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Economic Growth, Exchange Rate and Constrained Competiveness of the Tourism Sector in Andalucía

Abstract

This paper examines the relationship between tourism and economic growth, analyzing key factors affecting tourism income in Andalucía, Spain. Based on time series annual data for the period 2005 to 2012 and a multiple regression analysis we show that international tourism has made an important contribution to Andalucía's economic growth. Some of the factors considered in the analysis include the number of luxury hotels, the hotel price index and the exchange rate, though the latter is outside of the control of local authorities under the European Monetary Union (EMU).

Introduction

The tourism sector plays a significant role in economic development for countries with a tourism oriented infrastructure. Since the 1960 s tourism has gained importance, becoming one of largest and fastest growing industry around the world, contributing to economic growth through its multiplier effects. According to UNWTO [2013], international tourist travel reached a record high of 1,035 million, generating $ 1,075 billion of income per year. Today tourism continues to significantly contribute (even in the poorest regions) to world economic growth. The tourism industry includes a wide range of businesses, ranging from restaurants, hotels, transportation, travel agents, insurance companies, the food and health care industries [Uriely et al., 2002]. Today's EU growth is mostly generated by service industry [McKee, 2008] and the impact of tourism on economic growth includes an overall increase of household and government incomes and improved balance of payments [Lim, 1997; Oh, 2005]. Tourists expenditure concentrates on the consumption of products, for which prices are determined in local markets [Balaguer, Contavella-Jorda, 2002].

Historically, tourism has been a fragmented sector with many problems on the supply and demand sides, and fierce destination competition.[4] As Cracolici and Nijjamp [2008] argued, the competitiveness of tourist destinations is highly related to the its unique attractiveness. As a result, tourist destinations face constant pressure to adjust the attractiveness of their resources to meet demand expectations [Ritchie 2003].

Spain is one of the most popular tourist destinations, ranking fourth in both Europe and globally in the Travel and Tourism Competitiveness Report 2013[5], moving up from seventh place in 2011. In Spain, Andalucía is the most popular tourist destination. It contains eight provinces, 20% of the country's population and 17.3% of Spanish territory with a long coastline, sandy beaches, a beautiful countryside, mountain ranges, monuments and historical sites dating back several thousand years.[6] Tourism is an important source of national income for Andalucía, accounting for about 4% of the GDP and employing some 10% of the workforce, both directly and indirectly [Andalucía, 2015]. In 2014 Andalucía received more than 8.5 million international tourists, compared to 7.9 million in 2013, which is a 9% increase on a 13 year average (the average number since year 2000 is 7.8 million per year; the trend of international tourist arrivals is shown in Figure 1. [Andalucía, 2015]. This places Andalucía about twenty fifth among foreign tourist destinations in the world. In terms of national income, total tourist spending in 2013 reached 8.4 billion euro, i.e. 1,067 euro per tourist [Andalucía, 2015].

At the same time, Andalucía is the poorest region in Spain, lacking other engines of growth and relying heavily on tourism for its development. Thus, it is important to understand the factor(s) supporting tourism development in Andalucía.

FIGURE 1. **International tourists arrivals in Andalucia 2000–2014**
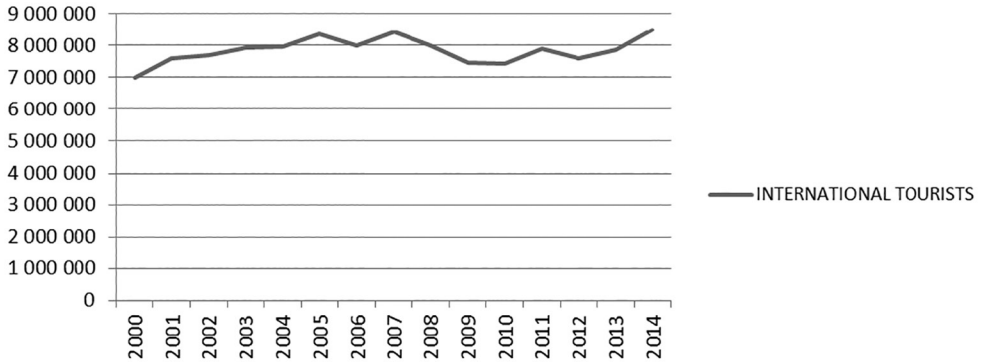
S o u r c e : Instituto de Estudios Turísticos (IET), Ministerio de Industria, Turismo y Comercio.

In general, a number of factors influences attractiveness and competitiveness of a tourism industry For instance, the literature documents a relationship between GDP, international tourism and the exchange rate in many countries [Dritsakis, 2004; Brida et al., 2010; Falzon, 2012]. Cheng et al. [2013] investigated a relationship between the real exchange rate and income from tourism in the USA and reported that US dollar depreciation had a positive impact on inflows of tourists, as a weaker dollar makes the US more attractive for foreign visitors [Krugman, Obstfeld, 2009]. However, being a member of the European Monetary Union (EMU) negates exchange rates when considering tourism from other EMU countries.

Another factor impacting tourism is the state of the global economy; for example during the financial crisis in 2007–2009, the inflow of tourists and business travels declined drastically, affecting the hotel and transportation industries in the European Union [WEF, 2013]. The number of international tourists fell by 11%, from a record level 8.4 million to 7.4 million in 2009.[7]

As mentioned above, the major goal of this study is to examine the *relationship between tourism and economic growth* in Andalucía in the period of 2005–2012, covering that region's economic boom, downturn and recovery. The economic variables used in the research include average tourist expenditure, the number of international tourists arrivals, effective exchange rate, hotel price index (exchange rate and hotel price index are proxies for competitiveness), average salary in the tourism sector and real GDP per capita. The paper is organized as follows: we begin by providing a theoretical background for the study, then we describe our methodology and data; in the next section we present and interpret our findings and then we conclude and discuss the findings' implications.

Literature Review

Tourism-Led Growth Hypothesis

The literature provides a number of studies on the tourism-led growth hypothesis (TLG). Khan et al. [1995], in examining the effects of tourism on growth suggested that there are direct, indirect and induced multiplier effects of tourist spending on GDP and employment. The direct effect includes the initial inflow of income from hotels and travel agents, the indirect effect results from the previous agents buying the essential inputs for their economic activity, and the induced effect arises as a result of spending on unrelated goods and services. A study by Lee and Kwon [1995] also emphasized the importance of foreign tourist receipts as an economic engine of growth, finding that through the *multiplier effect* tourism generates employment with a greater value-added. This finding has encouraged governments to treat tourism as a strategic sector [Pao, 2005].

Moreover, the income derived from tourists plays a key role in local markets and development as it involves foreign exchange [Hazari, 1993]. As indicated by Balaguer and Cantavella-Jorda [2002], foreign exchange impacts growth as it permits imports of inputs stimulating the overall economy. Based on studies of Greece, Dritsakis [2004] provides direct evidence supporting a strong relationship between the exchange rate and tourism earnings. Similarly Cortes-Jimenez et al. [2009] and Belloumi [2010] argued that foreign exchange earnings generated from international tourism are a comparative advantage for economic growth and, therefore, policy makers should design policies promoting tourism. Overall, a number of studies provide consistent support for the tourism led growth hypothesis, including, for example, Durbarry [2002] on Mauritius, Tosun [1999] on Turkey, Fayissa et al. [2007] on Sub-Saharan Africa, Khalil et al. [2007] on Pakistan, Ching-Fu and Chiou-Wei [2009] on Taiwan and South Korea[8], and Cortes-Jimenez et al. [2009].

While tourism plays a key role in enhancing economic growth in developing countries, economic diversification and other economic factors need to be considered. For instance, Brau et al. [2003] found that tourism can lead to growth in small countries with a limited industrial base but its impact on growth declines with a country's size. According to Candela and Cellini [1997] and Lanza [2000], country size can be treated as a proxy for potential economic growth. They found an initial negative relationship between natural resources per capita (tourism specialization) and the size of the country (population). In this sense, Schubert et al. [2011] examined the effects of an increase in tourism demand in Antigua and Barbados, two small islands specializing in tourism, and found that an increase in the number of tourists generates a boom in foreign income and output. Moreover, Lee and Chang [2008] discovered an indirect relationship between tourism and economic growth in developed countries, while for less developed countries a bi-directional causality was found. However, Kim et al. [2006] found a mutual association between tourism and economic growth in Taiwan, which is inconsistent with the results of previous studies.

The possible causes of this inconsistency could be explained by the unique characteristics of the countries involved. This kind of reciprocal temporal relationship might suggest considering tourism as a strategic industry and intrinsic component in a broad context, specifically in the host country's environment.

Competitiveness in the Tourism Industry

Development of the tourism industry is heavily affected by many competitive factors either from a national or global perspective. A study of China's Sichuan Province [Yang, 2011] showed that the local economy is strongly influenced by the competitiveness of the tourism industry (i.e. wage of employees, star hotels, GDP per capita, number of tourists). Using data on 131 countries, Webster and Ivanov [2014] found a positive relationship between a destination's competitiveness, economic growth and the tourism industry. The results show that the number of tourists is linked to a High Destination Competitiveness[9] index, as price competeness increases the number of visitors. Thus, tourism competitiveness is related to two main components: *price and the quality of the tourist destination*.

Tourism is subject to severe price competition. Durbarry and Sinclair [2002] found that in Malta the demand for holiday pricing is highly elastic when juxtaposed against offers by such countries such as Turkey or Spain. Falzon [2012] analyzed a relative price index for the most visited countries in the Mediterranean regions to track price fluctuation in the long-term. This price index helps private sector and governments make specific decisions in order to retain or even increase the competitiveness of a region/country, as it is based on real exchange rates. Holiday prices are closely associated with exchange rate. The study by Falzon [2012] showed that over 1997–2002 period, most destinations became cheaper for British tourists as compared to German tourists due to exchange rate differences. Martin and Witt [1987] attempted to establish the exchange rate of identified *tourist bundles* of goods and services. Cheng et al. [2013] investigated the relationship between real exchange rate and income related to the tourism sector in the USA over the period 1973–2010, and the results showed that US dollar depreciation had a positive impact on foreign tourism. Consequently, literature maintains that price competitiveness is a key factor for the tourism sector.

In destination competitiveness studies, scholars generally agree that in the tourism industry comparative advantage is related to the characteristics of a destination. For example, Vjekoslav et al. [2012] examined the relationship between the competitiveness of Croatia as a tourist destination and the tax burden and suggested that Croatia's tax burden for tourism industry is substantial but comparable to other countries; Cracolicia and Nijkamp [2008] explored the competitiveness of Southern Italy and found that in some cases, the relevant components of tourist supply play a smaller role than the complementary components of tourist supply. As tourism is susceptible to variations in the environment, research on tourism should treat it as an active and complex activity and consider other factors affecting selection of a destination. In this regard, David and Tóth's [2011] research

on tourism competitiveness in Hungary shows that the Budapest-Central region is the most attractive in that country. Crouch and Ritchie [1999] confirmed that a competitive tourist destination generates prosperity for a tourist region.

Impact of Economic Crisis on Tourism in the European Union

The influence of tourism on economic growth and job creation has been recognized by the Treaty of Lisbon [Europa EU, 2010]. The Treaty emphasizes supporting and promoting tourism. According to Article 175 – Title XXII, of the consolidated version of the Treaty on the European Union and the Treaty on the functioning of the European Union [2010], EU actions should be aimed at:

1. *Promoting competitiveness in the tourism sector via additional actions undertaken by Member States. These are:*
   (a) *encouraging the creation of a favorable environment for the development of undertakings in this sector;*
   (b) *promoting cooperation between Member States, particularly by the exchange of good practice;*
2. *The European Parliament and the Council, acting in accordance with the ordinary legislative procedure, shall establish specific measures to complement actions with Member States to achieve the objective referred to in this Article, excluding any harmonization of the laws and regulations of Member States* [Europa EU, 2010].

As argued earlier, tourism is closely associated with business cycles. An economic downturn can lead to reduced tourism activity, but on the other hand it can support economic recovery and growth in some countries/regions. A number of studies explored the influence of the recent economic 2007–2009 crisis on tourism in the EU. Eugenio-Martin and Campos-Soria [2013] examined the variations in tourism spending and its consequences during the crisis in the EU. Their results show that reduced tourism spending is connected to changes in gross domestic product, which directly depends on economic growth. However, Northern European regions are likely to reduce tourism spending proportionally less than Southern ones. Eugenio-Martin and Campos-Soria's study [2013] further revealed that in the countries most affected by the economic crisis (i.e. such as Portugal, Spain, Italy, Greece), new opportunities stemming from a rising number of tourists led to an increase in employment. Tourists arrivals growth was a consequence of decreasing prices resulting from the economic downturn. Ozcam et al. [2012] examined the perceptions of travel to Turkey during the European economic crisis. Although respondents confirmed negative impact of economic crisis on the tourism, Turkey's tourism was not severely affected by the crisis. Moreover Jucan and Sabina [2013] found that tourism is an important driver for popular tourist countries/regions helping them to recover from the crisis, as contrasted with other non-tourist destinations. The authors emphasized that tourism contributes to economic growth, employment, trade and economic recovery

The above-mentioned literature suggests that in autonomous regions like Andalucía, tourism can play a vital role in economic expansion. This inference is tested in the next section of this study.

Data Sources and Analytical Model

International tourists expenditures (tourism sector income in a country/region) can be influenced by numerous factors. In our study, we investigate the relationship between tourism and economic growth in Andalucía. Our main exploratory variables are: *Gross Domestic Product*[10], *tourism earnings, exchange rate*[11]*, the number of starred hotels, and the Hotel Price Index.* The data were collected from multiple sources including the Spanish Statistical Office, the Andalucía Statistical Yearbook, the Bank of England and the Statistical Office of the European Union. As not all quarterly data were available, the annual data of Andalucía from 2005–2012 are employed. In an attempt to avoid heteroscedasticity, all these variables have been transformed into their natural logarithms.

The econometric model was established as follows:

$$Y_= \alpha + \beta X_{1t} + \beta X_{2t} + \beta X_{3t} + \beta X_{4t} + \beta X_{5t} + \beta X_{6t} + et \qquad (1)$$

where, Y is the income generated by the tourism industry in Andalucía [IET, 2013]; X_1 is Gross Domestic Product per capita in Andalucía [INE, 2013a]; X_2 is International Tourist Arrivals (million) over the period of 2004–2012 in Andalucía [IET, 2013]; X_3 is Numbers of starred hotels in Andalucía [Turismo y Deporte de Andalucía, 2012]; X_4 is Average salary in the tourism industry in Andalucía [INE, 2013b]; X_5 is the Average Exchange Rate Index, Sterling (Jan 2005 = 100) [Bank of England, 2013]; X_6 is the Hotel Price Index, Andalucía (Jan 2005 = 100) [INE, 2013c]; *et* is the err term. Data for X_3 (Number of starred hotels) from 2005 to 2006 was not found, and in this case data were obtained by getting the value of the adjacent year. E-views-7 is employed for our multiple regression analysis and ordinary least squares estimation, after logarithmic transformation of the all variables (independent and dependent).

Data Analysis and Findings

A reliable regression model requires a high R-squared value with no serial correlation and no heteroscedasticity in the residuals, showing a normal distribution of residuals. To assess whether our results are robust against heteroscedasticity (unequal variances) and auto-correlation, we performed a diagnostic test before running the regression analysis.

The results showed that the Obs*R-squared was 7.79 and the corresponding p-value was higher than the significance level of 5% (Prob = 0.2534 > 0.05). Therefore, we cannot reject the null hypothesis of no heteroscedasticity. We also performed the normality test Jarque-Bera. The p-value related to the Jarque-Bera test is higher than the significance level of 5% (Prob = 0.826> 0.05) and we therefore could not reject the null hypothesis, and the residuals were normally distributed.

The multiple liner regression results are presented in Table 1. The coefficient of determination or R-squared (R^2) is 0.999 (99.9%), which indicates a good fit of our model. In fact, around 99.9% of variations of *average tourism expenditure* are explained by the independent variables incorporated in the model. *F*-statistics is 5517.828 and *P*-value = 0.001. Consequently, at the significance level of 5% (0.05), the model equation proved to be statistically significant. This indicates that the independent variables jointly can influence the dependent variable (Y).

TABLE 1. Multiple linear regression analysis (2005-2012)

Independent variables (X)	Tourism income (Y)	Sig
Constant (b_0)	4.724	0.017
	(36.593)	
GDP per capita (X_1)	−0.247	0.019
	(−32.025)	
International tourists arrivals (X_2)	0.008	0.053
	(11.777)	
Number of starred hotels (X_3)	0.054	0.303
	(1.932)	
Average salary in the tourism (X_4)	0.762	0.015
	(40.728)	
Average exchange rate (X_5)	0.005	0.804
	(0.316)	
Hotel price index (X_6)	−0.749	0.023
	(−26.893)	
F test	5517.828	0.000
R squared	0.999	
N	8	

Note: absolute '*t*' ratio in brackets.

S o u r c e : own elaboration.

The results of individual impact of the explanatory variables showed that the *t*-statistic is significant ($p < 0.05$) for GDP per capita (X_1), average salary (X_4) and hotel price index

(X_6) with p-values of 0.019, 0.015 and 0.023 respectively. It suggests that these variables are important factors explaining tourism income growth in Andalucía, while the variables of tourist arrivals (X_2), number of starred hotels (X_3) and exchange rate (X_5) are not significant as p-values are higher than the significance level of 5% (0.05). As the income generated by tourism in Andalucía is part of its GDP and contributes to GDP per capita, we consider it when analyzing the impact of GDP per capita on tourism income. It is unclear if the income per capita in Andalucía's induces tourism expenditure. Methodologically this signifies the possible existence of multicollinearity in the model due to a high correlation among independent variables. To test this issue, we calculated a correlation matrix (Table 2.).

TABLE 2. Correlation matrix

	GDP per capita (X_1)	International tourist arrivals (X_2)	Number of starred hotels (X_3)	Average salary in the tourism (X_4)	Average exchange rate (X_5)	Hotel price index (X_6)
X_1	1					
X_2	0.0203389	1				
X_3	−0.3460455	−0.00624244	1			
X_4	0.52472633	−0.26570263	0.31517857	1		
X_5	0.34578494	−0.21848347	−0.85996235	0.04516995	1	
X_6	0.36736534	−0.5934215	−0.5844002	0.31218856	0.86377763	1

S o u r c e : own elaboration.

Table 2. shows that substantial correlations were identified between the variables of GDP per capita (X_1) and average salary (X_4), international tourists arrivals (X_2) and hotel price index (X_6), number of starred hotels (X_3) and exchange rate (X_5), and exchange rate (X_5) and hotel price index (X_6), which suggests that considerable multicollinearity could exist among these explanatory variables, leading to questionable results.

To find a better model, we re-ran the analysis by evaluating the response of each variable one by one, from the result of the regression of Y on GDP per capita (X_1) through to hotel price index (X_6). The most accurate estimation is Y to exchange rate (X_5). This regression model obtained the maximum R-squared value of 0.724. According to Hair et al. [1998], the higher the value of R-squared, the greater the explanatory power of the regression. Based on to this explanation, around 72.49% of the total variation of *average tourism expenditure* (i.e. tourism income) (*Y*) is explained by the *average exchange rate index (sterling)* (X_5), and additionally both "*t*" and "*F*" statistics are significant at 5%. As a result, exchange rate (X_5) is highly significant, which supports the argument that exchange rate has a negative impact on tourism income (Table 3.). In this model, the exchange rate (X_5) was fixed.

TABLE 3. **Least squares regression for exchange rate (X_5)**

Independent variable (X)	Tourism income (Y)	Sig
Constant (b_0)	8.44	0.000
	(21.743)	
Average exchange rate (X_5)	−0.343	0.007
	(−3.976)	
F test	15.809	0.007
R squared	0.724	
N	8	

Note: absolute 't' ratio in brackets.

S o u r c e : own elaboration.

When estimating the remaining explanatory variables (X_1, X_2, X_3, X_4 and X_6) the best estimation was found with X_2 and the results of this regression are shown in Table 4. The value of the coefficient of determination (R-squared) was the highest, suggesting a higher power explanation of the model. In fact, now around 78.38% of the total variation of *average tourism expenditure* (i.e. tourism income, the dependent variable) is explained by exchange rate (X_5) and international tourist arrivals (X_2). Although the *t* test for international tourist arrivals (X_2) was not significant (p-value = 0.295 > 0.05), it showed a positive sign which implied that international ttourist arrivals (X_2) have a positive impact on tourism income which seems intuitive. In principle, the F test was passed and the p-value related to the F-statistic was lower than the significance level (p-value = 0.021 < 0.05). This indicates that international tourist arrivals (X_2) was substantial in adding to the regression model's predictive ability.

TABLE 4. **Least squares regression for X_5 and X_2**

Independent variables (X)	Tourism income (Y)	Sig
Constant (b_0)	8.111	0.000
	(17.211)	
Average exchange rate (X_5)	−0.321	0.013
	(−3.740)	
International tourist arrivals (X_2)	0.014	0.295
	(1.167)	
F test	9.064	0.0217
R squared	0.783	
N	8	

Note: absolute 't' ratio in brackets.

S o u r c e : own elaboration.

Having used a fixed exchange rate (X_5) and international tourist arrivals (X_2), we further regressed to the remaining variables (X_1, X_3, X_4 and X_6). In this case exchange rate (X_5), international tourist arrivals (X_2) and number of starred hotels (X_3) jointly provided the best estimation. The results are shown Table 5. In this new estimation, the value of R-square again increased considerably, as almost 90% of variations of *average tourism expenditure* (i.e. tourism income) are explained by average exchange rate index (sterling), international tourist arrivals and number of starred hotels. The F test is significant at five 5% level (p-value $= 0.020 < 0.05$). However, individually the explanatory variables (X_5, X_2 and X_3) are not significant. All p-values were higher than 5% ($\text{Prob}_{x5} = 0.678 > 0.05$; $\text{Prob}_{x2} = 0.096 > 0.05$ and $\text{Prob}_{x3} = 0.111 > 0.05$ respectively). Hence, consistent with our previous findings of correlation among variables and the multicolinearlity problem we return to the prospect of separating independent variables when they are highly correlated to avoid the issue of multicolinearlity.

TABLE 5. **Least squares regression for X_5, X_2 and X_3**

Independent variables (X)	Tourism income (Y)	Sig
Constant (b_0)	1.837	0.585
	(0.592)	
Average exchange rate (X_5)	−0.063	0.678
	(−0.445)	
International tourists arrivals (X_2)	0.022	0.096
	(2.168)	
Number of starred hotels (X_3)	0.672	0.111
	(2.039)	
F test	11.245	0.020
R squared	0.894	
N	8	

Note: absolute 't' ratio in brackets.

S o u r c e : own elaboration.

Having used a fixed exchange rate (X_5), international tourist arrivals (X_2) and number of starred hotels (X_3), we ran a regression using the remaining variables (X_1, X_4, and X_6). The results are presented in Table 6. By adding hotel price index (X_6), a higher R-squared value is obtained.

At this instant around 95% of variations of *average tourism expenditure* (i.e. tourism income) are supported by X_5, X_2, X_3 and X_6. Additionally, the F test verified that the previous independent variables can jointly influence the dependent variable at the significance level (p value $= 0.027 < 0.05$). Again these variables are not significant at 5% level respectively ($\text{Prob}_{x5} = 0.258 > 0.05$; $\text{Prob}_{x2} = 0.880 > 0.05$, $\text{Prob}_{x3} = 0.052 > 0.05$ and

$Prob_{x6} = 0.168 > 0.05$). However the number of starred hotels (X_3) showed a positive sign implying that the number of starred hotels has a direct impact on tourism income, which is intuitive, and the p-value (0.111) suggests that it is significant. Hotel price index (X_6), appears as significant but with negative impact, which suggests that the increase in hotel price may deter international tourists, however the results are not significant enough to suggest that it could be a major factor, particularly when the number of starred hotels (X_3) had a positive impact on tourism income.

TABLE 6. Least squares regression for X_5, X_2, X_3 and X_6

Independent variables (X)	Tourism income (Y)	Sig
Constant (b_0)	2.230	0.435
	0.897	
Average exchange rate (X_5)	0.370	0.258
	(1.390)	
International tourists arrivals (X_2)	0.002	0.880
	(0.163)	
Number of starred hotels (X_3)	0.997	0.052
	(3.125)	
Hotel price index (X_6)	−0.968	0.168
	(−1.806)	
F test	14.014	0.027
R squared	0.949	
N	8	

Note: absolute 't' ratio in brackets.
S o u r c e : own elaboration.

It should be noted that GDP per capita (X_1) and average salary (X_4) cannot be selected due to the multicollinearity problem discussed earlier. If these variables were added to our estimation, R-squared would be around 96%, however, neither F (Prob $F_{x1} = 0.120 > 0.05$ and Prob $F_{x4} = 0.075 > 0.05$) or t test are passed at the significance level. Finally, the Breusch-Godfrey Correlation test shows that there is no serial correlation (null hypothesis). The results from the Breusch-Godfrey correlation test show that, the probability of *Chi-Square* (2) is higher than the significance level of five per cent (p-value $= 0.08 > 0.05$). Consequently, we cannot reject the null hypothesis. Since autocorrelation is not a problem here this is a model worth considering when drawing policy conclusions in the next section.

Conclusion

Andalucía, the poorest region of Spain, is the most attractive destination for international tourists in that country. An examination of key factors contributing to the growth in tourism in Andalucía could shed some light on the potential development engines of the region. This research relied on a time series analysis and robust statistical methods to test the relationship between the tourism sector and economic growth and to identify the determinants of tourism development in Andalucía. The data for 2005–2012 covers periods of the economic boom, downturn and recovery providing a better explanation of the relationship between tourism and economic growth in Andalucía.

The results suggest that when the number of international tourists arrivals increases, the tourism expenditure increases accordingly, which is in line with the Kim et al. [2006] study on Taiwan and Schubert et al. [2011] study on Antigua and Barbuda. The increase in hotel prices lead to a reduction in tourist arrivals and tourist spending as supported by Falzon [2012] and Webster and Ivanov [2014] argument which uses the Destination Competitiveness theory. Our study confirmed the importance of price as a determinant of tourism competitiveness. The results also showed that the number of starred hotels positively augments tourists spending. It also provided empirical support to Yang's [2011] earlier works indicating that the local economy (China's Sichuan Province) is strongly influenced by the competitiveness of its tourism. In addition, we found that an increment in the exchange rate index (using appreciation of the sterling pound versus the euro) matters and tourist spending positively responds to a weakening currency. This finding confirms Cheng et al.'s [2013] argument regarding exchange rate and the competitiveness of tourism sector. In summary, exchange rate index, the number of international tourists, the number of starred hotels and hotel price index are the major factors that affect the average tourism income in Andalucía.

These research findings have a number of policy implications for the Andalucía government. Firstly, targeting British tourists when pound sterling appreciates would stimulate tourism, though there is no room to alter euro values as Spain is a member of EMU. Andalucía's government should also pay attention to other factors: the number of starred hotels and the hotel price index. Declining hotel prices during and after the financial crisis attracted international tourists and the government should make every effort to take advantage of such trend. Secondly, increasing number of starred hotels requires high quality employees and services and relevant government regulations. Thirdly, the increasing number of international tourists requires a joint public and private sector effort to facilitate high quality infrastructure, which calls for a proactive strategy and effective sectoral coordination. If Andalucía develops a coherent strategy supporting growth in tourism and implements effective policies, the multiplier effect should stimulate economic growth in the region.

As do most studies, this research has its limitations. We recognize that it is impossible to test all potential variables that affect economic growth through the tourism industry in Andalucía. In addition, the relatively short period involved may have influenced the general nature of our findings.

Notes

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[4] Competitiveness is a multidimensional component that is problematic to measure [Scott and Lodge, 1985]. However it could be defined by the level of productivity with which a nation utilizes its human, capital and natural resources [IESE, 2014, available at: http://www.iese.edu/en/ad/AnselmoRubiralta/Apuntes/Comp etitividad_en.html].

[5] Travel and Tourism Competitiveness Report issued by the World Economic Forum available at: http://www.weforum.org/reports/travel-tourism-competitiveness-report-2013

[6] See http://www.andalucia.com/intro.htm, accessed: 14 September 2014.

[7] International Tourists in Andalucía, available at: http://www.andalucia.com/spain/statistics/tourism.htm, accessed: 4th October 2014.

[8] In a wider analysis, Che Chou [2013] used an empirical study to examine the relationship between tourist expenditure and economic growth in ten transition countries (Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Poland, Romania, Slovakia and Slovenia). The results were paradoxical. The Granger causality test for domestic tourism in Latvia, Slovakia and Cyprus showed that a negative travel policy will diminish economic growth by reducing travel expenditures. Similar results were found in Poland and the Czech Republic. On the other hand, in the case of Hungary and Estonia, two factors that reciprocally affect each other (Endogenous Variable between Economic Growth and Tourism Development) were found. This implies that extreme protection of the travel industry may cause difficulties in economic activity. Finally, the domestic tourism-led growth hypothesis was neutral in the case of Slovenia, Romania and Bulgaria. Experts attributed these results to a minor impact of tourism on total economic activity in these countries.

[9] Index based on 14 pillars of the travel industry, released by the World Economic Forum, available at: http://www3.weforum.org/docs/TTCR/2013/TTCR_Chapter1.1_2013.pdf, accessed: 15 November 2014.

[10] GNP is not used as it includes the nation's gain on overseas investment, whereas GDP does not [Antoni and Baidal 2003].

[11] The devaluation or depreciation of the sterling pound versus the euro is crucial for Andalucía, as the UK is the principal source of international visitors. Therefore, in this study, we consider the exchange rate between sterling and euro.

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