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FACTORS OF INTERNATIONAL TOURIST CONSUMPTION AND ITS IMPACT ON GDP GROWTH

Summary: *The subject of this research is international tourist consumption, the factors determining it and the influence of international tourist consumption on GDP growth. The aim of this paper is to determine the international tourist consumption and assess the influence of international tourist consumption on the GDP trends of the Republic of Croatia by 2027. Research results are based on secondary data for the period from 2000 to 2019. Several scientific methods are used in this paper, including methods of analysis and synthesis, methods of descriptive statistics and methods of correlation and regression analysis. Data analysis and numerical calculations were done using program Statistica. The main finding of this paper points to the conclusion that the growth of international tourist consumption guarantees the achievement of existing low economic growth rates in the Republic of Croatia.*

Key words: *international tourist consumption, hotel industry, GDP*

JEL classification: *C53, E27, Z32*

INTRODUCTION

The hotel industry became the third largest export industry in the world, immediately after the fuel and chemical industry and ahead of the food and automotive industries (Rasool and Maqbool and Tarique 2021). The hotel industry has a positive impact on the entire national economy of individuals and households, the private and public sectors (Petrevska 2012). The hotel industry accounts for 7.6 trillion USD, accounting for over 10% of world GDP, 7% of international trade (UNWTO 2019) and 30% of world service exports (Roman and Roman and Niedziolka 2020). The global hotel industry grew by higher annual growth rates (3.9% vs. 3.2%) than world GDP in the period from 2010 to 2019 (WTTC 2019). The hotel industry is of particular importance for achieving foreign trade balance for many countries (Blazevic 2002). For the Republic of Croatia, the hotel industry was important for other reasons, such as the development of modern road transport infrastructure (highway construction), which again contributed not only to faster and better traffic connections and more international tourists' arrivals, but also to accelerated economic development of rural areas. Thus, the hotel industry is increasingly becoming a promoter of economic growth and development from the consequences of economic growth.

Tourism consumption is an important driver of economic growth (GDP) and employment (Santos and Cincera 2018; Hamari and Sjöklint and Ukkonen 2015; Jegdic 2009; Anderson and Fornell and Lehmann 1994). International tourist consumption is dominant in the structure of tourist spending in the Republic of Croatia, accounting for 86% of total tourist consumption. Thus, the

Republic of Croatia has been ranked among the countries whose hotel industry is almost entirely dependent on the consumption of foreign tourists. Of the EU countries, only Malta and Estonia have a greater share of international tourist consumption in total tourist consumption than the Republic of Croatia. This data may be of concern especially in times of crisis (Mouzas 2006) such as this caused by Covid-19 virus (Mrnjavac et al. 2021) because it is known that international tourist consumption is recovering slower than domestic tourist consumption. The share of tourist consumption in GDP of the Republic of Croatia is estimated at 19% and is ten times higher than the global average of 1.2% (Pupavac and Knezevic 2021).

In accordance with the above mentioned research, subject of importance for this paper is foreign tourist consumption and its influence on GDP growth and employment in the hotel industry of the Republic of Croatia. In order to scientifically establish the influence of international tourist consumption on GDP growth and employment trends in the hotel industry, factors that determine international tourist consumption will first be investigated, namely: number of international tourist arrival (ITA), length of stay (in number of days) tourist in Croatia (LOS), income of tourists GDP/p.c. and tourist supply (TS) (Ivanov and Webster 2007). Research results are based on secondary data for the period from 2000 to 2019. Numerous scientific methods are used in this paper, including methods of analysis and synthesis, methods of descriptive statistics and methods of correlation and regression analysis. Data analysis and numerical calculations were done in program *Statistica*.

2. THEORETICAL FRAMEWORK AND RESEARCH CONCEPT

International tourism consumption (ITC) is expenditures of international outbound visitors in other countries. Domestic tourist consumption is not included because it is an integral part of personal consumption. International tourist spending in the world in 2019 was \$1.439 trillion (Eurostat 2022), showing a continuous growth trend. In the period from 2000 to 2019, international tourist consumption increased at an average annual growth rate of 4.91%, that is, it increased almost three times. An overview of the countries with the largest international tourist consumption is given in figure 1.

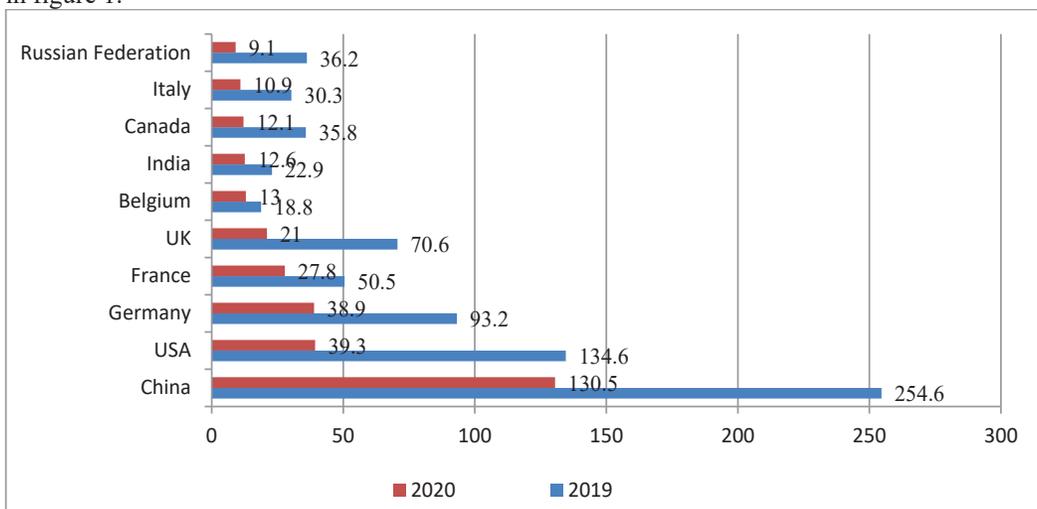


Figure 1. Countries with the highest international tourist consumption in the world in 2019 and 2020 (in billion USD) (Authors prepared according to Eurostat 2022)

Some authors (Bayramoglu and Ari 2015) found a significant link between international tourist spending and Greece's economic growth.

The number of international tourist arrivals (ITA) is one of the most frequently used indicators used to demonstrate the importance of tourism for the national economy of a country. Some authors (Rosellio-Nadal and He 2019) shows the correlation between the number of tourist arrivals and tourist consumption on a sample of 191 countries in the world for the period 1998-2016. The Republic of Croatia was visited by 207.79 million tourists in the period from 2000-2019, or an average 10.38 million annually (SD=3.3). The largest number of arrivals was recorded in 2019 when a record 17.35 million international tourists visited Croatia. The number of tourist arrivals to the Republic of Croatia increased from 2000 to 2019 at an average annual rate of 5.6%.

The length of stay in number of days (LOS) in a certain tourist destination is one of the basic factors in measuring international tourism (Gossling and Scott and Hall 2012), defined as the ratio between the total number of overnight stays and the total number of tourists (Castro-Nuño and Molina-Toucedo and Pablo-Romero 2013; De Vita and Kyaw 2016; Smeral 2006). The average number of foreign tourists' stays in a tourist destination has become the subject of research in the early stages of the development of mass tourism, because the connection between the average number of days spent in a certain tourist destination and the total consumption has been noticed very early. Some authors (Archer and Shea 1975) thus point out that tourism can generate the highest income if tourists are convinced to stay in a certain destination for as long as possible. The average length of stay directly affects the size of international tourist spending, the offer of services and also the character and availability of individual activities (Rasool and Maqbol and Tarique 2021; Oklevik et al. 2019; Thrane 2012). The Republic of Croatia belongs to the EU 27 group of countries with the highest average number of international tourist residence days (4.85). Only Cyprus (5.4) and Malta (4.9) are ahead of Croatia. The average length of stay of foreign tourists in EU 27 countries is 2.9 days (https://www.ksh.hu/stadat_files/tur/en/tur0041.html). Some authors suggest that the global trend is to reduce the average number of foreign tourists' days in a certain tourist destination (Alegre and Pou 2006; Eurostat 2014; Ferrer-Rosell et al. 2014; Fleischer and Peleg and Rivlin 2011; Gokovali and Ozan and Metin 2007; Salmasi and Celidoni and Procidano 2012). The reduction of the average number of tourist holidays in a certain destination is accompanied by a more frequent number of trips. Among the factors that facilitate this trend are decreasing transport costs, increasing wages and increased competition between tourist destinations worldwide (Almeida and Machado and Xu 2021). This trend is evident in the Republic of Croatia.

Gross domestic product per capita of emitting markets (GDP/p.c.). International tourist consumption increases with the level of income of tourists measured by GDP/p.c. of the country from which tourists come. More than one million arrivals in 2019 were tourists from Germany, Slovenia, Austria and Italy. Tourists from the leading ten European countries account for 63.58% of the total number of foreign tourists arriving in the Republic of Croatia in 2019. Out of the non European countries, 626035 tourists came from USA, 492381 from China and 403613 from South Korea. Since EU countries constitute the main tourist market of the Republic of Croatia, the GDP/p.c. of the EU 27 will be examined as a potential variable of the model for determining international tourist consumption. GDP/p.c. of the EU in 2020 was 23 380 and in 2021 27 810 €. The development of **tourist supply (TS)** is usually estimated by the development of accommodation capacities. The number of available beds (NB) means the accommodation capacities of a single country's hotel industry (tourist supply). The structure of accommodation capacities in the Republic of Croatia is not favorable. Namely, in the structure of overnight hotels as the most developed form of accommodation capacities in 2019 accounted for only 28.26% (cf. figure 2).

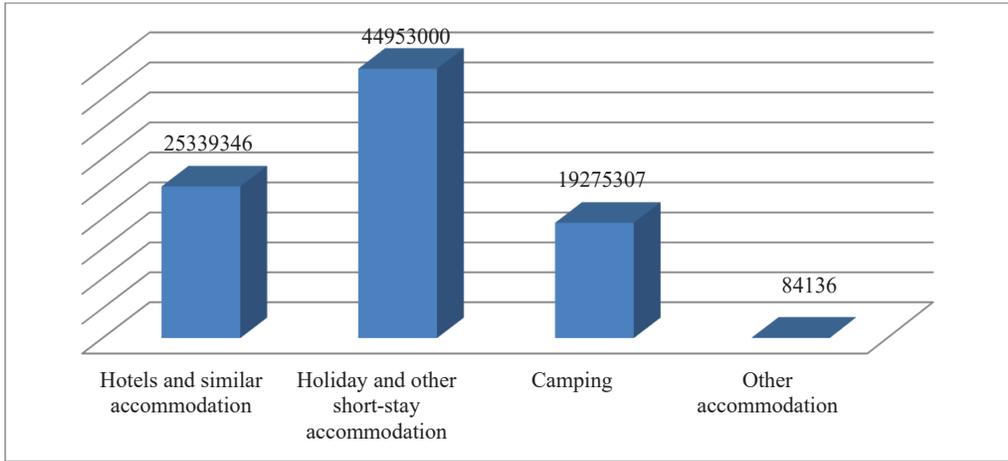


Figure 2. Tourist nights by types of tourist accommodation, 2019. (Authors 2022)

Gross domestic product of national economy is defined as:

$$GDP = C + I + G + (E - U) \tag{1}$$

where: C – consumption, I – investment, G – government purchases, (E – U) – net exports.

Personal consumption is the largest macroeconomic aggregate whose share in Croatia’s GDP in 2019 was estimated at 56.9% of GDP (umbilical cord, 2021). Tourist consumption of domestic and foreign tourists is a part of total personal consumption as the most important item in GDP. This leads to the conclusion that international tourist consumption is extremely important for economic growth for the tourist countries. This claim also applies to the Republic of Croatia, where international tourist consumption in 2019 amounted to 32.45% of total personal consumption. The decrease in total personal consumption in 2020 by 5% compared to 2019 is the result of the largest part of the decrease in international tourist spending due to the COVID-19 crises which resulted in a decrease in GDP in 2020 of 8.4%.

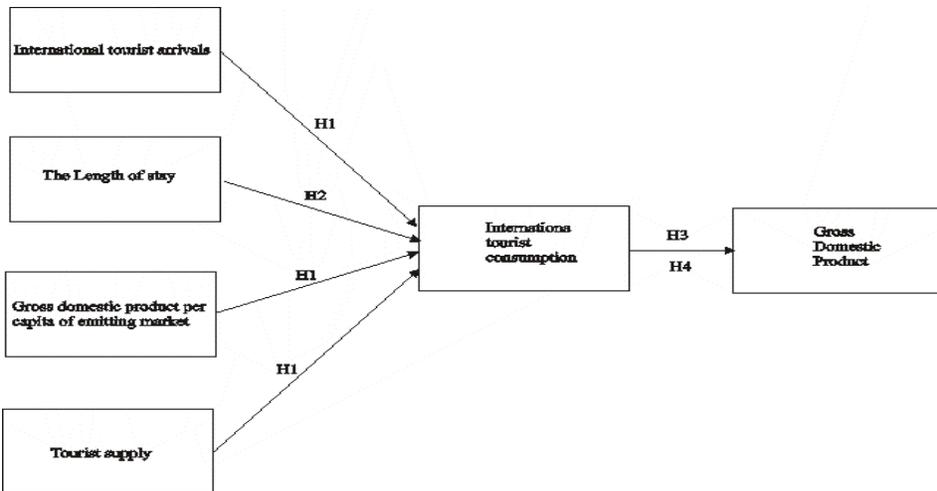


Figure 3. Research concept (Authors 2022)

It defines international tourist consumption, factors which determine it and the influence of international tourist consumption on the GDP trends of the Republic of Croatia. Accordingly, the following hypotheses have been set (cf. figure 3):

H1: There is statistically strong and positive correlation between international tourist consumption and the number of international tourist arrivals.

H2: There is statistically strong and negative correlation between international tourist consumption and the length of stay in tourist destination.

H3: There is statistically strong and positive correlation between international tourist consumption and the gross domestic product in the Republic of Croatia.

H4: The growth of international tourist consumption gives strong support to the Croatian economy, guaranteeing the achievement of GDP growth in the Republic of Croatia at annual rates of about 1.5 %.

2. DATA AND RESEARCH METHODOLOGY

The results of the research are based on secondary data collected from different sources, and the average length of stay foreign tourist in the Republic of Croatia is the result of the authors' calculation (cf. Table 1).

Table 1. Trends of international tourist consumption factors which determine it, and GDP of the Republic of Croatia (Author's calculation according to Eurostat 2000-2019)

Year	ITA(000)	LOS	Real GDP/p.c. EU-27 in EUR	NB (000)	ITC mil.USD (current)	GDP RH constant prices in 1990 mil. HRK
2000.	5831	5,84	22460	710	2835,1	234589,65
2001.	6544	5,87	22900	736	3439,3	243585,96
2002.	6944	5,72	23100	752	3951,3	256841,78
2003.	7409	5,58	23210	786	6513	269575,02
2004.	7912	5,37	23710	812	6945	281031,02
2005.	8467	5,43	24070	851	7625	292859,83
2006.	8659	5,43	24820	864	8296	306739,80
2007.	9306	5,33	25510	882	9244	323522,76
2008.	9415	5,38	25590	906	10915,8	331155,41
2009.	9334	5,41	24410	909	8866	306981,06
2010.	9111	5,60	24900	907	8256	302376,34
2011.	9926	5,52	25320	933	9202,2	301469,22
2012.	10369	5,55	25090	878	8798	294535,42
2013.	10955	5,45	25040	924	9568,8	293062,75
2014.	11622	5,28	25400	976	9821,3	292769,68
2015.	12683	5,19	25920	1028	8833,7	299796,16
2016.	13714	5,26	26390	1132	9552,1	310289,02
2017.	15592	5,15	27080	1201	10702,6	319907,98
2018.	16644	5,00	27600	1267	11348	328545,50
2019.	17353	4,85	27950	1319	11974	338073,32

In order to achieve the aim of the research and to prove the hypotheses set, numerous scientific methods were used, of which descriptive statistical methods and correlation and regression analyses are singled out. The correlation analysis was used to determine the existence of statistically significant links between international tourist consumption, the factors determining it, and the international tourist consumption and the gross domestic product of the Republic of Croatia. Regression analysis was used to show analytical relationship between international tourist consumption and factors determining it and between international tourist consumption and gross domestic product of the Republic of Croatia. After that, the development of international tourist consumption and gross domestic product of the Republic of Croatia was assessed by 2027.

3. RESEARCH RESULTS AND DISCUSSION

Based on the data from Table 1, a descriptive analysis of international tourist consumption in the Republic of Croatia for the period from 2000 to 2019 was made (cf. table 2).

Table 2. Descriptive statistics of international tourist consumption (mil. USD) (Authors 2022)

Mean	8334.36
Standard error	565.03
Median	8849.85
Standard deviation	2526.906
Min	2835.1
Max	11974
SUM	166687.2
N	20

In the period from 2000 to 2019, in the hotel industry of the Republic of Croatia achieved a total of USD 166.68 billion from foreign tourist spending, or an average annual amount of USD 8.33 billion (SD=2.52). The smallest amount of foreign tourist spending was realized in 2000 in the amount of only USD 2.83 billion. The largest amount of foreign tourist spending was realized in 2019, in the amount of USD 11.97 billion.

In the observed period, the average annual international tourist consumption increased by 4.22 times. The annual average growth rate of international tourist consumption in the observed period was 7.46, well above the annual average GDP growth rate of 1.84 %.

A Correlation analysis was conducted to prove hypotheses H1, H2, and H3 based on data from Table 1. The results of the correlation analysis are given in Table 3.

Table 3. Correlation analysis (Authors 2022)

	Means	Std.Dev.	ITA	LOS	GDPpc	NB	ITC	GDP
ITA	10389,5	3301,24	1,00	-0,90	0,95	0,99	0,81	0,74
LOS	5,4	0,25	-0,90	1,00	-0,90	-0,90	-0,86	-0,83
GDPpc	25023,5	1522,32	0,95	-0,90	1,00	0,95	0,91	0,88
NB	938,6	171,52	0,99	-0,90	0,95	1,00	0,81	0,76
ITC	8339,1	2532,44	0,81	-0,86	0,91	0,81	1,00	0,94
GDP	296385,4	28024,17	0,74	-0,83	0,88	0,76	0,94	1,00

The obtained results indicate a good to excellent correlation between the observed variables, and the positioned hypotheses H1, H2 and H3 are accepted.

In order to prove hypothesis H4, regression analysis was necessary in order to analyse the relationship between the ITC and the factor determining it, and between ITC and GDP of the Republic of Croatia. Despite the fact that there is good to excellent correlation between foreign tourist spending and the factors that determine it, a joint multiple regression model for assessing international tourist consumption has not been developed. Since the correlation between ITC and GDP/p.c. is positive and strong ($R=0.91$; $p<0.01$), a simple linear model was selected for the assessment of international tourist consumption as a dependent variable, which simultaneously yields the best results, in which GDP/p.c. the EU-27 is an independent and the ITC is a dependent variable.

The regression analysis results are given in table 4.

Table 4. Results of regression analysis for ITC depending on GDP/p.c. EU-27 country (Authors 2022)

Regression Summary for Dependent Variable: ITC $R= ,91019353$ $R^2= ,82845227$ Adjusted $R^2= ,81892184$ $F(1,18)=86,927$ $p<0,0000$						
	b*	Std.Err. - of b*	b	Std.Err. - of b	t(18)	p-value
Intercept			-29550,0	4070,982	-7,25869	0,000001
GDPpc	0,910194	0,097624	1,5	0,162	9,32347	0,000000

The obtained model for the assessment of international tourist consumption depending on the movement of GDP/p.c. of the EU-27 has the following form:

$$ITC = - 29\ 550 + 1.5 \text{ GDP/p.c. } (R = 0.91; p < 0.01) \quad (2)$$

After that, regression analysis was carried out between international tourist consumption and GDP of the Republic of Croatia, the results of which are given in Table 5.

Table 5. Results of regression analysis for the GDP of the Republic of Croatia depending on ITC (Authors 2022)

Regression Summary for Dependent Variable: BDP $R= ,94859744$ $R^2= ,89983711$ Adjusted $R^2= ,89427250$ $F(1,18)=161,71$ $p<0,0000$						
	b*	Std.Err. - of b*	b	Std.Err. - of b	t(18)	p-value
Intercept			208847,3	7179,081	29,09110	0,000000
ITP	0,948597	0,074596	10,5	0,825	12,71642	0,000000

The obtained model for the assessment of GDP of the Republic of Croatia, depending on international tourist consumption, has the following form:

$$\text{GDP of the Republic of Croatia} = 208\ 847.3 + 10.5 \text{ ITC } (R = 0.94; p < 0.01) \quad (3)$$

In accordance with the obtained results, the estimates of the ITC and GDP of the Republic of Croatia by 2027 are based on a simplified conceptual model that has the following form (cf. figure 4).

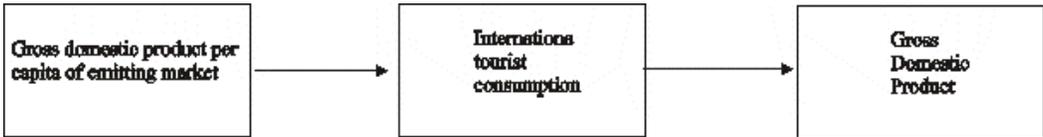


Figure 4. Interdependence between GDP/p.c. international tourist consumption and GDP of the Republic of Croatia (Authors 2022)

Due to COVID-19 crises and the decline in international tourist spending caused by the decline in the number of arrivals by international tourists, in 2020 the Republic of Croatia experienced a decrease of as much as 8.4 % in GDP, and in 2021 achieved a record GDP growth of as much as 10.4 %. International tourist consumption in the Republic of Croatia in 2020 amounted to only 5.63 billion USD, while in 2021 it was estimated at 10.41 billion USD (Eurostat 2022). Accordingly, two scenarios, i.e. two estimates will be developed to prove hypothesis H4. The first assessment is based on the models obtained (2) and (3) that ignore the extraordinary circumstances caused by COVID-19 crises, while the second assessment has developed two new models that take into account the results and effects of the COVID-19 and post COVID-19 crises. These models take the following form, referring to the period 2000-2021.

$$ITC = -24\,547.7 + 1.3 \text{ GDP/p.c.} \quad (r=0.82; p<0.01) \tag{4}$$

$$\text{GDP RH} = 215\,681.3 + 10ITC \quad (r=0.88; p<0.01) \tag{5}$$

This approach seems appropriate to take into account not only the impact of the ITC on the GDP of the Republic of Croatia, but also the impact of the crisis on the slowdown of GDP growth in the Republic of Croatia. The growth forecast for international tourist consumption is based on an estimate of the average annual growth rate of GDP/p.c. of the EU Member States of 1.1 % recorded for the period 2000-2019, while the estimate taking into account the effects of the COVID-19 crisis for the period 2000-2021 is based on the average growth rate of GDP/p.c. of the EU Member State of 0.97 % recorded in that period. The results of two different scenarios are given in Table 6.

Table 6. Scenarios of GDP trends depending on international tourist consumption (Authors 2022)

	Model	ITC estimation to 2027.	Model	Estimation of GDP of the Republic of Croatia to 2027.	Estimated annual GDP growth rate of the Republic of Croatia until 2027
Scenario 1	Model (2)	16209,615	Model (3)	379048,26	1,44 %
Scenario 2	Model (4)	13761,09	Model (5)	353292,23	0,55%

Based on the data from Table 6, it is evident that there were no extraordinary circumstances caused by the crisis, the growth of international tourist consumption would guarantee a growth of real gross domestic product of the Republic of Croatia by at least 1.44 % per year, which can be considered as realistic scenario.

In the conditions of extraordinary circumstances caused by the COVID-19 crisis, the growth of international tourist consumption by 2027 guarantees the growth of gross domestic product of the Republic of Croatia by only 0.55 % per year, which can be taken as a pessimistic scenario. The results suggest that it is necessary to engage other economic activities more significantly in order to achieve higher economic growth rates.

CONCLUSION

The hotel industry and related tourist consumption represent a strong support to the economies of many countries around the world. Tourist consumption is divided into domestic and international tourist consumption. The Republic of Croatia belongs to a group of European countries whose structure is dominated by foreign tourist spending. International tourist consumption in the Republic of Croatia shows a tendency of continuous growth in order to reach an amount of almost 12 billion USD in 2019. Thus, the international tourist consumption has a positive and important impact on GDP growth, employment and balance of payments of the Republic of Croatia. For the purpose of this scientific discussion, international tourist consumption is determined by the number of international tourist arrivals, the average number of days of their stay, the gross domestic product per capita of the tourist area and the development of the tourist supply. A statistically strong link was established between these variables. The survey on the impact of international tourist consumption of the GDP of the Republic of Croatia confirmed the existence of a statistically strong and positive link between the development of international tourist consumption and the GDP of the Republic of Croatia ($R=0.94$; $p < 0.01$) and confirmed that the growth of international tourist consumption guarantees the Republic of Croatia to achieve low economic growth rates. In order to achieve desirable and necessary higher economic growth rate, it is necessary to significantly activate other economic sectors as well.

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