <<http://webzrs.stat.gov.rs/WebSite/Public/PageView.aspx?pKey=2>> [Accessed 11 October 2015].
- Unković, S. and Zečević, B., 2014. *Ekonomika turizma*. Beograd: Ekonomski fakultet u Beogradu, Centar za izdavačku delatnost.
- Wang, Z. P., Yan, J. P. and Li, W., 2012. Spatial Strategic Orientation and Distribution of the Tourism Development in Minority Areas—A Case of Linxia Hui Autonomous Prefecture. *Advanced Materials Research*, iss. 361, pp. 1748-1751.
- Weaver, D. and Lawton, L., 2010. *Tourism Management*. Milton: Wiley & Sons.