A Statistical Analysis of the Impact of Tourism on Economic Growth in Albania

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Abstract: - Tourism has become an important sector in Albania in recent years. After the pandemic period where the tourism industry suffered a big blow, the year 2022 has turned out to be very successful in this sector. Tourism this year is extending throughout the year, unlike previous years, which focused only on summer. In this paper, we analyzed the number of tourists and economic growth in Albania for the years 2016-2022 with quarterly frequencies (until the third quarter of 2022). The purpose of the paper is to analyze the relationship between the two variables in the short and long term periods. AIC, BIC, HQC model selection criteria are used throughout the analysis, the ADF test is used for series stationarity, the Granger test for causality and the Johansen test for co integration

Keywords: number of tourists, GDP, relationship, long-run.

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1 Introduction

The communist system in Albania collapsed in 1991, opening the path to a long and painful transition from a fully centralized and isolated economy toward a liberalized market economy. In the last 30 years the country underwent a comprehensive political, economic, and social transformation. The country undertook deep reforms to transform its economy, including the tourism sector.

No tourism legacy: The country suffered total isolation for almost half a century, from the end of the Second World War up until 1991. Under communism, Albania had almost no tourism sector and, as such no legacy. The little tourism entailed a handful of hotels that received a very limited number of foreign tourists per year. The locals were not allowed to travel abroad, and only a small percentage of population had the right to go for vacations on the so-called workers camps mostly on the beach. This was pretty much the entire tourism sector up until 1991.

Despite the lack of legacy, the favorable geographic position, a long, beautiful, and diverse coastline coupled with a fascinating country landscape from hills to alps and lakes and rivers, rich history, culture, and archeology represented a strong baseline to support the tourism sector as one of the key pillars of the Albanian economy.

A series of new conditions that were created after 1990, constituted very good premises for the promotion of tourism in Albania. However, the development of tourism sector took a major hit in 1996-1997 with the collapse of pyramid schemes and the civil war that followed, to restart the revival only after 2000, and become a priority sector only in the last decade.

However, tourism is now concentrated around summer months mostly around sea & sun, and suffers from high seasonality as well as low spending per tourist. Albania needs to develop a mix of tourism offerings to mitigate the seasonality. In addition, Albania needs to slowly shift its model away from high intensity tourism to a tourism that enables higher spending per tourist.

Types of tourism offerings Albania can develop successfully are at least coastal, mountainous & adventurous, and historical & cultural. The beach, the sea and the sun have been the main product that occupy the largest weight of the total of yearly tourist products. This type of tourism in Albania has a

pronounced seasonal character, and therefore, most of the accommodation structures in the coastal area face difficulties.
In seasonal operation: Meanwhile, for tourism and marine infrastructure it currently is missing and this segment (yachting, sailing, cruising) is still in its infancy, but the potential to develop is very large and very significant for the economy and elite tourism in Albania.
Nature tourism - Albania has been appreciated by many operators and international visitors for its nature and its beautiful landscapes. Natural and rural areas in Albania offer opportunities for the development of rural tourism, mountain tourism, ecotourism and outdoor activities (rafting, throwing sport parachute, mountain biking, fishing, trekking, mountain climbing, nature walking-hiking, horse riding, study tours, etc.). Some of these activities are the main motive of the visits from foreign visitors to natural areas.
As for mountain tourism, there have been positive developments, as a result of which they have stabilized a significant number of tours organized in Theth, Vermosh-Lepushë, Valbonë and Tropoja, in the Albanian Alps, Dibër and the area of Bulqiza, the mountainous area of Tirana, the mountainous area of Elbasan and Librazhdi, the mountainous area of Korça, the mountain of Tomori, Llogara and Karaburun and the mountainous area of Gjirokastra and Përmet. On the other hand, the category I tourism in the protected environmental areas is also increased.
The basis of the system of environmental protected areas consists of 15 national parks, some managed natural reserves and protected landscapes, which contain the greatest natural values and biodiversity in the country.
Thematic tourism - This category includes a number of specific forms of tourism, such as agrotourism, event and business tourism, cultural tourism (heritage, history, faith, etc.), enogastronomic tourism and health tourism (thermal, wellness and medical) etc. Although not the main purpose of visiting Albania, archeology, heritage and culture are identified as Albania's strengths in various studies conducted with visitors and the tourism industry in trips from foreign markets. Main destinations visited by organized cultural tours are: Shkodra, Lezha, Kruja, Durrësi, Tirana, Fieri, Berati, Elbasani, Korça, Përmeti, Gjirokastra, Saranda and Vlora (INSTAT, 2021).

As for business tourism, developments in this direction are concentrated at a national level and the lack of a consolidated cooperation network between the actors, together with the lack of new centers for the organization of conferences and congresses, centers of business near the poles of economic development (Rinas Airport), accommodation structures well-known international brands in the organization of conferences and congresses, have limited the perspective of the development of tourism in this sector at an international level.
Located in a favorable position in the regional market of the Balkans and some markets of important European, with technology and know-how developed in some of the sectors medicine (dental care, plastic surgery, cardiovascular surgery and neurosurgery, fertility treatment), natural resources and favorable climatic conditions for the development of several directions of this segment (thalassotherapy, thermal water therapy), competitive prices, Albania has had positive developments in the health and wellness tourism segment. It should be noted that in recent years we have had a considerable number of entries made for health purposes.

2 Literature Review

There are studies on the effects of tourism on economic growth on Albania. The study conducted by, [1], presents an econometric model which confirms the dependence of GDP on tourism revenues and the real effective exchange rate. The study has proven that the development of tourism has a positive impact on economic development.
The aim of the study, [2] is to observe how the growth of the tourism sector affects the economy of the country. She concludes that steady growth of tourism must be carried out while being overseen by the government and all actors while working on the three main aspects: social, environmental, and economic.

According to, [3], the development of tourism has a Granger causal relationship with the increase of employment and this in turn will lead to the economic growth of the country. Furthermore, Johansen co integration shows a stable relationship even in the long run period.
According to [4] a gravity-type equation is built based on an annual database of international tourist arrivals in Albania from 22 countries of origin during

the period 2001–2018. The gravity model was evaluated through three evaluation techniques: pooled OLS, fixed effects and random effects. Empirical results showed that international tourist arrivals in Albania are positively correlated with GDP per capita in the destination and in the countries of origin, total investments in infrastructure, political stability and the absence of violence/terrorism, and the existence of common borders. On the other hand, the dependent variable is negatively related to the distance between Albania and the countries of origin, and to the dummy variable "climate of similarity".

According to, [5], careful forecasting of tourist arrivals is a key factor in arranging and administering tourist activities. In their study the time series "**number of tourist arrivals"** is modeled as a logistic growth model and then it is modeled as ARIMA (2,1,2). The results of the **Life Cycle of the Albanian Tourist Area** showed that the middle of the life cycle is the year 2010, the duration of the growth time is 13.6 years, and the capacity is 4,886,858 tourists.

According to, [6], in forecasting, macroeconomic variables such as GDP play, an important role for policymakers in assessing the future state of the economy. In their study, the time series of GDP with quarterly frequencies and in its logarithmic form is modeled as an ARIMA Model (1,0,1) and is used for forecasting, even though it is not the model with the best performance.

Schiopoiu, [7], investigates the potential of Albanian tourists, using a quantitative analysis and a regression model. The results demonstrate that the tourist is a rational decision maker, and there are differences in expectations and perceptions among respondents. These differences are not significantly related to the gender of the respondents, but related to the level of education, the differences are important for sensitivity, where respondents with a college degree have a higher level of expectations than respondents who don't. The findings highlight the practical implications for the need of capable human resources as tourists are very sensitive to the level of understanding of their specific needs by the industry.

There are also studies on the impact of the pandemic on the tourism industry. [8], based on a survey conducted between August and early September 2020 on the perceived impact of COVID-19 on the tourism sector in Albania with representatives of hotels and accommodation units in Albania. It presents us with their views on the impact of COVID-19 in the sector. This paper focuses on creating several scenarios from the perception of the impact of COVID-19.

Many studies have attempted to identify the causal link between international trade (especially export growth) and economic expansion, [Bahmani-Oskooee and Alse (1993); Chow (1987); Jin (1995); Marin (1992); Shan and Sun (1998)]. They have assessed a strong correlation between international trade and economic development that has a strong bilateral causality between export growth and economic growth; Moreover, tourism growth and economic growth have a reciprocal causal relationship, as export-driven economic growth causes an increase in tourism revenues [9].

Regarding causality between tourism and economic growth we have a series of studies as Balaguer and Cantavella Jorda (2002, 2010) in Spain, Belloum (2010) in Tunisia, Kreishan (2011) in Jordan for the first direction and Brida,Sanchez– Carrera, and Risso (2008) in Mexico, Oh (2005) in South Korea for other direction, whereas Khalil, Kakar, and Waliullah (2007) have found a bilateral direction in Pakistan.

3 Empirical Analysis

In this paper, the series of the number of tourists (Nrt) and GDP in Albania for the years 2016-2022 with quarterly frequencies have been analyzed. The data is provided by INSTAT (2022).

Throughout the econometric analysis, the model selection criteria were used to select the best model.

Based on the balance of payments report of the Bank of Albania, the statistical data in travel and tourism during the first 6 months of 2022 (January–June) show that there is an increase of 64.6% compared to 2021. Also, this year there is a significant increase of 32.4% compared to 2019.

The net income from travel/tourism in this first 6-month period has shown a comparative increase with the previous year. Net income has increased by 17.2% compared to 2021. The increase in net income is higher even compared to 2019. Only for the year 2021, the contribution of the tourism sector to the GDP of the country was 7.5%, while if the sectors that indirectly contribute to tourism are also counted, this contribution goes up to 17.5% of the GDP, [10].

As for the year 2022, only for the period June-August, there was an increase in the turnover of the sector by 30% and an increase in employment by 4% compared to the previous year, which according to the Minister shows a positive development, an increase in the number of businesses, the number of nights of stays, the increase in capacities and the use of touristic capacities, [11].
The table below shows the number of tourists according to their country of origin.

Table 1. Arrivals of foreign citizens according to regions, 2014-2021

Description	2014	2015	2016	2017	2018	2019	2020	2021
Africa	859	2,973	2,409	2,756	3,321	24,203	1,636	3,147
America	90,084	96,763	105,032	125,339	148,846	156,726	30,020	115,833
East Asia and the Pacific	30,874	33,032	36,551	54,343	68,152	78,050	4,993	7,968
South Asia	1,274	1,636	1,807	2,344	3,084	3,550	801	20,998
Central / Eastern Europe	163,006	151,457	187,527	276,563	362,083	393,368	92,326	363,483
Northern Europe	137,308	125513	149,992	204,099	212,248	234,956	65,173	127,767
Southern Europe	2821920	3169174	3855779	3810464	4301996	2335914	2335914	4331888
West Europe	237,760	246,811	221,566	316,264	357,411	417,163	95,211	293,054
Mediterranean	63,671	66,468	75,750	86,878	97,878	114,379	28,284	56,653

Source: [12].

The largest number of tourists in Albania continues to be from southern Europe, this is due to the fact that in addition to others, they come for holidays from Kosovo and North Macedonia.
The year 2022 looks like a good year for Albanian tourism, after the negative period of Covid-19. According to the data of the Bank of Albania, for the first 6 months only, the inflow of foreign tourists is calculated at 1.13 billion euros, over 440 million euros more than compared to the same period last year.

The income from tourism turns out to be higher even than the 6-month period of 2019, which is considered the best year for the tourism sector, where throughout the year tourists brought in over 2 billion Euros, [13]. The increase in spending by tourists during this period was also influenced by the sports and cultural events held in our country, especially the final of the Conference League that brought many fans and visitors to the country, giving a significant impact on activities related to tourism.

3.1 Model Selection Criteria

In 1951, Kullback and Leibler developed a measure to capture the information that is lost when approximating reality; that is, the Kullback and Leibler measure is a criterion for a good model that

minimizes the loss of information, [14]. Two decades later, Akaike derives a criterion, referred to as the Akaike information criterion, [15]. The Bayesian information criterion (BIC), proposed by Schwarz and hence also referred to as the Schwarz information criterion and Schwarz Bayesian information criterion, is another model selection criterion based on information theory but set within a Bayesian context, [16]. Burnham & Anderson, [17], say that Hannan-Quinn information criterion (HQC) [18], "while often cited, seems to have seen little use in practice". They also note that HQC, like BIC, but unlike AIC, is not an estimator of Kullback–Leibler divergence.

The AIC, BIC, and HQC are used as statistics of a good fit, and we use them for the selection of the most appropriate-best fit model from a sum of estimated ones. The mathematical formula for these statistics is shown in the equation:

$$AIC(M) = -2 \log L(M) + 2 \cdot p(M)$$

L(M) is the likelihood function of the parameters in model M evaluated at the MLE (Maximum Likelihood Estimators) and p(M) is the number of estimated parameters in the candidate model.

Schwarz's Bayesian Information Criterion:

$$BIC(M) = -2 \log L(M) + p(M) \cdot \log n$$

Hannan-Quinn information criterion:

$$HQ(M) = -2 \log L(M) + 2\, p(M) \log(\log n)$$

As a user of these information criteria as a model selection guide, you select the model with the smallest information criterion.

Table 2. The results of selection test

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-236.16		32.60	9.16	9.23	9.19
1	-101.27	254.22	0.21	4.13	5.18	4.58
2	-100.34	1.67	0.24	4.24	4.62	4.39
3	-98.50	3.19	0.26	4.33	4.85	4.53
4	-92.87	9.32	0.25	4.26	4.94	4.52
5	-84.03	1.16	0.23	4.20	4.90	4.39
6	-78.93	13.92*	0.205*	4.07*	4.350*	4.211*
7	-81.94	1.89	0.26	4.31	5.43	4.74
8	-83.26	4.05	0.28	4.34	5.62	4.83

Source: Author's calculation

Based on the values of the model selection criteria (in table 2), the most appropriate model for our variables is the VAR, [6], model.

According to Gujarati (2003), a key concept underlying stochastic processes that has received a great deal of attention and study by time series analysts is the stationarity of the stochastic process. In the general sense, "A time series is said to be stationary if the mean and variance are constant over time. ADF (Augmented Dickey-Fuller 1979, 1981) test is a statistical significance test which means the test will give results in hypothesis tests with null and alternative hypotheses. The null hypothesis is the series in not stationary, and for testing we used a t-test. As a result, we will have a p-value, from which if it is less than the 5% significance level, we say that the basic hypothesis falls down and the time series is stationary.

The following table shows the results of the ADF test for the two series included in the analysis, the number of tourists and GDP in Albania for the period under study.

Table 3. The result of ADF test

Variable	t-test for ADF	Prob	Result for Hypothesis	Result for series
Number of tourist	0.054	0.6891	No Reject	
D(Number of tourist)	-2.6062	0.0119	Reject	I(1)
GDP	1.350	0.9502	No Reject	
D(DGP)	-8.3118	0.0000	Reject	I(1)

Source: Author's Calculation

Based on the values of p, we conclude that both series are non-stationary, they are the first order integrated, I, [2].

In the graphs below, two series are presented, the number of tourists and GDP according to seasonality. We can see that as far as GDP is concerned, it has higher values in the second quarter, while the number of tourists in the third quarter.

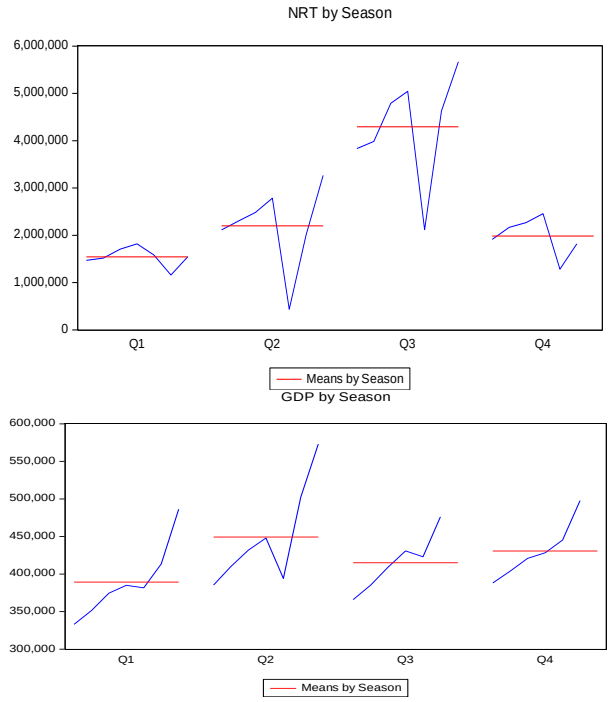

Fig. 1: Seasonality of series
Source: Authors Calculation

3.2 Granger Causality

To show the causal relationship between the variables, the Granger, [19] test is used. In to understand the short-term interdependence between variables is helped by the Granger test (Granger, 1969&1980, Sims, 1972 Geweke et al., Hoover 2008; Korda 2007; Xu 2015).
A variable X is said to 'Granger cause' a variable Y, if past values of X can predict the current value of Y. The Granger test empirically detects relationships that exist between variables in the short run by relying on VAR models.

The Granger causality test is based on VAR models, in the case of our two variables, using the model selection criteria, the most suitable model was the VAR, [6], model, which is presented in the following system:

$$\begin{cases} Nrt_t = \sum_{i=1}^{6} \alpha_{1i} Nrt_{t-i} + \sum_{i=1}^{6} \alpha_{2i} GDP_{t-i} + \varepsilon_{1,t} \\ GDP_t = \sum_{i=1}^{n} \beta_{1i} Nrt_{t-i} + \sum_{i=1}^{n} \beta_{2i} GDP_{t-i} + \varepsilon_{2,t} \end{cases}$$

The hypothesis are:

1. Ho: . $\sum_{i=1}^{p} \beta_{1i} = 0$ (Nrt not causality DGP)
2. Ho: $\sum_{i=1}^{p} \alpha_{1i} = 0$ (DGP not causality Nrt)

Fisher statistics are used to test the hypothesis, if the p-value is less than the 5% significance level, the basic hypothesis is rejected.

The Granger test results for the number of tourist and GDP are given in the following table:

Table 4. The result of Granger test

Null Hypothesis:	F-Statistic	Prob.	Result
NRT does not Granger Cause GDP	21.5601	0.00000	Reject
GDP does not Granger Cause NRT	7.15632	0.0048	Reject

Source: Author's Calculation

The p-values are smaller than the 5% significance level, therefore the hypothesis have been dropped.
In conclusion, we say that there is a two-way causal relationship between the number of tourists and GDP in Albania.

3.3 Cointegration

Cointegration indicates the existence of a long-run relationship between variables, [20]. Even when the variables do not, they are cointegrated in the long run, they may still be correlated in the short run.
According to, [21], if we have more than two variables in the model, then there is a possibility that there is more than one co-integrating vector. By this we mean that the variables in the model can form several equilibrium relationships. In general, for a number k of variables, we can have only up to (k-1) co integrating vectors, [22]. To find how many co integrating relationships exist between the k variables, the use of Johansen's method is required.

When it is known that the variables are I, [1], then there is a possible cointegration among them. So there may be a long-term relationship with time lags between them.
To test for cointegration, we used the Johansen test (1988, 1991), which is based on the VEC model. Maximum eigenvalue and trace statistics are used to test the hypothesis.
For the trace statistics, it tests the null hypothesis of r cointegrating vectors against the alternative hypothesis of n cointegrating vectors. The maximum eigenvalue test, on the other hand, tests the null hypothesis of r cointegrating vectors against the alternative hypothesis of r +1 cointegrating vectors. Neither of these test statistics follows a chi-square distribution in general. Asymptotic critical values can be found in Johansen and Juselius (1990) and are also given by most econometric software packages. If the p-value is less than the 5% significance level, the basic hypothesis is rejected.

The results of the Johansen test are shown in the table below

Table 5. The result of Johansen test

Hyp.		Trace	0.05		Result
No. of CE(s)	Eigen value	Stat	Critical Value	Prob.**	
None *	0.934	51.82	18.39	0	Reject
At most 1	0.009	0.174	3.841466	0.675	Not reject

Source: Author's Calculation

The p-values are smaller than the 5% significance level, for the case when r=0, therefore this hypothesis falls down. The p-value is greater than the 5% significance level, for the case when r=1, therefore this hypothesis remains. In conclusion, we say that the number of tourists and GDP in Albania are cointegrated.

4 Conclusion

Tourism is an important sector with an impact on economic development in Albania. The development of tourism has an impact on the increase of employment, on the increase of investments in accommodation structures, in infrastructure, and directly on the increase of national production. This sector was severed during the Codiv-19 pandemic period, but with the easing of measures, it will continue to grow, culminating in 2022 with a significant increase and, moreover, with the addition of the countries of origin from which tourists come, as well as the extension of time than tourism. Cultural, historical and mountain tourism are becoming even more attractive. From the analysis of two series of the number of tourists and GDP in Albania, it turned out that they are non-stationary series, from the ADF test it turned out that the series are I, [1]. The Granger causality test concluded that there is a two-way relationship between the number of tourists and GDP. Johansen's test discovered that these variables have stable relationships even in long-term periods. These conclusions show us that the increase in the demand for tourism affects economic growth, but also the economic growth affects the increase in the demand for tourism since the conditions offered are better and this will make the tourists increase the values spent in the country.

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