

The Relationship between Foreign Direct Investment and Tourism Development: Evidence from Developing Countries

Ahmad Jafari Samimi
University of Mazandaran,
Babolsar, Iran
Email:
jafarisa@umz.ac.ir

Somaye Sadeghi*
Islamic Azad University
Firoozkooh, Iran
Email:
somysadeghi@yahoo.com

Soraya Sadeghi
Islamic Azad University
Firoozkooh, Iran
Email:
soysadeghi@yahoo.com

Abstract: This paper investigates the existence of Granger causality and co-integrated relationships between tourism related Foreign Direct Investment (FDI) and tourism development in developing countries using panel VECM techniques from 1995 to 2008. The results confirm the existence of a co-integrated relationship between variables in the long run. In addition, there is a bilateral long-run causality between tourism related FDI and tourism development, while there is no short-run causality between variables.

Key words: developing countries, Foreign Direct Investment, panel VECM, tourism industry

JEL classifications: F21, L83, E32

1. Introduction

Tourism has become one of the most significant export sectors in many developing countries. A general consensus has emerged that it not only increases foreign exchange income, but also creates employment opportunities, stimulates the growth of the tourism industry and by virtue of this, triggers overall economic growth. The World Tourism Organisation (WTO) statistics indicate that the annual average growth rate of international tourism arrivals in developing countries for the years 1990-2005 was 6.5 per cent, compared to 4.1 per cent growth worldwide over the same period (Ashley *et al.*, 2007). Also, estimate put tourism as having accounted for between 3-10 per cent of the GDP in the developing world (WTO 2006). In general, there is an increasing and widely accepted belief that tourism can play a fundamental role for developing countries to achieve economic growth and development. Hence, tourism development has become an important target for most governments, especially in developing countries.

Foreign Direct Investment (FDI) in tourism would help developing countries to mitigate the effect of adverse development gap between developed and developing countries (UNCTAD, 2007). The UNCTAD (2007) documents that FDI played a major role in the tourism take-off in 1970s Tunisia, inducing the country's economic growth. Hence, most governments in developing countries often place the highest priority on attracting FDI, by experimenting with a variety of policies (Zhang and Chong, 1999). On the other hand, the growth of tourist arrivals induces an increasing demand for goods and services such as food, accommodation and transportation. Thus, governments often prefer to attract further FDI to expand domestic products and infrastructure to cover the increasing tourist demand for goods and services.

However, there arises a question whether FDI strongly contributes to tourism growth or, alternatively, tourism growth actually caused the further attracting of FDI instead? Despite the belief in tourism-related FDI development, relatively speaking not many studies have rigorously investigated the causal and long-run relationships between FDI and tourism growth. Moreover, most studies have indeed been dealing with samples of developed countries and despite the increasing importance of tourism for developing economies, even fewer studies (possibly none at all) have been found to rigorously assess the relationship. Likewise, papers that analyse the role of FDI on tourism growth focus exclusively on a limited cross section and panel data for developing country cases are scarce. Hence, this paper examines the existence of causality and co-integrated relationships between tourism related FDI and tourism expanding in a panel of 20 selected developing countries using a dynamic panel framework that allows us to capture both inter-country and inter-temporal variation. Firstly, existence of a long-run relationship between variables is tested by using a Pedroni panel co-integration approach. Then, a panel Granger causality test is applied in a VECM framework to examine Granger short-run, long-run and joint causality relationships between variables.

The rest of this paper is organised as follows. Section 2 reviews the literature and empirical studies of the relationship between FDI and tourism development. Section 3 describes the data and methodology. The fourth section presents the empirical results, leading into the concluding section.

2. Literature Review

Tourism development's effects on the economy are considerable. As a multidisciplinary activity involving several industries and drawing upon a variety of skills, tourism's benefits are spread over a wider section of society compared to those from other sectors of the economy (Telce and Schroenn, 2006). Pioneering studies have highlighted its potential effects in promoting growth, creating jobs and generating revenue for the government (Lea, 1988;

Sinclair, 1998). This economic relationship is known as the tourism-led growth hypothesis. According to this hypothesis, international tourism is considered as a significant strategic factor for economic growth (Sinclair and Stabler, 2002; Samimi *et al.*, 2011). Also, international tourism would contribute to an income increase in two additional ways at least: first, enhancing efficiency through increased competition among firms and other international tourist destinations (Krueger, 1980); second, facilitating the exploitation of economies of scale in local firms (Helpman and Krugman, 1985).

However, the tourism industry is an activity that requires capital, infrastructure, knowledge and access to global marketing and distribution chains. Therefore, the availability of financial sources is critically important for achieving further tourism development and economic growth. As such, FDI would play a significant role in developing the tourism industry, especially in developing countries, by providing the required capital and infrastructures such as international airports, highways, hotels and modern technologies which are the keystones to tourism development. Hence, most governments in developing countries often place the highest priority on attracting FDI for further tourism arrivals and economic growth (Zhang and Chong, 1999; Andergassen and Candela, 2009). Therefore, there is a causal relationship between FDI and tourist arrivals, with FDI improving the quantum and quality of service, then the international tourist arrival numbers increase (Selvanathan *et al.*, 2012). A further indirect link from FDI to tourism is through business tourists. Foreign investors brought their established or potential tourist sources into developing countries' markets. Consequently they contributed to increasing sources of inward tourism and promoting development of the tourist economy. However UNCTAD (2007) reports that FDI in tourism is still rather low – in both developed and developing countries – compared to the levels of FDI in other economic activities, including other services industries. But it does not mean that tourism-related FDIs are insignificant. Yet FDI is undoubtedly used as an important tool for expanding the tourism industry in developing countries, in particular, those that are newly emerging in the industry (Endo, 2006; Subbarao, 2008). On the other hand, there is a causal relationship between tourism and FDI in that tourists usually demand goods and services such as accommodation, food, transportation facilities and entertainment in the host country. In most developing countries, to satisfy this increasing demand, the current level of production needs to increase. Since there is a shortage of facilities and infrastructure in developing countries, FDI is considered an effective channel for transferring the trade, knowledge and technologies leading to economic growth. Thus, governments prefer to attract further FDI to expand domestic products.

However, recognising the existence of a causal relationship between FDI and international tourism will have important implications for the development

of different tourism marketing and policy decisions, in particular for developing countries. As for policy implications, if there is clear-cut unidirectional causality from tourism growth to FDI, then making strides in tourism growth needs to be prioritised. If the outcome shows the opposite direction of causality, then every effort should be made for overall tourism-related FDI as this, in turn, will result in the expansion of the tourism industry. If there is no causal relationship between tourism growth and FDI, then there is no feedback effect between each other. Finally, if the relationship is bidirectional, and tourism and FDI have a reciprocal causal relationship, then major initiatives in both areas would benefit both.

Studies of the relationship between tourism activity and FDI have been flourishing recently, but they are still scarce. Tang *et al.* (2007) assessed empirically the causality relationships among FDI, economic growth and tourism in China by using an ECM method from 1978 to 2005. The results indicated that there is a one-way causality link from FDI to tourism. In other words, the growth in China's tourism industry is due to attracting further FDI. Likewise, there is a bilateral causality link between tourism and economic growth that confirms the tourism-led growth hypothesis. Garcia-Flores *et al.* (2008) evaluated the relationship between FDI, tourism development and its impacts on the environment in Mexico from 1982 to 2007. The findings show that there is a positive relationship between FDI and tourism development. In addition, they show that urban tourism-related infrastructure does not respect the structure and functions of the ecosystems of the area, since it is possible to identify severe environmental damage in the area attributed to tourism development infrastructure. Moreover, there is a positive relationship between the North American Free Trade Agreement (NAFTA) and the creation and use of environmental policy tools.

Selvanathan *et al.* (2012) investigated the causal link between FDI and the tourism industry in India under a VAR framework, by employing quarterly statistics from 1995 to 2007. The results indicate that a one-way causality link is found from FDI to tourism arrivals. This explains the rapid growth in the international tourism arrivals as being due to attracting further FDI in the Indian economy during the last decade.

Chen (2010) analysed the influence of foreign direct investment within China's tourism industry considering the imbalance of the development process across coastal and inland regions from 1978 to 2008. The results show that impacts of FDI on tourism industry in the coastal regions are greater than they are inland. Therefore, the coastal regions have experienced rapid economic and tourism development because of the inflow of FDI and political preferences.

Overall, the empirical findings suggest that there is a positive relationship between FDI and tourism industry development. Nevertheless, these empirical

studies are not abundant, especially in developing countries. In addition, they are mainly single-country and empirical studies at cross-country levels are scarce. Moreover, previous research has not separated long-run causality from short-run. However this paper attempts to analyse both long-run and short-run causality, as well as the existence of a co-integration relationship between tourism related FDI and tourism growth in a panel of developing countries.

3. Data and Methodology

This paper evaluates the causality and long-run relationship existence between foreign direct investment (*FDI*) inflow and tourism arrivals (*TOUR*) in 20 developing countries using the panel co-integration approach. We use FDI in hotels and restaurants as a proxy for tourism related FDI. *FDI* is in terms of constant 2000 price USD. The studied period is 1995-2008 considering availability of data, using World Bank data as well.

The panel data technique has attracted the attention of many researchers because of its weak restrictions. It captures country specific effects and allows for heterogeneity in the direction and magnitude of the parameters across the panel. However, to test the nature of association between the variables while avoiding any spurious correlation, the empirical investigation in this paper follows three steps. First, we test for non-stationarity in both variables *FDI* and *TOUR*. Recently, Im *et al.* (2003) proposed the between-group panel unit root tests that permit heterogeneity of the autoregressive root under the alternative hypothesis. Hence, we used the Im, Pesaran and Shin (hereafter IPS) unit root test that assumes the series are non-stationary. Thus, being unable to reject the null hypothesis implies that variables have a unit root (it means that they are non-stationary).

Second, we look for a long-run relationship between variables using the panel co-integration test. The Engle and Granger (1987) co-integration test is based on an examination of the residuals of a spurious regression performed using $I(1)$ variables. If the variables are co-integrated, the residuals will be $I(0)$. On the other hand, if the variables are not co-integrated, the residuals will be $I(1)$. Pedroni (1999: 2004) extended the Engle–Granger framework to tests that involve panel data. Pedroni proposes several tests for co-integration that permit heterogeneous intercepts and trend coefficients across cross-sections. Overall, there are seven testing methods in the Pedroni (1999) co-integration test: the panel v -statistic; panel ρ -statistic; panel PP-statistic; panel ADF statistic; group ρ -statistic; group PP-statistic; and group ADF-statistic. Therefore, in order to inspect the theories related to the contribution of tourism-related FDI and tourism development in the long-run, we perform co-integration tests for the panel by using Pedroni.

However, co-integration implies that causality exists between the series, but it does not indicate the direction of the causal relationship. After an affirmation of a long-run relationship between variables, we test for Granger causality in the long-run relationship at our third and final step of estimation. Granger causality itself is a two-step procedure. The first step relates to the estimation of the residual from the long-run relationship. Then, we use the dynamic error correction model as follows:

$$\Delta FDI_{i,t} = \alpha_{1,i} + \varphi_{1,i} ECT_{i,t-1} + \sum_{j=1}^k \gamma_{1,j,i} \Delta TOUR_{i,t-j} + \sum_{j=1}^k \theta_{1,j,i} \Delta FDI_{i,t-j} + \varepsilon_{1,i,t} \quad (1)$$

$$\Delta TOUR_{i,t} = \alpha_{2,i} + \varphi_{2,i} ECT_{i,t-1} + \sum_{j=1}^k \gamma_{2,j,i} \Delta TOUR_{i,t-j} + \sum_{j=1}^k \theta_{2,j,i} \Delta FDI_{i,t-j} + \varepsilon_{2,i,t} \quad (2)$$

where i ($i = 1, \dots, N$) denotes the country, t ($t = 1, \dots, T$) the period, and j is the optimum lag considering SBC criteria. Also: Δ is a difference operator; ECT is the lagged error-correction term derived from the long-run co-integrating relationship; φ_1 and φ_2 are adjustment coefficients and $\varepsilon_{1,i,t}$ and $\varepsilon_{2,i,t}$ are disturbance terms assumed to be white-noises and uncorrelated. We determined the sources of causation by testing for significance of the coefficients on the lagged variables in the above equations.

First, we evaluate Granger short-run causality using F-statistic by testing $H_0: \gamma_{1,j} = 0$ or $H_0: \theta_{2,j} = 0$ for all i and j , in equations (1) and (2), respectively. If the null hypothesis is rejected, then the existence of Granger short-run causality (Granger weak causality) is confirmed (Masih and Masih, 1996; Asafu-Adjaye, 2000). In other words, the dependent variable responds only to short-run shocks to the stochastic environment. Second, we identify Granger long-run causality using the ECT (error correction terms) coefficients in the above equations. The coefficients on the ECTs represent how fast deviations from the long-run equilibrium are eliminated following changes in each variable. If the ECTs' coefficients are zero ($\varphi_{1,i} = 0$ or $\varphi_{2,i} = 0$) for all i , then there is no Granger long-run causality from explanatory variable to dependent variable (Hatanaka, 1996). Finally, we can jointly check the existence of both Granger short-run and long-run causalities using the F-statistic by testing $H_0: \gamma_{1,j} = 0$ and $\varphi_{1,i} = 0$, or $H_0: \theta_{2,j} = 0$ and $\varphi_{2,i} = 0$ for all i and j , in equations (1) and (2), respectively. This is referred to as a strong Granger causality test. The joint test indicates which variable(s) bear the burden of short-run adjustment to re-establish long-run equilibrium, following a shock to the system (Asafu-Adjaye, 2000).

4. Empirical Results

Table 1 presents the results of the "Im, Pesaran and Shin" (IPS) unit root test. The IPS test assumes the series are non-stationary. The IPS statistics indicate

that both variables are stationary after first differencing. In other words, both variables are integrated of order (1).

Table 1: Results of the IPS Unit Root Test for Variables

Variables	Level	Prob.	First Difference	Prob.	Result
TOUR	0.81	0.79	-3.90	0.000	I(1)
FDI	2.33	0.99	-4.38	0.000	I(1)

By using the unit root test results, we proceed to test for co-integration in order to determine whether there is a need to control for the long-run equilibrium relationship between variables in the econometric specifications. Hence, we use the panel co-integration tests induced by Pedroni (1999). Table 2 reports the results of the panel co-integration test. The results clearly indicate that there exists a co-integrated relationship between tourism related FDI and tourism expanding in long-run.

Table 2: Results of the Pedroni Panel Co-integration Test

Test statistics	Statistic	Prob.
Panel v-statistic	-0.374016	0.6458
Panel ρ -statistic	-4.213288	0.0000
Panel PP-statistic	-9.60689	0.0000
Panel ADF-statistic	-5.628330	0.0000
Group ρ -statistic	-2.749328	0.0030
Group PP-statistic	-7.476931	0.0000
Group ADF-statistic	-4.930987	0.0000

However, the existence of a co-integration relationship does not give any information on the causality relationship between the variables. Therefore, we use the Granger causality test in the critical values at 5 per cent in VECM framework. The results of the F test for both long-run and short-run causality are reported in Table 3. It is apparent that F statistics for null hypothesis that *FDI* does not Granger short-run cause *TOUR* and conversely, is not significant. Thus, there is no short-run causality between variables. In addition, the coefficients of ECT in both equations are statistically significant. Therefore, there is a bilateral long-run causality between *FDI* and *TOUR*. In other words, tourism-related FDI inflow plays an important role attracting tourists in the long run. Also, tourism expansion increases FDI and looks to act as an engine of economic growth for developing countries in long-run. Furthermore, the joint test indicates that there is a bilateral strong causality between variables. In other words, whenever a shock occurs in the system, the variables would make short-run adjustments to restore long-run equilibrium.

Table 3: Results of Panel Causality Tests (F-statistics)

Dependent Variable	Source of Causation (explanatory Variable)					
	Short-run		Long-run	Joint (short-run/long-run)		
	Δ TOUR	Δ FDI	ECT(-1)	Δ TOUR	ECT(-1)	Δ FDI ECT(-1)
Δ TOUR	-	0.47	4.32**	-		3.03**
Δ FDI	0.83	-	3.87**	2.56**		-

* All figures are the calculated F statistics.

** Significant at 5%.

5. Conclusion

This paper investigates the existence of Granger causality and co-integrated relationships between tourism-related Foreign Direct Investment (FDI) and tourism development in developing countries using panel co-integration techniques from 1995 to 2008. The results of panel co-integration tests induced by Pedroni indicate that there is a co-integrated relationship between tourism related FDI and tourism growth in long-run. As well, the results of Granger Causality in VECM framework suggest that there is a bilateral long-run causality between tourism related FDI and tourism development, while there is no short-run causality between variables. Also, the joint test reveals that there is a bilateral strong causality between variables. In other words, whenever a shock occurs in the system, the variables would make short-run adjustments to restore long-run equilibrium.

Overall, FDI inflows to the tourism sector promote the growth of incoming tourism and consumption. However, the significant impact of tourism-related FDI on tourism growth in developing countries' economies justifies the necessity of public intervention by implementing various policies including "soft" policies, such as government support for trade fairs and maintenance of tourism internet sites like cultural and heritage sites or eco-tourism, and "hard" policies, such as government providing incentives to foreign investors in order to bring their established or potential tourist sources to these countries. Consequently, the inward tourism arrivals increase and economic development in developing countries improves.

Note:

* Corresponding author.

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