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# USING ECONOMIC SENTIMENT IN DESTINATION DEMAND MANAGEMENT

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## ABSTRACT

*As part of competitive marketing strategies, tourism demand modeling plays an important role in destination management and marketing. This study incorporated the concept of Economic Sentiment Indicator (ESI) into tourism demand studies along with more traditional variables such as interest rate, relative price, and relative exchange rate. The study utilized ARIMA, and ARDL Bound Test approach to cointegration for the long and short-run elasticities using 15 tourist generating countries from the members of EU to Turkey. The study concludes that ESI is an effective tool and good indicator to gauge and monitor tourism demand.*

**Keywords:** *Tourism Demand, Economic Sentiment Indicator, Econometric Models, ARIMA, ARDL Bound Test Approach, Turkey*

## INTRODUCTION

Destination managers are constantly challenged to be innovative in their efforts to develop competitive marketing plans and strategies. As part of such efforts, modeling tourism demand has been one of the important areas of research in destination management and marketing. Analyzing both the effects of various demand determinants and accurately forecasting the future demand for tourism destinations are the two major focuses of tourism demand studies (Song, Li, & Witt, 2008). Governments and investors need to know the factors affecting the destination choice and the type of trips in order to create effective marketing and strategic planning decisions (Kim & Uysal, 1998; Turner et al., 1998). Therefore finding the right variables to understand and estimate tourism demand becomes very important and challenging in policy formulations. Most of the variables used in demand studies are able to explain certain

aspects of the tourism demand, but little, if any research has been conducted on how the prospective tourists' state of mind regarding to their financial situation for both today and tomorrow may play a role in their demand for tourism. Thus, the objective of this study is to develop a demand model that incorporates not only traditional demand determinants such as CPI, relative price, and exchange rate, but also Economic Sentiment Indicator (ESI) as a new demand determinant into the model of tourism demand. In order to meet the study objective, this study uses Turkey as a destination country and a group of 15 selected EU (European Union) countries as origin countries. These countries represent a significant number of tourist arrivals for Turkey.

Using the Economic Sentiment Indicator for demand analysis for this study will assist in the ability to tap into individuals' hopes and/or worries for the present and future. Therefore, the hypothesized model of this study will demonstrate if the economic sentiment indicator is a viable demand determinant along with traditional ones identified from previous studies. All things being equal, it is hypothesized that the higher the index score, the higher its positive effect on demand would be. The estimation of the study model used the econometric models of ARIMA (Auto Regressive Integrated Moving Average) and ARDL (Auto Regressive Distributed Lag) Bound- test approach. The general hypothesis of the study is that tourist arrivals from the selected countries of EU can be explained as a function of ESI, relative price, exchange rate, and interest rate. The demand function for the origin country  $i$  to destination country  $j$  is given by:

$$Y_{ijt} = \alpha_0 + \alpha_1 ESI_{it} + \alpha_2 IR_{it} + \alpha_3 RP_{ijt} + \alpha_4 EX_{ijt} + \epsilon_{ijt}$$

Where

- $Y_{ijt}$  = Visitor Arrivals from origin country  $i$  to destination country  $j$  at given time
- $ESI_{it}$  = Economic Sentiment Indicator for the origin country  $i$
- $IR_{it}$  = Interest rate in the origin country  $i$
- $RP_{ijt}$  = Relative price for tourists from origin country  $i$  to destination country  $j$
- $EX_{ijt}$  = Exchange rate for tourists from origin country  $i$  to destination country  $j$

## METHODOLOGY

Data in this study were compiled from three main sources: Turkish Statistical Institute, EuroStat, and OECD statistical databases. Monthly data covering January 2001 to December 2007 resulted in 84 data points. For this study, the ARDL Bound-test approach is employed to examine long and short run relationships between tourist arrivals and selected independent variables. Procedure is simple, once the optimum lag order has been identified and the presence of the cointegration relationship established, the model can be estimated using OLS (Ordinary Least Square) regression method. ARDL representation of the demand for Turkey can be written in natural log (Ln) form as follows:

$$\Delta \ln STA_{jt} = \alpha_0 + \alpha_1 \Delta \ln STA_{jt-1} + \alpha_2 \Delta \ln ESI_{it-1} + \alpha_3 \Delta \ln IR_{it-1} + \alpha_4 \Delta \ln RP_{ijt-1} + \alpha_5 \Delta \ln EX_{ijt-1} + \alpha_6 \ln STA_{jt-1} + \alpha_7 \ln STA_{jt-2} + \alpha_8 \ln STA_{jt-3} + \alpha_9 \ln STA_{jt-4} + \alpha_{10} \ln STA_{jt-5} + \alpha_{11} \ln STA_{jt-6} + \alpha_{12} \ln STA_{jt-7} + \alpha_{13} \ln STA_{jt-8} + \alpha_{14} \ln STA_{jt-9} + \alpha_{15} \ln STA_{jt-10} + \epsilon_{jt}$$

Where STA is the seasonally adjusted tourist arrival dependent variable;  $\Delta$  is the first difference operator,  $\alpha_1, \alpha_2, \alpha_3, \alpha_4, \alpha_5, \alpha_6, \alpha_7, \alpha_8, \alpha_9, \alpha_{10}, \alpha_{11}, \alpha_{12}, \alpha_{13}, \alpha_{14}, \alpha_{15}$  represent short run dynamics of the model,  $\alpha_1, \alpha_2, \alpha_3,$

$\alpha_4$ ,  $\alpha_5$  represent long run elasticities,  $n$  is the optimum lag length and  $\epsilon_t$  is the error term.

ARDL Bound-test approach involves two steps to test the existing cointegration relationship of the variables in the model. First step is to examine whether there is a cointegration among the selected dependent and independent variables using F-test or Wald coefficient restriction test. After confirming that there is a cointegration in the model, second step is used to estimate long run and short run coefficients of the same equation simultaneously. Optimal lag selection on ARDL model can be derived using critical values such as Akaike Information Criterion (AIC), or Schwartz Bayesian Information Criterion (SBIC).

## CONCLUSION

The result from Wald test (F-test) indicated that 13 out of 15 countries had cointegration relationships; France and The Netherlands did not show any cointegration relationships among the variables. Interest rate was used as an independent variable in 12 countries except the UK. The variable was statistically significant in 10 out of 12 countries and had an expected negative sign. Thus, interest rate negatively affects tourism demand. European Central Bank enforces common interest rates for all EU countries no matter how they grow; if a given country is growing very fast it can increase interest rate to lower that country's growth rate thus eliminating future hyperinflation. If the growth is slower, then it may lower interest rate in order to boost economy. But as a member country of EU, there is almost no control over interest rate anymore. Second effect from the interest rate is that, it could be expensive to borrow money for visitors if they need to finance their trips. Additionally, higher interest rates would mean that prospective visitors might prefer to invest their vacation money somewhere else with better investment opportunities and spend it in the future.

There were only 3 countries that had statistically significant results for exchange rate, UK, Ireland, and Spain. Exchange rate coefficient was positive for the UK market and negative for Ireland and Spain. Negative results from Ireland and Spain did not support the general assumption that exchange rate positively affects tourist arrivals. European Union members use Euro as a currency, when a common currency is used, countries cannot devalue their currency to become more competitive and/or use inflation to decrease the amount of money they borrow. This might be the reason for the negative outcome for Ireland and Spain. The positive confirmation of this hypothesis for the UK market may be attributed to the fact that UK uses own currency. The study revealed that relative price is statistically significant for UK, Greece, Ireland, and Spain. The sign of relative price is negative for Greece, Ireland, and Spain. The findings from these countries with respect to price support the study hypothesis. Visitors from the UK market might not consider the variable of price very important in destination selection or this finding may be attributed to the notion of safe harbor effect which is explained in the following paragraph.

The hypothesis that Economic Sentiment Indicator (ESI) positively affects tourist arrivals was statistically significant for the origin countries of Austria, UK, Finland, Germany, Ireland, Luxembourg, Portugal, and Sweden. Three of these countries (Austria, Finland and Germany)

had a negative coefficient and five had a positive sign as hypothesized in the study. There could be several possible reasons related to the negative sign of the estimated coefficient from these three countries. First, higher interest rates could create budget constraints even if there is higher ESI, which means, visitors might be willing to go to Turkey but they might not be able to afford it because of the budget constraints. Second, Euro is not a country specific currency, all the countries with the negative estimated coefficients use Euro as a common currency, not able to control own currency could create problems even with higher ESI. The third explanation could be attributed to the notion of “Inferior Good” approach. If origin countries consider Turkey as an “Inferior Good”, which means when visitors from such countries feel better about their economic conditions, they may switch to other more expensive destinations. If not, they might prefer Turkey as a destination; this could explain the negative sign of ESI. Lastly and most probable approach is the notion of “Safe Harbor” approach. Especially after September 11 destination selection criteria have changed, perceived safety became a very important factor in selecting destinations. If visitors consider Turkey as a safe place to visit, comparing to other destinations that might create a “Safe Harbor” effect. This approach has been confirmed by positive dummy D01 (September 11 effect) in this study.

The study supports the notion that ESI could be an effective tool to understand demand for tourism activities. We encourage researchers to consider it in their demand studies in the future. The study concludes that ESI is a good indicator to gauge and monitor tourism demand and adding the visitors’ state of mind into the demand equation could reduce errors and increase variance in explaining tourist arrivals. Policy makers should monitor ESI as it fluctuates over time and assess its potential effect on visitation behavior. Using this information generated from the study, government officials and tourism suppliers could adjust their promotional activities and expenditures in origin countries accordingly.