Comparative Analysis of Tourism-Led Growth in Slovenia and Montenegro

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This article introduces 'Granger Causality in Tourism Analysis for Slovenia and Montenegro.' Included within are comparisons of the tourism led-growth in these countries between December 2007–June 2015. The focus of the analysis is directed towards gross domestic product and tourist arrivals as endogenous variables, as well as unemployment rates. In addition, monthly time series of inflation rates are introduced as exogenous variables. The Granger Causalities differ between countries. The latter indicates uni-directional causal relationships of three relations between the economic growths, tourism growth and unemployment rates for Slovenia and Montenegro. Finally, causality from tourism growth to economic growth and vice-versa is found in Montenegro.

Key Words: Slovenia, Montenegro, causality, tourism, economic growth
JEL Classification: E31, L83

Introduction

This paper applies the Granger causality approach to investigate the relation between economic and tourism growth in Slovenia and Montenegro. To the best of our knowledge, there have only been a few similar researches conducted within the Western Balkan region: for Croatia (Payne and Mervar 2010) and Serbia (Milanović and Stamenković 2012). However, none have been conducted for Slovenia or Montenegro. The latter omission has served as a key motivation for our research. The Granger

causal relationship between certain variables is one of the most important issues in modern economics (Łukasz 2010).

From a broad economic perspective, the number of tourist arrivals (Oh 2005; Gökovali and Bahar 2006; Kim, Chen, and Jang 2006) drives the importance of tourism in an economy (Valek and Wu 2013). Tourism expenditures, such as: shopping, accommodation, food services, transport, visitor attractions and entertainment, all contribute substantially to gross domestic product (GDP). These factors create employment and provide socio-economic development opportunities (Oh 2005; Gökovali and Bahar 2006; Wu, Li, and Song 2012; Inchausti-Sintes 2015). A fundamental reason for governments to promote the worldwide development of tourism is that like other economic activities, tourism has a positive impact on economic growth and development. Tourism has thus helped to reduce the imbalance of payment deficits in several countries. Moreover, tourism is perceived as an important source of foreign exchange that is used for financing economic growth (Tugcu 2014).

According to the World Tourism Organization (see http://www2.unwto.org), tourism plays an important economic role in Montenegro and Slovenia. In 2010, Slovenian tourism created 117,300 jobs (13.6% of Slovenian employment) (Planinc, Bojnec, and Planinc 2013) and in 2014 (World Travel and Tourism Council 2014) contributed 13% to Slovenia's GDP and 3,438,297 of tourist arrivals. According to the World Travel and Tourism Council (2015), the total contribution of tourism to employment in the Montenegrin economy was 32,000 jobs in 2014 (18.5% of total employment). These figures are predicted to rise by 6.9% in 2015 to 34,000 jobs (19.4% of total employment), followed by 55,000 jobs (29.6% of total employment) in 2015. This represents an increase of 4.9% over the given period (World Travel and Tourism Council 2015). In 2011, Montenegrin tourism contributed to 17% of GDP and 8% of its employment (Đuranović and Radunović 2011). In 2013, the direct impact of tourism to Montenegrin GDP was 9.8% (348.7 million euros) (World Travel and Tourism Council 2014).

Vitic and Ringer (2008) highlighted that the observed countries share common history from the former Yugoslavia. Slovenia declared its independence in 1991. In 2004 it subsequently became a member of the European Union (EU). In 2006, Montenegro's parliament declared independence from the State Union of Serbia and Montenegro (Vitic and Ringer 2008). In 2008, Montenegro applied for EU membership.

Montenegro seeks its future economic growth, measuring in percent-

age of GDP, in tourism. Montenegro's tourism is mostly limited to the coastal hot-spots, such as: Kotor, Budva and Ulcinj. In 2007, Montenegro was considered the fastest growing tourism market worldwide. It has suffered a slight decrease in the last six years, but tourism is still seen as a crucial factor for Montenegro's future economic development. This latter point is due to its natural potential with its beneficial position on the Adriatic coastline. It has also gained experience of tourism development since the 1970s (Bickert, Göler, and Lehmeier 2011). Whilst tourism development can be considered progressive and dynamic, it is strongly affected by multiple polarizations and divergent trends. For example, there is need for infrastructural upgrades in the mass tourism sector, which is predominantly for a low budget market with difficult future perspectives. Simultaneously, there are small but growing numbers of exclusive offers, often seen as the vanguard of Montenegro's future as an upper class tourist destination. The economic bias towards coastal tourism includes the risk of increase in spatial disparities. Consequentially, this would mean neglecting mountainous hinterland whilst leaving behind a shrinking economy and population (Bickert, Göler, and Lehmeier 2011).

Trošt and Bojnec (2015) suggest that Slovenia has avoided large scale destruction through war in the former Yugoslavia and entered into closer institutional and economic relations with EU countries. As the most developed former Yugoslav republic, Slovenia has experienced GDP growth and the economic development gap between Slovenia and other parts of former Yugoslavia.

According to World Travel and Tourism Council (2014), the Slovenian mountains, seaside and health resorts are the most important features of the country's tourism. The average length of time that tourists spend in Slovenia is 2.7 days, whereas foreign tourists represent 63% of all tourists. Most of Slovenia's foreign tourists are Italian, Austrian, German, Russian or Dutch. Most overnight tourism during 2014 was made in the health resorts (WTTO 2014). The second most popular places were mountain resorts, followed by seaside resorts and the Slovenian capital.

The time varying parameter plays a crucial role in tourism demands and the cross-country price competition (Gričar and Bojnec 2014) investigated in the present study. Despite the tourism industry playing an important role in the global economy, there has been less attention to the empirical investigation of tourism-led economic growth (Gökovali and Bahar 2006). This study focuses on tourism-led growth in Slovenia and Montenegro. A time series data approach has been applied.

The remainder of this paper is organized as follows: Section 2 provides a brief overview of previous empirical research and develops the main research hypotheses. Section 3 provides details of the methodology and data used. Section 4 explains the empirical results. Section 5 serves as the paper's conclusion.

Overview of the Current Empirical Research

Stochastic properties of the tourism time series for Montenegro and Slovenia have not yet been fully examined. Like other post-socialist countries, they have aimed to restructure their economies towards a market-based economy (Güney, Telatar, and Hasanov 2015). Under socialist regime, prices differed from world prices with limited roles in resource allocation. However, during the transition period, these countries have aimed to liberalise their economies, establish market institutions and integrate with the world tourism economy. In addition, it is argued that some special features of these transition countries, such as: catching up in growth rates or higher inflation rates and variable risk premiums, affect real interest rates (Greenspan 2004; Svensson 2003). Therefore, examination of stochastic properties of macroeconomic variables in these countries may improve our understanding of dynamic causalities between economic growth and tourism growth (Feltenstein 1994). Furthermore, tourism can play a crucial role for market oriented economies (see http://www2.unwto.org). Our main aim in this article is to contribute to empirical literature by examining the stochastic properties between economic growth and tourism growth in Montenegro and Slovenia. Güney, Telatar, and Hasanov (2015) find that real interest rate variables within macroeconomics follow a stationary process in the time series approach.

A body of empirical research examines cyclical patterns in the development of: GDP, tourist arrivals, inflation and unemployment rates. Phiri (2014) proves that unemployment causes economic growth in the long term, a result which may account for the jobless-growth phenomenon experienced by South Africa. In their empirical research, Gökovali and Bahar (2006), built the statistical model, including: a gross fixed capital formation as a percentage of GDP, tourism receipts as a percentage of exports and the growth of the labour force as explanatory variables for the growth rate of GDP. Oh (2005) investigated the causal relations between tourism growth and economic expansion for the Korean economy by using the Engle and Granger two-stage approach and a bivariate

Vector Autoregression (VAR) model. The hypothesis of tourism-led economic growth is not held by the Korean economy.

Recent surges of tourism and its leading place in the world economy are the gradual consequence of an increase in leisure time and money in societies. This sudden increase is also attributed to a greater availability of goods and services that were previously considered a luxury. Tourism demand used to be limited to the rich, who by implication could afford the free time from work. Tourism demands have become a way of life, a consumption habit for many tourists in developed or developing countries, including Slovenia and Montenegro. Tourism has been regarded as a leading economic sector for the twenty-first century (Giles and Perry 1998). In 2015, tourism experienced significant shares (30% exports in international services) in the global economy; according to the UNWTO (http://www2.unwto.org), tourism is the largest sector in the global economy in terms of generating income and employment (Lundberg, Krishnamoorthy, and Stavenga 1995).

We have developed four hypotheses regarding tourism led growth (Oh 2005): tourism-led economic growth, economic growth driven by tourism growth, bi-directional causal relationship and no relationship between tourism growth and economic growth (Lean, Chong, and Hooy 2014).

H1 *The first causal hypothesis for Slovenia and Montenegro indicates a one-way relationship from tourism-led growth to economic growth. When this is not rejected, greater attention to tourism development can increase income levels.*

H2 *The reverse causality exhibits a causal nexus from economic growth to tourism expansion. The economic expansion may enhance tourism growth and revenues.*

H3 *The two way causal relationship exists in the reciprocal hypothesis. The latter benefits both tourism expansion and economic growth by exerting a dynamic interaction in both areas (Chen and Chiou-Wei 2009) for the analysed countries.*

H4 *There is no relationship between tourism growth and economic growth in either Slovenia or Montenegro. Tourism growth and economic growth under special conditions do not have significant consequences on each other. In this case, tourism growth or aggressive economic expansion may not bring anticipated outcomes.*

Empirical studies have found mixed results regarding the nexus be-

tween tourism and economic growth. These empirical studies are reported, first, by Schubert, Brida, and Risso (2011), and Tang and Tan (2015) regarding the findings of tourism-led economic growth. Secondly, economic growth-driven tourism growth were reported by Oh (2005). The third empirical findings suggest two-way causal relationship (Tugcu 2014), and the fourth referred to no relationship between tourism and economic growth (Tugcu 2014).

Balaguer and Cantavella-Jordá (2002) supported the tourism-led economic growth hypothesis in Spain. On the contrary, Oh (2005) found that causality is changing from economic growth to tourism expansion in Korea. However, Kim, Chen, and Jang (2006) investigated the feedback of causal relationships between economic growth and tourist arrivals in Taiwan. Katircioglu (2009) included a real exchange rate as part of the model. However, the results demonstrate that no long-term relationship exists between international tourism growth and the Turkish economy. Generally, studies of the tourism-growth nexus can be categorized into two groups. Firstly, those based on cross country data. Secondly, those based on time series data.

Time series data is used on a wider scale to investigate trends (Durbarry 2004; Croes and Vanegas 2008; Kaplan and Celik 2008; Lee and Chien 2008; Akinboade and Leshoro 2009) supported by the most recent of studies (Belloumi 2010; Brida and Risso 2010; Schubert, Brida, and Risso 2011; Inchausti-Sintes 2015). The panel data is introduced by specific empirical studies (Tugcu 2014; Webster and Ivanov 2014; Lee and Brahmasrene 2013) to investigate the stochastic trends in tourism growth.

In terms of methodology, the Johansen's co-integration (1988) and Granger causality tests (Granger 1988) have been widely applied in empirical studies (Dritsakis 2004; Brida and Risso 2010; Łukasz 2010; Samimi, Sadeghi, and Sadeghi 2011; Trošt and Bojnec 2015). Gunduz and Hatemi-J (2005) propose that bootstrapping (Łukasz 2010) is a favourable method providing the sample size is small. This also applies if the autoregressive conditional heteroscedasticity (ARCH) effect exists and the assumption of normality is invalid. Alternatively, Chen and Chiou (2009) proposed the use of Exponential Generalized Autoregressive Conditional Heteroskedasticity in Mean (EGARCH-M) model to include the negative impact of shock.

In previous literature, GDP growth has perpetually been seen as an indicator of a country's economic growth. Two of the most common variables for tourism activity pointers are the total number of tourist arrivals

(Samimi, Sadeghi, and Sadeghi 2011) and tourist receipts (Lean, Chong, and Hooy 2014) or earnings (Oh 2005). The selection of proxy subjects depend on the reliability and availability of the data source. Regarding time series data, there is need to omit technical problems of the proposed statistical VAR model, such as serial correlation or multicollinearity (Gunduz and Hatemi-J 2005). Nanthakumar, Ibrahim, and Harun (2008) included a consumer price index (CPI) in order to study the relationship between tourist arrivals and real GDP growth (Lean, Chong, and Hooy 2014). Bonham, Gangnes, and Zhou (2009) stipulated that CPI should be treated as an exogenous variable. Nanthakumar, Ibrahim, and Harun (2008) examined the hypothesis of economic growth-driven tourism growth in Malaysia. The examination was conducted using a tri-variate model with real GDP growth, tourist arrivals and CPI. The findings demonstrated a bi-directional relationship between CPI and tourist arrivals. In addition, they indicated similar relations between CPI and real GDP growth, whilst suggested economic growth factors drive Malaysia's tourism sector. Inchausti-Sintes (2015) highlighted that tourism growth promotes economic growth and reduces unemployment.

The importance of international trade on tourism has recently been disclosed by Tugcu (2014) and Inchausti-Sintes (2015). Inchausti-Sintes (2015) highlighted that tourism promotes economic growth and reduces unemployment. Employment is also a proxy of economic growth, as proposed by Akkemik (2012). Tugcu (2014) found bi-directional causality for tourism receipts and economic growth in Europe, as well as bi-directional causality for tourism expenditures and economic growth in Asia. However, there was no causality between tourism and economic growth in Africa. Lee and Brahmasrene (2013) indicated that tourism and direct foreign investments have highly positive effects on economic growth in the EU. Kuledran and Wilson (2000) indicated a unidirectional causal relationship concurrent between total trade and total travel in the United States of America and United Kingdom. In addition, Kadir and Jusoff (2010) found a unidirectional causality running from total trade to tourism receipts in Malaysia. However, results from Kartircioglu (2009) indicate a one-way causation from international tourist arrivals to international trade in Cyprus.

Data and Methodology

For the analysis we used time series data obtained from: the Statistical Office of the Republic of Slovenia (http://pxweb.stat.si), Statistical Office

of Montenegro (http://monstat.org), Central Bank of Montenegro (Đuranović and Radunović 2011) and from the Montenegrin Ministry of Sustainable Development and Tourism (http://www.mrt.gov.me). The data vector ranges from December 2007 until June 2015.

The frequency of time series data varies. Certain macro variables are reported only on a quarterly basis, such as GDP and Montenegrin unemployment rates. Whereas other macroeconomic aggregates are only available on a monthly basis. Time series studies should use the lowest frequency of the included variables. In order to do this effectively, we convert the data from quarterly to monthly to match the frequency of monthly data. To convert quarterly data to monthly, a linear trend is applied using Eviews software (http://www.eviews.com).

The Granger Causality test is applied to the analysed time series variables. To test the causality between the variables, we specify a VAR time vector of related time series variables. As part of this process, CPI is introduced as an exogenous (ex) variable as proposed in the empirical literature (Bonham, Gangnes, and Zhou 2009) for Slovenia:

$$\underset{N}{\sim I(1)}[\mathrm{CPI}_{ex}][\mathrm{UNR\ TA\ GDP_Q}]_{\mathrm{SI}}^{\mathrm{T}(\sum_{i=1}^{j=o} x_{t-1})t\to\infty}. \tag{1}$$

The abbreviations of the variables are: N is the number of observations (after the unit root test implied), $I(1)$ are the theoretical assumption variables that are integrated at most of first order; UNR represents 'unemployment rate,' CPI is 'consumer price index,' TA is 'tourist arrivals,' GDP signifying 'gross domestic product'; Q indicates 'quarterly data,' $\sum_{i=o}^{j=o} x_{t-1}$ represents time series in stochastic process, SI is the abbreviation used for 'Slovenia,' and T represents 'time dependent approach,' where $t = 1, \ldots,$ T, and for Montenegro:

$$\underset{N}{\sim I(1)}[\mathrm{CPI}_{ex}][\mathrm{UNR_Q\ TA\ GDP_Q}]_{\mathrm{ME}}^{\mathrm{T}(\sum_{i=1}^{j=o} x_{t-1})t\to\infty}. \tag{2}$$

ME is the abbreviation used for 'Montenegro.'

UNIT ROOT TEST

The results of the empirical studies may vary substantially depending on various factors. These may include the sample period, the number of variables included in the model and the statistical techniques used in testing for causality. In the VAR framework, the test used on the Granger Causality method may have non-standard asymptotic properties if the variables considered in the VAR model are integrated or co-integrated.

The proposed solution is performed on the coefficients of co-integrated VAR (CVAR) processes with variables if at least one coefficient matrix is unrestricted under the null hypothesis.

One of the assumptions based on the use of the Granger Causality test in the analysis is the stationarity of a VAR time series representation. In order to mitigate or eliminate non-stationarity problems, it is possible to use several methodological approaches. A unit root test, for example, is a formal method used for testing the stationarity in time-series data. Alternatively, it is possible to apply what is known as the Augmented Dickey-Fuller (ADF) test. With help from Tau (τ) statistics, the ADF test can determine the validity of the null hypothesis of non-stationarity (Trošt and Bojnec 2015).

CO-INTEGRATION TEST

In the eventuality of testing the null hypothesis of non-stationarity, the Johansson's (1988) Trace Test is applied to detect long-term relationships between the analysed variables in the data. The two-step procedure, formed by Engle and Granger (1987), assumes the existence of only one co-integrating relationship. The general procedure proposed by Johansen (1988) has the advantage of testing all the possible co-integrating relationships. Engle and Granger (1987) and Granger (1988) noted that if two time-series variables are co-integrated, then at least one directional Granger-causation exists. The existence of a stable and long-running relationship (co-integrating relationship) between economic growth and tourist arrivals implies that two variables are causally related in at least one direction. The Granger Causality tests were performed in order to answer the question regarding the direction of causation.

GRANGER CAUSALITY TEST

The causality tests are applied to identify whether a one time series set causes another time series set, or whether the series are mutually determined by the each other. The most widely used causality test is the Granger Causality test (Lütkepohl and Krätzig 2004). The Granger (1969) Causality test is applied to study whether one variable precedes the other variable, or whether they are contemporaneous. The Granger causality question is whether $x_{t,n}$ causes y_t, to see to what extent the current value of the second variables can be explained by the past values of the first variable. The null hypothesis is constructed so that the time series $x_{t,n}$ does not cause the Granger causality y_t, where n is a number of time se-

ries included in the analyses. The Granger Causality Test can be written in equation as follows, where y_{1t} represents GDP_{t-1}:

$$y_{1,t+h|\Omega_t} = y_{1,t+h|\Omega_t \setminus \{y_{2,s}|s \leq t\}},\ h = 1, 2, \ldots \tag{3}$$

The time series with t variables indicate important information in the Ω area with designate space $y_{1,t+h|\Omega_t}$, where $h = i - j, t \to \infty$. We can assume that y_{2t} represents Granger non-causality for y_{1t}. Non-causality is assumed only when the results of equation (3) are satisfied with the same conditions of h. In our example, y_{2t} shows observation of TA_{t-1}. Regardless of the fact that the choice of the time lags is a matter of a judgment, the investigation usually starts with a large number of time lags and with the same number of time lags for both time series. The number of time lags become smaller by omitting those lags which are not relevant (Lütkepohl and Krätzig 2004).

EViews run bi-variate regressions for all possible pairs of series in the group. The reported F-statistics are the Wald statistics for the joint hypothesis:

$$\beta_1 = \beta_2 = \cdots = \beta_l = 0, \tag{4}$$

for each equation. The null hypothesis is that variable x does not Granger-cause time series y in the first regression. Secondly, it suggests that y does not Granger-cause x in the second regression:

$$y_t = \alpha_0 + \alpha_1 \cdot y_{t-1} + \cdots + \alpha_1 \cdot y_{t-1} + \beta_1 \cdot x_{t-1} + \cdots + \beta_l \cdot x_{-l} + \varepsilon_t, \tag{5}$$

$$y_t = \alpha_0 + \alpha_1 \cdot x_{t-1} + \cdots + \alpha_1 \cdot x_{t-1} + \beta_1 \cdot y_{t-1} + \cdots + \beta_l \cdot y_{-l} + u_t. \tag{6}$$

We illustrate Granger causalities using a data vector for testing the tourism-led growth hypotheses for Slovenia and Montenegro.

Results and Discussion

UNIT ROOT TEST

The ADF tests were applied to find the presence of the unit root in the analysed time series. Table 1 demonstrates that all analysed variables for UNR, CPI, TA and GDP for Montenegro and Slovenia, were not stationary in their levels, except for TA_{ME}. In conclusion, there is a presence of the unit root in the variables at levels in the raw data. Therefore, all the variables were analysed in the first difference. The ADF test reveals that each analysed variable was stationary in the first difference, or integrated within the order one, i.e. $I(1)$.

TABLE 1 ADF Unit Root Test

Country	Variable	Level	1st difference
Montenegro	UNR_t	−0.11	−7.40***
	CPI_t	−0.18	−7.98***
	TA_t	−1.99**	−5.63***
	GDP_t	−0.78	−5.50***
Slovenia	UNR_t	−0.02	−5.51***
	CPI_t	−0.21	−8.28***
	TA_t	−0.69	−7.20***
	GDP_t	−0.02	−9.36***

NOTES *** and ** denote significance levels of 1% and 5%, respectively, UNR – unemployment rate, CPI – consumer price index, TA – tourist arrivals, GDP – gross domestic product, *t* – time series.

TABLE 2 Co-Integration Rank Test

Country	Rank	Trace statistic
Montenegro	None	143.84***
	At most 1	72.90***
	At most 2	29.35***
Slovenia	None	190.23***
	At most 1	62.21***
	At most 2	13.87***

NOTES *** denote significance level of 1%.

CO-INTEGRATION RANK TEST

The hypothesis of the co-integration rank was investigated by the Johansen trace test in table 2.

In order to identify co-integration between variables, the constant is incorporated in the model. The test was made using EViews software.

The co-integrated vector, beta, is normalized on TA with exogenous variable CPI for Montenegro:

$$TA_t = -0.64 + 1.45 \cdot GDP_{t-1} - 21.67 \cdot UNR_{t-1},$$

TA generates a positive impact on GDP growth and a huge negative impact on UNR, and for Slovenia:

$$TA_t = -3.70 - 26.98 \cdot GDP_{t-1} - 61.75 \cdot UNR_{t-1},$$

TA has a negative impact on GDP growth. However, there is no statistically unilateral relation from TA to GDP growth. Contrary to this, along with Montenegro, there is also a significantly negative impact for Slovenian TA growth to unemployment rate. This confirms that tourism growth creates jobs and reduces unemployment rates.

Finally, only one co-integrated vector has been presented as part of our empirical study. For each country there are two more vectors.

GRANGER CAUSALITY TEST

Since the association between analysed variables were established, the Granger Causality Test was applied to test the tourism-led growth hypothesis. Although, we checked whether there was a causal relationship between the first difference variables for UNR, TA and GDP. GDP is introduced in current prices where an implicit price deflator for Montenegro and for Slovenia is used. Table 3 presents the results for Montenegro and Slovenia.

The results for Montenegro indicate:

1. The tourism-led growth hypothesis (H1) is rejected. However, we cannot reject the reciprocal bi-directional causal relationship hypothesis (H3). The TA does Granger cause GDP growth and GDP growth does Granger cause TA. Therefore, the Granger causality runs bi-directional from GDP growth to TA, as well as from TA to GDP growth.
2. The hypothesis that UNR does Granger cause TA cannot be rejected. Whereas, the hypothesis that TA does Granger cause UNR is rejected. Therefore, the Granger causality runs uni-directional from UNR to TA, but not the opposite way.
3. The hypothesis that UNR does Granger cause GDP growth is rejected. Additionally, the hypothesis suggests that GDP growth does Granger cause UNR is also rejected. Therefore, there is no Granger causality between GDP and UNR.

The results for Slovenia indicate:

1. The tourism-led growth hypothesis (H1) is rejected. However, we cannot reject uni-directional hypothesis (H2) on the economic growth-driven tourism growth. The hypothesis that TA does Granger cause GDP growth is rejected, but the hypothesis that GDP growth does Granger cause TA cannot be rejected. Therefore, the

TABLE 3 Granger Causality Test

Montenegro	dTA_t does Granger cause $dGDP_t^r$	25.16***
	$dGDP_t^r$ does Granger cause dTA_t	12.25***
	$dUNR_t$ does Granger cause dTA_t	4.60***
	dTA_t does Granger cause $dUNR_t$	1.27
	$dUNR_t$ does Granger cause $dGDP_t$	0.07
	$dGDP_t^r$ does Granger cause $dUNR_t$	0.01
Slovenia	dTA_t does Granger cause $dGDP_t^r$	0.91
	$dGDP_t^r$does Granger cause dTA_t	3,66**
	$dUNR_t$ does Granger cause dTA_t	1.19
	dTA_t does Granger cause $dUNR_t$	7.48***
	$dUNR_t$ does Granger cause $dGDP_t^r$	11.85***
	$dGDP_t^r$ does Granger cause $dUNR_t$	0.56

NOTES *** and ** denote significance levels of 1% and 5%, respectively, *d* – at least *I*(0), UNR – unemployment rate, TA – tourist arrivals, and GDP – gross domestic product, *t* – time series, and *r* – GDP in current prices deflated by CPI.

Granger causality runs uni-directional from GDP growth to TA and no other way.

2. The hypothesis that UNR does Granger cause TA is rejected, but the hypothesis that TA does Granger cause UNR cannot be rejected. The Granger causality runs uni-directional from TA to UNR and not the other way. This is consistent with contemporary literature (Inchausti-Sintes 2015), where only a few empirical studies introduce unemployment rates in tourism-led growth hypothesis.
3. The hypothesis that UNR does Granger cause GDP growth cannot be rejected, but the hypothesis that GDP growth does Granger cause UNR is rejected. Therefore, the Granger causality runs uni-directional from UNR to GDP growth and not the opposite way. These findings are also consistent with recent literature (Akkemik 2012; Phiri 2014; Inchausti-Sintes 2015).

In conclusion, the Granger Causality Test results reject the H1 on the uni-directional tourism-led growth. Contrary to this, the H2, H3 and H4 cannot be rejected. The uni-directional economic growth causes tourism growth (H2) regarding Slovenia. The bi-directional causality (H3) between tourism led and economic growth cannot be rejected for Montenegro. In addition, unemployment as a proxy variable for economic growth

is applied for tourism led-growth. The Granger Causality Test rejected the validity of causality between unemployment rates and economic growth for Montenegro, which is concurrent with the set H4.

The implications of our study are for tourism development on the national (Slovenian and Montenegrin) economy level. It does so by observing its causalities with unemployment and GDP. The results are mixed with two different findings for each country. This can be linked to the relative role of tourism involved in the national GDP, which for Slovenia is 13% and Montenegro 17% in a wider sense. In Montenegro, there is a strong reciprocal bi-directional causality between tourism and economic growth. In Slovenia however, economic growth alone drives tourism growth, which is measured by GDP growth.

Conclusion

This study contributes to the investigation of four tourism-led growth hypotheses in Montenegro and Slovenia where the tourism sector plays an important role in the economies. The applied empirical Granger Causality approach has confirmed bi-directional causality in Montenegro, wherein the tourism sector causes the economic growth and economic growth causes tourism growth. In Slovenia, the causality is uni-directional as economic growth causes tourism growth.

More specifically, three uni-directional causality relations cannot be rejected for Slovenia. Firstly, economic growth generates tourism growth. Secondly, tourism-led growth causes employment growth. Thirdly, employment stimulates economic growth. Finally, there is a uni-directional causality for Montenegro, meaning that employment stimulates tourism-led growth.

While this study includes a time series for unemployment and inflation rates to the tourism-led growth hypotheses, amongst other issues for further research, is to test additional explanatory variables and their relations.

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