Article

Determinants of Tourism Demand in Spain: A European Perspective from 2000–2020

Susana Borrego-Domínguez [1], Fernando Isla-Castillo [2] and Mercedes Rodríguez-Fernández [1,*]

[1] Department of Economics and Business Administration, Universidad de Málaga, 29071 Málaga, Spain
[2] Department of Statistics, Universidad de Málaga, 29071 Málaga, Spain
* Correspondence: mmrodriguez@uma.es

Abstract: This empirical study evaluates European tourism demand in Spain from 2000 to 2020. To test the hypotheses, we have modelled tourism demand, which is measured in terms of travellers arriving in Spain. An Error Correction Model adapted to a panel structure has been utilised to work within a time series context and differentiate up to 14 European countries of origin. The findings denote that over the short and the long term, gross domestic product (GDP) and the number of beds positively relate to tourism demand. Still, the stock market indices are not significant in both terms. The price index, trade flows, and length of stay differ in the short and the long term. Results of this study call the attention of policy makers and the private sector to encourage an increase in the supply of available beds to ensure post-pandemic sustainability.

Keywords: Europe; tourism demand; supply of beds; GDP; stock market indices; panel data

1. Introduction

The implications and contributions of tourism to economic growth are well documented (Sequeira and Nunes 2008; Dritsakis 2012; Ana 2018), explaining why many countries are interested in its development (Brida et al. 2008). The effect of tourism on economic activity varies according to the income levels and institutional qualities of the host countries (Tang and Tan 2017). The investigation of political and social characteristics, together with geographic and economic aspects, will allow for a better understanding of this complex relationship (Antonakakis et al. 2016), which is also affected by globalization (Ivanov and Webster 2013).

According to data from the World Tourism Organisation (UNWTO 2019), 1.4 billion international tourist arrivals were reported in 2018, which was 5% over the value reported in the previous year. Furthermore, the total international tourism export was US$1.7 trillion in the same year, which was attributed to the relatively strong global economy and a growing middle class in emerging economies. Although international arrivals grew below the exceptional rates observed in 2017 (+7%) and 2018 (+6%), strong growth was evident in 2019, with 1.46 billion people travelling globally. Demand was somewhat weaker for economically advanced destinations in various regions due to reasons such as the uncertainty surrounding Brexit, geopolitical and trade tensions and the global economic slowdown. Major changes in the travel industry, with the collapse of the Thomas Cook Group and several low-cost airlines in Europe, also had a substantial impact (UNWTO 2021b).

Travelling abroad has become more common since an increasing number of individuals, with a lower social and economic status, find travelling abroad viable (Martins et al. 2017). For Europe, this ease led to 710 million international tourist arrivals in 2018 and 744 million in 2019, with $570 billion and $576 billion in revenues, respectively. According to the Border Tourist Movement Survey, 82.8 and 83.7 million international tourists visited Spain in the same years. The total expenditure of the international tourists, according to the

Tourist Expenditure Survey, is estimated to be between 89,856 to more than 93,200 million euros (INE 2019, 2020). With this data, tourism can be ranked as the fastest-growing sector in the world (Oliveira et al. 2019) and its effects on business creation, infrastructure and employment are of paramount importance.

According to the World Tourism Organization, world tourism suffered its worst year on record in 2020 since international arrivals declined by 74%. In the same year, 19.0 million tourists visited Spain (INE 2021). Destinations around the world received one billion fewer international arrivals in 2020 compared to the previous year due to an unprecedented drop in demand amid widespread travel restrictions. According to the latest World Tourism Barometer (UNWTO 2021b), the decline in international travel led to an estimated loss of USD 1.3 trillion in export earnings.

Future travel plans, especially leisure travel, are influenced by economic expectations and suffer significant declines when the outlook turns negative. Individuals increase their actual demand for travel as their incomes recover (Ritchie et al. 2010). However, the values lower than the unit for income elasticity obtained in studies analysing vacations and the intensity of participation decisions exhibit the significance of tourist participation (Alegre et al. 2009), labelling the main summer holiday as a necessity good rather than a luxury good (Bronner and de Hoog 2016). In addition to the impact on the economy, tourism significantly improves the quality of life (Dolnicar et al. 2012).

In 2018, the contribution of tourism to gross domestic product (GDP) in Spain amounted to 147,946 million euros and rose to 154,487 million euros in 2019, representing 12.3% and 12.4% of the total, respectively (INE 2019, 2020). This interconnection between tourism and the economy forms the basis of this article, which analyses inbound tourism demand. A theoretical model is developed, which suggests that the number of trips is affected by the economic circumstances of travellers in the sending country. It assesses the purchasing power of travellers by per capita income, the average stay, and the adequacy of the supply of hotel beds, together with other circumstances that may condition demand, such as fluctuations in the stock market, the consumer price index (CPI) and the crises affecting the welfare system. Besides, consideration is given to which of the above-mentioned factors can contribute to explaining tourism demand in the short and long term.

1.1. Literature Review

Due to its impact on tourist arrivals, tourism seems to have a significant influence on the national trade balance (Işık et al. 2019). When economies grow, personal incomes rise (Murgoci et al. 2009) and travellers' incomes influence their decisions, affecting their travel and overnight stays. Therefore, it is possible to analyse a set of available hotel vacancies from the supply side, which will act on the decisions of individuals in an environment where economic cycles and fluctuations, such as those caused by changes in the stock market or different types of crises, influence travellers' behaviour (Wong et al. 2016).

Tourist arrival is a commonly used variable in the study of tourism demand (Song et al. 2010). This term has been defined by the World Tourism Organisation as the arrival of international visitors in the economic territory of the country of reference, with a high probability of being affected by the income of the country of origin (UNWTO 2019). Considering the strong relationship between core economic factors (i.e., income, prices, exchange rate, CPI, distance, population and economic crisis) and the decision to travel, income is a determinant that affects tourism flow the most (Hanafiah and Harun 2010). In this case, the use of GDP per capita also allows for a better understanding of the effect of the population (i.e., the size of the target market) (Pompili et al. 2019).

The decision to travel involves, among other aspects, determining a budget, which will be contingent on the individuals' available income and preferences (Eugenio-Martin 2003). Nicolau and Mas (2005) note how a higher propensity to travel is associated with higher incomes, directly influencing the destination choice for international holidays (Sönmez and Graefe 1998). Although tourism demand is income-elastic, differences exist between domestic travel or going abroad. After a certain income threshold, the substitution pattern

between destinations becomes a factor (Eugenio-Martin and Campos-Soria 2011), with the probabilities of domestic travel remaining constant and foreign travel increasing. Moreover, both domestic and international tourism are closely related because they share the same infrastructures and tourist offers. Countries that take domestic tourism seriously can attract many international tourists (Demelas 2009).

Income levels in source markets are also one of the most important factors in determining the demand for rooms (Song et al. 2011). Thus, the number of nights spent by non-resident tourists in accommodation establishments (guests) (i.e., overnight stays) are also analysed to gauge tourism demand (Popescu and Plesoianu 2017). Overnight stays are a useful variable to distinguish factors that intervene in international overnight stays (Falk and Vieru 2019) in the interest of maximising tourism resources (Gómez-Vega and Herrero-Prieto 2018) or in its utilisation as a performance variable to create a typology of clients for the development of personalised marketing strategies (Cossio-Silva et al. 2019).

Given the large investment in infrastructure supported by the hotel industry and how the lack of use can be a major source of inefficiency that harms competitiveness (Parte-Esteban and Alberca-Oliver 2015), the analysis of hotel vacancies and their effect on tourist arrivals is prioritised. The expansion of the supply of tourist accommodation typically leads to an increase in the supply of other services, which may in turn favour existing socio-economic development (Machado et al. 2019; Chau and Yan 2021). We observe that high-quality accommodation opportunities and services determine tourism growth by analysing trends and relationships between accommodation capacity (i.e., establishments and beds) and overnight stays (Popescu 2019). Besides, satisfaction with room features encourages guests to return (Hon and Fung 2019).

This close relationship between tourism and economic growth diverts attention towards economic fluctuations that often shatter the strongest forecasts (Santana-Gallego et al. 2011). In the current context, it is appropriate to address the impact on the demand of another economic factor, financial market indices, which are seen as crucial for economic recovery and health (Guo et al. 2011). Stock market instability is the source of major economic crises (Hsing and Hsieh 2012), garnering much of the analysts' attention due to its informative nature concerning the outlook for macroeconomic depressions (Barro and Ursúa 2017). These financial crises harm international tourism flows in destination countries, while their effect on countries of origin is not statistically significant (Khalid et al. 2020).

The proven correspondence between tourism and the economy emphasises crises detection, which is a cause for concern as tourism becomes more mobile and accessible, and the global economy becomes even more interconnected (Hall 2010). Various crises influence tourists differently (Senbeto and Hon 2020). For example, pandemics cause anxiety among tourists and influence travel, while a financial crisis is associated with price elasticity and reduced consumption patterns.

1.2. Statement of Hypotheses

This preliminary analysis enables us to propose the following hypotheses.

1.2.1. Tourism Demand Is Directly Related to GDP

Purchasing power exerts a strong influence on travel decisions, and disposable income is decisive when deciding how much of the budget can be devoted to travel (Eugenio-Martin 2003) or which site could serve as a viable destination (Nicolau and Mas 2005).

It is, therefore, logical to consider that travellers' spare income directly affects tourism demand and that earnings determine a positive impact on tourism demand (Habibi 2017), such that a higher available budget does improve the willingness to travel. Hence, the tourism market must explore the potential of attracting more tourists with higher disposable incomes, mitigating the influence of other determinants that may negatively affect tourism demand (Alleyne et al. 2021).

Tourism demand is not severely impacted unless income increases (Balcilar et al. 2020). A 1% increase in real GDP per capita in a source country (e.g., USA) leads to a 1.9% increase in tourism receipts in a destination country (e.g., Puerto Rico), while a 1% decrease in real GDP per capita in the USA leads to a 4.8% decrease in tourism receipts in that destination (Husein and Kara 2020).

1.2.2. Tourist Demand Is Directly Related to the Supply of Hotel Beds

The demand for rooms is a foremost issue when it comes to travelling and will be significantly conditioned by the available income (Song et al. 2011). Therefore, analysing hotel vacancies offered by a destination is a critical aspect of tourism planning strategies. Along with the expansion of the supply of tourist accommodation, there follows a greater supply of other complementary services, which is associated with socio-economic growth (Machado et al. 2019). By analysing trends and relationships between accommodation capacity (i.e., establishments and number of beds) and overnight stays, we observe that opportunities and high-quality accommodation services determine tourism growth (Popescu 2019).

As hospitality in terms of hotel rooms has a positive impact on tourism demand (Habibi 2017), this study proposes that tourism demand is directly related to the supply of hotel beds. Therefore, an increase in the supply of accommodation could lead to an increase in tourism demand.

1.2.3. Tourism Demand Is Inversely Related to the Consumer Price Index

The tourism sector is a significant driver of economic growth (Danish and Wang 2018), and prices are one of the determinants of tourism flows to destinations that influence international tourism demand (Surugiu et al. 2011; Nguyen 2022). Notably, a decrease in relative domestic prices helps boost tourism demand (Martins et al. 2017). Studies show that tourism demand is negatively affected by the consumer price index, similar to the effect of violence, terrorism, or the level of household debt (Ulucak et al. 2020).

Therefore, the consumer price index exerts a significant impact on international tourism demand and consequently, there exists a negative relationship with tourist arrivals (Yazdi and Khanalizadeh 2017).

Evidence suggests that an increase in world GDP per capita, a depreciation of the domestic currency, and a decrease in relative domestic prices will facilitate tourism demand. World GDP per capita is an integral explanatory factor for arrivals, and relative prices become critical when using expenditures as a proxy for tourism demand (Martins et al. 2017). The positive price effect indicates a competitive price advantage in tourism (Muryani et al. 2020). However, low prices also reveal low value in tourism services.

Consequently, the impact of prices is studied in this article to determine how this variable influences the arrival of travellers from the countries under study.

1.2.4. Tourism Demand Is Directly Related to the Trade Flows among Countries

International trade flows (i.e., the purchase and sale of goods and services) also influences tourism demand and serve to measure the balance of trade (exports–imports) of a country in a given period. The concept of balance of trade refers to the number of goods a country sells to other countries minus the number of goods a country buys from other countries and does not include services provided from other countries nor capital movements (Datacomex 2021).

More exports than imports are considered a better outcome for a country as resources are coming in from abroad. Likewise, the relationship between economic growth and tourism development has always been of primary interest in tourism economics because the development of a country's industry due to international tourism is inevitably linked to the performance of foreign economies (Chen et al. 2021).

An analysis of the relationship between tourism and economic growth under a dynamic model of international trade reveals tourism as a dual channel for promoting long-term growth. Tourism activity finances foreign capital imports but also enables tourists to consume non-tradable goods (Albaladejo Pina and Martinez-Garcia 2013).

An unexpected decrease in international travel income leads to an increase in the trade deficit (Mariolis et al. 2020) and has a significant negative impact on the efficiency of the country's destinations (Aissa and Goaied 2017).

In this sense, it should be noted that when speaking of economic growth and tourism, consideration of the exchange rate is necessary, where external competition also plays a fundamental role (Balaguer and Cantavella-Jordá 2002). For this author, eliminating the exchange rate from this analysis will leave the relationship between economic growth and tourism without effect.

Researchers identified that bilateral trade is a central determinant of tourism, clearly showing that tourism demand is significantly related to bilateral trade (Hanafiah et al. 2011). Furthermore, international trade has a major role in influencing business tourism demand (Turner and Witt 2001). Therefore, we propose that an impact on trade flows will affect tourism demand.

1.2.5. Tourism Demand Is Directly Related to the Average Length of Stay

Tourism demand has traditionally been analysed under the perspective of economic variables to examine the evolution of tourist expenditure, overnight stays, or arrivals (Zamparini et al. 2017). Boosting the average length of stay is considered one of the main objectives in the development of efficient marketing strategies (Santos et al. 2015). This approach has a significant economic impact on destinations and the subsequent implementation of marketing strategies (García-Sánchez et al. 2013).

Tourist arrivals are one of the most widely used variables (Song et al. 2010) in tourism demand studies, and visitor arrivals and economic growth happen to be strongly interrelated (Kumar et al. 2020).

Overnight stays are an important object of analysis in the determination of tourism demand (Popescu and Plesoianu 2017). Thus, the amount of time tourists spend in a given destination has become a key variable for tourism management (Montano et al. 2019). In fact, overnight stays have been taken as a reference to assess the impact of seasonality on tourism demand (Vergori 2017). Similarly, tourism efficiency evaluation studies employ production functions to maximise overnight stays (Gómez-Vega and Herrero-Prieto 2018).

In this study, the average stay is considered to be an approximation of the number of days that, on average, travellers stayed in establishments, and is calculated as the ratio between overnight stays and the number of travellers.

Lastly, we consider the average length of stay as an explanatory factor for analysing tourism demand.

1.2.6. Tourism Demand Is Directly Related to the Main Stock Market Index of Each Country

Forecasting demand is a prerequisite for decision-making and investment planning to improve performance (Xie et al. 2021), justifying the importance of determining the drivers of tourism demand (Peng et al. 2015).

Thus, a destination country that experiences major stock market turmoil for several years experiences a drop in international tourist arrivals compared to a destination country that does not experience such stock market fluctuations (Khalid et al. 2020; Opstad et al. 2021).

A challenging economic environment and stock market volatility hurt economic diversification in general and tourism in particular, affecting wealth generation and job creation worldwide (Chan and Lim 2011; Ongan et al. 2017). Individuals and businesses are then forced to reduce travel and travel budgets (Murgoci et al. 2009). Furthermore, the expected wealth effect of financial assets does not affect international tourism demand (Kim et al. 2012; Khanna and Sharma 2021).

Previous studies suggest that the role of the stock market among economic factors in determining the demand for a given segment, such as golf, is outweighed by a country's level of development (Bárcena-Martin et al. 2017).

It is therefore of interest to determine whether tourism demand is directly related to each country's main stock market index.

2. Methodology

To test the hypotheses, we have modelled tourism demand, measured in terms of the number of travellers arriving in Spain. A panel structure model has been preferred because of the time series context and to differentiate up to 14 countries of origin. To avoid possible spurious correlations[1], we propose the specification based on a time series error correction model (Engle and Granger 1987)[2]. This model or mechanism was first used by Sargan (1984) to analyse time series and allows the explicit capture of the short- and long-term relationships existing amongst the economic variables in question. In the analysis of tourism demand, the long-term behaviour of tourists is expected to be one of the main concerns of policymakers, with a corresponding impact on planning issues, while short-term dynamics are useful for business decision-making and management (Song et al. 2012). In this sense, it may be relevant to differentiate which phenomena are more relevant for tourism demand in the long term and which factors may be influencing it to a greater extent in the short term.

In this paper, we propose the following specification (1) and estimation of an error correction model (ECM) adapted to the context of a panel structure where heterogeneity in the cross-sectional units is present in the long term[3]:

$$\Delta y_{it} = \delta \Delta y_{it-1} + \Delta X'_{it}\beta_X - \alpha[y_{it-1} - u_i - X'_{it-1}\beta_X^*] + \varepsilon_{it} \tag{1}$$

where Y_{it} refers to the *it*-th observation of the endogenous variable, X_{it} refers to the *it*-th observation in the k explanatory variables considered exogenous and u_i signifies the specific unobservable effects on the cross-sectional units in the long term. The variable ε_{it} outlines the idiosyncratic disturbance term that must satisfy the usual basic assumptions in a regression model. The short-term parameters are represented by β_X and the long-term parameters by β_X^*. The so-called one-period lagged long-term error, also known as the cointegrating vector, is enclosed in square brackets. Finally, the parameter α measures the speed of the correction between the short-term level of the endogenous variable and the level that the endogenous variable should reach in the long term. There would be no possibility of a cointegration or long-term relationship between the variables involved if this parameter was not significant (Hill et al. 2018).

The endogenous variable is defined as log(TRAVEL$_{it}$) and it specifies the number of people arriving in Spain from 14 European Union (EU) countries in the period 2000–2020. X_{it} is defined by the following exogenous variables: Log(GDP$_{it}$), log(BEDS$_{it}$), log(RCPI_R$_{it}$), log(TRADE_R$_{it}$) y log(OVER/TRAVEL$_{it}$). Table 1 presents the description of the variables involved in the model.

Three steps were followed to properly derive specification (1).

The first stage: check that the time series are integrated of order 1 (i.e., evolutionary or non-stationary).

The second stage: estimate the cointegrating vector and verify the existence of a long-term cointegrating relationship.

The third stage: specify and estimate the dynamic model (ECM) with the variables in differences, incorporating the cointegration vector and other exogenous variables.

Table 1. Model variables.

Abbreviation	Description	Source
$\text{Log(TRAVEL}_{it})$	Endogenous variable. All persons, classified by their country of residence, who make one or more consecutive overnight stays in the same accommodation in Spain.	INE[4]
$\text{Log(GDP}_{it})$	Exogenous variable. Real gross domestic product per capita.	Eurostat
$\text{Log(BEDS}_{it})$	Exogenous variable. Estimated places equivalent to the number of fixed beds in the establishments.	INE[5]
$\text{Log(RCPI\_R}_{it})$	Exogenous variable. Harmonised Index of Relative Consumer Prices.	INE
$\text{Log(TRADE\_R}_{it})$	Exogenous variable. Trade flows (exports minus imports of goods) between Spain and the EU.	Datacomex
$\text{Log(OVER/TRAVEL}_{it})$	Exogenous variable. Variable resulting from dividing the number of overnight stays by the number of travellers in Spain.	INE
$\text{Log(INDEX}_{it})$	Exogenous variable. It represents the most significant stock market index in each country.	Official web pages

Source: Own elaboration.

3. Results

The findings of each stage are detailed below.

The first stage: check that the time series are evolutionary and integrated of order 1 (Dickey 1979)[6]. In this case, the tests applied to the time series have been adapted to the Panel Data (Baltagi 2013). Appendix A comprises the graphs of the corresponding time-varying variables, which show the evolutionary nature of the variables, implying the need to establish cointegration relationships to avoid spurious relationships that commonly occur while working with time series. Appendix B contains the unit root tests for all time-varying variables applied to the levels. In all cases, the null hypothesis of a unit root is accepted, and the existence of two unit roots is rejected.

The second stage: estimate the cointegrating vector and verify that the residuals of the corresponding vectors are stationary (Engle and Granger 1987)[7]. On this occasion, the unit root test is applied again to the residuals of the cointegrating vector adapted to the Panel Data. The cointegration vector establishes a long-term relationship between the number of travellers $\text{log(TRAVEL}_{it})$ and the exogenous variables. This relationship has been estimated with fixed effects (i.e., assuming that the heterogeneity probably existing between countries of origin may be correlated with the explanatory variables). Likewise, an estimation of White's matrix of variances and covariances for the time units (corrected for degrees of freedom) has been employed to ensure robustness in the estimators of the standard errors of the coefficients. Table 2 exhibits the partial results of the estimation, and Table 3 presents the outcomes of the unit root tests on the residuals of the model that captures the long-run relationship. Correspondingly, these residuals are stationary regardless of whether a common unit root is assumed in all cross-sectional units or whether specific unit roots are admitted for each cross-sectional unit or country of origin. In conclusion, there is a cointegrating relationship.

The results show that:

1. There is a long-term relationship between tourism demand and GDP, with an estimated elasticity of 1.24%.
2. Tourism demand is directly related to the supply of hotel beds, with the long-term elasticity being 2.06%.
3. The influence of relative prices on tourism demand is negative, with a long-term elasticity of more than one and a half points.
4. Trade flows of goods between Spain and the countries of origin have a positive influence on increased tourism demand. In this case, a 1% increase in these trade flows would increase tourism demand in the long term by 0.31%.
5. Tourism demand is directly related to the average length of stay, with the estimate of the long-term elasticity being less than unity (0.84%).
6. Tourism demand is not directly related to each country's main stock market index. This variable was not significant, even at 10%.

Table 2. Cointegration vector. Long-Term (LT) model. Fixed Effects.

Dependent Variable: log($TRAVEL_{it}$)			
Independent Variable	**Coefficient**	***t*-Statistic**	***p*-Value**
LOG(GDP_{it})	1.2440	8.1285	0.0000
LOG($BEDS_{it}$)	2.0629	33.0575	0.0000
LOG($RCPI\_R_{it}$)	−1.6422	−5.8289	0.0000
LOG($TRADE\_R_{it}$)	0.3116	2.2072	0.0281
LOG($OVER_{it}/TRAVEL_{it}$)	0.8364	5.4270	0.0000

Note: Cluster-Robust Standar Errors: (white period). R^2 = 0.989435.

Table 3. Panel unit root test (summary). "Stationary" Residuals of the Long-Term Model.

Null Hypothesis: Unit Root (Assumes Common Unit Root Process)					
Model	**Test**	**Statistic**	***p*-Value**	**Cross-Sections**	**Obs.**
LT	Levin, Lin & Chu t	−5.6931	0.0000	14	279
Null Hypothesis: Unit Root (Assumes Individual Unit Root Process)					
Model	**Test**	**Statistic**	***p*-Value**	**Cross-Sections**	**Obs.**
LT	ADF—Fisher	68.8704	0.0000	14	279
LT	PP—Fisher	71.7263	0.0000	14	279

Note: Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality. No exogenous variables in the test equation.

The third stage: Specify and estimate the specification (1) that represents a dynamic model (ECM) with the variables in differences, incorporating the cointegration vector and other exogenous variables. This third stage is part of what is known as Engle and Granger's two-stage estimation[8]. Table 4 presents the estimation of the ECM where the significance of this vector at 1% and the influence of del GDP_{it} and $BEDS_{it}$ in the short term can be observed. This significance focuses on testing the following null hypothesis $H_0 : \alpha = 0$ on specification (1) using the Student's *t*-test.

Table 4. Error Correction Model (ECM).

Dependent Variable: $\Delta LOG(TRAVEL_{it})$			
Independent Variable	**Coefficient**	***t*-Statistic**	***p*-Value**
LT	−0.1682	−5.3112	0.0000
$\Delta LOG(GDP_{it})$	1.0013	5.1324	0.0000
$\Delta LOG(BEDS_{it})$	2.1032	56.4125	0.0000
$\Delta LOG(BEDS_{it-1})$	−1.0244	−4.0428	0.0001
$\Delta LOG(TRAVEL_{it-1})$	0.2136	3.4032	0.0008

Note: Cluster-Robust Standar Errors: (White period). R^2 = 0.9412. R^2 (nivel) = 0.980.

The justification for this model lies in the fact that the estimation and inference are valid when working in a stationary environment (i.e., the variables transformed into differences do not have unit roots). Similarly, we achieve a greater explanatory capacity for tourism demand by incorporating short- and long-term relationships (R^2 = 0.9980). Figure 1 denotes the simulation of the variable TRAVEL (year-on-year rates) using ECM where a great similarity can be seen between the observed and simulated rates.
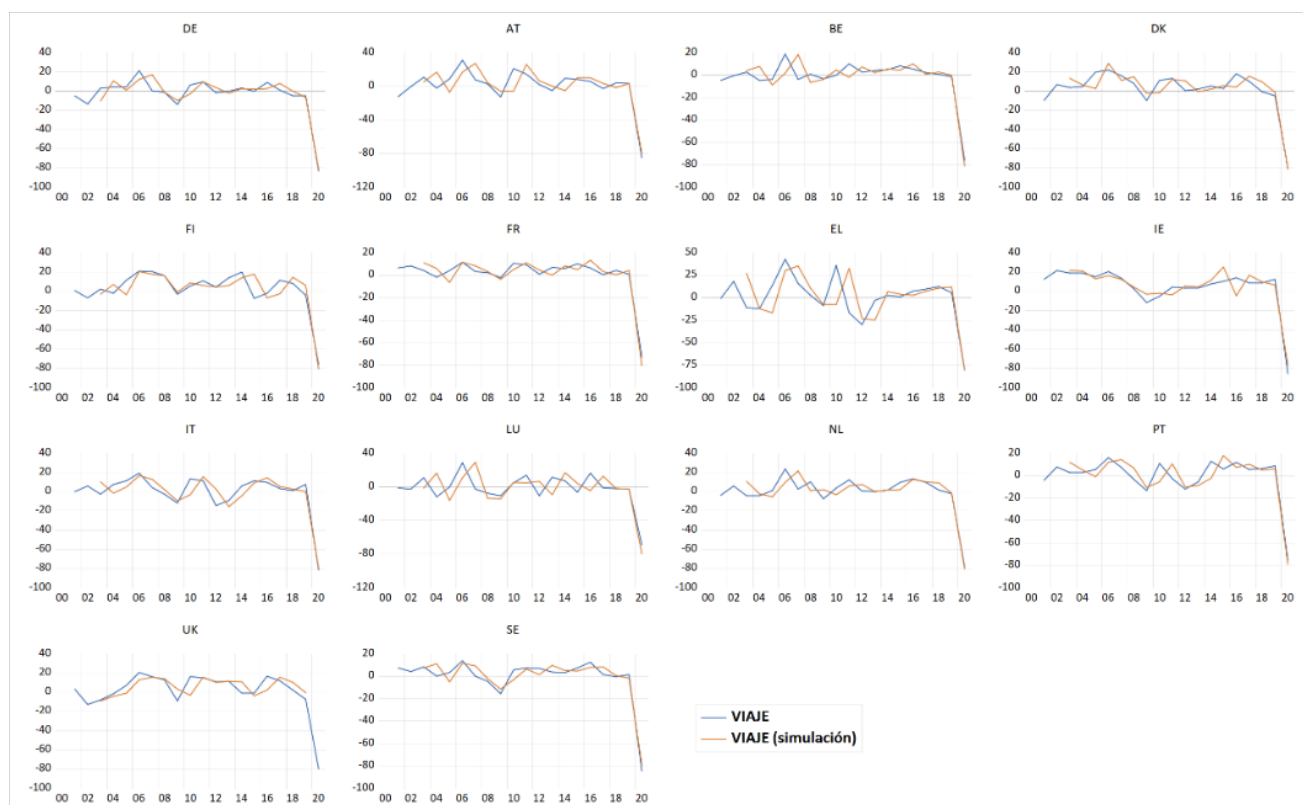

Figure 1. Simulated year-on-year rates of the variable TRAVEL in the ECM. Source: Own elaboration.

Figure 2 shows an adequate behaviour of the ECM residuals, clearly reflecting stationary behaviour and Table 5 reports the outputs of the unit root tests on the ECM residuals. The findings confirm that the residuals do not exhibit unit roots either, indicating the adequacy of specification (1). Notably, the recent pandemic dramatically reduced tourism demand and that this reduction has been perfectly captured by the variables in the model. Similarly, other shocks, such as the terrorist attack of 9/11, the international financial crisis of 2008, or the quantitative easing of the European Central Bank (ECB), that significantly affected demand (Santamaria and Filis 2019) were also captured in our model.
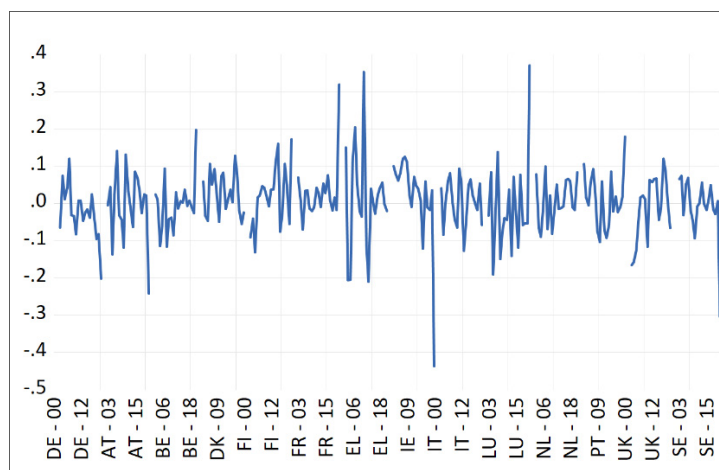
Figure 2. "Stationary" ECM Residues. Source: Own elaboration.

Table 5. Panel unit root test (summary). "Stationary" Residuals of the ECM Model.

Null Hypothesis: Unit Root (Assumes Common Unit Root Process)					
Model	**Test**	**Statistic**	***p*-Value**	**Cross-Sections**	**Obs.**
MCE	Levin, Lin & Chu t	−6.13856	0.0000	14	251
Null Hypothesis: Unit Root (Assumes Individual Unit Root Process)					
Model	**Test**	**Statistic**	***p*-Value**	**Cross-Sections**	**Obs.**
MCE	ADF—Fisher	94.6800	0.0000	14	251
MCE	PP—Fisher	107.875	0.0000	14	251

Note: Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality. Individual intercept in test equation.

The results elucidate that:

1. There is a short-term relationship between the year-on-year growth of tourism demand and GDP, with the elasticity being practically unitary.
2. Tourism demand is directly related to the supply of hotel beds, with a net short-term elasticity in terms of year-on-year rates of practical unity.
3. Relative prices have no short-term relationship with tourism demand.
4. Trade flows of goods between Spain and the countries of origin do not influence tourism demand in the short term.
5. Tourism demand is not directly related to the short-term average length of stay.
6. Tourism demand is not directly related to the main stock market index of each country in the short term.

4. Discussion and Conclusions

Summarising and comparing the outcomes obtained in the long and short term, we conclude that:

1. GDP and number of beds relate positively to tourism demand in both the long and short term.
2. The main stock market indices of each country relate to tourism demand in neither the long nor the short term.
3. The price index affects negatively in the long term and shows no relation in the short term.
4. Trade flows affect positively in the long term and are unrelated in the short term.
5. Length of stay relates positively in the long term but is insignificant in the short term.

This study's findings validate the robust relationship between economic development and tourism demand, highlighting several aspects that this study shares with the work of other authors (Schubert et al. 2011; Brida et al. 2020).

The analysis of long-term demand is a fundamental tool for decision-making, especially during the outbreak of the pandemic. The world calls for a revamped tourism sector that should be more "sustainable, inclusive and resilient" (UNWTO 2021a).

Therefore, policymakers must give attention to the outcomes of this analysis, which elucidate GDP, the supply of hotel beds, trade flows of goods between Spain and the countries of origin, together with the average length of stay as positive long-term relationships for tourism demand. Tourism demand is negatively related to the relative price index. Furthermore, it should be noted that the most influential variable, even superior to GDP, is the supply of hotel beds. These findings should be used to devise policies aimed at reactivating the economy through a series of mechanisms, the scope of which should be the direct responsibility of the government of the country in question.

In this study, we considered travellers from 14 different European countries. In light of the derived results, the promotion of destinations in different source markets is paramount (Husein and Kara 2020). Accordingly, the risk of the tourism portfolio is diversified, as it is important to consider the impact of economic conditions in source countries on outbound tourism and how it is linked to specific destinations (Santamaria and Filis 2019).

Therefore, the establishment of segmentation criteria is crucial as it would allow policymakers to develop strategies with a better knowledge of the market, allocating economic resources more efficiently (Fu et al. 2020), while facilitating the creation of diverse products according to tourist type. Vila et al. (2021) propose basic premises of the digital strategy that tourism platforms should follow. They suggest that e-commerce search and metasearch engines in the tourism industry should devote substantial efforts to implementing interactivity, memorability, personalization, privacy, and security. In short, public bodies should facilitate measures to improve the digital health of tourism companies.

Besides, tourism management policies must ensure sustainability, seeking to maximise the benefits of tourist arrivals while minimising adverse effects on the environment or the population of the destination. Moreover, national policies to increase tourist arrivals should be integrated with national energy and environmental policies to facilitate the transition of a sustainable tourism sector (Nepal et al. 2019).

In this analysis, we envisage the outbreak of the Coronavirus Disease 2019 (COVID-19), with its extraordinary impact on the global economy, calling for strong countershock measures (Im et al. 2021). A crisis event that creates a structural rupture should require a targeted policy and, in addition, an increased allocation of resources by policymakers (Cró and Martins 2017). A security problem, whether domestic or international, negatively influences tourism demand.

Thus, the immediate impact of political instability causes a significant reduction in international tourist arrivals and spending in the region (Perles-Ribes et al. 2019). Similarly, corruption significantly affects a country's ability to compete globally in the tourism industry (Das and Dirienzo 2010), such that a reduction in corruption levels positively affects the level of tourism competitiveness of nations, affecting developing countries to a greater extent.

Ensuring the safety and health of tourists is central to maintaining inbound tourism demand (Wang 2009). Hence, the tourism sector needs to implement control measures with regards to COVID-19, as well as facilitate tourists in case of consultations, illness or even quarantine (Sánchez-Teba et al. 2020; Arbulú et al. 2021; Cruz-Ruiz et al. 2022).

On top of financial and taxation measures, the need for coordination between countries to provide coordinated communications on health and safety measures is highlighted as essential for restarting tourism (Villacé-Molinero et al. 2021).

In fact, the health quality of host countries is an important factor influencing tourists' decisions and choice of destinations, such that health quality has a significant effect on international tourism receipts (Konstantakopoulou 2022).

This study has demonstrated the importance of GDP and bed supply in increasing tourism demand, both in the short and long term. Furthermore, this study is a wake-up call for policymakers and for the private sector to offer an adequate supply of beds. This situation relays the importance of combating seasonality in the tourism sector since it is one of the main challenges experienced by tourist destinations (Saito and Romão 2018).

The short-term results differ from those obtained in the long term, which is the main source of analysis for tourism entrepreneurs and agents. In the short term, tourism demand is not directly related to relative prices, trade flows of goods between Spain and the countries of origin, nor to the average length of stay. This notion will condition the measures to be effective in counteracting the decline in tourism by reducing costs in the tourism sector, as these measures will not improve the growth rate and revenues in the tourism sector (i.e., demand has proved to be inelastic to prices) (Stauvermann and Kumar 2017).

Tourism demand is related, neither in the short term nor in the long term, to the main stock market index of each country, demonstrating that the effect of future stock market returns does not impact international tourism demand (Kim et al. 2012).

A new contribution of this work is the differentiated analysis according to various countries that are the primary sources of tourism, which in the case of Spain entails establishing differentiated policies depending on the origin of tourists.

This is of great value to policymakers, who will have to make decisions based on the tourist profile and preferences according to the diversity of tourist destinations, which will serve as a basis for establishing the most appropriate strategies for promoting and consolidating tourism demand.

Based on the findings of this research and once the pandemic is over, we expect a future tourism demand where hospitality (number of beds offered) will be fundamental, as well as the GDP of each country. On the other hand, stock market indices are not expected to have a significant influence.

This paper does not consider the possibility of capturing differences in long- and short-term elasticities, which are dependent on the tourist destination. Given that our research has targeted Spain, future studies should replicate these results for other major tourist destination countries and test whether there are significant differences.
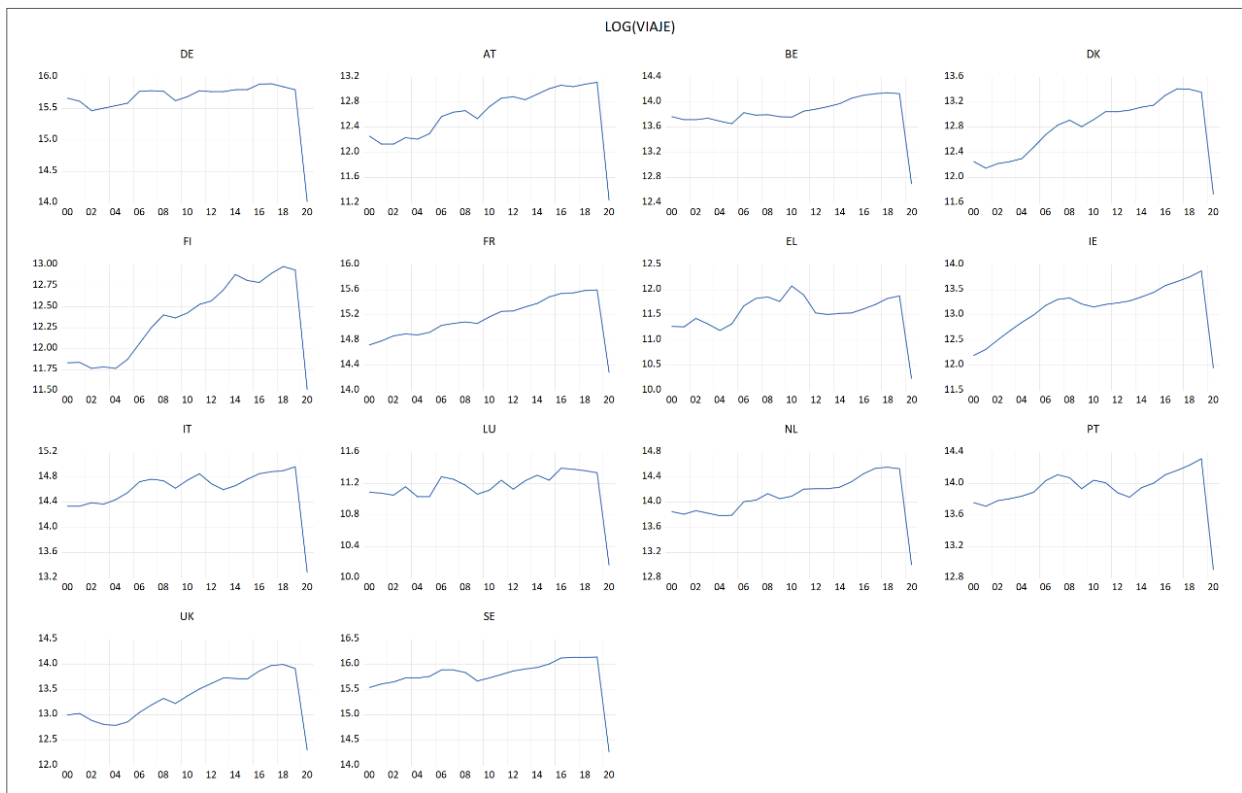
Appendix A. Graphics

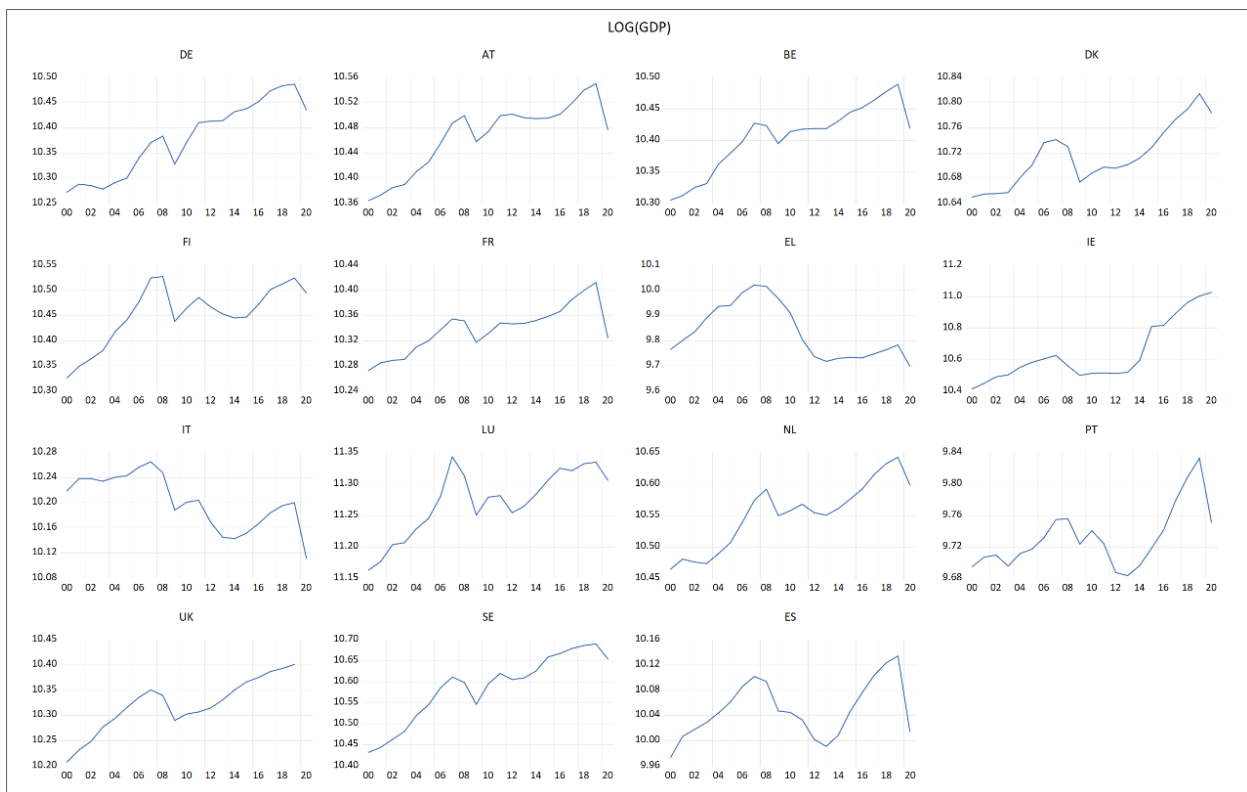**Figure A1.** Log(TRAVEL). Source: Own elaboration.

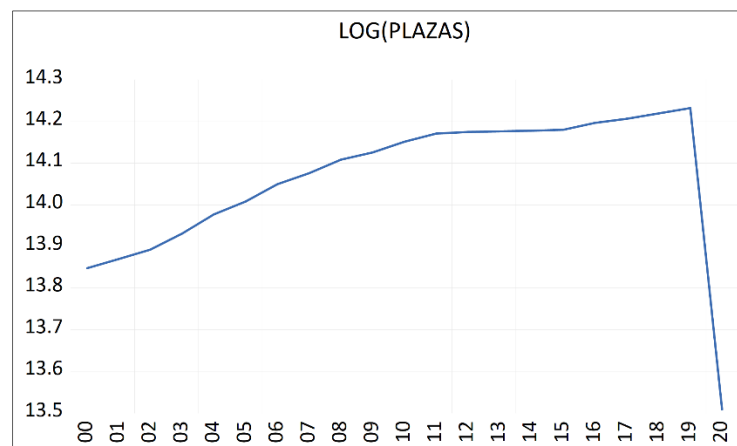**Figure A2.** Log(GDP). Source: Own elaboration.

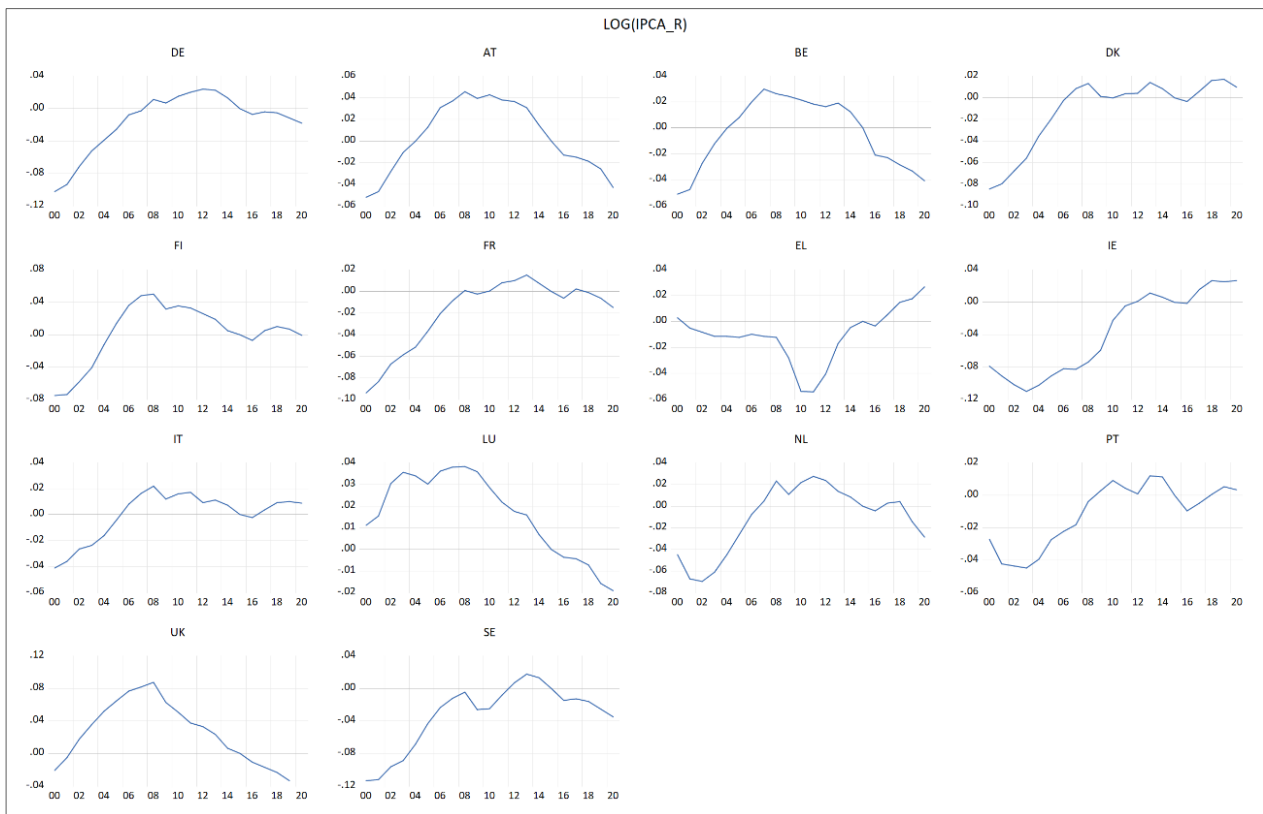**Figure A3.** Log(BEDS). Source: Own elaboration.

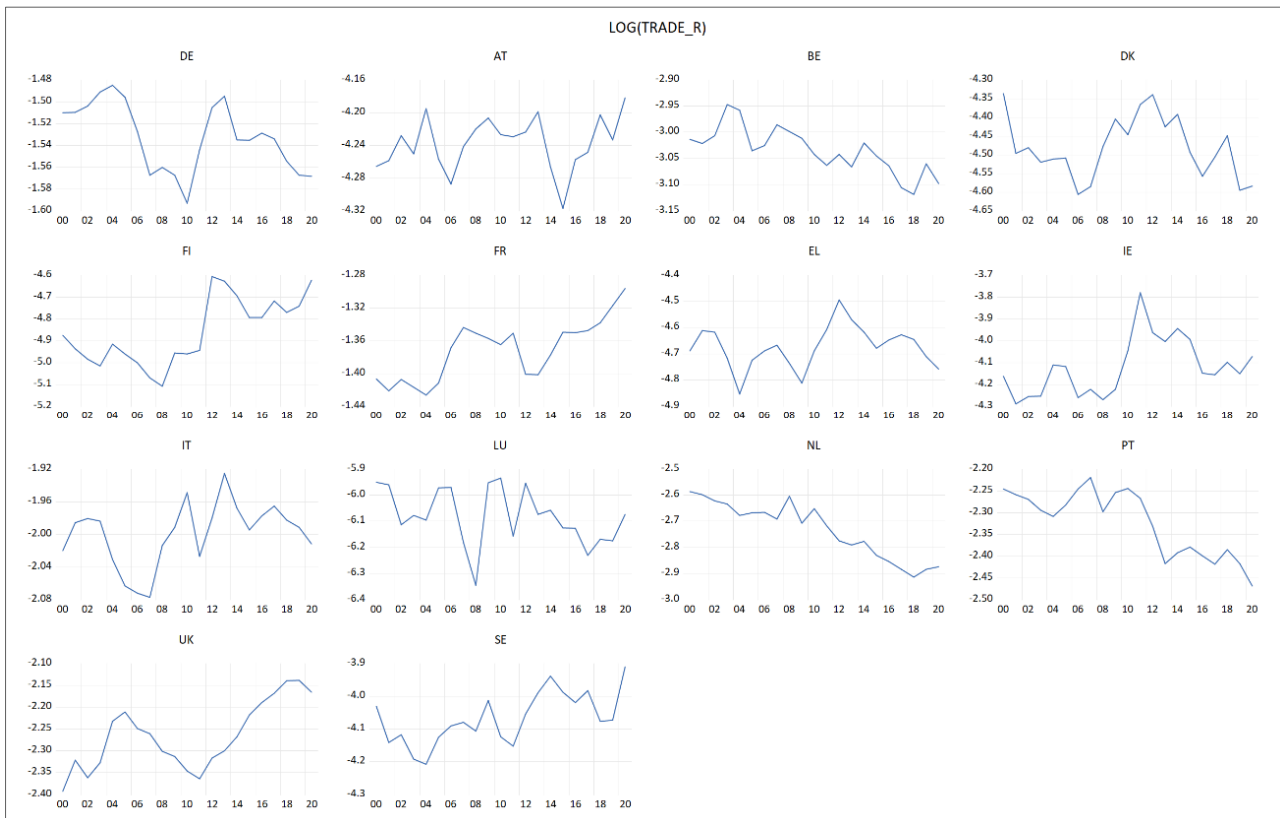**Figure A4.** Log(RCPI_R). Source: Own elaboration.

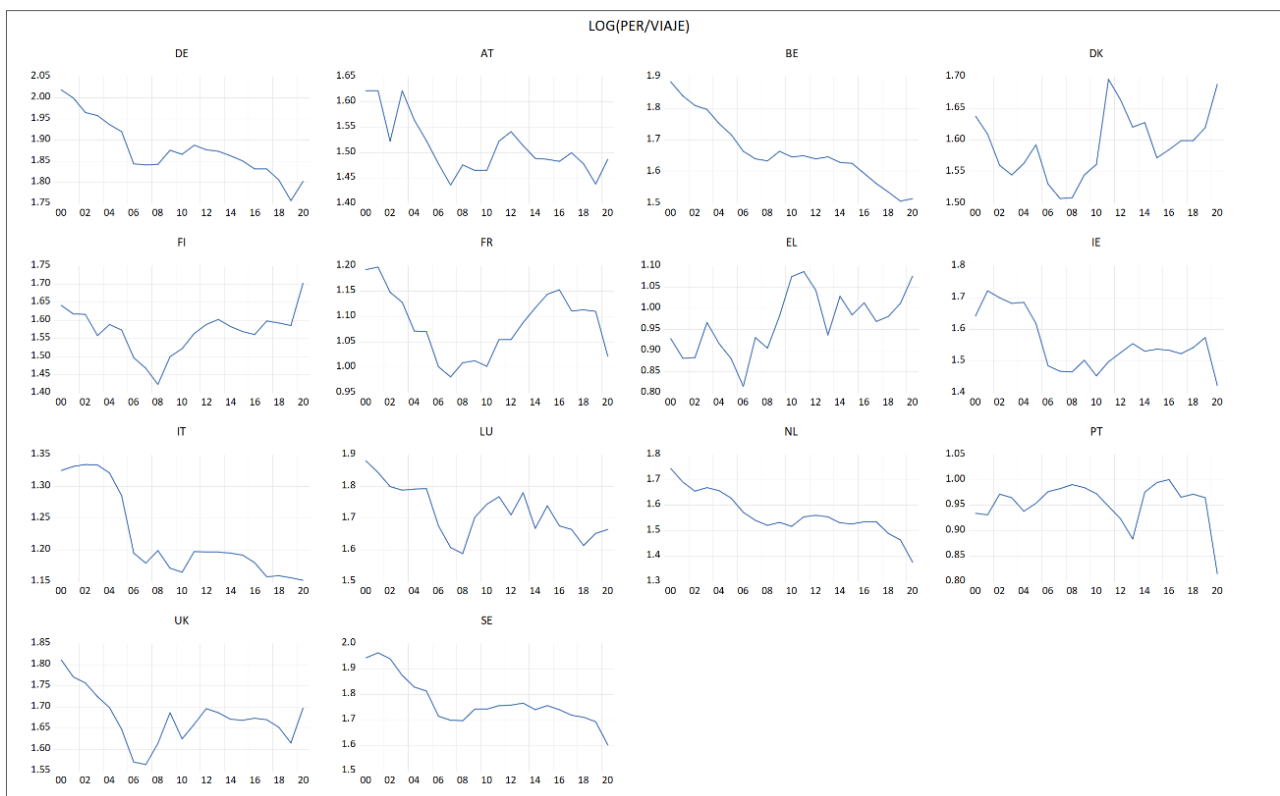**Figure A5.** Log(TRADE_R). Source: Own elaboration.

Figure A6. Log(OVER/TRAVEL). Source: Own elaboration.

Appendix B. Statistical Results

Table A1. Descriptive Statistics.

Descriptive Statistics	TRAVEL	GDP	BEDS	RCPI_R	TRADE_R	OVER/TRAVEL
Mean	1,870,356	35,982	1,295,703	0.9930	0.0714	4.5812
Median	909,010	33,920	1,363,934	1.0000	0.0335	4.7732
Maximum	10,351,685	84,420	1,517,583	1.0910	0.2735	7.5233
Minimum	25,886	16,050	735,619	0.8927	0.0018	2.2580
Std. Dev.	2,454,624	14,497	196,079	0.0348	0.0787	1.2428
Skewness	1.6887	1.6446	−1.1443	−0.6180	1.1654	−0.1916
Kurtosis	4.7577	6.1865	3.8213	3.6358	3.1492	2.2157
Jarque-Bera	177.5768	256.0455	72.4229	23.5870	66.8214	9.3343
Probability	0.0000	0.0000	0.0000	0.0000	0.0000	0.0094
Sum	5.50×10^8	10,542,620	3.81×10^8	290.9396	21	1,346.866
Sum Sq. Dev.	1.77×10^{15}	6.14×10^{10}	1.13×10^{13}	0.35443	1.816543	452.5722
Observations	294	293	294	293	294	294

Table A2. Panel unit root test (summary): Log(TRAVEL).

Null Hypothesis: Unit Root (Assumes Common Unit Root Process)				
Test	Statistic	*p*-Value	Cross-Sections	Obs.
Levin, Lin & Chu t	5.28143	1.0000	14	275
Null Hypothesis: Unit Root (Assumes Individual Unit Root Process)				
Test	Statistic	*p*-Value	Cross-Sections	Obs.
ADF—Fisher	29.4387	0.3905	14	275
PP—Fisher	24.1512	0.6735	14	280

Note: Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality. Individual intercept and trend in test equation.

Table A3. Panel unit root test (summary): Log(GDP).

Null Hypothesis: Unit Root (Assumes Common Unit Root Process)				
Test	Statistic	*p*-Value	Cross-Sections	Obs.
Levin, Lin & Chu t	−2.24359	0.0124	15	294
Null Hypothesis: Unit Root (Assumes Individual Unit Root Process)				
Test	Statistic	*p*-Value	Cross-Sections	Obs.
ADF—Fisher	37.4615	0.1641	15	294
PP—Fisher	32.3963	0.3493	15	299

Note: Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality. Individual intercept and trend in test equation.

Table A4. Panel unit root test (summary): Log(BEDS).

Null Hypothesis: Unit Root (Assumes Common Unit Root Process)				
Test	Statistic	*p*-Value	Cross-Sections	Obs.
Levin, Lin & Chu t	1.34719	0.9110	1	20
Null Hypothesis: Unit Root (Assumes Individual Unit Root Process)				
Test	Statistic	*p*-Value	Cross-Sections	Obs.
ADF—Fisher	1.3707	0.5039	1	20
PP—Fisher	1.3707	0.5039	1	20

Note: Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality. Individual intercept in test equation.

Table A5. Panel unit root test (summary): Log(RCPI_R).

Null Hypothesis: Unit Root (Assumes Common Unit Root Process)				
Test	Statistic	*p*-Value	Cross-Sections	Obs.
Levin, Lin & Chu t	−3.84960	0.0001	14	265
Null Hypothesis: Unit Root (Assumes Individual Unit Root Process)				
Test	Statistic	*p*-Value	Cross-Sections	Obs.
ADF—Fisher	46.8153	0.0143	14	265
PP—Fisher	37.8642	0.1010	14	279

Note: Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality. Individual intercept and trend in test equation.

Table A6. Panel unit root test (summary): Log(TRADE_R).

Null Hypothesis: Unit Root (Assumes Common Unit Root Process)				
Test	Statistic	*p*-Value	Cross-Sections	Obs.
Levin, Lin & Chu t	−1.44324	0.0745	14	277
Null Hypothesis: Unit Root (Assumes Individual Unit Root Process)				
Test	Statistic	*p*-Value	Cross-Sections	Obs.
ADF—Fisher	38.0566	0.0973	14	277
PP—Fisher	37.7307	0.1036	14	280

Note: Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality. Individual intercept and trend in test equation.

Table A7. Panel unit root test (summary): Log(OVER/TRAVEL).

Null Hypothesis: Unit Root (Assumes Common Unit Root Process)				
Test	Statistic	*p*-Value	Cross-Sections	Obs.
Levin, Lin & Chu t	−1.93379	0.0266	14	274
Null Hypothesis: Unit Root (Assumes Individual Unit Root Process)				
Test	Statistic	*p*-Value	Cross-Sections	Obs.
ADF—Fisher	36.0658	0.1409	14	274
PP—Fisher	29.9261	0.3668	14	280

Note: Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality. Individual intercept and trend in test equation.

Notes

[1]   Many time series in macroeconomics are non-stationary or evolutionary and, as a general rule, regressions on levels of such series signify that standard significance tests are usually wrong, favouring so-called spurious regressions (Granger and Newbold 1974; Greene 1999; Granger and Newbold 1974; Greene 1999).

[2]   Engle and Granger (1987) highlighted that cointegrating variables can be transformed into an error correction mechanism (ECM) and vice versa. This bidirectional transformation is known as the "Granger Representation Theorem".

[3]   A recent application of this methodology applied to trade flows between the European Union (EU) and Russia can be found in Garashchuk et al. (2021).

[4]   https://www.ine.es/jaxiT3/Tabla.htm?t=2038&L=0 (accessed on 5 April 2020).

[5]   https://www.ine.es/jaxiT3/Tabla.htm?t=2011&L=0 (accessed on 5 April 2020).

[6]   A unit root or stationary difference process is a stochastic trend in time series, known as a "random walk with drift". If a time series has a unit root, it exhibits systematic behaviour that is unpredictable (https://www.statisticshowto.com/unit-root/, accessed on 24 January 2020).

[7]   If the variables are not cointegrated, the residuals of the static estimation will, by definition, have a unit root (i.e., they will not be stationary and have a time-varying character).

[8] The two-stage procedure of Engle and Granger (1987) commences by first estimating the cointegrating relationship by ordinary least squares (OLS) (in this case, since it is a panel, it has been estimated by fixed effects). Subsequently, the ECM is estimated by introducing the residuals of the estimated cointegrating relationship lagged by one period.

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