EMPIRICAL INVESTIGATION OF THE RELATIONSHIP BETWEEN TOURISM RECEIPTS AND SUSTAINABLE ECONOMIC GROWTH IN SRI LANKA

A.M.M. Mustafa and Dr. S. Santhirasegaram

Department of Management, South Eastern University of Sri Lanka.

Corresponding Author: A.M.M. Mustafa

Abstract

Tourism is one of the largest and fastest growing industries in the world. Tourism has become one of the most significant sectors in many developing countries. Tourism has been identified as one of key industries in promoting sustainable economic growth and development of Sri Lanka. The aim of this study is to investigate long-run and short-run relationship between tourism and economic growth in Sri Lanka. Using annual data covering the period of 1978 to 2011. Minitab, Excel and E-views software were used for data analysis. Time-series econometrics techniques were used, namely Augmented Dickey-Fuller (ADF) for unit root test, Engle-Granger for co-integration, and Granger causality test for causal relationships. The findings of the study showed that there is a positive relationship between tourism receipts and economic growth in the long-run and Granger causality test results revealed that the unidirectional causality from tourism earnings helped the economic growth. The results of this study suggests that government should focus on economic policies to promote more international tourism as a potential source for sustainable economic growth in Sri Lanka

Keywords: tourism; economic growth; foreign direct investment, cointegration, causality

Over the past six decades, tourism had experienced continuous expansion and has become a significant source of global economic output. Tourism has been identified as one of the fastest growing industry in the world. According to the United Nation World Tourism Organization (UNWTO), tourist visits have grown from about 900 to 940 million last year and the figure is projected to rise to 1.6 billion by the year 2020 and UNWTO states that tourism is the largest industry in the world with an estimated 11.5 percent of the world GDP and employing about 12.5 percent of the world's work force.(Halter & Randle, 2012). International tourist arrivals calculated as 25 million in 1950, 278 million in 1980,528 million in 1995, and 1,035 million in 2012 and 1.8 billion tourist arrivals are forecasting the year 2030 (UNWTO,2013). The direct contribution of Travel & Tourism to GDP in 2012 was 2.9%. This is forecasted to rise by 3.1% in 2013(Travel & Tourism, 2013).

Sri Lankan government has identified the Tourism sector as a key growth area in post-war development with an ambitious target of attracting 2.5 million visitors by 2016. Sri Lanka has 39 tourist attractions all over the island (Ismail, et.al., 2012). Meanwhile, tourism industry led to 57786 direct employments in 2011, whereas in 1998 it was only 1338. Income received from tourism was Rs. 18,863.3 million in 2001, 91926 Million in 2011 (Tourism Development Authority, 2011). It was expected to increase \$2.75 billion by 2016 (Asian Traveler, 2011). Such development in tourism industry has happened in Sri Lanka. As tourist arrivals have continuously increased since the end of the 30 years long war in May 2009, the Sri Lankan government is ensuring that the building blocks for sustainable economic growth are being developed simultaneously with major infrastructure projects such as express highways, airports and seaports. Especially, tourist arrivals towards Sri Lanka have suddenly increased during the post-war period. Almost, 39 tourist attractive places have been identified in the island. Especially, the development progress in Sri Lanka is happening in almost all sectors in the post war environment. The end of three decades-war facilitated a prosperous future for the people in Sri Lanka and a booming situation in terms of economy and business.

International tourist arrivals to Sri Lanka increased from 192592 in 1978 to1005605 in 2012 (Tourism Development Authority, 2011 & 2012). In particular, the contribution of Travel & Tourism to Gross Domestic Product was 3.8 % in 2012 in Sri Lankan economy (Travel & Tourism, 2013). The Board of Investment (BOI), the agency tasked with attracting Foreign Direct Investments (FDI) to Sri Lanka, has been playing a pivotal role in executing this strategy by attracting top tier tourism and hotel investors to the country. Sri Lanka has expected tourism to be an important growth mechanism, as it provides an important source of foreign exchange earnings. Thus, there is a need to investigate the impact of tourism on economic growth in Sri Lanka by the way of empirical time series investigation. The findings of this study will provide important implications for policy decisions and the development of the tourism in the country.

Tourism is assumed to benefit a developing country like Sri Lanka. Moreover; the development of the tourism sector appears to have been as important as the development of other sectors of the economy of Sri Lanka. It plays a key role in the Sri Lankan economy; a little attention has paid to this sector in the academic literatures. Compare with other economic sources of the country, tourism industry has been viewed in a below ranking due to country's traditional oriented agricultural and manufacturing economy. However, tourism should

be focused as very significant source of the country's economy because of relating natural aspects. Empirical data reveals that Sri Lanka the countries like Malaysia, Singapore and Spain have many potentials to invite foreign direct investment through the tourism means. Hence, this study is formulated to expose this significant of the tourism sector. In this way, this study will lead to focus tourism sector as main source to invite foreign direct investment into country and it will also provide implications of tourism to develop the country nationally. Therefore, since this study will attempt to clear the tourism and economic growth, it has also an intension to develop the tourism sector in terms of economic booming of the country. In this regards, this study will contribute knowledge for future studies and it will also contribute to reorient the existing knowledge in the field of tourism and sustainable economic growth

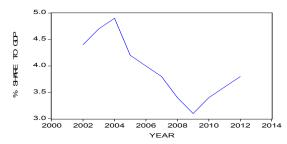


Figure 1 –Sri Lanka – Behavior of share of Travel & Tourism to GDP

(Source: World Travel and Tourism Council Data, 2013)

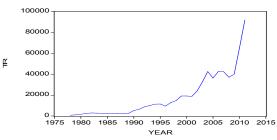


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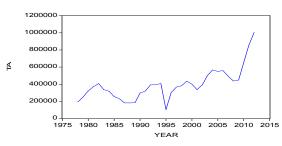


Figure 3 – Sri Lanka – Tourist Receipts Behavior

(Source: Sri Lanka Tourism Development Authority, 2012)

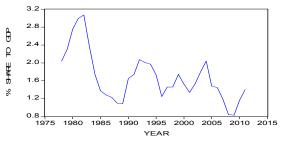


Figure 4 – Sri Lanka – Behavior of share of Tourist Receipts to GDP

(Source: Sri Lanka Tourism Development Authority, 2012and Central Bank of Sri Lanka, 2012)

LITERATURE REVIEW

Empirically, the analyses of tourism development and the economic growth relationships have been conducted for different countries in different years and employing different methods. For instance, Fayissa (2007) use a panel data of 42 African countries show that receipts from the tourism industry significantly contributed to the economic growth of African countries. Findings of this study implied that African economy could enhance shortrun economic growth strategically strengthening their tourism industries. But, Kreishan (2011) found a positive unidirectional linkage between tourist receipts and economic growth in the long run for the period of 1970 to 2009 in Jordan. The findings of the study showed that there is a positive relationship between tourism development and economic development in the long-run. The results of this study suggest the government should focus on economic policies to promote international tourism as a potential source of economic growth in Jordan. Gautam (2011) studied that tourism and economic growth in Nepal. Results found that cointegration test has been done for ascertaining long run relationship and error correction method for short run dynamics. Granger Causality test has been applied to determine causal relationship between these variables. The evidence confirms the conventional wisdom of tourism development, that tourism (represented by foreign exchange earnings) causes economic growth both in short and long run. The result also indicates bidirectional causality between these variables. Suresh, et. al. (2011) examined the relationship between economic growth and international trade in India as well as at the international perspective over years. The co-integration analysis results indicate the existence of a long-run relationship among the study variables. But we could not find any short-run relationship among the study variables in the VECM analysis, despite the significant error correction term. Samimi, et. al.(2011) examines the causality and long-run relationships between economic growth and Tourism development in developing countries using P-VAR approach during 1995-2009. The findings reveal that there is a bilateral causality and positive longrun relationship between economic growth and Tourism development. Khalil et. al. (2007) examined the role of tourism receipts in the short-run economic development in Pakistan through ECM during 1960-2005. The result revealed that economic expansion is necessary for tourism development in Pakistan. Katirciogclu (2010) examines the tourism-led growth in Singapore using annual data from 1960 to 2007. The study found the existence of a long-run equilibrium relationship between international tourism and economic growth, hence confirming the tourism-led growth in the long run. Kibara, et. al., (2012) studied about tourism and economic growth in Kenya. They examine the dynamic relationship between tourism sector development and economic growth- using annual time-series data from Kenya. The results of our study show that there is a unidirectional causality from tourism development to economic growth. The results are found to hold irrespective of whether the causality is estimated in the short run and long run. Tang (2011) analyzed that the tourism-growth nexus for Malaysia with the cointegration and Granger causality tests. In terms of Granger causality, this study finds different sources of causality. In the short run, real output and real effective exchange rate Granger-cause tourist arrivals, while tourists arrivals also Granger-cause real output and real effective exchange rate. In the long run, this study shows that all the variables are bi-directional causality. Assadzadeh, et. al. (2009) investigated the relationship between tourism industry and gross domestic product of Iran during 1968-2007. Also the causal relationship between income obtained from tourism and GDP is investigated using the Granger and Hsiao causality tests. The results of the cointegration test suggest a long-run positive relationship between mentioned variables and the income obtained from tourism. Also causality tests showed that there was bidirectional. Dragouni et. al. (2013) studied that the time-varying relationship between tourism and economic growth in selected European countries. Overall, the findings suggest that the tourismeconomy relationship is not stable over time in terms of both its magnitude and Direction the relationship exhibits patterns in its magnitude and direction during major economic events. Dritsakis (2004) studied the impact of tourism on long-term economic growth in Greece using Granger causality test in a paper entitled "tourism, longterm economic growth factor. Gross domestic product (GDP), real effective foreign exchange rate and international tourism income were the applied variables in this paper during the years 1960-2000. At last, Granger causality tests based on error correction models showed existence of a strong causality relationship between incomes obtained from international tourism and economic growth. Also, there had been significant causal relationships between effective foreign exchange rate and economic growth as well as effective foreign exchange rate and incomes obtained from international tourism during the intended period in Greece. This study is conducted in impact of tourism on economic growth in Sri Lanka. It is primarily analyzing the Sri Lankan situation based on models derived from above review of literatures.

METHODOLOGY

This study use annual data for the period from 1978 to 2011. Data for this study have been collected from the Sri Lanka Tourism Development Authority –Annual Statistical Report, World Investment Reports 1990 - 2012, Central Bank Annual Reports 1977 – 2012, The

World Tourism Organization is the United Nations (UNWTO) and Economic and Social Statistics in Sri Lanka 1990 - 2012. Variables of the is study are Gross Domestic Product (GDP) to measure the value of economic growth and tourism receipts(TR) as proxies of tourism activity, Foreign Direct Investment (FDI), Economic Freedom Index (EFI)and Dummy variable(D) dummy variable has been defined 1 for no war period and0 for war period. GDP,TR,FDI variables were transformed by the use of natural logarithms (LGDP,LTR,LFDI,LEFI). The data analysis involves three steps; stationary property of each time series is first tested using Augmented Dickey-Fuller, Co-integration test is performed in the second step to identify the existence of the long run relationship between the variables. In the third step, error correction mechanism and Granger Causality test are performed to find the short run relationship and casual relationship between tourism and economic growth. E-views, Excel, and Minitab statistical software were used for the data analysis.

The following function is used for testing the contribution of TR to GDP in Sri Lanka.

$$Y = f(TR, FDI, EFI, D)$$
.....(1)

Where y is Gross Domestic Production (GDP), TR is tourism receipts, FDI is Foreign Direct Investment, EFI is Economic Freedom Index and D is Dummy variable. Using long transformation the model is stated as follows, $\log GDP = \beta_1 + \beta_1 \log TR + \beta_2 \log FDI + \beta_3 \log FI + \beta_4 D + \varepsilon$(2)

RESULTS AND DISCUSSION

Graphical presentation of data is very useful to identify the trend and underlying relationship between the variables. The Kernel Fit, Nearest Neighbor Fit and Confidence ellipse graphs show that strong positive relationship between GDP and TR,GDP and FDI. Also show GDP and TR,GDP and FDI series are highly correlated

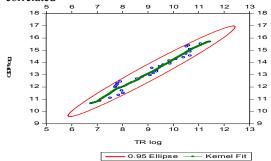
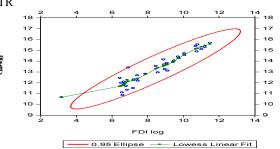


Figure 05 - Kernel Fit and Confidence ellipse (GDP & TR



Before the long-run relationship between tourism receipts and growth can be determined, it is important to carry out a univariate analysis. Thus, the first step in our

methodology is to determine whether the variables we use are stationary or non-stationary. If a series is non-stationary, then all the controversial regression results may mislead wrong conclusion, thereby leading to biased and meaningless results. The Augmented Dickey-Fuller(ADF) Unit Root Tests are performed on both the levels and the first differences of the variables. Results of

ADF tests for stationary are reported in Table 1. The null hypothesis of one unit root against the alternative of stationary cannot be rejected in levels of variables, but is rejected in their first differences. Therefore, variables are integrated of order one, I (1)

Table 01- Result of Unit Root Test (ADF statistics)

Variables	ADF Test	Intercept	Trend & Intercept	Decision
LGDP	Level	-1.51	-2.80	Non – Stationary
	First difference	-3.99**	-4.37**	Stationary
LTR	Level	-0.60	-2.47	Non – Stationary
	First difference	-3.99**	-3.89**	Stationary
LFDI	Level	-0.69	-2.44	Non – Stationary
	First difference	-8.64*	-8.32*	Stationary
LEFI	Level	-0.75	-3.07	Non – Stationary
	First difference	-6.10*	-6.05*	Stationary

Table 02 – Unit Root Test for Residual Cointegration Regression Equation

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RESID01(-1)	-0.628751 -0.001703	0.176841 0.029802	-3.555463 -0.057131	0.0014 0.9548
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-3.555463	0.0132
Test critical values:	1% level		-3.670170	
	5% level		-2.963972	
	10% level		-2.621007	

^{*}MacKinnon (1996) one-sided p-values.

According to the Engle- Granger Coeintegration analysis Unit Root Test for Residual of Coeintegration Regression Equation was perform by Augmented Dickey-Fuller test.ADF test statistics = -3.55, P value = 0.0132

According to the above table results conclude that residual is stationary. Estimating residual series of the cointegration regression is stationary, variables LGDP, LTR, LFDI, LEFI, are cointegrated. The JB test shows that residual is normal distributed.

According to the model selection statistics such as adjusted R^2 is very high, Akaike info criterion, Schwarz criterion, F-statistic, Prob (F-statistic) are appropriate. The model is when we turn in to the coefficient of determination, all the independent variables jointly explain the 97 % of total variation of GDP, it means this model is statistically appropriate to measure the relationship between economic performance and factors which affect to the economic performance specially

receipts from tourism. The model is overall significant at 1 % level.

1.95e-15

-0.030789

0.301709

-0.488802

0.170734

-0.373235

3.602456

1.188555

0.551961

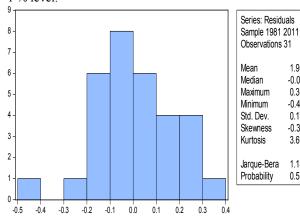


Figure 07 – Residual Distribution

Table 03 -Cointegration Regression Results

Variable	Coefficient	t Value	Probability (p)
β_0 (Intercept)	25.94532	4.490369	0.0001*
Tourist receipts (LTR)	0.657259	8.741260	0.0000*
ForeignDirect Investment (LFDI(-3))	0.106558	2.326342	0.0281**
Economic Freedom Index (LEFI)	-4.65444	-3.756654	0.0009*
Dummy variable(D)	-0.278542	-3.030205	0.0055*

R-Sq(adj) = 97%, Akaike info criterion -0.407629, Schwarz criterion-0.176340, F-statistic362.6189, Prob(F-statistic) 0.0000

According to the long run regression output presented in the above table results all the sign of coefficient the variables are theoretically expected, further, the estimated coefficient of TR indicates that, 1% increase in changes of TR will increase GDP only by 0.657%. The long run relationship between TR and GDP has been positively and statistically significant at 1% level. The estimated coefficient of FDI indicates that, 1% increase changes of FDI will increase GDP 0.106%. The long run relationship between FDI and GDP has been positively and statistically significant at 5% level. However, it reveals that the actual impact of FDI can be felt after certain time lag of three years. Economic Freedom Index the negative coefficient but statistically significant at 1% level. The dummy variable indicated for war and non war period used in this study is negatively and statistically significant at 1% level to determine GDP in the long run. The negative coefficient obvious in Sri Lanka that GDP growth in non-war period is relatively high compared with war period or average GDP growth degrees due to the war period high defense expenditure of the government.

Table 04 - Results of Error Correction Model (ECM), Dependent Variable: D(GDP LOG)

Dependent variable: D(GDP_LOG)				
Variable	Coefficient	t Value	Probabili ty (p)	
β_0 (Intercept)	0.133944	9.890813	0.0000*	
D(TR_LOG)	0.058396	0.839085	0.4097	
D(FDI_LOG(- 3))	0.002784	0.353065	0.7271	
D(LEFI)	- 0.108404	-0.752755	0.4589	
D01	0.013900	0.611395	0.5467	
RESID01(-1)	- 0.082608	- 2.481015	0.0205* *	
Durbin-Watson stat 1.73, Akaike info criterion -3.226184, Schwarz criterion-2.945945.				

^{*}Significant at 1% **Significant at 5%

According to the error correction model result adjustment speed coefficient of error correction term is statistically significant and has negative sign. The negative sign indicate that LGDP moves downwardly towards equilibrium path. It implies that 8.2% of the disequilibrium is corrected each year. This shows the downward adjustment of GDP towards equilibrium path adjustment rather slow.8.2 % of the GDP from equilibrium is adjusted within the period of one year. However short run effect impact multiplier of LTR, LFDI, LEFI,D variables are statistically not significant and has expected sign. This may be due to the fact civil

conflict and other politically motivated violent events influence the tourism arrivals in Sri Lanka in the short run period

Table 05 - The results of diagnostic tests based on the model

Tests	Statistics	Probability
Jarque-Bera (normality		0.5519
test)	1.188555	
	Fstatistics	0.5588
HeteroskedasticityTest:	0.350129Obs R-	0.5427
ARCH	squared	
	0.370505	
Bruesh-Godfrey Serial	F statistics	0.1539
Correlation LM test:	2.025256	0.1066
	Obs R-squared	
	4.476419	

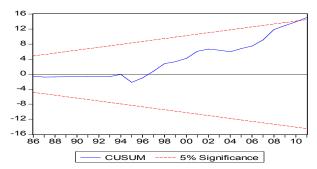


Figure 08 – Stability Test (Cusum)

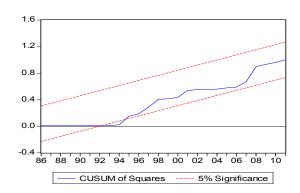


Figure 09 – Stability Test(Cusum of quares)

The results show that the model in the study has no non normality of errors, no autocorrelation, noheteroskedasticity, have well specified functional form and stable regressions. Therefore it can be concluded that the model applied in the study is robust and the

^{*}Significant at 1%

^{**}Significant at 5%

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specification of the model is an adequate representation of the data

Table 06 - Granger Causality Tests

Null Op Hypothesis: lag	timal S	F- Statisti c	Probability
TR does not Granger Cause GDP 1	6.	45265	0.0165
GDP does Granger Cause T	not		0.0033

The results shown in table 06 the causality does run from tourism receipts to economic growth in Sri Lanka. According to the Granger Causality Tests, TR statistically (p value = 0.0165) motivated GDP. The results show that there are two way causal relationships from TR to GDP and from GDP to TR in Sri Lanka.

CONCLUSION

The main goal of this study is to investigate the effect of tourism on the sustainable economic growth in Sri Lanka. The results show that the tourist receipt positively and statistically significant to determine GDP in the long run. The Granger causality test is then used to investigate the direction of causality between tourism and economic growth. Tourism receipts result in a effect in Sri Lanka where it not only leads to growth but also contributes to the multiplier effect. When tourists visit Sri Lanka, they on accommodation, food and transportation, recreation, culture, sports activities and shopping. The flow of money from tourism receipts is then recycled and re-spent in the itinerary which results in the multi-folds increased in income. Moreover, the incomes received from tourists do not only impact the tourism industries but will also spread to the other industries along the line. Therefore, it is worthwhile to continuously pay direct attention to this important sector to sustain economic growth. The policy makers' further improve promoting and increasing international tourism demand by providing the mandatory facilities and other motivators which encourage and attract more and more tourists to the nation.

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