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Preliminary paper

A LONG RUN EQUILIBRIUM RELATIONSHIP BETWEEN INTERNATIONAL TOURISM, HIGHER EDUCATION, AND ECONOMIC GROWTH IN NORTHERN CYPRUS

ABSTRACT

The relationship between internatiomal tourism and economic growth deserves further attention compared to tourism demand models over the years. This study employs the bounds test for co-integration and Granger causality tests to investigate a long-run equilibrium relationship between international tourism, higher education sector, and real income growth, and the direction of causality among themselves for the Turkish Republic of Northern Cyprus (TRNC), which is not recognized by countries other than Turkey. Results reveal that international tourism and higher education are in long-run equilibrium relationship with real income growth. The major finding of this study is that although TRNC suffers from political non-recognition and emgargoes since 1974, real income growth is stimulated by growth in international tourism and higher education sector as found from Granger causality tests.

Keywords: *International Tourism, Higher Education, Economic Growth, North Cyprus*

I. INTRODUCTION

International tourism is a major source of foreign exchange for small countries as well as the larger ones. Small countries, in particular small islands, have more dependency on tourism than the larger ones since their economies are based on only a few sectors. Especially, export-oriented services tend to represent unique characteristics of small islands and therefore provide a basis for a potential comparative advantage (Mehmet and Tahiroglu 2002). Eilat and Einav (2004) suggest that international tourism is driven by unique factors of production, and may be better dealt with in a single industry study rather than in a general equilibrium trade model. They also find that political risk is very important for tourism, and that exchange rates matter mainly for tourism to developed countries. There are huge amount of studies investigating empirical relationship between international trade and economic growth (especially, trade-led, export-led and import-led growth hypotheses), but this cannot be said about empirical relationship between international tourism and economic growth (Gunduz and Hatemi-J, 2005). Furthermore, results

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of the studies made for the relationship between international tourism and economic growth are still inconclusive (See also Katircioglu, 2009a; 2009b; 2009c; Gunduz and Hatemi-J, 2005).

There is an unverified question of whether tourism growth actually causes economic growth or does economic growth contributes to tourism growth instead. Empirical studies of the relationship between tourism and economic growth have been less rigorous in the tourism literature (Oh, 2005). International tourism receipts are a major source of foreign exchange together with export revenues that well compensate current account deficits as well due to the fact that tourism spending serves as an alternative form of exports contributing to ameliorated balance of payments in many countries (Oh, 2005). On the other hand, since international tourism contributes to every sector of the economies, budget deficits also benefits from these activities via tax revenues. As McKinnon (1964) argues international tourism brings foreign exchange that can be used to import intermediate and capital goods to produce goods and services, which in turn leads to economic growth. Balaguer and Cantavella-Jorda (2002) prove the validity of tourism-led hypothesis for the Spanish economy where the Spanish economy is the second largest recipient of international tourist earnings (5.9% of its GDP) in the world after the United States. However, there is a question if this hypothesis can be proved for other countries. Therefore, the tourism-led hypothesis deserves further attention for the other economies.

Gunduz and Hatemi-J (2005) empirically confirmed the TLG hypothesis for Turkey by making use of the leveraged bootstrap causality tests. They found unidirectional causality running from international tourist arrivals to economic growth of Turkey. On the other hand, Ongan and Demiroz (2005) also investigated the impact of international tourism receipts on the long-term economic growth of Turkey by using the Johansen technique and vector error correction modeling. They found that there was bidirectional causality between international tourism and economic growth in this country; which means an expansion in international tourism stimulates growth in the Turkish economy and growth in the Turkish economy stimulates an expansion in international tourism. However, unlike the findings of Gunduz and Hatemi-J (2005) and Ongan and Demiroz (2005), Katircioglu (2009a) rejects the TLG hypothesis for the Turkish economy using the Johansen approach and bounds test for cointegration. Both tests in the study of Katircioglu (2009a) did not reveal any long-run relationship (cointegration) between international tourism and economic growth in Turkey.

Katircioglu (2009b) confirmed long-run equilibrium relationship between international tourism and economic growth in South Cyprus. But, the TLG hypothesis was not confirmed for South Cyprus according to the results of Katircioglu (2009b); tourism growth is output-driven in South Cyprus. On the other hand, Katircioglu (2009c) again confirmed long-run equilibrium relationship between international tourism and economic growth in the case of Malta. Furthermore, Granger causality test results of Katircioglu (2009c) suggest that both the TLG and output-driven tourism hypotheses can be inferred for Malta since there is bidirectional causation between international tourism and economic growth.

Dristakis (2004) examined the impact of tourism on the long-term economic growth of Greece by using causality analysis and found evidence of bidirectional causality between international tourism and economic growth in the case of Greece. Cortés-Jiménez and Pulina (2006) supported the TLG hypothesis for Spain while they rejected it for Italy by using multivariate cointegration techniques and Granger causality tests. Sequeira and Nunes (2008) show that tourism is a

positive determinant of economic growth both in a broad sample of countries and in a sample of poor countries.

Aim and Importance of the Study

Having the importance of these issues mentioned above that deserves further attention, this study empirically investigates the possible co-integration and causal link between international tourism, higher education sector, and economic growth in a small island, Turkish Republic of Northern Cyprus (TRNC), which is not a recognized state other than the mainland Turkey and suffers from political isolation and economic and politic embargoes over the years. North Cyprus has a population more than 200,000 with 10,537 US$ per capita income (SPO, 2008) and is located in a strategic location of the earth. International tourism and the emergence of higher education sector are two major sources of foreign exchange to this small island since its foreign trade is under embargoes; but, tourism sector also faces great difficulties in attracting international tourists due to the embargoes.

There are important implications and motivations for doing this study: First, international trade plays an extremely important role amidst economic concerns. However, little mention is of international tourism, in spite of its importance among foreign expenditure items (Luzzi and Flückiger, 2003) and majority of empirical studies on tourism forecasting were built on tourism demand functions. As Shan and Wilson (2001) mention several areas remain incomplete in this sort of studies and hence deserve further studies. For example, the role of international trade as one of the determinants of tourism demand is not well recognized in these studies. Thus, this study will search the relationship of not only international tourism growth with economic growth but also of international students' flow with economic growth in this small island.

Second, the econometric techniques used in the previous studies of international tourism are generally poor lacking new developments in econometrics such as co-integration and Granger causality concepts (Shan and Wilson 2001; Lim 1997; Song et al. 1997; Witt and Witt 1995).

Third, there are very few studies in the literature analyzing the impact of education on the economic performance or growth. But to the best of authors' knowledge there is no empirical study investigating the relationship between higher education sector development and economic growth till the moment. Thus, this study is the first of its kind that it investigates long run equilibrium relationship and the direction of causality between higher education growth and economic growth in the case of North Cyprus.

And fourth, Cyprus problem has been at the agenda of world countries for more than 40 years. Now, the south of Cyprus became a member of the EU whereas the north of the island does not benefit the EU regulations. Thus, this situation will continue to deserve attention from the world countries and the results of this study are also expected to give important messages to policy makers.

Tourism and Emergence of Higher Education Sector in North Cyprus

The services sector was given priority basically as a result of political isolation and embargoes faced by North Cyprus in every field. The 1980s became a transition period from manufacturing industry to services with a focus on tourism and higher education. Tourism sector was also under embargoes so the island couldn't attract considerable arrivals of tourists to stimulate significant

growth in the economy. It was targeted to attract tourists from abroad by allowing and opening casinos in the island. Now, many casinos are opened in North Cyprus, which attract many tourists from Turkey and the south of Cyprus since casinos are not allowed in both countries. There were 715,749 tourists visiting Northern Cyprus in 2006 of which 80% were from Turkey. Net tourism revenues constituted 11.2% of gross domestic product (GDP) in 2007 (SPO, 2008).

On the other hand, the demand for higher education sector in North Cyprus showed a considerable increase by 1990s mainly because of Turkish students from Turkey and advertising in the other overseas countries especially in African countries. There are six universities in North Cyprus: Eastern Mediterranean University (EMU, the oldest and the largest one that was established in 1979), Near East University (NEU), Lefke European University LEU), Girne American University (GAU), Cyprus International University (CIA) and North Cyprus Campus of Middle East Technical University (from Turkey) (METU). At the beginning of 2005-2006 academic year, there were 41,865 students studying at these six universities of which 25.3% were Turkish Cypriots, 68.3% were from the mainland Turkey, and 6.5% were from various overseas countries (SPO, 2008). Overseas students have been coming to North Cyprus for higher education since 1982. Afterwards there has been a steady increase in the number of overseas students from more than 68 countries around the world as more universities were established in the country. Having internationally recognized universities with accredited diplomas in North Cyprus contributes to the image of North Cyprus in international arena also through international conferences, seminars, social, cultural and sports activities (SPO, 2008). The expansion of infrastructure and facilities at the universities of North Cyprus continues at an unprecedented rate and may now be compared favorably to their international counterparts. Therefore, higher education sector has now been the most important sector in North Cyprus earning considerable foreign exchange and contributing to this small and non-recognized island state.

The paper proceeds as follows. Section 2 defines data and methodology of the study. Section 3 provides results and discussions and the paper concludes with Section 4.

II. DATA AND METHODOLOGY

Data used in this paper are annual figures covering the period 1979 – 2007 and variables of the study are real gross domestic product (GDP), total number of international tourists visiting and accommodating in tourist establishments of Northern Cyprus, total number of students studying at higher education institutions of North Cyprus and real exchange rates. Data were taken from State Planning Organization of Northern Cyprus (SPO, 2008) and variables except tourists and the number of higher education students are all at 2000 constant US Dollar prices.

There are several alternatives to measure tourism variable in the literature as also mentioned by Gunduz and Hatemi-J (2005): Tourism receipts, the number of nights spent by visitors from abroad and the number of international tourist arrivals from abroad. Since the great majority of higher education students in North Cyprus come from the other countries, higher education variable was proxied by total number of students studying at these institutions of the island. This is justified by the fact that student tourism is a part of international tourism. On the other hand, the bounds and Granger causality tests in this study are all trivariate systems using the real exchange rates as well. Oh (2005), Gunduz and Hatemi-J (2005) and Balaguer and Cantavella-Jorda (2002) suggest real exchange rates to be included in the existence of international tourism in order to deal with potential omitted variable problem. Thus, not only in the existence of international tourism but also in the existence of higher education, real exchange rates were

added to the bounds and Granger causality tests, which were calculated by multiplying Turkish Lira per US dollar and consumer price index (2000 = 100) in the United States, and then dividing it by consumer price index (2000 = 100) in North Cyprus.

The Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP)[4] Unit Root Tests are employed to test the integration level and the possible co-integration among the variables (Dickey and Fuller 1981; Phillips and Perron 1988). The PP procedures, which compute a residual variance that is robust to auto-correlation, are applied to test for unit roots as an alternative to ADF unit root test.

To investigate long-run relationship between each pair of variables under consideration, the bounds test for co-integration within ARDL (the autoregressive distributed lag) modeling approach was adopted in this study. This model was developed by Pesaran et al. (2001) and can be applied irrespective of the order of integration of the variables (irrespective of whether regressors are purely I (0), purely I (1) or mutually co-integrated). The ARDL modeling approach involves estimating the following error correction models:

$$\Delta \ln Y_t = a_{0_Y} + \sum_{i=1}^{n} b_{i_Y} \Delta \ln Y_{t-i} + \sum_{i=0}^{n} c_{i_Y} \Delta \ln X_{t-i} + \sum_{i=0}^{n} d_{i_Y} \Delta \ln Z_{t-i} + \sigma_{1_Y} \ln Y_{t-1} + \sigma_{2_Y} \ln X_{t-i} + \sigma_{3_Y} \ln Z_{t-1} + \varepsilon_{1t} \quad (1)$$

$$\Delta \ln X_t = a_{0_X} + \sum_{i=1}^{n} b_{i_X} \Delta \ln X_{t-i} + \sum_{i=0}^{n} c_{i_X} \Delta \ln Y_{t-i} + \sum_{i=0}^{n} d_{i_X} \Delta \ln Z_{t-i} + \varpi_{1_X} \ln X_{t-1} + \varpi_{2_X} \ln Y_{t-i} + \varpi_{3_X} \ln Z_{t-i} + \varepsilon_{2t} \quad (2)$$

In equations (1) and (2), Δ is the difference operator, $\ln Y_t$ is the natural log of the dependent variable, $\ln X_t$ and $\ln Z_t$ are the natural logs of the independent variables and ε_{1t} and ε_{2t} are serially independent random errors with mean zero and finite covariance matrix.

Again, in equations (1) and (2), the F-test is used for investigating a (single) long-term relationship in a trivariate system. In the case of a long-term relationship, the F-test indicates which variable should be normalized. In equation (1), when lnY is the dependent variable, the null hypothesis of no cointegration is H_0: $\sigma_{1Y} = \sigma_{2Y}$ $\sigma_{3Y} = 0$ and the alternative hypothesis of cointegration is H_1: $\sigma_{1Y} \neq \sigma_{2Y} \neq \sigma_{3Y} \neq 0$. On the other hand, in equation (2), when lnX is the dependent variable, the null hypothesis of no cointegration is H_0: $\varpi_{1Y} = \varpi_{2Y} = \varpi_{3Y} = 0$ and the alternative hypothesis of cointegration is H_1: $\varpi_{1Y} \neq \varpi_{2Y} \neq \varpi_{3Y} \neq 0$.

In the case of co-integration based on the bounds test, the Granger causality tests should be done under the vector error correction model (VECM) since the variables under consideration are co-integrated. By doing so, the short-run deviations of series from their long-run equilibrium path are also captured by including an error correction term (See also Narayan and Smyth, 2004). Therefore, error correction models of co-integration under the trivariate system in this study can be specified as follows:

$$\Delta \ln Y_t = \alpha_0 + \varphi_{11}^{p}(L) \Delta \ln Y_t + \varphi_{12}^{q}(L) \Delta \ln X_t + \varphi_{13}^{r}(L) \Delta \ln Z_t + \delta ECT_{t-1} + \mu_{1t} \quad (3)$$

[4] PP approach allows for the presence of unknown forms of autocorrelation with a structural break in the time series and conditional heteroscedasticity in the error term.

$$\Delta \ln X_t = \alpha_1 + \varphi_{21}^{p}(L)\Delta \ln X_t + \varphi_{22}^{q}(L)\Delta \ln Y_t + \varphi_{23}^{r}(L)\Delta \ln Z_t + \delta ECT_{t-1} + \mu_{2t} \qquad (4)$$

Where

$$\varphi_{11}^{p}(L) = \sum_{i=1}^{P_{11}} \varphi_{11,i}^{p} L^i \qquad \varphi_{12}^{p}(L) = \sum_{i=0}^{P_{12}} \varphi_{12,i}^{p} L^i \qquad \varphi_{13}^{p}(L) = \sum_{i=0}^{P_{13}} \varphi_{13,i}^{p} L^i$$

$$\varphi_{21}^{p}(L) = \sum_{i=1}^{P_{21}} \varphi_{21,i}^{p} L^i \qquad \varphi_{22}^{p}(L) = \sum_{i=0}^{P_{22}} \varphi_{22,i}^{p} L^i \qquad \varphi_{23}^{p}(L) = \sum_{i=0}^{P_{23}} \varphi_{23,i}^{p} L^i$$

In equations (3) and (4), Δ denotes the difference operator and L denotes the lag operator where $(L)\Delta \ln Y_t = \Delta \ln Y_{t-1}$. ECT_{t-1} is the lagged error correction term derived from the long-run co-integration model. Finally, μ_{1t} and μ_{2t} are serially independent random errors with mean zero and finite covariance matrix. Finally, according to the VECM for causality tests, having statistically significant F and t ratios for ECT_{t-1} in equations (3) and (4) would meet conditions to have causation from X to Y and from Y to X respectively.

III. RESULTS AND DISCUSSIONS

Table 1 gives ADF and PP unit root test results for the variables under consideration. Real GDP, tourist arrivals, and RER variables are non-stationary at their levels but stationary at their first differences whereas higher education variable is stationary at its level as confirmed by both ADF and PP tests. Therefore, y, T, and RER are said to be integrated of order one, I (1), whereas HE is said to be integrated of order zero, I (0).

Table 1

ADF and PP Tests for Unit Root

Statistics (Level)	ln y	lag	ln T	lag	ln HE	lag	ln RER	lag
τ_T (ADF)	-1.89	(1)	-2.52	(0)	-0.90	(2)	-1.45	(0)
τ_μ (ADF)	1.62	(0)	0.22	(0)	-10.27*	(3)	-1.56	(0)
τ (ADF)	2.11	(0)	2.05	(0)	0.47	(3)	-0.04	(0)
τ_T (PP)	-1.52	(1)	-2.63	(2)	-1.51	(27)	-1.29	(3)
τ_μ (PP)	1.29	(2)	0.13	(1)	-10.94*	(27)	-1.68	(2)
τ (PP)	1.62	(3)	1.92	(1)	2.61	(3)	-0.04	(2)
Statistics (First Difference)	Δln y	lag	Δln T	lag	Δln HE	lag	Δln RER	lag
τ_T (ADF)	-4.47*	(0)	-4.60*	(0)	-5.46*	(1)	-5.81*	(0)
τ_μ (ADF)	-3.75*	(0)	-4.56*	(0)	-1.16	(3)	-4.93*	(0)
τ (ADF)	-3.40*	(0)	-4.10*	(0)	-1.64***	(3)	-5.02*	(0)
τ_T (PP)	-4.48*	(1)	-4.60*	(0)	-4.49*	(3)	-6.00*	(4)
τ_μ (PP)	-3.77*	(3)	-4.56*	(0)	-3.89*	(1)	-4.93*	(2)
τ (PP)	-3.45*	(3)	-4.10*	(2)	-3.01*	(2)	-5.02*	(2)

Note:

y represents real gross domestic product; T is the total number of tourist arrivals; HE is the total number of students in the higher education institutions; and RER is real exchange rates. All of the series are at their natural logarithms. τ_T represents the most general model with a drift and trend; τ_μ is the model with a drift and without trend; τ is the most restricted model without a drift and trend. Numbers in brackets are lag lengths used in ADF test (as determined

by AIC set to maximum 3) to remove serial correlation in the residuals. When using PP test, numbers in brackets represent Newey-West Bandwith (as determined by Bartlett-Kernel). Both in ADF and PP tests, unit root tests were performed from the most general to the least specific model by eliminating trend and intercept across the models (See Enders, 1995: 254-255). *, ** and *** denote rejection of the null hypothesis at the 1%, 5% and 10% levels respectively. Tests for unit roots have been carried out in E-VIEWS 5.1.

Unit root tests have provided mixed results for the variables of this study. Therefore, bounds test will be employed in this study to investigate long-run equilibrium relationship between international tourist arrivals and real GDP, and between higher education sector and real GDP for North Cyprus within the ARDL modeling approach as suggested by Pesaran et. al (2001). Critical values for F and t statistics for small samples are presented in Table 2 as taken from Narayan (2005) to be used in this study. Table 3 gives the results of the bounds test for cointegration by a trivariate system (including real exchange rates) between real GDP and international tourist arrivals to North Cyprus, and between international students' flow to North Cyprus under three different scenarios as suggested by Pesaran, et al. (2001: 295-296), which are with restricted deterministic trends (F_{IV}), with unrestricted deterministic trends (F_V) and without deterministic trends (F_{III}). Intercepts in these scenarios are all unrestricted[5].

Table 2

Critical Values for ARDL Modeling Approach

	0.10		0.05		0.01	
k = 3	I (0)	I (1)	I (0)	I (1)	I (0)	I (1)
F_{IV}	3.38	4.27	4.05	5.09	5.67	6.99
F_V	3.87	4.97	4.68	5.98	6.64	8.31
F_{III}	5.33	7.06	3.71	5.02	5.33	7.06
t_V	-3.13	-3.84	-3.41	-4.16	-3.96	-4.73
t_{III}	-2.57	-3.46	-2.86	-3.78	-3.43	-4.37

Source: Narayan (2005) for F-statistics and Pesaran et. al (2001) for t-ratios.

NOTES: (1) k is the number of regressors for dependent variable in ARDL models, F_{IV} represents the F statistic of the model with unrestricted intercept and restricted trend, F_V represents the F statistic of the model with unrestricted intercept and trend, and F_{III} represents the F statistic of the model with unrestricted intercept and no trend. (2) t_V and t_{III} are the t ratios for testing $\sigma_{1Y} = 0$ in Equation (1) and $\varpi_{1Y} = 0$ in Equation (2) respectively with and without deterministic linear trend.

Table 3

The Bounds Test for Co-integration

	With Deterministic Trends			Without Deterministic Trend		
Variables	F_{IV}	F_V	t_V	F_{III}	t_{III}	Conclusion
						H_0
(1) y and T						
F_y (y / T, RER)	5.84[c]	5.63[c]	-2.19[a]	4.51[a]	-0.19[a]	Rejected
F_T (T / y, RER)	6.83[c]	6.60[c]	-2.28[a]	13.22[c]	-2.09[a]	Rejected
(2) y and HE						
F_y (y / HE, RER)	5.88[c]	6.39[c]	-1.88[a]	6.97[b]	-1.53[a]	Rejected
F_{HE} (HE / y, RER)	3.15[b]	1.98[a]	-1.17[a]	1.90[a]	-0.99[a]	Inconclusive

[5] For detailed information, please refer to Pesaran, et al. (2001), pp. 295-296.

Note: Akaike Information Criterion (AIC) and Schwartz Criteria (SC) were used to select the number of lags required in the co-integration test. Both gave the same level of lag order, VAR= 1. F_{IV} represents the F statistic of the model with unrestricted intercept and restricted trend, F_V represents the F statistic of the model with unrestricted intercept and trend, and F_{III} represents the F statistic of the model with unrestricted intercept and no trend. t_V and t_{III} are the t ratios for testing $\sigma_{1Y} = 0$ in Equation (1) and $\varpi_{1Y} = 0$ in Equation (2) respectively with and without deterministic linear trend. [a] indicates that the statistic lies below the lower bound, [b] that it falls within the lower and upper bounds, and [c] that it lies above the upper bound.

Results in Table 3 suggest that the application of the bounds F-test using ARDL modeling approach suggest a level relationship between international tourist arrivals and real GDP in both models where T and GDP are dependent variables respectively. The null hypotheses of H_0: $\sigma_{1Y} = \sigma_{2Y} = \sigma_{3Y} = 0$ and H_0: $\varpi_{1Y} = \varpi_{2Y} = \varpi_{3Y} = 0$ can be rejected according to F_{III}, F_{IV} and F_V scenarios. On the other hand, results of bounds tests have shown that there is a level relationship between higher education growth and real income growth in North Cyprus only when real income is dependent variable as can be seen from Table 3 since the null hypothesis of H_0: $\sigma_{1Y} = \sigma_{2Y} = \sigma_{3Y} = 0$ can be rejected according to F_{III}, F_{IV} and F_V scenarios. The second model where HE is dependent does not provide any evidence for cointegration. Finally, the results from the application of the bounds t-test in each ARDL model do not allow for the imposition of the trend restrictions in the models since they are not statistically significant (See Pesaran, et al., 2001: 312).

Table 4

Granger Causality Tests

Lag Level	1		2		3		
Null Hypothesis	**F – Stat**	**t_{ECTt-1}**	**F – Stat**	**t_{ECTt-1}**	**F – Stat**	**t_{ECTt-1}**	**Result**
(1) y and T							
T does not Granger cause y	5.99*	-3.78*	5.80*	-3.46*	5.29*	-2.24**	T ⇒ y
y does not Granger cause T	0.18	0.26	0.18	0.38	0.16	-0.23	
(2) y and HE							
HE does not Granger cause y	12.80*	-5.60*	4.42*	-2.53**	4.90*	-2.03***	HE ⇒ y

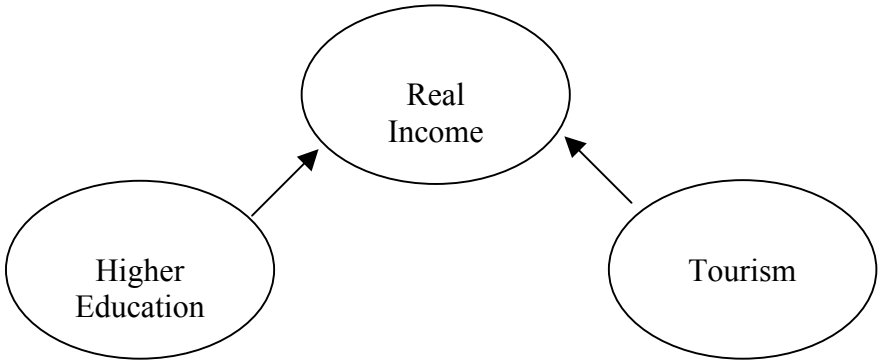
Note: 1. *, ** and ** significance at 1%, 5% and 10% levels respectively.

Having cointegrated relationships in bounds tests, the direction of causality can be now searched within the VECM mechanism as a long-run context. There are methods for lag length selection in the recent literature such as AIC (Akaike Information), SIC (Schwartz Information Criterion) and Hsiao's (1979) sequential procedure (which combines Granger's definition of causality and Akaike's minimum final prediction error (FPE) criterion). However, due to the limited number of observations in this study, maximum lag is set to 3 and VECM models were estimated for each lag length. Pindyck and Rubinfeld (1991) also point out that it would be best to run the test for a few different lag structures and make sure that the results were not sensitive to the choice of lag length. Results of VECMs are given in Table 4, which shows that there are unidirectional causalities that run from international tourist arrivals to real GDP and from higher education to

real GDP. The major finding of this study is that a growth in international tourism and higher education sector stimulates (precedes) a growth in the economy.

Figure 1

International Tourism, Student Tourism, and Economic Growth in Northern Cyprus



IV. CONCLUSION

This paper empirically investigated long-run equilibrium relationship between international tourism, higher education, and economic growth in TRNC, which suffers from political non-recognition, isolation, and embargoes since 1974. Results of the present study reveal that long-run equilibrium relationship exists between international tourism and economic growth, and between higher education and economic growth in this small island. The major finding of this study is that economic growth in Northern Cyprus is international tourism and higher education sector driven. This is to say that both tourism-led growth and higher-education-led growth hypotheses are confirmed for Northern Cyprus as also can be seen in Figure 1 according to the results of Granger causality tests in this study. This finding is very important for such an isolated economy and for also policy makers as well as academicians in the field due to the fact that tourism and higher education significantly contributes to North Cyprus economy. Furthermore, this study has shown that Turkish Cypriot authorities should give more attention for promoting universities as well as international tourism for the island. Private sector investments in improving infrastructure and facilities should be encouraged by government to enhance better infrastructure, quality and professional service both at the universities and the hotels since they are two main parts of international tourism in North Cyprus. Encouraging infrastructure and facilities in higher education institutions and the hotels will mean a greater flow of international tourist and student arrivals to Cyprus, because it is mainly customer satisfaction that will attract more tourists and students from abroad.

Finally, this study has shown that tourism and growth relationship still deserves further attention from researchers for comparison purposes since its results contradict with some and are consistent with some other studies in the relevant literature.

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DUGOROČNI ODNOS RAVNOTEŽE IZMEĐU MEĐUNARODNOG TURIZMA, VIŠEG OBRAZOVANJA I GOSPODARSKOG RASTA U SJEVERNOM CIPRU

SAŽETAK

Veza međunarodnog turizma i gospodarskog rasta zaslužuje daljnju pažnju u usporedbi s modelima turističke potražnje tijekom godina. Istraživanje koristi bounds test za kointegraciju i Grangerove testove kauzalnosti kako bi se istražio dugoročni odnos ravnoteže međunarodnog turizma, sektora višeg obrazovanja i rasta realnog prihoda, te pravca kauzalnosti među njima za Tursku Republiku Sjeverni Cipar (TRNC) koju u međunarodnoj zajednici priznaje samo Turska. Rezultati pokazuju da se međunarodni turizam i više obrazovanje nalaze u odnosu dugoročne ravnoteže s rastom realnog prihoda. Najznačajniji nalaz ovog istraživanja je da iako TRNC nije politički priznata i pod embargom je od 1974., rast realnog prihoda je stimuliran rastom međunarodnog turizma i sektorom višeg obrazovanja kako pokazuju Grangerovi testovi kauzalnosti.

***Ključne riječi**: Međunarodni turizam, više obrazovanje, gospodarski rast, Sjeverni Cipar*