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International Tourism and Economic Development in Turkey: A Vector Approach

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Abstract

Being a developing country, Turkey is endeavoring to achieve sustained economic growth. An important tool Turkey uses for sustained economic growth is that of international tourism earnings. In turn higher real income of the country attracts more tourists and leads to higher tourism earnings as well. The direction of causality between income and tourism earnings is tested for Turkey with the help of other variables; those of real export volume and real exchange rate in a multivariate vector autoregressive model. Quarterly data from 1980 to 2011 is (are) used and tourism earnings are shown to be an essential contributor to the real GDP of the country. After the elections in 2002, a more assertive party as regards their setting of tourism targets of international scale came into power. The effects of this new aggressive tourism strategy of the government, and this relationship with the tourism sector are studied for the first time in the literature.

Keywords: *tourism earnings, economic development, Turkey, VECM, Granger causality test*

Introduction

For the Mediterranean countries, tourism is an essential dynamo of economic growth. Countries such as Italy, Spain and Greece have direct tourism incomes close to 3% of their respective GDPs. In addition to these direct incomes coming from abroad, tourism creates many opportunities in the domestic economy through tourism-based jobs. Cultural and knowledge-based exchanges are considered as additional benefits of

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tourism. According to the estimates of the World Tourism Travel Council, the scale of the world tourism industry will reach roughly 11% of the world's GDP in 2014.

With the direct income and other positive side effects the tourism industry provides to the host country's economy, tourism is considered as an important determinant of economic growth in many studies in the subject-related literature. (Belloumi, for Tunusia, 2010; Akinboade, Braimoh, for South Africa, 2010; Brida, Risso, for Chile, 2009) Brau et al. (2003) showed that a rising number of tourists to the world's main destinations is associated with a corresponding growth in both GDP and employment rates. In addition, tourism-based economies are shown to achieve higher rates of growth on average than other economies by Brau et. al. (2003).

Although international tourism contributes to the growth of many countries, it is in turn, impacted by growth in those economies. An undirectional temporal relationship ranging from economic development to tourism activity is detected in the literature for Fiji, Tonga, Solomon Islands and Papua New Guinea (Narayan et al., 2010) for African countries (Lee and Chang, 2008) and for Cyprus (Katircioglu, 2009)

Demiröz, Ongan, (for Turkey, 2005) Dritsakis (for Greece, 2004) Chen and Chiou-Wei (for South Korea, 2009) found bi-directional relationship between tourism revenues and national income.

The direction of causality between tourism incomes and economic growth is a subject of ongoing discussion in the related literature. In this paper, by using Granger causality tests and quarterly data for the period 1980 to 2011, we try to understand and evaluate the relationship between international tourism and economic growth in Turkey.

For Turkey, Arslantürk and Atan (2012) claim that, international tourism helps to fix the balance of payments, provides the necessary financial tools for the technological equipment used in the manufacturing process, increasing employment and leading to economic growth. Gunduz and Hatemi (2005), by using bootstrap techniques, show that tourism-led growth hypotheses are supported empirically in the case of Turkey. In addition, as we mentioned above, Demiröz, Ongan (2005) showed a bi-directional relationship between tourism receipts and GDP.

Many studies in the literature, including the one by Gunduz and Hatemi (2005) focus on the last 20-30 years using annual data. The lack of observations may reduce the reliability of the estimations in these studies.

The paper by Demiröz and Ongan uses quarterly data for the period between 1980 and 2003, hence allowing certain degrees of freedom. However, the data for the end year of the study is a bit problematic. After the economic crisis in 2001, with a new government which showed particular interest in tourism revenues reached a high rate of economic growth and tourism volume. Therefore, the data included in this particular period offers a useful insight into understanding the relation between tourism income and economic growth in Turkey. Our paper will be the first in the literature with an emphasis on this period.

In Khan, Rex and Chua, 2005 and Kadir and Jusoff, 2010; the inclusion of export volume as an explanatory variable tourism – growth analysis, is shown to be significant. Following on from this contribution, this paper will be first to analyze Turkey's tourism and growth in international relations with an eye on the exports of the country. The econometric methods which are shown to offer the best estimates for the subject will be used for the analysis. More information about the econometric methods is presented in the section that deals with methodology.

Tourism in Turkey

As in most countries, in Turkey, the major objective of macroeconomic policies is sustained economic growth. By using different sectors and different markets Turkey is trying hard to achieve this goal. The tourism sector became very important for Turkey's economic development over recent decades. In 2009, combined with the travel sector, the industry generated approximately 10.2% of Turkey's GDP. (TL 95.3 billion) with a share of 7.2% of Turkey's total employment. (1.7 million people) (See Figures 1 and 2.)

Turkey is centrally located between Asia and Europe; the Black Sea to the north and the Mediterranean tothe south. In comparison to many European countries Turkey can be said to possess a large territorial area that stands at 814.578 sq. km.

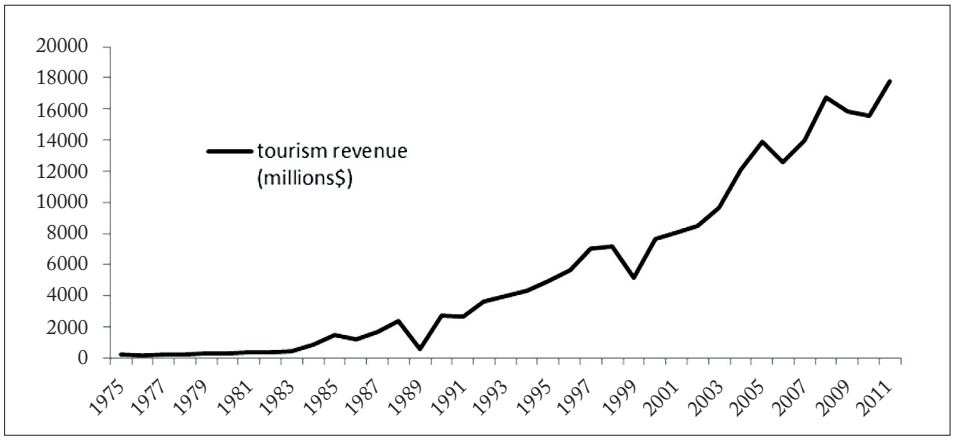
Turkey has various climatic types in its different regions. The Black Sea region experiences a temperate rainy climate, the Central Anatolian region a continental , and the south a partially subtropical Mediterranean climate respectably. From west to east there are also considerable differences and contrasting climatic regions. In the Marmara and the Aegean regions hot summers and mild winters are the norm, and in and Eastern Anatolia

it is common to experience extremes of temperature where the winters are long with heavy snowfall.

Having this variation in climatic conditions, the flora and fauna of Turkey are correspondingly diverse. The flora varies from those of lush forests, that of the wild steppes to typical Aegean and Mediterranean vegetation. Turkey has nearly ten thousand species, hundreds of which are endemic to Turkey. Turkey is on the migratory routes of birds and there are a number of areas which are the natural habitat for many different species, including many rare ones.

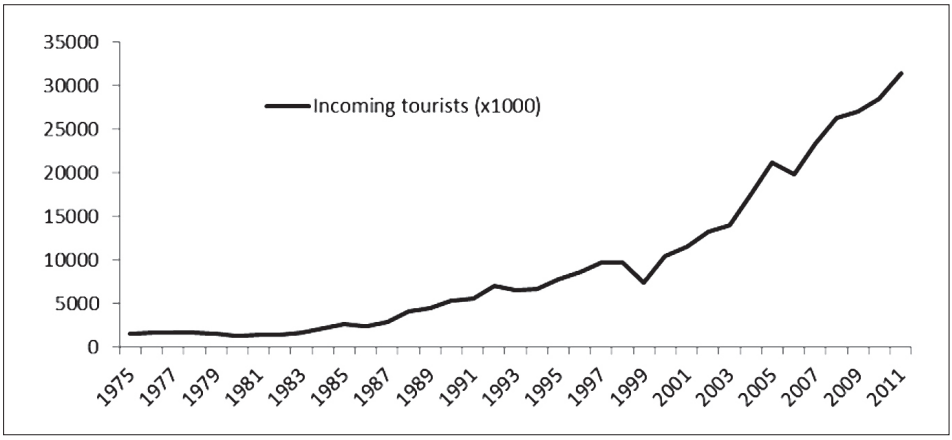
Turkey is an attractive destination for international tourists who are interested in historical sightseeing. It has historical traces from numerous civilizations such as Hittites, Phrygians, Lycians, Lydians, Ionians, Romans, and Byzantines to the Seljuks and Ottomans. The history of humanity has continuously merged and accumulated, from that of the earliest settlements, to theat of contemporary Turkey today.

Figure 1. Tourism Revenues



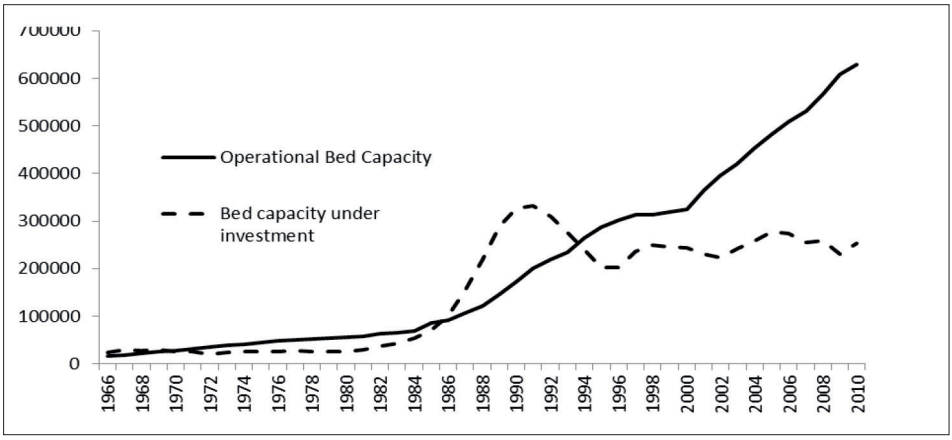
Citizens of Germany, the Russian Federation and the United Kingdom comprise 36% of all tourist arrivals to Turkey and are the top sources of tourism revenue. Currently, hotels in Turkey have a capacity of 629.465 beds and this number is still increasing. (See Figure 3.)

Figure 2. Incoming Tourists



Tourism receipts and international tourism arrivals have been growing rapidly over recent years. The growth in Turkish tourism industry has been faster than world averages. The share of Turkish tourism on the world scale has increased from 1.1% in 1990 to 2.8% in 2009. (See Figures 1 and 2.)

Figure 3. Bed Capacity



When graphs regarding tourism volume are examined it should be noted that, despite the onset of the economic crisis in 2008, Turkish tourism industry managed to grow in 2008 and has broken records for tourism revenues every year since. Currently coastal tourism is the most popular type of tourism in Turkey. Although coastal tourism is by far the most popular tourism type in Turkey, the country also has developed

several unique fields of tourism including conference and expo tourism, cruise ships and yachting, mountain climbing, winter sports, health and tourism resources. To take advantage of these vast non-utilized resources, the Ministry of Culture and Tourism has issued 'Turkey's Tourism Strategy 2023'. 2023 is the 100th anniversary of Turkish Republic and the ministry wants to provide a guide for tourism investors interested in Turkey. This will provide guidance to investors in the phases of planning, production management and implementation. The charecteristics and conditions of such incentives will be determined on a yearly basis. Turkey expects a lot from tourism and endeavours to offer better guidance to the sector.

It is obvious that, tourism is a fastly developing sector for Turkey and with the ongoing investments; it strives to retain its major position as regards growth-related issues. The country expects a lot from the industry, therefore, the relationship is in need of reexamination keeping the latest developments of the sector and the newest findings of the literature in mind. The study will attempt to provide new evidence on the issue of tourism-led growth hypothesis in the case of Turkey. In addition, the government which came to power in 2002, has started to apply a more assertive tourism strategy. This study will allow us to consider this new term as well while testing the accompanying hypothesis.

Data and Methodology

The two key variables that are included for analysis are obviously tourism and growth indicators. In the literature, there is a consensus for growth-indicator choice. In this context, real GDP per capita is included to keep track of the changes in total economic activity. The IMF database is used for real GDP of Turkey for the period 1980-2011. However there are different papers which use different tourism indicators. For example, Gunduz and Hatemi (2005) discussed alternative measures for the volume of international tourism including tourism receipts and international tourist arrivals. They decided to focus on arrivals. However, in this paper, as in Akainborade and Bramioh (2010) we are going to use tourism receipts as the tourism activity indicator which is shown to give the most meaningful estimates in this regard. As suggested by Oh (2005) and Gunduz and Hatemi (2005) real exchange rates and export volume are included in the analysis to deal with the potentially- omitted variable problems. Real

exchange rate and real export volume data are taken from World Bank Development Indicators.

To understand whether policies should be designed in a 'tourism first' or 'development first' manner we tested the causal relationship between tourism receipts and economic development in Turkey. By causality, we mean causality in the Granger sense. In that sense, we will find out whether one variable precedes another variable or not. For this purpose we designed a four variable vector autoregressive (VAR) model.

In econometrics whenever time series data is used, several statistical techniques should be applied. First of all, to gain an insight as to whether data is stationary, unit root tests should be used individually for each series. The existence of unit root makes the analysis unreliable. (Non-stationary data contains unit roots.) Hence, we start our causality analysis with a unit root test: the Augmented Dickey Fuller Test (ADF). By this test we check for the existence of unit roots and determine the degree of differences in order to establish a stationary series which will help us to arrive at reliable results. The ADF test is based upon estimations of the following equations.

The results of the ADF test in Table 1 indicate that the series of each variable are not stationary in their level form but are stationary in the first differences. Therefore, we concluded that each series used in the analysis are integrated as of order 1. To determine the correct specification of the unit root tests, Akanke's information criterion is used to determine the lag length in various specifications. Related lag lengths are provided in the table as well.

Table 1. Unit Root Test

LEVELS	**LGDP**	**Lag**	**LTUR**	**Lag**	**LEXPO**	**Lag**	**LRER**	**Lag**
Constant	-1.33 (0.61)	4	-3.62 (0.006)	9	-1.99 (0.29)	1	-2.35 (0.15)	0
Const & trend	-2.46 (0.34)	4	-2.28 (0.47)	9	-2.78 (0.20)	1	-2.53 (0.31)	0
FIRST DIFFERENCES	**LGDP**	**Lag**	**LTUR**	**Lag**	**LEXPO**	**Lag**	**LRER**	**Lag**
constant	-6.82 (0.00)	3	-5.29 (0.00)	7	-14.80 (0.00)	0	-7.39 (0.00)	3
const & trend	-6.88 (0.00)	3	6.09 (0.00)	8	-14.99 [0.00)	0	-7.63 [0.00)	3

In the section above we conclude that all variables in the study are integratedaccording to order one. To determine the most stationary linear combination of the time series variables we will employ a Johansen Cointegration test. (1988) Cointegaration test, including an intercept and a non- deterministic trend in the co-integration equation are used. The results of the cointegration tests are shown in Table 2. The null of no cointegration is rejected and we found only one cointegration relationship. Therefore we can claim that long term relationship is detected between the variables of interest. For the test, several lag intervals are tested and the most efficient results are reached with lag intervals of 1 to 3.

Results

To understand the direction of causality in the short run, we employed a Granger causality test. Through this we determine whether international tourism earnings Granger cause or Granger caused by economic growth. In this part we also examined the results of the causality tests to find out the direction of causality for the variables real exports and real exchange rate.

It is seen; from Table 3 that, neither growth Granger causes tourism earnings nor tourism earnings causes growth in the short run. It is not a surprise in the sense that, tourism being a construction- driven sector in Turkey, has been expected to have its interaction with growth in the longer term. It is worth noting from the results of the causality tests that, real exchange rate granger creates both economic growth and tourism earnings.

The results we get in the cointegration tests allow us to use a vector error correction model to investigate the relationship between variables under consideration. By this we will be able to formulate the dynamic of the system. The vector error correction model can be specified as follows. In this model the emphasis is on the Z terms which represent the residuals from the previously estimated cointegration equations. By checking the significance of these terms we will be able to interpret whether the independent variables in each equation Granger cause the dependent variable or not.

The results of the vector error correction model are presented in Table 4. As seen from the highly significant results, we can assert that the direction of the causality in the long run is from economic growth to tourism earnings. When the results of the four variable analyses are

examined from Table 4, it is actually seen that tourism earnings are caused by real GDP, real exports and real exchange rate. The relationship seems to be uni-directional. GDP does not seem to be caused by the triple of tourism earnings, real export and real exchange rate.

For further information and statistical purposes we did a bivariate analysis for real GDP and tourism earnings. The results of this bivariate analysis are presented in Tables 5 and 6. Similarly in this bivariate case the direction of the causality is from real GDP to tourism earnings. That is, real income Granger causes tourism earnings.

In Turkey after the elections in 2002 a more conservative party, AKP (Turkish initials for Justice and Development Party) came to power. They have given special importance to earnings from tourism. Accordingly the increase in tourism earnings is observable in the Graph 1. For this reason we examined the relation between tourism and other variables of interest for Turkey in two periods in the case of a characteristic change. However, the results for the whole period (1980-2011) mentioned above are valid for the subperiods as well. (1980-2001 and 2002-2011) The results for these subperiods are presented in Tables 7, 8 and Tables 9, 10. The number of observations may decrease the reliability of the results for the subperiod analysis. However, we still believe that in Turkey the direction of causality can easily asserted to be from GDP to tourism earnings for all periods especially after observing the reliability of the analysis for the whole period.

Discussion

The reasons why economic growth causes higher tourism earnings in Turkey should be carefully examined. The first reason that we can suggest is the structure of tourism in the country. In Turkey, more than 60% of the tourism is conducted at all-inclusive hotels. Five, four and three star hotels account for 40%, 31% and 20% of the operational bad capacity respectively. These hotels have huge facilities and need large investments. Therefore they contribute a lot to the increase in GDP, especially in the construction period. After the investments are completed, and these hotels have started to operate, an increase in the tourism earnings is observed as well. This can explain the direction of causality between economic development and tourism earnings which is from the former to the latter.

In addition we have to make a socio-economic observation at this point. Turkey attracts tourists from both the developed western countries

and developing eastern European and Middle Eastern countries. So as to attract tourists from eastern European and some Middle Eastern countries, having higher economic and development standards than the tourist sending country is a key factor. Tourists are likely to expect better conditions for accomodation, travel, shopping etc. Hence economic growth brings extra tourists from these countries in particular. (For example newly constructed ultra-modern shopping malls in Istanbul can be easily observed to be full of international tourists.) Thus this may be another reason why economic development leads to higher tourism earnings in Turkey.

Furthermore, economic growth leads to better infrastructure and security standards in a country. Hence, international tourists from developed countries who were previously reluctant to come to Turkey, have now started to consider Turkey as a must see tourism destination. Also, higher levels of GDP have allowed Turkey to transfer more funds to its promotion agencies. This better advertising of the country may contribute to higher GDP which in turn leads to higher tourism earnings.

Conclusion

In this paper, we tested the tourism-led growth hypothesis for the case of Turkey. Tourism is a key sector for this rapidly developing country, Turkey, that deserves to be analyzed in detail.

The results when the co-integration and causality test is applied, tell us that tourism earnings are caused by real GDP, real exports and a real exchange rate. The relationship seems to be uni-directional. Higher GDP does not seem to be caused by the tripling of tourism earnings, real export and real exchange rate. A bivariate analysis is also applied excluding the explanatory variables real exports and real exchange rate. No change is observed in the results, in the sense that, tourism earnings appeared to be caused by real GDP growth.

After the elections in 2002, a more assertive party with regard to international tourism targets came into power. This raises the necessity of a revisiting by the analysis of Turkish tourism earnings. With this motivation, the subperiods before 2002 and after 2002 are examined as well. These analyses give us an opportunity to claim with greater conviction that the direction between tourism earnings and real GDP is unidirectional and flows from real GDP to tourism earnings.

Policy makers in Turkey hence may wish to become more aware of the fact that an increase in tourism earnings is achieved by the help of the increase in real GDP. In addition to the attractions of nature; an improved infrastructure, greater security and promotion which stems from a higher GDP seem to make Turkey an attractive destination for international tourists.

Table 2. Results of the Cointegration Test

	Unrestricted Cointegration Rank Test (Trace)				**Unrestricted Cointegration Rank Test (Maximum Eigenvalue)**			
Hypothesized No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.20035	50.5639	47.8561	0.027	0.20035	27.7252	27.5843	0.048
At most 1	0.10369	22.8387	29.7970	0.254	0.10369	13.5750	21.1316	0.400
At most 2	0.06953	9.26368	15.4947	0.341	0.06953	8.93635	14.2646	0.291
At most 3	0.00263	0.32733	3.84146	0.5672	0.002636	0.327330	3.841466	0.5672

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Table 3. Granger Causality Test Results

VEC Granger Causality/Block Exogeneity Wald Tests (Dependent Variable)								
	LGDP		**LTUR**		**LEXPO**		**LRER**	
(Excluded)	Chi-square	Prob.	Chi-square	Prob.	Chi-square	Prob.	Chi-square	Prob.
LGDP			3.689208	0.2970	5.002581	0.1716	2.834119	0.4179
LTUR	1.069833	0.7844			6.275094	0.0990	5.001837	0.1717
LEXPO	3.636250	0.3035	3.110751	0.3749		0.9824	0.749856	0.8614
LRER	9.060632	0.0285	12.37569	0.0062	0.168917			

Table 4. Results of the Long-Run Causality Test

Vector Error Correction Estimates				
	LGDP	**LTUR**	**LEXPO**	**LRER**
Cointegrating equations	-0.009537	-0.267785	-0.011623	-0.118384
	(0.01993)	(0.06523)	(0.03892)	(0.03789)
	[-0.47863]	[-4.10507]	[-0.29865]	[-3.12442]
	Included observations: 124 after adjustments Standard errors in ( ) & t-statistics in [ ]			

Table 5. Results of the Cointegration Test (Bivariate)

	Unrestricted Cointegration Rank Test (Trace)				**Unrestricted Cointegration Rank Test (Maximum Eigenvalue)**			
Hypothesized No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.167478	29.20622	25.87211	0.0185	0.167478	22.36206	19.38704	0.0179
At most 1	0.054555	6.844161	12.51798	0.3611	0.054555	6.844161	12.51798	0.3611

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Table 6. Results of the Long-Run Causality Test (Bivariate)

Vector Error Correction Estimates		
	LGDP	**LTUR**
Cointegrating equations	0.013161	-0.142468
	(0.01427)	(0.04804)
	[0.92207]	[-2.96591]
	Included observations: 124 after adjustments Standard errors in ( ) & t-statistics in [ ]	

Table 7. Results of the Cointegration Test (1980-2001)

	Unrestricted Cointegration Rank Test (Trace)				**Unrestricted Cointegration Rank Test (Maximum Eigenvalue)**			
Hypothesized No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.309978	49.15150	47.85613	0.0376	0.309978	31.16663	27.58434	0.0166
At most 1	0.124100	17.98487	29.79707	0.5672	0.124100	11.13033	21.13162	0.6343
At most 2	0.078059	6.854544	15.49471	0.5946	0.078059	6.827052	14.26460	0.5098
At most 3	0.000327	0.027491	3.841466	0.8682	0.000327	0.027491	3.841466	0.8682

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Table 8. Results of the Long-Run Causality Test (1980-2001)

Vector Error Correction Estimates				
	LGDP	**LTUR**	**LEXPO**	**LRER**
Cointegrating equations	-0.018122	-0.080455	0.019610	-0.058106
	(0.01126)	(0.03905)	(0.02250)	(0.02001)
	[-1.60873]	[-2.06010]	[0.87150]	[-2.90333]
	Included observations: 124 after adjustments Standard errors in ( ) & t-statistics in [ ]			

Table 9. Results of the Cointegration Test (2002-2011)

	Unrestricted Cointegration Rank Test (Trace)				**Unrestricted Cointegration Rank Test (Maximum Eigenvalue)**			
Hypothesized No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.467072	52.09762	47.85613	0.0189	0.467072	25.17475	27.58434	0.0986
At most 1	0.334785	26.92288	29.79707	0.1035	0.334785	16.30579	21.13162	0.2075
At most 2	0.174035	10.61708	15.49471	0.2362	0.174035	7.648107	14.26460	0.4156
At most 3	0.071537	2.968976	3. 3.841466	0.0849	0.071537	2.968976	3.841466	0.0849

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Table 10. Results of the Long-Run Causality Test (2002-2011)

Vector Error Correction Estimates				
	LGDP	**LTUR**	**LEXPO**	**LRER**
Cointegrating equations	-0.025510	-0.402428	-0.279649	0.026990
	(0.05470)	(0.19000)	(0.06787)	(0.13883)
	[-0.46639]	[-2.11805]	[-4.12018]	[0.19441]
	Included observations: 124 after adjustments Standard errors in ( ) & t-statistics in [ ]			

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