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Tourism Persistence in the Southeastern European Countries: The Impact of Covid-19

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TOURISM PERSISTENCE

IN THE SOUTHEASTERN EUROPEAN COUNTRIES:

THE IMPACT OF COVID-19

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Abstract

This paper examines tourism persistence in a group of Southeastern European (SEE) countries (Albania, Bosnia, Bulgaria, Croatia, Montenegro, North Macedonia, Serbia and Slovenia) by applying fractional integration methods to monthly data on foreign tourist arrivals and overnight stays. The results indicate that the COVID-19 pandemic has increased the degree of persistence of the series examined and also reduced the importance of their seasonal component.

Keywords: SEE; COVID-19; fractional integration; persistence; shocks; tourism

JEL Classification: C13; C22; L83; N74; Z32

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1. Introduction

Tourism has been one of the sectors most affected by the COVID-19 pandemic, since the border closures and lockdown restrictions adopted by many countries to limit the spread of the virus brought about a huge drop in foreign tourist arrivals and overnight stays. An interesting issue is the degree of persistence in the tourism sector, i.e. whether the effects of such shocks are permanent or transitory. Various papers have analysed this question by carrying out unit root tests (Bahmani-Oskoee, et al., 2021; Narayan, 2005; Albaladejo, Gonzalez-Martinez & Martinez-Garcia, 2020; Al-Nsour, 2020; etc.). Some recent studies have applied instead a more general framework allowing the differencing parameter to take fractional as well as integer values. Examples of such studies using fractional integration methods are Yucel et al. (2022), Claudio-Quiroga et al. (2021), Gil-Alana et al. (2019) and Payne et al. (2021), the latter finding that, as a result of the COVID-19 shock, the number of foreign arrivals and overnight stays in Croatia both declined whilst their degree of persistence increased. The present study analyses the same series for a wider set of Southeastern European countries (SEE) countries for the period before and during the COVID-19 pandemic. All these countries (Albania, Bosnia & Herzegovina, Bulgaria, Croatia, Montenegro, North Macedonia, Serbia and Slovenia) are located at the crossroads of South and South East Europe. Some of them, namely Albania, Croatia, Montenegro and Slovenia, have direct access to the sea. Others, such as Bosnia and Herzegovina (also known as Bosnia) and Bulgaria have only a short coastline giving them access to the Adriatic Sea and the Black Sea respectively. Finally, North Macedonia and Serbia are landlocked.

Prior to the pandemic, the SEE countries had experienced a sharp increase in tourism, being ranked among the fastest emerging tourist attractions by the United Nationals World Tourism Organization (2019); in particular, by 2018 Albania had

recorded 15% year-on-year growth, Bosnia 14.1%, Bulgaria 4.4%, Croatia 6.7%, Montenegro 10.6%, North Macedonia 12.2%, Serbia 14.2% and Slovenia 10.9%.

The share of tourism in GDP had also increased in the SEE countries in the two decades before the pandemic, but then dropped in most cases (see Figure 1). For instance, in Albania it had reached 2.12% over the period 1996-2020 before dropping (Institute of Statistics Albania, 2022); in Bulgaria it had reached 19% by 2020 and it was not significantly affected (National Statistical Institute of Bulgaria, 2022); in Slovenia the increasing trend was followed by a sharp drop to 3.14% in 2020 (Statistical Office of the Republic of Slovenia, 2022); in Croatia tourism exhibited an increasing trend over the period 1996-2020, its share of GDP then dropping to 2.8% in 2020 (Croatia Bureau of Statistics, 2022); similarly, in Montenegro this share increased over the period 2007-2020 but then fell to 2.4% in 2020 (Statistical Office of Montenegro, 2022); in North Macedonia it increased slightly over the period 2000-2019, reaching 1.58% in 2019 according to the most recent figures (State Statistical Office Republic of North Macedonia, 2022); by contrast, in Bosnia and Herzegovina there had been a slightly decreasing trend, with a sharper fall to 1,39% in 2020 (Agency for Statistics of Bosnia and Herzegovina, 2022), and the same applies to Serbia, where this share had been slightly decreasing over the period 1996-2020, reaching 1.1% in 2020 (Statistical Office of the Republic of Serbia, 2022).

INSERT FIGURE 1 ABOUT HERE

On the whole the COVID-19 pandemic had a severe impact on the number of foreign tourist arrivals and overnight stays in the SEE countries, which raises the issue of adopting appropriate policy responses. A relevant debate, which predates the crisis, concerns how to develop a sustainable tourism system that might be less vulnerable to such exogenous shocks; for instance, in the case of Martin Brod, a small town in Bosnia

and Herzegovina, within a couple of years the locals changed their sustainability imaginaries ("a society's understanding of how environmental resources should be used") in response to shifting external financial circumstances (Dogmus & Nielsen, 2021). Managers of enterprises in Slovenia essentially depended on labour crisis management practices (CMPs), liquidity, assistance from stakeholders and the government to manage the emergency represented by the COVID-19 shock (Kukanja, Planinc & Sikošek, 2022). Bulgaria generally fared better during the pandemic (Hermansen, 2021), but there is still a need to find opportunities for extending the season and overcoming the decline of journeys and visits to mountain resorts (Velkova & Dimitrova, 2021). Since the beginning of the pandemic, the European Union has also adopted several support measures for the SEE countries with the purpose of alleviating the economic impact of the pandemic. (European Commission, 2022).

In the light of the issues discussed above, the aim of the present study is to provide evidence on the degree of persistence in the tourist sector of these countries and how it might have been affected by the COVID-19 pandemic. This type of analysis has important policy implications, since policy action is only required in the case of shocks with long-lived effects.

2.   Data and Methodology

We analyse monthly data on foreign tourist arrivals and overnight stays for the longest available span in each of the SEE countries included in our dataset (namely Albania, Bosnia, Bulgaria, Croatia, Montenegro, North Macedonia, Serbia and Slovenia). The data sources are the national statistical offices of the various SEE countries, more precisely: Institute of Statistics Albania, Agency for Statistics of Bosnia and Herzegovina, National

Statistical Institute of Bulgaria, Croatia Bureau of Statistics, Statistical Office of Montenegro, State Statistical Office Republic of North Macedonia, Statistical Office of the Republic of Serbia, Statistical Office of the Republic of Slovenia. The sample period for the various countries examined is the following: Albania, 2018M01-2021M12; Bosnia and Herzegovina, 2008M01-2021M12; Bulgaria, 2008M01-2021M12 for foreign arrivals and 2012M01-2021M12 for overnight stays; Croatia, 2005M01-2021M12; Montenegro, 2016M01-2021M09; North Macedonia, Serbia and Slovenia, 2010M01-2021M12. Foreign tourist arrivals and overnight stays are displayed in Figure 2 and 3 respectively. Both the negative impact of COVID-19 and seasonality patterns are immediately apparent in both cases.

INSERT FIGURES 2 AND 3 ABOUT HERE

Tables 1 and 2 report descriptive statistics for the two variables in all countries. Croatia has the highest number of observations (204), followed by Bulgaria and Bosnia (168); all countries reached an all-time high for foreign tourist arrivals and foreign overnight stays in August 2019 (all data expressed in thousands): Albania, with 190 arrivals and 640 stays; Bosnia, 166 & 356; Bulgaria, 2325 & 4569; Croatia, 4365 & 25905; Montenegro, 204 & 962; North Macedonia, 100 & 248; Serbia, 237 & 490 and Slovenia, 879 & 2286; by contrast, historically all-time lows for both series were reached in April 2020, with some countries even registering zero foreign arrivals and overnight stays.

INSERT TABLES 1 AND 2 ABOUT HERE

These series are analysed using fractional integration methods. To allow for some degree of generality, we include a linear time trend in the model, along with a seasonal AR(1) structure to capture the seasonality of the data. More precisely, the model is

specified as follows:

$$y_t = \alpha + \beta t + x_t, \qquad (1 - B)^d \, x_t = u_t, \qquad u_t = \rho \, u_{t-12} + \varepsilon_t. \qquad (1)$$

where y_t stands for the observed series; α and β are unknown coefficients, namely the intercept (constant) and the linear time trend coefficient; B denotes the backshift operator; x_t stands for the regression errors, which are assumed to be integrated of order d or I(d), with ρ being the seasonal coefficient.

3.   Empirical Results

Table 3 reports the estimated coefficients from Equation (1), in Panel (i) for Foreign Tourist Arrivals, and in Panel (ii) for Foreign Tourist Nights. Note that the differencing parameter d (and the 95% confidence intervals, in parenthesis) is estimated using three different specifications: without deterministic components; with a constant only; with a constant and a linear time trend; the reported estimates are those from the specification selected on the basis of the statistical significance of the regressors, which in all cases includes a constant only. The estimates of d imply that in the case of Foreign Tourist Arrivals (panel i) mean reversion takes place only in Bosnia, whilst in the other cases either the unit root null (d = 1) cannot be rejected (as in Albania, Bulgaria, Croatia and Slovenia) or d is found to be significantly higher than 1 (as in Montenegro, North Macedonia and Serbia). As for Foreign Tourist Nights (panel ii), mean reversion is not found in any single case and the unit root null hypothesis cannot be rejected for any country except North Macedonia and Serbia, in both cases in favour of alternatives with d > 1. Thus, these results suggest that the effects of shocks are transitory only in the case of Bosnian arrivals, whilst they are permanent in all other cases. Finally, there is evidence

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of seasonality in some of the series, especially in Bulgaria and Croatia, but also in Slovenia and Albania.

INSERT TABLES 3 AND 4 ABOUT HERE

Table 4 reports the corresponding estimates for the logged series. The parameter d is now found to be lower than previously, with mean reversion taking place not only for Bosnia (with d = 0.61) but also for Albania (d = 0.47) and Slovenia (0.49); in other countries, despite the estimates of d being below 1 (as in Croatia, Montenegro and Serbia), the unit root hypothesis cannot be rejected. Concerning Foreign Tourist Nights, mean reversion occurs in Albania and Croatia, with estimates of d significantly below 1. On the whole, more evidence of mean reversion is found when using the logged data, in particular for both series in the case of Albania, and also for arrivals in the case of Bosnia and Slovenia and overnight stays in the case of Croatia. Again Bulgaria and Croatia exhibit the largest seasonal AR coefficients for both series.

To examine the possible impact of the COVID-19 pandemic we repeat the analysis ending the sample in December 2019. These results are displayed in Table 5 and 6 for the original and the logged series respectively.

INSERT TABLES 5 AND 6 ABOUT HERE

When using the raw data, in the case of arrivals we obtain much lower estimates of d than those based on the full sample, except in the case of Bosnia (Table 5, panel i), and mean reversion now takes place in Bulgaria and Croatia; as for overnight stays (Table 5, panel ii), mean reversion is detected in Bosnia, Serbia and Slovenia, whilst in the other cases the confidence intervals are so wide that the unit root null cannot be rejected, and in the case of Albania neither the I(0) nor the I(1) hypothesis can be rejected. Seasonality is clearly present in all cases.

Concerning the logged data (Table 6), we find that, for arrivals, mean reversion takes place in all cases except Montenegro, and for overnight stays in all cases except Montenegro and Albania. Further, the time trend is now statistically significant and positive in some cases, especially for overnight stays. Once again, seasonal patterns are present.

On the whole, there is evidence that the COVID-19 pandemic has significantly increased the degree of persistence of the series, the number of cases without mean reversion being much higher in the full sample including the pandemic period, and also reduced the importance of the seasonal component in the data.

4.   Conclusions

This paper has examined the statistical properties of two tourism-related series (the number of foreign tourist arrivals and overnight stays) in a group of eight Southeastern European countries, namely Albania, Bosnia, Bulgaria, Croatia, Montenegro, North Macedonia, Serbia and Slovenia. For this purpose, a fractional integration model has been estimated that allows to distinguish between transitory and permanent effects of shocks within a more general and flexible framework compared to the classical approach based on unit root tests.

The empirical findings suggest that the COVID-19 pandemic increased both persistence and seasonality in the series under investigation. Interestingly, they also point to some cross-country differences, possibly reflecting different policy responses to the pandemic. Regional cooperation might be desirable to achieve a faster recovery in the tourist sector and to reduce the impact of future external shocks.

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Figure 1: Share of tourism in GDP in % in SEE countries
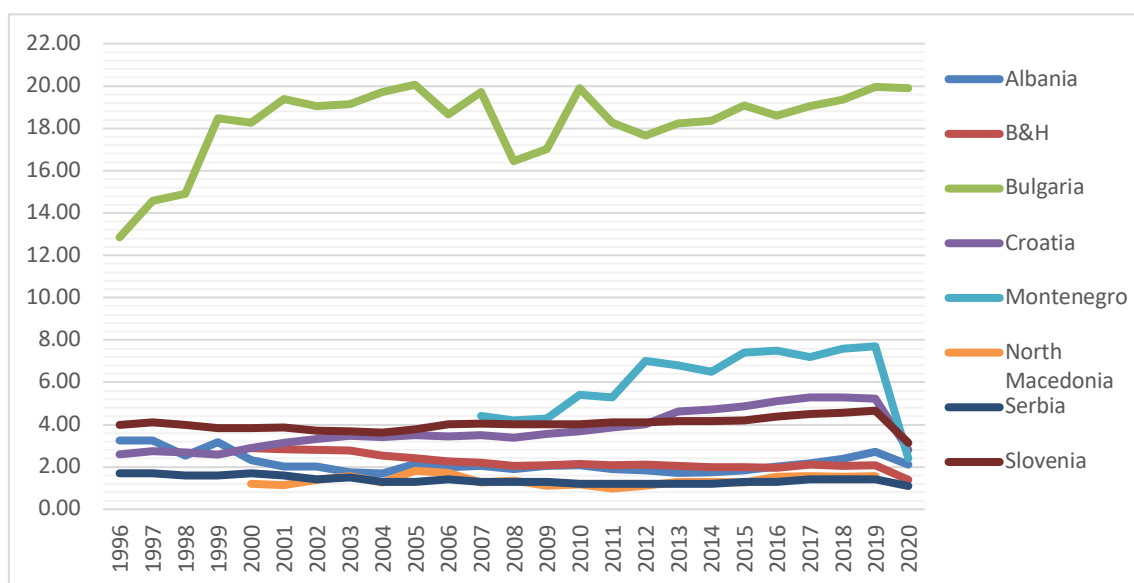
Figure 2. Foreign tourist arrivals in SEE countries (January 2005 – December 2021)
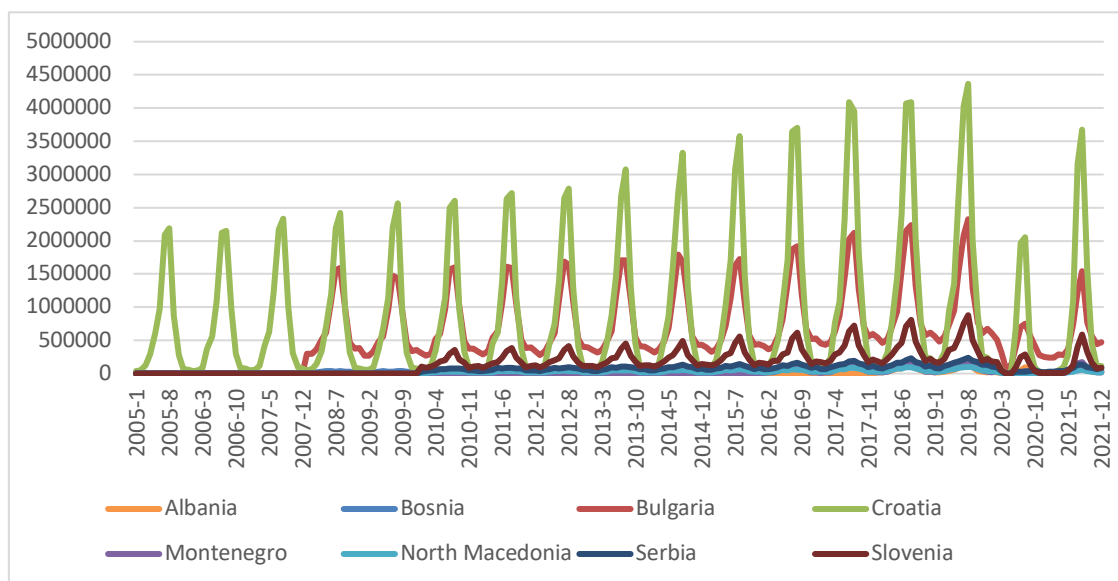
Figure 3. Foreign overnight stays in SEE countries (January 2005 – December 2021)

Table 1: Descriptive statistics for foreign tourist arrivals in SEE countries

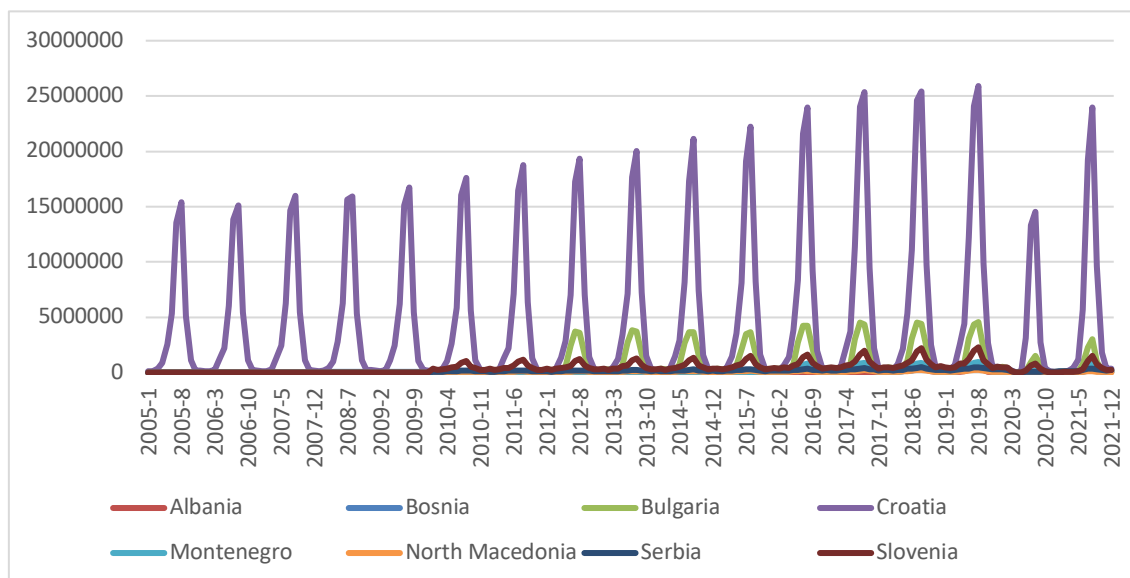| Series	St. date	End date	N. of obs.	Mean	Std. Dev.	Maximum	Minimum
ALBANIA	2018-1	2021-12	48	52706.54	48708.83	189607	0
BOSNIA	2008-1	2021-12	168	48925.20	33873.93	165554	268
BULGARIA	2008-1	2021-12	168	771185.76	517014.49	2325187	81153
CROATIA	2005-1	2021-12	204	903083.98	1083271.96	4365372	758
MONTENEGRO	2016-1	2021-12	72	62340.65	56492.70	204462	68
N.MACEDONIA	2010-1	2021-12	144	36591.91	22754.17	100132	171
SERBIA	2010-1	2021-12	144	90223.26	46264.54	237801	1052
SLOVENIA	2010-1	2021-12	144	239053.40	169744.82	879291	0

Table 2: Descriptive statistics for foreign overnight stays in SEE countries

Series	St date	End date	N. of obs.	Mean	Std. Dev.	Maximum	Minimum
ALBANIA	2018-1	2021-12	48	148526.75	182418.13	672779	0
BOSNIA	2008-1	2021-12	168	103451.40	69213.24	357593	1670
BULGARIA	2012-1	2021-12	120	1136558.38	1379627.69	4568804	10657
CROATIA	2005-1	2021-12	204	4921595.68	6952146.70	25904762	26001
MONTENEGRO	2016-1	2021-12	72	246000.56	288894.63	962168	1310
N MACEDONIA	2010-1	2021-12	144	78525.14	52553.51	248491	2332
SERBIA	2010-1	2021-12	144	199493.61	93930.08	496489	11932
SLOVENIA	2010-1	2021-12	144	609231.83	447321.71	2286237	11554

Table 3. Estimates based on the original data

i) Arrivals Foreign Tourists				
Series	d	Intercept	Time trend	Seas.
ALBANIA	1.08 (0.81, 1.53)	16475.66 (21.43)	---	0.809
BOSNIA	0.41 (0.27, 0.65)*	40972.36 (12.21)	---	0.159
BULGARIA	1.07 (0.92, 1.26)	206552.46 (13.96)	---	0.933
CROATIA	1.05 (0.88, 1.25)	26208.55 (41.33)	---	0.965
MONTENEGRO	1.28 (1.02, 1.67)	8441.54 (2.67)	---	0.704
NORTH MACEDONIA	1.28 (1.13, 1.47)	11590.38 (53.17)	---	0.737
SERBIA	1.29 (1.14, 1.49)	26626.38 (22.16)	---	0.737
SLOVENIA	1.09 (0.93, 1.29)	109146.75 (6.65)	---	0.901
ii) Night Foreign Tourists				
Series	d	Intercept	Time trend	Seas.
ALBANIA	1.10 (0.75, 1.70)	23155.35 (2.67)	---	0.862
BOSNIA	1.09 (0.95, 1.25)	54342.48 (2.48)	---	0.764
BULGARIA	1.14 (0.86, 1.52)	284483.59 (7.60)	---	0.935
CROATIA	1.06 (0.84, 1.31)	33418.54 (7.68)	---	0.988
MONTENEGRO	1.32 (0.97, 1.84)	18158.30 (4.41)	---	0.777
NORTH	1.36 (1.18, 1.59)	22764.94 (84.11)	---	0.775
SERBIA	1.22 (1.05, 1.44)	68937.37 (3.94)	---	0.669
SLOVENIA	1.01 (0.86, 1.21)	354495.43 (97.17)	---	0.922

*: Evidence of mean reversion at the 5% level. The values in parenthesis in column 2 are the 95% confidence bands for d and those in column 3 the t-statistics.

Table 4. Estimates based on the logged transformed data

i) Arrivals Foreign Tourist				
Series in logs	d	Intercept	Time trend	Seas.
ALBANIA	0.47 (0.22, 0.85)*	10.271 (4.31)	---	0.092
BOSNIA	0.61 (0.47, 0.84)*	10.052 (5.54)	---	0.296
BULGARIA	1.10 (0.89, 1.39)	12.574 (4.41)	---	0.825
CROATIA	0.73 (0.52, 1.06)	11.096 (2.22)	---	0.758
MONTENEGRO	0.92 (0.63, 1.38)	9.391 (2.41)	---	0.149
NORTH	1.12 (0.89, 1.43)	9.388 (1.98)	---	0.226
SERBIA	0.87 (0.69, 1.11)	10.353 (1.76)	---	0.199
SLOVENIA	0.49 (0.34, 0.71)*	11-828 (3.51)	---	0.209
ii) Night Foreign Tourist				
Series	d	Intercept	Time trend	Seas.
ALBANIA	0.51 (0.25, 0.91)*	10.873 (2.21)	---	0.174
BOSNIA	1.10 (0.91, 1.36)	10.907 (4.56)	---	0.427
BULGARIA	1.03 (0.79, 1.37)	12.619 (9.87)	---	0.844
CROATIA	0.65 (0.48, 0.88)*	12.393 (5.67)	---	0.915
MONTENEGRO	1.22 (0.86, 1.82)	10.142 (2.17)	---	0.443
NORTH	1.35 (1.13, 1.63)	10.051 (4.44)	---	0.505
SERBIA	1.01 (0.83, 1.26)	11.184 (5.11)	---	0.309
SLOVENIA	1.18 (0.89, 1.57)	12.809 (8.24)	---	0.587

*: Evidence of mean reversion at the 5% level. The values in parenthesis in column 2 are the 95% confidence bands for d and those in column 3 the t-statistics.

Table 5. Estimates based on the original data. Data ending at 2019

i) Arrivals Foreign Tourists				
Series	D	Intercept	Time trend	Seas.
ALBANIA	0.31 (-0.15, 1.54)	41636.01 (4.31)	---	0.971
BOSNIA	0.90 (0.72, 1.14)	19849.28 (2.44)	---	0.940
BULGARIA	0.54 (0.46, 0.76)*	528769.43 (2.66)	---	0.993
CROATIA	0.72 (0.56, 0.95)*	252583.22 (3.23)	---	0.990
MONTENEGRO	0.75 (0.61, 1.53)	22765.49 (10.23)	---	0.981
NORTH MACEDONIA	0.87 (0.67, 1.17)	13694.55 (12.69)	---	0.921
SERBIA	0.79 (0.65, 1.06)	38218.38 (2.42)	---	0.954
SLOVENIA	0.80 (0.61, 1.09)	122498.48 (3.31)	---	0.976
ii) Night Foreign Tourists				
Series	D	Intercept	Time trend	Seas.
ALBANIA	0.02 (-0.36, 1.42)	178150.54 (22.39)	---	0.987
BOSNIA	0.73 (0.60, 0.94)*	57648.82 (4.53)	---	0.946
BULGARIA	0.72 (0.51, 1.07)	503504.25 (53.06)	---	0.993
CROATIA	0.76 (0.54, 1.06)	890405.25 (2.15)	---	0.994
MONTENEGRO	1.51 (0.66, 1.74)	20761.68 (10.46)	---	0.988
NORTH	1.12 (0.80, 1.44)	23323.08 (2.54)	---	0.914
SERBIA	0.53 (0.36, 0.77)*	85048.23 (2.51)	2080.75 (3.47)	0.929
SLOVENIA	0.73 (0.56, 0.99)*	392889.81 (2.44)	---	0.982

*: Evidence of mean reversion at the 5% level. The values in parenthesis in column 2 are the 95% confidence bands for d and those in column 3 the t-statistics.

Table 6. Estimates based on the logged transformed data. Data ending at 2019

i) Arrivals Foreign Tourist				
Series in logs	d	Intercept	Time trend	Seas.
ALBANIA	0.01 (-0.26, 0.91)*	10.783 (2.51)	---	0.984
BOSNIA	0.39 (0.27, 0.55)*	9.947 (51.94)	0.0101 (4.30)	0.969
BULGARIA	0.82 (0.67, 0.96)*	12.694 (4.51)	---	0.988
CROATIA	0.17 (0.07, 0.65)*	12.297 (36.59)	0.0068 (2.21)	0.995
MONTENEGRO	0.79 (0.46, 1.36)	9.508 (1.97)	---	0.971
NORTH	0.37 (0.24, 0.56)*	9.797 (52.26)	0.0102 (3.78)	0.968
SERBIA	0.50 (0.15, 0.82)*	10.611 (63.02)	0.0113 (4.01)	0.948
SLOVENIA	0.07 (-0.01, 0.19)*	11.833 (110.13)	0.0079 (5.22)	0.988
ii) Night Foreign Tourist				
Series	D	Intercept	Time trend	Seas.
ALBANIA	0.60 (-0.24, 1.69)	10.,791 (2.53)	---	0.934
BOSNIA	0.35 (0.24, 0.49)*	10.777 (64.35)	0.0093 (4.66)	0.958
BULGARIA	0.44 (0.34, 0.59)*	13.156 (2.40)	---	0.990
CROATIA	0.07 (-0.06 0.32)*	13.612 (42.26)	0.0062 (2.05)	0.993
MONTENEGRO	0.83 (0.41, 1.32)	10.387 (2.22)	---	0.989
NORTH	0.45 (0.31, 0.62)*	10.480 (42.02)	0.0101 (2.61)	0.961
SERBIA	0.01 (-0.12, 0.30)*	11.574 (24.94)	0.0096 (14.53)	0.947
SLOVENIA	0.07 (-0.02, 0.18)*	12.832 (11.364)	0.0066 (4.19)	0.983

*: Evidence of mean reversion at the 5% level. The values in parenthesis in column 2 are the 95% confidence bands for d and those in column 3 the t-statistics.