The effects of exchange rate depreciations and appreciations on the tourism trade balance: the case of Spain

Cem IŞIK[*], Magdalena RADULESCU[**], Aleksandra FEDAJEV[***]

Abstract

Considering the high current account deficits worldwide and the growing importance of tourism to GDP in many countries, the impact of the exchange rate fluctuations on the tourism demand and on the current account of the balance of payments became crucial during the last decades. That is why many researchers focused on studying this impact in the context of different exchange rate regimes. Tourism has a significant positive impact on Spain's trade balance, because Spain ranks 1st globally if we consider tourist arrivals. FED proceeded to many adjustments of its currency against other currencies to boost tourism industry. Thus, we estimated the impact of the exchange rate on trade balance in tourism with Turkey in the short and long run by using the non-linear ARDL cointegration approach because Turkey is the one of the main trade partner of Spain and this bilateral relation has not been studied so far in the economic literature. Our results show that the Euro depreciation boosts Turkey tourist arrivals, while the Euro appreciation is not significant for Spain's tourism balance. Based on these results, we designed some policy recommendations.

Keywords: exchange rate fluctuations, tourism balance, Spain, Turkey

1. Introduction

The way exchange rates affect the balance of trade, especially the current account, has been a topic of crucial importance for both academics and policymakers. According to economic theory, a real devaluation improves the trade balance as long as Marshall – Lerner (ML) condition is fullfiled. ML condition

[*] Cem IŞIK is PhD at Anadolu University, Eskişehir, Turkey; e-mail: cemisik@anadolu.edu.tr.

[**] Magdalena RADULESCU is PhD at University of Pitesti, Romania; e-mail: magdalena.radulescu@upit.ro.

[***] Aleksandra FEDAJEV is PhD at Technical Institute of Bor, University of Belgrade, Serbia; e-mail: afedajev@tfbor.bg.ac.rs.

implies that if the sum of import and export demand elasticities exceeds unity, the devaluation policy can be successful in improving trade balance. Having in mind that elasticity in the short-run is lower, devaluation policy does not influence trade balance. The occurrence of such situation invoked J-curve phenomenon as an explanation. It is characterized by an initial negative effect of real currency depreciation on trade balance before leading to an improvement (Ongan *et al*., 2018a, 2018b; Ongan *et al*., 2017; Vural, 2016; Baek *et al*., 2009). Most authors approved the existence of the J-curve effect in the analyzed countries, but the explanations of this phenomenon and the methodology they used were different. Some of them suggest that the J-curve effect is the result of the consumers' and producers' adjustments to changes of relative prices - Meade (1988), while others state that sticky export prices can cause occurence of the J-curve effect (Arndt and Dorrance, 1987). On the other hand, some authors used diferent methodologies to investigate this phenomenon, like VAR technique (Backus *et al*., 1994; Demirden and Pastine, 1995), error correction model (Gupta-Kapoor and Ramakrishnan, 1999) or cointegration analysis (Akbostanci, 2002).

Most authors focused their research on the influence of the exchange rate on trade balance as a whole and, as far as we know, only some of them investigated this phenomenon in terms of economic activity in particular. Bearing in mind that tourism is traditionally one of the main drivers of economic growth in Spain and its impact becomes more powerful, it is very important to investigate factors influencing tourism competitiveness in Spain. One of them is, for sure, exchange rate fluctuations. Generally speaking, changes in exchange rates influences the inflow of tourists and their spending in a country as a tourist destination, through changes in price competitiveness of a given country in the global tourism market (Dogru *et al*., 2019). In order to improve its tourism trade balance, every country has to analyse the so-called visitor-weighted exchange rate trend for its main trade partners and its impact on tourism inbound.

In that sense, the paper explores if EUR/TL exchange rate depreciation improves tourism trade balance in Spain, and whether appreciation worsens it, both in the long and in the short run. The bilateral tourism has received relatively insufficient attention in the academic literature, although a number of theories have been developed to explain flows between countries. The bilateral tourism trade between Spain and Turkey is not sufficiently represented in empirical research despite the fact that bilateral trade between two countries is intense and highly integrated. So, this paper is trying to cover that gap.

This study contributes to the tourism literature by presenting unbiased and efficient estimates of the relationship between exchange rate and tourism trade balances. To the best of our knowledge, this is the first prospective analysis of the effects of exchange rate depreciations and appreciations on the tourism trade balance for Spain and Turkey. With this purpose, we tested the J-curve theory applying monthly data by using the non-linear approach. This technique contributes to the

literature due to its superiority compared to the studies using linear methods. Finally, we chose the Spain and Turkey case study because in the tourism sector, Turkey's biggest competitor is Spain (see Appendix).

Section 2 offers a review of previous research in a diverse set of countries, both of the J-curve effect in the short run and the long run impact of the exchange rate on the trade balance in tourism and generally observed. Section 3 explains the data and metodology used. In Section 4, the short and long run impact of the exchange rate on trade balance in tourism with Turkey is estimated by using the non-linear ARDL cointegration approach against the linear approach. The policy recommendation according to obtained results are defined in Section 4 which concludes the results.

2. Literature review

The concept of J-curve was elaborated by Magee (1973), but it was first experimentally investigated by Bahmani-Oskooee (1985) for 4 countries with different exchange rate regimes during 1973-1980 by using price elasticities of import/export demands. In their study (1986), Appleyard and Field demonstrated that if the sum of import and export demand elasticities exceed unity, the devaluation policy can be successful; this is the so-called Marshall-Lerner condition which was not validated in the short-run by this study because short-run elasticities are usually smaller than long-run elasticities, as demonstrated by Eicher *et al*. in their study (2009). Meade (1988) demonstrated that a J-effect occurs because there is a lag between consumers and producers in adjusting to the changes of the relative prices. An increase in the domestic activity can overcome the positive effect of devaluation. Junz and Rhomberg (1973) have found a five-years lag for devaluation to deliver positive effects on the foreign trade. Arndt and Dorrance (1987) indicate that the J-curve effect can also occur if the domestic currency prices of exports are sticky. Rosensweig and Koch (1988) found a delayed J-curve effect for US foreign trade during 1973-1986 and their results were confirmed by the studies of Wassink and Carbaugh (1989) for the USA-Japan bilateral trade and of Mahdavi and Sohrabian (1993) for USA trade during 1973-1989. Brissimis and Leventankis (1989) develop a dynamic general equilibrium model that combines the elasticities and monetary approaches to the balance of payments for Greece during 1975-1984 and demonstrated the existence of the J-curve effect, the initial deterioration being one quarter.

Backus *et al*. (1994) studies the trade balance for Japan for the time period 1955–1993, using a vector autoregression (VAR) method and impulse response functions, and he reports the presence of a J-Curve. Gupta-Kapoor and Ramakrishnan (1999) have also reported the existence of a J-curve effect for Japanese trade during 1975-1996, using an error correction modelBy using a VAR technique for US trade during 1978-1993, Demirden and Pastine (1995) found a

devaluation negative effect on the trade balance for five quarters, followed by a significant improvement for the US trade balance.

On the other hand, Flemingham (1988) sees no evidence of the J-Curve for Australia. Likewise, Moffett (1989) found no evidence of a J-curve effect for USA trade during 1967-1987. Zhang (1996) did not find evidence for the presence of a J-curve effect in China.

Bahmani-Oskooee (1989) found an inverse J-curve for Greece, Korea and India. Earlier papers relied on aggregate data, but the relatively recent ones rely on disaggregate data in the bilateral trade. Bahmani-Oskooee and Brooks (1999) pointed out that a country's trade balance could improve with one trading partner while, at the same time, deteriorating with another.

Rose (1991) used cointegration and concluded that real depreciation is ineffective for improving the UK's trade balance in the long-run. His results were confirmed by Bahmani-Oskooee and Alse (1994) and Boyd *et al*. (2001) for some of the analyzed countries such as Ireland, Turkey or the Netherlands. Cushman (1987) determined that dollar devaluation could have an adverse effect on the trade balance between the US and the UK. Bahmani-Oskooee and Kovyryalova (2008) concluded the existence of the J-curve in 66 industries from UK. All of these studies assumed that the impact of the exchange rate fluctuations on the trade balance is symmetric.

Based on the disaggregate data, Rose and Yellen (1989) argued that a positive impact of devaluation against one country might be offset by its negative impact against another one. Thus, the devaluation is not always a viable trade policy (Bahmani-Oskooee and Goswami, 2003). Marwah and Klein (1996) examined the response of the trade balance to the exchange rate in the USA and Canada with their major trading partners, from 1977-1992 and found a similar shape of the J-curve for both countries. The adverse devaluation effects last for 3-4 quarters for Canada and US. Wilson (2001) investigated the existence of a J-curve effect in some Asian developing countries - Korea, Singapore and Malaysia in relation with the US and Japan as trading partners, but only proved a J-curve effect for Korea.

Other studies with mixed results of the J-curve effects that validate the J-curve effects in the bilateral trade with some countries, but invalidate them for other trading partners include Arora *et al*. who investigated India by using an ADRL approach (2003), Bahmani-Oskooee and Ratha (2004a) who validated the J-curve effects for more than half of the US's trading partners during 1975-2000, Bahmani-Oskooee *et al*. (2005) who investigated the Australian bilateral trade, Hacker and Hatemi (2004) who investigated the trade of 3 Central and Eastern European countries with Germany and validated the J-curve effects, Narayan and Narayan (2004) who investigated Fiji external trade, Moura and Da Silva (2005) who investigated Brazil's bilateral trade.

Carter and Pick (1989) focused on the agricultural exports and imports of the US and proved a J-curve effect. Tihomor (2004) elaborated an ARDL model to investigate Croatia's trade balance response to a currency depreciation. The study

proved the existence of the J-curve effect. Akbostanci (2002) investigated the existence of the J-curve effect in Turkey, based on the cointegration analysis, VECM and impulse responses. This study demonstrated the non-existence of J-curve effects for Turkish trade.

Kamoto (2006) investigated the effects of the exchange rate on the trade balance in South Africa and Malawi by using data from 1976 to 2003 and the vector error correction model (VECM). The study reflects the existence of the J-curve, but there are no exact data on South-Africa's bilateral trade partners. A similar study was elaborated by Moodley (2010). He has examined the South African trade balance with 4 large trading parteners. The study uses data from 1994 up to 2009 and an Autoregressive Distributed Lag (ARDL) model. The study finds that there is no existence of the J-curve effect for the trade balance of all four trading partners of South Africa.

Halicioglu (2007) studied the existence of the J-curve for Turkey's bilateral trade with 9 trading partners. This study concludes that the J-curve effect does not exist at disaggregate and aggregate levels. The depreciation might improve the trade balance but in a very long run. Some of the Turkish longrun trade relationships are not stable, so the devaluation cannot be used by Turkey to overcome the trade deficits in relation with 3 trade partners.

Chileoane *et al*. (2014) demonstrated the existence of the J-curve effect and showed that the Marshall–Lerner condition holds in the South African manufacturing sector by using data from 1995 to 2010, and a vector error correction modelling technique as well as impulse response functions.

Bahmani-Oskooee *et al*. (2016a) studied the impact of peso appreciation or depreciation for Mexico's trade balance. They found quite different effects, proving the existence of a J-curve for Mexico's bilateral trade. Bahmani-Oskooee *et al*. (2016a) proved that the linear ARDL model generates significant long-run coefficients for six of Mexico's partners, implying that peso depreciations improve Mexico's trade balance with them. However, the nonlinear ARDLmodel finds that peso appreciation hurts Mexico's trade balance with three additional partners, and that peso depreciation improves it with one additional partner. An application of the linear ARDL approach was conducted by Bahmani-Oskooee and Hegerty (2011), who find little evidence of a J-curve effect for trade in 102 Mexican industries with the United States. Shin *et al*. (2014) investigated the asymmetric effects of depreciation and appreciation by using the nonlinear ARDL method, which extended the (linear) Autoregressive Distributed Lag technique of Pesaran *et al*. (2001).

Bahmani-Oskooee *et al*. (2016b) also studied the asymmetric effects of exchange rate changes on British bilateral trade balances with 8 trading partners. They used an ADRL approach to examine whether pound appreciations affected the British trade balance differently than pound depreciations did during 1998-2015. They proved a co-integration relationship in the long-run with 5 trade partners, but a lack of a long-time relationship for 3 trade partners. They also found some

asymmetric effects for 4 British trade partners. Thus, they stated that nonlinear ARDL econometric results are statistically more satisfying than the linear ARDL results (the nonlinear ARDL approach allows to evaluate separately the exchange rate depreciations or appreciation effects).

3. Empirical methodology

Our purpose is to identify whether the depreciations in the Euro affect the tourism balances of Spain with Turkey differently from the way appreciation does by using the nonlinear ARDL cointegration.

3.1. Empirical model and data set

Eq.1, is adapted from Rose and Yellen's (1989) model. The tourism balance (T) of Spain is the function of the incomes of Spain, Spain's tourism partner country i the bilateral real exchange rate between the Euro and its tourism partner country i's currency:

$$T_i = \beta_0 + \beta_1 Y_{Euro} + \beta_2 Y_i + \beta_3 REX_i + \varepsilon_t \quad (1)$$

The logarithmic form is as follows:

$$InT_i = \beta_0 + \beta_1 lnY_{Euro} + \beta_2 lnY_i + \beta_3 lnREX_i + \varepsilon_t \quad (2)$$

where: lnT_i = the rate of outbound tourist departures from Spain to tourism partner country i divided by the inbound tourist arrivals to Spain from the same country.

The data of T were taken from Spain's tourism statistics of the WorldBank.

The lnY_{Spain} and lnY_i are Spain's and its trading partner country i's Industrial Production Indexes (the National Statistics Institute of Spain).

$lnREX_i$ is the bilateral real exchange rate between the Euro and its trading partner country i'currency. $lnREX_i$ is defined as $lnREX_i$ = ($CPI_{Spain*}NEX_i/CPI_i$), where NEX_i is the nominal exchange rate defined as the number of units of partner i's currency per Euro. CPI_{Spain} and CPI_i are the Consumer Price Indexes of Spain and its trading partner country i. The data of NEX_i and CPI's were obtained from the database of the National Statistics Institute of Spain.

The data used are monthly figures covering the period of 1996 M1–2016 M12 and hence, in each country pair sample, there are 252 observations.

$$\Delta lnT_t = \alpha + \sum_{j=1}^{n} \beta_j \Delta lnT_{t-j} + \sum_{j=0}^{n} \gamma_j \Delta lnY_{t-j}^{Spain} + \sum_{j=0}^{n} \delta_j \Delta lnY_{t-j}^{i} + \sum_{j=0}^{n} \mu_j \Delta lnREX_{t-j} + \theta_1 lnT_{t-1} + \theta_2 lnY_{t-1}^{Spain} + \theta_3 lnY_{t-1}^{i} + \theta_4 lnREX_{t-1} + \varepsilon_t \quad (3)$$

In Eq.3, the significantly negative coefficients of *REX* refer to the negative effects of depreciations on the tourism balances of the US in the short and long-runs whereas the significantly positive short and long-run coefficients of μ_j and θ_4 indicate that depreciations in *REX* improve the balances in the country in the short and long-runs.

The non-linear approach proposed by Shin *et al*. (2014) was used to separate the effects of depreciations and appreciations of the Euro in Spain's tourism balances bilaterally with Turkey. The non-linear ARDL cointegration approach is included in the linear ARDL approach of Pesaran at al. (2001) and broadens its scope. For this reason, the appreciations (denotes by *POS*itive) and depreciations (denotes by *NEG*ative) in the USD were separately added to Eq.3 as two additional independent variables and we obtained Eq.4 which is presented in the following form:

$$\Delta lnT_t = \alpha + \sum_{j=1}^{n} \beta_j \Delta lnT_{t-j} + \sum_{j=0}^{n} \gamma_j \Delta lnY_{t-j}^{Spain} + \sum_{j=0}^{n} \delta_j \Delta lnY_{t-j}^{i} + \sum_{j=0}^{n} \mu_j^{+} \Delta POS_{t-j} + \sum_{j=0}^{n} \mu_j^{-} \Delta NEG_{t-j} + \theta_1 lnT_{t-1} + \theta_2 lnY_{t-1}^{Spain} + \theta_3 lnY_{t-1}^{i} + \theta_4^{+} POS_{t-1} + \theta_4^{-} NEG_{t-1} + \varepsilon_t \quad (4)$$

The partial sums of *POS* and *NEG* changes in the USD are defined as below:

$$POS_t = \sum_{j=1}^{t} \Delta lnREX_j^{+} = \sum_{j=1}^{t} \max(\Delta lnREX_j, 0) \quad (5)$$

$$NEG_t = \sum_{j=1}^{t} \Delta lnREX_j^{-} = \sum_{j=1}^{t} \min(\Delta lnREX_j, 0)$$

The significantly positive long-run coefficients $\theta_4^{-} NEG$ and short-run coefficients $\mu_j^{-} N\Delta EG$ reveal that depreciations in the Euro will lead to an improvement in Spain's tourism balances both in the long and in the short run, respectively. On the other hand, the significantly positive long-run coefficients $\theta_4^{+} POS$ and short-run coefficients $\mu_j^{+} \Delta POS$ mean that the Euro will cause Spain's tourism balances to worsen both in the long and in the short run, respectively.

3.2. Empirical results

We have applied the Augmented Dickey–Fuller (ADF) and Phillips–Perron (PP) Unit Root Tests to determine whether the series are stationary.

Table 1. Augmented Dickey–Fuller (ADF) and Phillips–Perron (PP) unit root test results

	ADF(Turkey)			***PP (Turkey)***	
	Intercept	**Intercept and trend**	***Variables***	**Intercept**	**Intercept and trend**
lnT_{TR}	-1.81(12)	-1.85(12)	lnT_{TR}	-1.78(12)***	-1.88(12)
lnY_{TR}	-2.88(2)	-3.35(2)*	lnY_{TR}	-2.92(5)***	-3.36(2)*
lnY_{Spain}	-2.59(4)*	-3.30(4)	lnY_{Spain}	-2.61(6)***	-3.27(4)
$lnREX_{TR}$	2.21 (0)	-2.23(0)	$lnREX_{TR}$	-2.24(0)	-2.24(0)
ΔlnT_{TR}	-6.18(12)***	-6.56 (12)***	ΔlnT_{TR}	-6.19(12)***	-6.54 (12)***
ΔlnY_{TR}	-4.29(3)***	-12.23(3)***	ΔlnY_{TR}	-4.31(3)***	-12.19(3)***
ΔlnY_{Spain}	-4.27(3)***	-4.31(3)***	ΔlnY_{Spain}	-4.26(3)***	-4.33(3)***
ΔREX_{TR}	-8.43(1)***	-8.56(1)***	ΔREX_{TR}	-8.45(1)***	-8.58(1)***
Critical Values	%1: -3.45 %5: -2.87 %10-2.57	%1: -3.99 %5: -3.42 %10:-3.13			

Lag lengths are selected *by* Schwarz Info Criterion.

According to the unit root test results, the stationary levels of the series are stationary at I (1) levels at 5% level. Table 2 shows the non-linear ARDL cointegration results.

Table 2. Estimates of the non-linear ARDL models

	Linear ARDL			**Non-linear ARDL**		
	SPAIN-TURKEY			SPAIN-TURKEY		
	Variables	Coef.	t stat	Variables	Coef.	t stat
Long-run estimates	Constant	-2.04	-0.40	Constant	-6.45	-2.40**
	lnY_{Spain}	8.57	5.30***	lnY_{Spain}	4.91	4.27***
	lnY_{TR}	-8.52	-7.88***	lnY_{TR}	-4.59	-2.97***
	$lnREX$	0.22	0.39	POS	0.39	1.38
				NEG	1.19	3.07***
Short-run estimates	ΔlnT_{t-1}	-0.27	-3.63***	ΔlnT_{t-1}	-0.19	-3.63***
	ΔlnT_{t-2}	-0.19	-2.58**	ΔlnT_{t-2}	-0.15	-2.49**
	ΔlnT_{t-4}	-0.13	-2.62***	ΔlnT_{t-4}	-0.15	-2.62***
	ΔlnT_{t-5}	-0.19	-3.34***	ΔlnT_{t-5}	-0.16	-3.34***
	ΔlnT_{t-6}	-0.26	-685***	ΔlnT_{t-6}	-0.41	-685***
	ΔlnT_{t-7}	-0.30	-5.86***	ΔlnT_{t-7}	-0.29	-5.86***
	ΔlnT_{t-8}	-0.28	-3.14***	ΔlnT_{t-8}	-0.24	-3.14***
	ΔlnT_{t-9}	-0.18	-2.93***	ΔlnT_{t-9}	-0.16	-2.93***
	$\Delta lnY_{Spain\ t-3}$	-6.16	-3.98***	$\Delta lnY_{Spain\ t-3}$	-6.41	-3.98***
	$\Delta lnY_{Spain\ t-5}$	-2.28	-2.14**	$\Delta lnY_{Spain\ t-5}$	-4.28	-2.14**
	ΔREX_{t-4}	1.63	3.31***	$\Delta lnY_{TR\ t-12}$	-3.02	-2.08**
	ΔREX_{t-7}	1.76	3.03***	ΔPOS_{t-4}	1.81	3.31***
				ΔNEG_{t-7}	3.80	3.03***
	Diagnostic statistic					
	F=9.38*** R^2= 0.86, Adj. R^2 = 0.84, D-W test: 2.006 ECM_{t-1}:-0.16 (4.73) χ^2_{SC} =15.67 [0.00] The Newey-West correction is applied. χ^2_{HET} =0.56 [0.48]			F=9.86*** R^2= 0.89, Adj. R^2 = 0.87 ECM_{t-1}:-0.27 (6.89) χ^2_{SC} =17.28 [0.00] The Newey-West correction is applied. χ^2_{HET} =0.39 [0.48] W_{LR}= 8.22 [0.000] W_{SR} = 3.97 [0.001]		

Pesaran, Shin and Smith (2001) tabulate the %5 critical values for k=3 as follows: F_{crit}= 4.35, k=4 as follows: F_{crit}= 4.01, *** %1, **: %5, *: %10. $\chi^2_{SC,}$ $\chi^2_{HET,}$ denote LM tests for serial correlation, Heteroscedasticit (ARCH), Figures parentheses are the associated t statistic and in square parentheses are the associated p-values. W_{LR} refers to the Wald test of long-run symmetry.

F-statistics of both approaches for Spain and Turkey are higher than the upper bound values therefore the non-linear approaches support the long-run relationships between them.

The significantly positive *NEG* refers to the fact that the non-linear approach confirms the positive effect of depreciations in the Euro against the Turkish Lira (TL) on the Spain tourism balances with Turkey in the long-run. However, as *POS*

is positive but not at a significant level, it is not possible to say that appreciations in the Euro have worsening effects on Spain's tourism balances with the same country in the long-run.

The calculated estimates (W_{Long}:8.22) of Turkey are significant enough to confirm the existence of asymmetric effects on Spain's tourism balances. The same size and same sign coefficients are also used to define the existence of symmetric effects of *NEG* and *POS*. However, the use of Wald test as a formal test is required for the confirmation in order to determine the existence of symmetric and asymmetric effects. For solving the autocorrelation problem arising in the series, the Newey-West correction is employed. Considering the percentages of the two countries, by the ECM (error correction model), it is revealed that the speed of adjustment is Turkey (-0.27) in the short-run.

As a result, it can be stated that the non-linear approach shows the Turkish tourists' positive responses to depreciations in the Euro against the TL and the positive roles in the improvement of Spain's tourism balance with their country. Whereas these results verify the J-curve effects in case of Euro depreciation, this relationship is not at the significant level in case of Euro appreciation. The results support the J-curve effects for the bilateral trade of many worldwide countries proved by many studies mentioned in the previous paragraphs (Bahmani-Oskooee *et al*., 2016a; Halicioglu, 2007).

The non-linear ARDL approach allows for the separation of positive and negative effects in the Euro against to the TL. In other words, by this approach, we focus on the short and on the long-term asymmetric relationship between the variables and determine the effects of the negative and positive changes in the explanatory variables on the dependent variable (Pesaran and Shin, 1999). Meanwhile, with this methodology, the short and long-term linearity and asymmetric effects are tested simultaneously.

Conclusions

Tourism represents the major economic activity for many countries, with a wide-ranging impact on economic growth, trade, investments, employment and social development. During the last years, it has become one of the fastest growing industries in the world and a significant source of revenues for all the economies worldwide. But the ability of one country to attract tourists depends on numerous factors, among which those which directly influence the tourism competitiveness of a particular country in the global market are the most important. One of them is, certainly, the exchange rate trend that impacts the prices of tourism services and the competitive position of a particular country in the global tourism market. Bearing that in mind, the main purpose of this study is to test the changes of the real exchange rate on the tourism balance of Spain by using nonlinear ARDL cointegration approaches. Our results showed that Euro depreciation against Turkish lira has a

significant positive influence on Spain's trade balance, while appreciations did not worsen it. This leads to the conclusion that ECB should manage the EUR/TL exchange rate in order to attract more tourists in all EU Mediterranean countries, especially in Spain. It is particularly important in the light of squeezing political tensions in the Middle East.

During the last few years, redirection of tourist flows from security troubled Middle East significantly boosted growth of this economic activity in Spain. This growth is the result of the slump in Egypt's, Turkey's and Tunisia's tourism because of terror attacks and political instability. In addition, the depreciation of the euro against other currencies also had a significant role in improving the competitiveness of Spain in the global tourism market and in boosting economic growth. Taking all the above mentioned into account, it can be said that the political situation in combination with euro depreciation have made travelling to Spain equally affordable as in the already mentioned countries. Now, the political situation starts to improve and, parallel with that, price competitiveness becomes more important.

Our results also suggest that policy makers in Spain should find other ways to enhance tourism export growth, because adjustment of EUR/TL exchange rate cannot be sufficient. In the modern conditions, characterised by intensified competitive pressures, especially in the tourism industry, advertising plays a significant role in selecting destinations. When the government increases the budget for travelling advertisement and, in that sense, obtains more information for tourists in foreign markets, this can certainly elevate the tourism aspiration of that country. So, for improving the tourism trade balance, more interesting destinations of Spain should be defined and the advertising activities meant to promote these destinations should be intensified. Turkish people prefer to travel to Spain due to its diversity in destinations, infrastructure, and very good travel and tourism services. Thus, tourist packages are very important.

Author contribution: Dr. Cem Işık implemented the empirical analysis of the study. Dr. Magdalena Radulescu designed the general framework of the study and wrote the literature review and drew the conclusions. Dr. Aleksandra Fedajev wrote the introduction and the conclusion.

References

Akbostanci, E. (2002), *Dynamics of the trade balance: The Turkish J – Curve*, ERC, Middle East Technical University, Working Paper in Economics, No. 05.

Appleyard, D. R. and Field, A. (1986), A note on teaching the Marshall-Lerner condition, *Journal of Economic Education*, 17(1), pp. 52-56.

Arndt, H. W. and Dorrance, G. (1987), The J-curve, *The Australian Economic Review*, 11(1), pp. 9-19.

Arora, S. Bahmani-Oskooee, M. and Goswami, G. (2003), Bilateral J-curve between India and her trading partners, *Applied Economics*, 35(9), pp. 1037-41.

Backus, D. K. Kehoe, P. J. and Kydland, F. E. (1994), Dynamics of the trade balance and the term of trade: the J-curve?, American Economic Review, 84(1), 84–103.

Baek, J. Koo, W.W. Mulik, K. (2009), Exchange Rate Dynamics and the Bilateral Trade Balance: The Case of U.S. Agriculture, *Agricultural and Resource Economics Review*, 38(2), pp. 213–228.

Bahmani-Oskooee, M. (1985), Devaluation and the J-Curve: Some Evidence from LDCs, *The Review of Economics and Statistics*, 67(3), pp. 500-504.

Bahmani-Oskooee, M. (1989), Devaluation and the J-curve: some evidence from LDCs: errata, *The Review of Economics and Statistics*, 71(3), 553–554.

Bahmani-Oskooee, M. and Alse, J. (1994), Short-Run Versus Long-Run Effects of Devaluation: Error Correction Modelling and Cointegration, *Eastern Economic Journal*, 20, pp. 453-464.

Bahmani-Oskooee, M. and Brooks, T. J. (1999), Bilateral J-curve between US and her trading partners, *Weltwirtschaftliches Archiv*, 135(1), pp. 156–165.

Bahmani-Oskooee, M. and Goswami, G.G. (2003), A disaggregated approach to test the J-curve phenomenon: Japan versus her major trading partners, *International Journal of Economics and Finance*, 27(1), pp. 102-113.

Bahmani-Oskooee, M. and Kovyryalova, M. (2008), The J-Curve: Evidence from Industry Trade Data between US and UK, *Economic Issues*, 13, pp. 25-44.

Bahmani-Oskooee, M. and Ratha, A. (2004a), The J-curve dynamics of US bilateral trade, *Journal of Economics and Finance*, 28(1), pp. 32-38.

Bahmani-Oskooee, M. and Ratha, A. (2004b), The J-curve: a literature review, *Applied Economics*, 36(13), pp. 1377-1398.

Bahmani-Oskooee, M. Ferda, H. Scott, H. (2016a), Mexican bi-lateral trade and J curve: An application of a non-linear ARDL model, *Economic Analysis and Policy*, 50(C), pp. 23-40.

Bahmani-Oskooee, M. Goswami, G.G. and Talukdar, B.K. (2005), The bilateral J-curve: Australia versus her 23 trading partners, *Australian Economic Papers*, 44(2), pp. 110-20.

Bahmani-Oskooee, M. Halicioglu, F. Ghodsi, S.H. (2016b), *Asymmetric Effects of Exchange Rate Changes on British Bilateral Trade Balances*, 18th Annual Conference of ETSG, Helsinki, Finland, 8-10 September, (retrieved from https://mpra.ub.uni-muenchen.de/73477/).

Bahmani-Oskooee, M. and Hegerty, S.W. (2010), The J- and S-curves: a survey of the recent literature, *Journal of Economic Studies*, 37(6), pp. 580-596.

Bahmani-Oskooee, M. and Hegerty, S.W. (2011), The J-Curve and NAFTA: Evidence from commodity trade between the US and Mexico, *Applied Economics*, 43(13), pp. 1579–1593.

Bank for International Settlements (2016), *Triennial Central Bank Survey, Foreign exchange turnover*, Monetary and Economic Department, Bank for International Settlements, Basel, Switzerland.

Boyd, D. Caporale, G.M. and Smith, R. (2001), Real Exchange Rate Effects on the Balance of Trade: Cointegration and Marshall-Lerner Condition, *International Journal of Finance and Economics*, 6(3), pp. 187-200.

Brissimis, S. N. and Leventakis, J. A. (1989), The effectiveness of devaluation: a general equilibrium assessment with reference to Greece, *Journal of Policy Modeling*, 11(2), 247-271.

Carter, C.A. and Pick, D. H. (1989), The J-curve and the US agricultural trade policy, *American Journal of Agricultural Economics*, 71(3), pp. 712-720.

Chiloane, L. Pretorius, M. and Botha, I. (2014), The relatıonship between the exchange rate and the trade balance ın South Afrıca, *Journal of Economic and Financial Sciences*, 7(2), pp. 299–314.

Demirden, T. and Pastine, I. (1995), Flexible exchange rates and the J-curve: an alternative approach, *Economics Letters*, 48(3-4), pp. 373-377.

Dogru, T. Isik, C. and Sirakaya-Turk, E. (2019), The balance of trade and exchange rates: Theory and contemporary evidence from tourism, *Tourism Management*, 74, pp. 12-23.

Eicher, T.S. Mutti, J.H. Turnovsky, M.H. (2009), *International Economics*, *7th edition*, New York: Routledge.

Flemingham, B. S. (1988), Where is the Australian J-curve?, *Bulletin of Economic Research*, 40(1), pp. 43–56.

Gupta-Kapoor, A. and Ramakrishnan, U. (1999), Is there a J-curve? A new estimation for Japan, *International Economic Journal*, 13(4), pp. 71–79.

Hacker, R.S. and Hatemi, A. J. (2004), The effect of exchange rate changes on trade balances in the short and long run, *Economics of Transition*, 12(4), pp. 777-799.

Halicioglu, F. (2007), The J-curve dynamics of Turkish bilateral trade: a cointegration approach, *Journal of Economic Studies*, 34(2), pp. 103-119.

International Labour Organization (2017), *Tourısm - an ımportant drıvıng force for inclusive socıo-economıc development, economic diversification, enterprise and job creation*, (retrieved from http://ilo.org/wcmsp5/groups/public/---ed_dialogue/---sector/documents/publication/wcms_544196.pdf).

Junz, H. B. and Rhomberg, R. R. (1973), Price-competitiveness in export trade among industrial countries, *American Economic Review*, 63(2), pp. 412–418.

Kamoto, E.B. (2006), *The J - curve effect of the trade balance in Malawi and South Africa*, Unpublished MCom thesis, Arlington: University of Texas.

Magee, S. P. (1973), Currency Contracts, Pass-Through, and Devaluation, *Brookings Papers on Economic Activity*, 1, pp. 303-325.

Mahdavi, S. and Sohrabian, A. (1993), The exchange value of the dollar and the US trade balance: an empirical investigation based on cointegration and Granger causality tests, *Quarterly Review of Economics and Finance*, 33(4), pp. 343–358.

Marwah, K. and Klein, L. R. (1996), Estimation of J-curve: United States and Canada, *Canadian Journal of Economics*, 29, pp. 523–539.

Meade, E. E. (1988), Exchange rates, adjustment, and the J-curve, *Federal Reserve Bulletin*, 74, pp. 633–644.

Moffett, M. H. (1989), The J-curve revisited: an empirical examination for the United States, *Journal of International Money and Finance*, 8(3), pp. 425–444.

Moodley, S. (2010), *An estimation of the J - Curve effect between South Africa and the BRIC Countries*, Unpublished MBA dissertation, Pretoria: Gordon Institute of Business Science.

Moura, G. and Da Silva, S. (2005), Is there a Brazilian J-curve?, *Economic Bulletin*, 6(1), pp. 1-17.

Narayan, P. K. and Narayan, S. (2004), The J-curve: evidence from Fiji, *International Journal of Applied Economics*, 18(3), pp. 369-80.

Ongan, S., Isik, C. and Özdemir, D. (2017), The Effects of Real Exchange Rates and Income on International Tourism Demand for the USA from Some European Union Countries, *Economies*, 5(4), p. 51.

Ongan, S. Ozdemir, D. and Isik, C. (2018a), Testing the J-curve hypothesis for the USA: applications of the nonlinear and linear ARDL models, *South-Eastern Europe Journal of Economics*, 16(1), pp. 21-34.

Ongan, S. Isik, C. and Özdemir, D. (2018b), The Asymmetric Effects of Exchange Rates on the US Tourism Balances in the NAFTA Countries: An Application of The Nonlinear ARDL Approach, *Journal of Applied Economics & Business Research*, 8(3), pp. 162-174.

Pesaran M.H. and Shin Y. (1999), An Autoregressive Distributed Lag Modeling Approach to Cointegration Analysis, in: Strom, S., Holly, A. and Diamond, P. (eds.), *Centennial Volume of Rangar Frisch*, Cambridge University Press, Cambridge, UK.

Pesaran, M. H. Shin,Y. and Smith, R. J. (2001), Bounds testing approaches to the analysis of level relationships, *Journal of Applied Econometrics*, 16(3), pp. 289–326.

Rose, A. K. (1991), The Role of Exchange Rates in a Popular Model of International Trade: Does the Marshall-Lerner Condition Hold?, *Journal of International Economics*, 30(3-4), pp. 301-316.

Rose, A. K. and Yellen, J. L. (1989), Is there a J-curve?, *Journal of Monetary Economics*, 24(1), pp. 53-58.

Rosensweig, J. A. and Koch, P. D. (1988), The US dollar and the 'Delayed J-curve', *Economic Review*, July/August, Federal Reserve of Atlanta.

Shin,Y.Yu, B.C. and Greenwood-Nimmo, M. (2014), Modelling asymmetric cointegration and dynamic multipliers in a nonlinear ARDL framework, in: Sickels, R. and

Horrace,W. (eds.), *Festschrift in Honor of Peter Schmidt: Econometric Methods and Applications*, New York: Springer, pp. 281–314.

Tihomor, S. (2004), *The effects of exchange rate change on the trade balance in Croatia*, International Monetary Fund, Working Paper, No. 65, Institute for Democracy and Mediation.

World Tourism Organization (2016), *Tourism Highlights*, World Tourism Organization, Madrid.

Vural, B.M.T. (2016), Effect of Real Exchange Rate on Trade Balance: Commodity Level Evidence from Turkish Bilateral Trade Data, *Procedia Economics and Finance*, 38, pp. 499 – 507.

Wassink, D. and Carbaugh, R. (1989), Dollar-Yen exchange rate effects on trade, *Rivista Int. Sci Econ. Com*, 36(12), pp. 1075–1088.

Wilson, P. (2001), Exchange rates and the trade balance for dynamic Asian economies: does the J-curve exist for Singapore, Malaysia and Korea?, *Open Economies Review*, 12, pp. 389–413.

World Economic Forum (2017), *The Travel & Tourism Competitiveness Report 2017 - Paving the way for a more sustainable and inclusive future*, World Economic Forum, Geneva.

World Travel & Tourism Council, (2018), Travel & Tourısm Global Economıc Impact & Issues 2018, World Travel & Tourism Council, London.

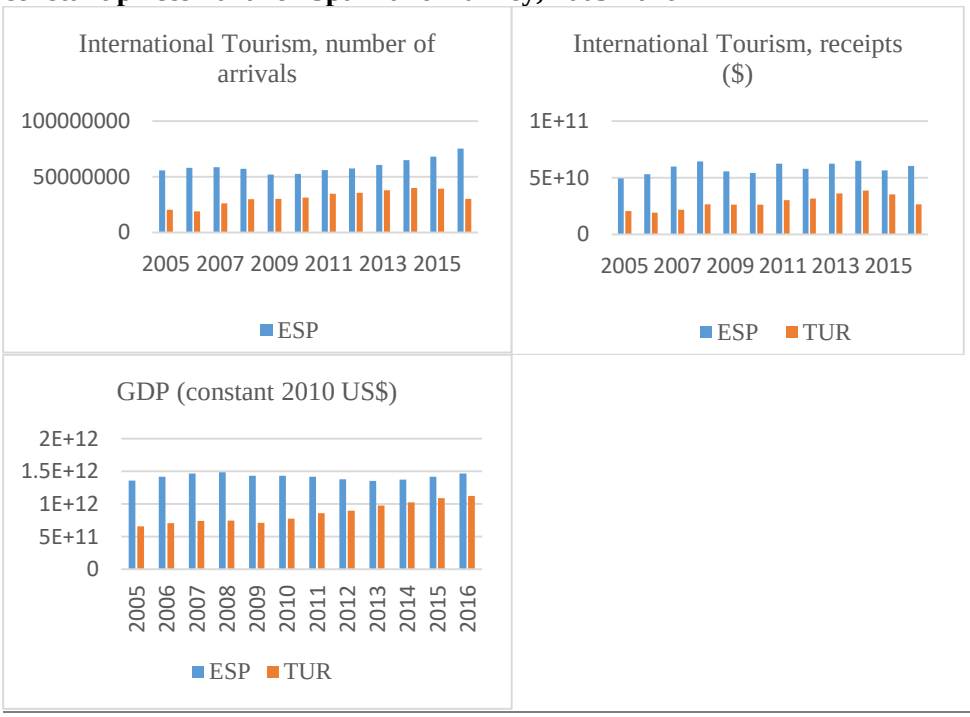
Zhang, Z. (1996), *The exchange value of the Renminbi and China's balance of trade: an empirical study*, NBER, Working Papers Series, Working Paper, No. 5771.

Appendix

Table 1. Statistics of thse variables used in the analysis

Desc. Stats. (252 obs)	Mean	Median	Stan. Dev.	Skewness	Kurtosis	Jarque-Bera	Prob.
T	2.612	2.644	0.348	-0.127	2.104	2.428	0.0001
Y_{Spain}	2.308	1.801	0.161	0.368	2.139	5.637	0.0187
Y_i	3.028	3.112	0.105	.0.345	1.713	7.541	0.0000
REX	2.057	2.034	0.136	0.533	2.652	3.120	0.0001

Figure 1. International Tourism, number of arrivals and receipts and GDP in constant prices 2010 for Spain and Turkey, 2005-2016



2017	Int. Tou. Arrivals million		Int. Tou. Receipts US $ billion	
1	France	86.9	United States	210.7
2	Spain	81.8	Spain	68.0
3	United States	76.9	France	60.7
4	China	60.7	Thailand	57.5

5	Italy	58.3	United Kingdom	51.2
6	Mexico	39.3	Italy	44.2
7	United Kingdom	37.7	Australia	41.2
8	Turkey	37.6	Germany	39.8
9	Germany	37.5	Macau	35.6
10	Thailand	35.4	Japan	34.1

Source: Author own calculation (UNWTO, 2016).