I J A B E R, Vol. 14, No. 4, (2016): 2605-2613

CAUSALITY RELATIONSHIP BETWEEN GDP, FDI, TOURISM: EMPIRICAL EVIDENCE FROM INDIA

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Abstract: *Tourism is emerging as one of the most important sectors in the world economy. It is playing an important role as an efficient tool to promote economic growth of the host country. Since last few decades, the rapidly growing tourism in Indian economy is providing vast potential for generating employment and earning large amount of foreign exchange impacting country's overall economic and socio-cultural development. It is very important to examine the relationship between expanding tourism sector and economic growth in India. This paper attempt to investigate the causality between economic growth and Tourism selecting some indicators such as real gross domestic product, tourism foreign exchange earnings, foreign tourists arrival and FDI. The study using popular time series models for the period spanning from 199I to 2014, provides the evidence of long-run unidirectional causality from tourism activities to economic growth of the country. Therefore, government can considered this relationship as an important tool for policy implication to achieve sustainable growth in tourism and of the economy as well.*

Keywords: *Tourism, FDI, India, Economic Growth, Co integration, Granger Causality*

JEL Classification Code: *Z32, C21, C82, O11, L83, O24*

I. INTRODUCTION

Tourism is one of important sector in the world economy. The relation between tourism and economic development has been the focus of study and research in the resent years. Tourism has been emerging as the biggest industry to impact the overall growth of the economy (Lashkarizadeh, Gashti, & Shahrivar, 2010). Growing tourism in any economy not only leads to economic progress but also leads to progress of political, cultural and social environment of the host country. In various approaches, international tourism is clearly seen to influence on the long-term economic growth (Brida and Aguirre 2009). In the recent years tourism and FDI has emerged as important sector to achieve sustainable development for many developed and developing countries. Furthermore, it is argued that FDI and growth may not impact each other directly but indirectly FDI does impact infrastructure and human development. There is need to study this impact of FDI on growth (Karimi & Yusop, 2009). There is plenty of empirical and theoretical research analyzing the role of tourism and FDI in economic development.

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Performance of tourism sector in India has remained very encouraging for last few years. Foreign tourist arrivals showed promising signs. In 1981, 1.28 million of foreign tourists arrived in India, which slightly moved towards north to 1.68 million in 1991, to 2.54 million in 2001 and by 2014 foreign tourist arrival zoomed to 7.68 million, giving enough evidence that 'Brand India' is working. Period after 1991 provides enough evidence that FDI and GDP is impacting each other significantly due to LPG policies. Fact can also be cross-verified by states where foreign tourist arrival is more. States like Tamil Nadu, Maharashtra, Uttar Pradesh, and Delhi are such states contribute highest percentage in the number of foreign tourist arrival. These are the states which were net beneficiaries of LPG policies. Foreign exchange earnings from tourism are growing at 9.7% in 2014. World Travel and Tourism Council predicted that India will be a tourism hotspot from 2009-2018, having the highest 10-year growth potential.

It is very much clear from the review that tourism sector and FDI is growing with time but how this growth in tourism and FDI impact economic development is still need investigation, this paper attempts to examine the dynamics of the relationship between FDI, tourism sector and economic growth of India for the sample period of 1991 to 2014. The present study aims to find out the causality relationship between GDP, FDI, and Tourism. The main question to answer the question: Is there any long-run relationship between GDP, FDI, and tourism in India? And, if this relationship exists, what is the direction of this causal relationship between three of them?

Above stated the research problem, paper is organized in sections as follows: Section II literature review, Section III data and methodology, Section IV analysis of the data, and Section V conclude above study.

II. LITERATURE REVIEW

There exists huge amount of literature examining the impact of expanding tourism sector on the host country, but there is paucity of literature on whether its impact on economic growth is significant of not, especially for the country like India. Many studies in this aspect hold the view that tourism sector not only helps to generate household income but also the government income generating employment and foreign exchange respectively. As such, the developed tourism sector in any country has been considered a positive contribution to economic growth (Lee and Kwon, 1995; Lim, 1997). Keeping in view this positive contribution of tourism on economic growth many studies have examined the relationship between tourism and economic development and growth in a country. Durbarry (2002) using co-integration and causality tests for Mauritius provides the evidence of the tourism-led economic growth. Balaguer and Cantavella-Jorda (2002) investigated and confirmed the role of tourism in economic development of Spain in long run using co-integration and causality tests. Eugenio-Martin *et al* (2004)

examined the relationship between economic growth and tourism for Latin American countries from 1985 through 1998. The study concluded that developed tourism can contribute to the economic growth of low-income and medium income countries while there are no clear evidence regarding contribution of tourism led growth for developed countries. Dritsakis (2004) shows tourism led economic growth in long run for Greece. Tosun (1999), Guduz and Hatemi (2005) have also supported empirically the tourism-led growth in Turkey. Skerritt and Huybers (2005) examined the impact of international tourism on GDP per capita of 37 developing countries, and concluded that there exists a positive relation between both the variables. Kim *et al.* (2006) examined the causality between tourism development and economic growth for Taiwan and concluded mutual causal type long-term equilibrium relationship between tourism and economic growth. Wickremasinghe and Ihalanayake (2007) using annual data from 1960 to 2000 investigates the relation of growing tourism industry and economic development for Sri Lanka. The result shows a significant causal relationship from tourism revenue to the GDP of Sri Lank. Khalil *et al*. (2007) investigates the how tourism effect the short-run economic development in case of Pakistan through calculating causality between tourism receipts and economic expansion and error correction model. The results shows there is strong relationship among tourism receipts and economic development, implies that economic development is necessary for tourism development in Pakistan. Fayissa *et al*. (2007) examined relation between tourism industry and economic growth using a panel data of 42 African countries, and result shows that receipts there is significant relation in both for Sub-Saharan African countries. Lee and Chang (2008) examined direction of relationship between tourism and growth. The result shows unidirectional relationship between tourism and growth for OECD countries and bidirectional relationship for non-OECD countries. Po & Huang (2008) conducted a study on annual data for the period 1995-2005 in 88 countries and used non-linear model to determine the relationship between tourism and economic growth. Results confirmed significant and positive relationship between tourism and economic growth in such countries. In another study, Fayissa *et al*. (2009) investigated the impact of tourism on economic development of 17 Latin American countries using panel data for 1995 to 2004. The results show that there exists a positive relation between the revenue receipts from tourism to both the current GDP and economic growth. Schneider and Soknmez (2009) investigated the effect of image of destination on tourism industry in case of Jordan. Primary study was conducted to know the view point of tourists about Jordan. The study concluded a fair image of Jordan among tourists but it was suggested to improve the service and hospitality sector to develop tourism industry in Jordan. Salleh *et al*. (2011) used some variables related to trade and growth to conduct a study on ASEAN countries. The results shows a long-term correlation among foreign tourist arrival, economic growth and trade. Feridun & Sissoko (2011) examined the relationship between GDP and FDI using VAR and

Granger causality test for Singapore. They concluded that no evidence proved GDP and FDI had a unidirectional causality running from FDI to GDP. A. Moudatsou and D. Kyrkilis (2011) revealed that growth of the economy does motivate inward FDI in both developing and developed economies. On the contrary, this FDI support economic growth and there exists a bidirectional correlation between both. Mah (2010) used co-integration test to observe the causality between FDI inflows and economic growth in China during 1983-2001. Empirical results show that FDI inflows does not impact GDP, but GDP does cause FDI. Orieqat and Saymeh (2015) discussed the effects of growing tourism sector on the Jordanian economy. Research have examined Jordan tourism and its economic impact on growth of the economy. While the findings analysis pointed out that tourism does play important role in growth of economy but there is need to improve the quantity and quality of tourism resources.

There are some studies concluding no relation between tourism growth and economic growth such as Oh, (2005), Neves Sequeira & Campos, 2005. Herzer in his study examined data for 28 developing countries, result shows no effect of FDI on growth. No significant unidirectional long-term effect from FDI to GDP was found (Herzer, Klasen, & Nowak-Lehmann D, 2008). Karimi and Yusop paper's empirical findings of their study suggested a lack of significant evidences on a bi-directional causality between GDP and FDI. (Karimi & Yusop, 2009). Agrawal and Khan concluded that impact of FDI on China's growth is more than the impact of FDI on the growth of India and other variables are much significant to predict growth rather than FDI (Agrawal & Khan, 2011).

The direction of relation between growth of tourism industry and economic growth is still a puzzle to solve for the country like India. Though it is clear from the review that growing tourism does benefit the economy in one or the other way but there exists less literature about it as far as India is concerned. The paper aims to investigate the causal relationship between economic growth, foreign direct investment and tourism sector development in India.

III. DATA SOURCES

The data that has been set for this study is a time series data covering period from 1991 to 2014. Four variables- Gross Domestic Product, Foreign direct investment, Foreign Tourist Arrivals and Foreign Exchange Earnings have been selected for the study and the data for the same has been collected from the World Bank, Statistical Reports of Ministry of Tourism and Government of India. GDP is measured by million US dollar. Foreign exchange earnings (FEE) is also measured in terms of million US dollars, whereas the foreign tourist arrivals (FTA) is number of million tourist visitors and foreign direct investment is measured by (FDI) inward.

IV. METHODOLOGY

Granger causality test was applied to comprehend the direction of relationship among GDP, FDI and tourism. A set of criteria, known as Diagnostic test were applied before Granger test. The criterion method was as follow:-

4.1. Unit root test

To check the causal relation among selected variables, the first step is to determine whether time series data have unit root or not. If data have unit roots, implies data is non-stationary. It is important to convert this data into stationary as non-stationary data may lead to misleading results containing problem of spurious regression and results shows high R2 and t-statistics, that appear to be significant, but the results do not have any economic meaning (Enders, 2008). If the data is non stationary and have unit root, then regression results might be incorrect and misleading, in this case regression should never be used to analyze data (Koop, 2008). Thus it is very important to check the stationary of data. Augmented Dickey-Fuller (ADF) test is one of the most popular technique to check whether data has unit root or not. According to Greene (2003), the hypothesis to be examined with unit root test is

H0: There is a unit root (data series are non-stationary)

H1: There is no unit root (data series are stationary)

This paper used ADF method to test data is stationary or not. ADF test check serial correlation by adding lagged values of explanatory variables, for example represented as:

$$\Delta Yt = \beta 0 + Yt + \beta 1 Yt - 1 + \sum_{i=1}^{n} \delta 1 \Delta Yt - 1 + \epsilon t$$

Where: $\in$t = white noise error term while ΔY= Yt - Yt-1

4.2. Johansen's Co integration Test

Granger (1969) develop Co-integration method as a statistical tool to investigate a long term equilibrium relationships among variables. This method was developed in order to determine the linear combination of two or more non-stationary series that might be stationary. co-integrated and long run relationship is said to exist if such a stationary linear combination. Co-integration implies existence of causality between variables but direction of the causal relationship is not indicated by this method.

4.3. Granger Causality

Granger Causality test is applied to forecast one time series from another one (Granger, 1969). The main assumption of Granger causality is that a variable X

Granger causes Y if Y can be better predicted using the histories of both X and Y than it can use the history of Y alone. If in the long run co-integration exists between any two variables, and then there must be either bi directional or unidirectional Granger Causality between these two variables. Granger Causality is employed for determination of direction of causality both in short and long run. Basic estimation model for two variable GDP and FTA is mathematically presented as:

$$LnGDPt = \beta 0 + \beta 1 \text{ Ln FTA} + \in t$$

Where coefficient β1 is, expected to positively determine economic growth in both long run and short run.

V. RESULTS AND DISCUSSION

As the first and most important step is to check the stationary of time series data to determine the order of integration for all of the four variables used in the study. Augmented Dickey-Fuller unit root test has been used for the analysis of data. The results of unit root test are reported in Table-1 and It is clear from the results that the null hypothesis of no unit roots for all the time series are rejected at their second differences as the ADF test statistic values are less than the critical values at 1%, 5% and 10% levels of significances. Thus, all the variables are stationary and integrated of same order, i.e. I(2). From the order of integration it is confirmed, how many times data need to be differentiate to become stationary. Once data is stationary we can use it for further analysis

Table 1
Results of Augmented Dickey-Fuller Unit Root Test

Variables with Intercept	*Level*	*First Difference*	*Second Difference*
GDP	7.466*(1.0000)	-1.437**(0.5454)	-4.902**(0.0011)
FDI	0.768*(0.8091)	-1.437**(0.0003)	-5.687**(0.0002)
FEE	2.653*(1.0000)	-3.084**(0.0426)	-6.632**(0.0000)
FTA	2.529*(0.9999)	-1.112**(0.6898)	-6470**(0.0000)

Note: ** denotes the rejection of the null hypothesis of unit root at the 5% level.

Next, to test the co-integration between stationary variables Johansen's co-integration test has been applied and results are concluded (in Table 1) on the basis of trace value and maximum eigen value tests. Both Trace test and maximum Eigen value indicate that these variables are integrating at 1%, 5% and 10% level of significance. This test confirms that there exist long run relationship among all of four variables. But this test does not indicate the direction of this relationship. To know the which variable Granger cause the other variable we will apply Granger Causality test as the final step. Further, the existence of co-integration implies the existence of Granger causality at least in one direction (Granger, 1988).

Table 2
Results of Johansen's Co integration Test

Hypothesized No. of CE(s)	*Trace Statistics*	*Max-Eigen Statistics*
None *	80.281**(0.000)	39.067**(0.0011)
At most 1 *	41.214**(0.0016)	26.084**(0.0092)
At most 2	15.129**(0.0567)	11.583**(0.1273)
At most 3	3.545**(0.5977)	3.545**(0.0597)

Note: ** denotes the rejection of the null hypothesis of no integration at the 5% level.

The Granger causality was applied to know the direction of relationship among all four variables. Results shows that FDI and FEE are not showing any causal relationship between both. There is a unidirectional relationship running from FTA to FDI means as the number of foreign tourist arrival increase; foreign direct investment also increase. The null hypothesis of GDP does not Granger cause FDI has been rejected by p-value which implies that growing gross domestic product in the economy attract foreign direct investment as both are found causally related to each other. The causality running from GDP to FEE and FTA is also unidirectional in nature. It is most surprising to see that GDP is one variable that is showing a causality relationship with all Other variables whereas no other variables seems to have causality running towards GDP.

Table 3
Results of Granger Causality Test

Null Hypothesis	*F -Statistic*	*Decision*
FEE does not Granger Cause FDI	3.497** (0.0534)	There is no relation between FEE and FDI
FDI does not Granger Cause FEE	1.557**(0.2393)	
FTA does not Granger Cause FDI	5.287**0.0164)	There is unidirectional relation running from FTA to FDI
FDI does not Granger Cause FTA	1.462**(0.2594)	
GDP does not Granger Cause FDI	6.576**(0.0077)	There is unidirectional relationship running from GDP to FDI
FDI does not Granger Cause GDP	0.238**(0.7905)	
FTA does not Granger Cause FEE	0.835**(0.4509)	There is no relation between FTA and FEE
FEE does not Granger Cause FTA	0.408**(0.6707)	
GDP does not Granger Cause FEE	20.402**(0.0000)	There is unidirectional relationship running from GDP to FEE
FEE does not Granger Cause GDP	1.476**(0.2563)	
GDP does not Granger Cause FTA	10.046**(0.0013)	There is unidirectional relationship running from GDP to FTA
FTA does not Granger Cause GDP	0.3424**(0.7148)	

Note: ** denotes the rejection of the null hypothesis of no Causality at the 5% level

VI. SUMMARY AND CONCLUSION

To check the causal relationship or direction of this relation among these variables Granger causality test was applied and results of this test indicate unidirectional relationship running from GDP to FDI, FEE and FTA's. The relation between foreign tourist arrival and foreign direct investment is also unidirectional running from FTA to FDI, implies number of foreign tourist arrivals does impact foreign direct investment but latter does not impact former. As far as India is concerned tourism and foreign direct investment is not showing any causal relationship with GDP. There are mixed review regarding the role of foreign direct investment and tourism on gross domestic product. Martin, Morales and Scarpa (2004) concluded that importance of tourism for economic growth may differ depending on level of income and trade openness and investment rate. Still FDI and tourism is playing important role as it not only generate employment but also improve infrastructure of the economy. Therefore, Non-existence of causality among growth tourism and foreign direct investment for some economies may occur due to small share of tourism sector in an economy. But this does not imply the unimportance of tourism sector for economic growth such economies. It has been empirical estimated by various researchers that tourism and foreign direct investment is either bidirectional or unidirectional related with economic growth. Therefore, there is a need to study the role of tourism and foreign direct investment, and expand these sector to achieve better growth of the economy.

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