CAUSALITY BETWEEN TOURISM AND FOREIGN DIRECT INVESTMENT: AN EMPIRICAL EVIDENCE FROM PAKISTAN

Check for updates

iD Farah Siddiqui[1+]
iD Danish Ahmed Siddiqui[2]

[1]Research Scholar, Karachi University Business School, University of Karachi, Pakistan
Email: farahsiddiqui28@gmail.com Tel: +923333273130
[2]Associate Professor, Karachi University Business School, University of Karachi, Pakistan
Email: daanish79@hotmail.com Tel: +923333485884

(+ Corresponding author)

ABSTRACT

Tourism is evolving to be one of the important sectors in the world's economy. This study explores the relationship of tourism and FDI inflows along with macro-economic variables in Pakistan over the period ranging from 1979 to 2017. Augmented Dickey-Fuller test results indicate the presence of stationarity in all variables at first difference. Johansen co-integration, VEC model and VECM Granger causality techniques are employed to check short-run and the long-run relationship among the variables. The results of the Johansen co-integration test indicate that FDI, tourism, GDP, exchange rate, inflation and trade openness are co-integrated. The results of VECM model indicate the presence of long-run causality running from tourism, GDP, exchange rate, inflation and trade openness to FDI in Pakistan. The results of VECM Granger causality test signify one way short-run causality running from tourism to FDI, from GDP to FDI, from inflation to FDI, from trade openness to FDI, from GDP to tourism, from inflation to tourism, from tourism to trade openness, from GDP to trade openness and from exchange rate to trade openness. Two-way causality is found in between FDI and exchange rate and no causation is found from FDI to tourism in the short run.

Contribution/ Originality: This study contributes to the existing literature by examining short run and the long run association between FDI, tourism, inflation, exchange rate, trade openness and GDP in Pakistan. This research is the first to explore the causality amid tourism and FDI in Pakistan.

1. INTRODUCTION

1.1. Background

Foreign direct investment is an investment made to attain interest and control in businesses located overseas. This cross border investment allows parent enterprise to exercise control on the foreign company.

The tourism industry is world's one of the biggest economic sector. Globally, this sector accounted for 10.4% contribution in the total global GDP, generated 313 million jobs, and comprised of 9.9% of the total employment in 2017. In the past ten years, every one out of five jobs has been generated in the world in this sector. Direct travel and tourism GDP growth was 4.6% in 2017. With precise regulations and governmental support, this sector holds the potential for growth and can positively impact the economic indicators (Travel & Tourism Economic Impact 2018 Pakistan, 2018).

In Pakistan, tourism and travel sector direct contribution were PKR 930.9 billion in 2017, direct travel and tourism comprised of 2.9% of Pakistan's GDP in 2017. The direct contribution of this sector to the GDP is eyed to increase by 5.8% per annum from 2018 to 2028. The total contribution to GDP including both direct and indirect contribution is PKR 2,349.0 billion in 2017, which makes 7.4% of the total GDP of Pakistan. This sector generated 1,493,000 jobs directly and contributed 2.5% to total employment. In 2017, the country generated PKR 98.7 billion through visitor exports and the industry has probably attracted capital investment of worth PKR 410 billion in 2017 (TTEI, 2018).

The government of Pakistan is increasingly concentrating on the revival of the tourism sector in Pakistan. The government is implementing cohesive policies to appeal the tourists. The tourism sector in Pakistan can greatly stimulate the economic status of Pakistan. Aleemi and Qureshi (2015) determined that receipts from tourism significantly and positively influence Pakistan's economic development. The government is encouraging investment friendly environment for foreign investment in order to strengthen foreign reserves and accelerate the economic progression of the country. Emergent economies have formulated welcoming FDI policies and strategies and witnessed visible growth (Zheng, 2011). A number of countries around the world have found an association between tourism and FDI. Katircioglu et al. (2018) found reinforcing interaction and long run affiliation between tourism development and financial development in Turkey. This research will fill the gap in the literature by analyzing the long term and short term association between tourism and FDI along with macro-economic variables in Pakistan and will help the government in designing policies.

1.2. Problem Statement

Subsequent to the betterment in the security circumstances in Pakistan, the tourism industry is gaining momentum in the country. Pakistan is emerging as an attractive destination for the tourists. The government of Pakistan is taking initiatives for the revival of the tourism industry. The tourism sector holds great potential for the advancement of the country and can be meaningfully conducive to the growth of Pakistan.

Ali et al. (2017) found that the economic growth rate in Pakistan has remained volatile and inequality and poverty have also remained unstable. Pakistan's growth is now slowing down. Pakistan has been facing problems nearly in all grounds whether economic, political or social. Siddique et al. (2016) found that the huge external borrowings of the country are exerting a negative influence on the growth of Pakistan. Tabassam et al. (2016) concluded political instability is negatively influencing the growth of the economy. Shahzad et al. (2016) found the deteriorating influence of terrorism on foreign direct investment, which then hinders the growth of Pakistan.

FDI is conducive to the advancement and growth of emerging economies. A strong and robust association has been spotted amid FDI and growth of the economies (Anwar and Nguyen, 2010). Perić and Radić (2016) stressed the need of establishing an encouraging macroeconomic environment and attractive policies of incentive investment measures precisely targeting the tourism industry. Such measures would lead to higher FDI inflows.

Many aspects of FDI have been studied with respect to Pakistan, but one crucial discussion of tourism and FDI short term and long term relationship has not been the subject matter of researches. Pakistan generated about 7.4% of GDP in 2017 from travel and tourism and aims to increase the contribution by 5.4% per annum to PKR 4200.4 billion by 2028 (TTEI, 2018).

1.3. Gap Analysis

Fereidouni and Al-mulali (2014) conducted a study on 24 OECD countries covering data from 1995 to 2009 and found bi-directional relation and long-run nexus amid foreign direct investment and Tourism. Whereas, Selvanathan et al. (2012) studied the co-integration between FDI and tourism in India and concluded one directional causation from FDI to tourism.

Alam *et al.* (2016) found long term relation between FDI, tourism value and the number of tourist arrivals in Saudi Arabia. Kaur and Sarin (2016) found one-way causality evidence from tourism activities to growth of Indian economy.

Morales *et al.* (2011) found tourism a significant driver of FDI in foreign studies. Singh *et al.* (2008) also found tourism to be the principal driver that entice foreign direct investment in small emerging states. Fereidouni and Al-mulali (2014) analysis of the relationship between FDI in real estate and tourism also concluded similar results. Two directional causalities was found amid tourism and real estate foreign direct investments in OECD countries. Roudi *et al.* (2018) found bidirectional causation between tourism and economic growth and one direction causality from FDI to the growth of small developing island economies. Alam *et al.* (2016) also confirmed the presence of long term and short term positive association between tourist arrivals and receipts with foreign direct investment inflows in Saudi Arabia.

The government of Pakistan is taking initiatives for the revival of this sector and Pakistan has become an attractive destination by the international tourists after the improved law and order situation in the country. Rasheed *et al.* (2019) found the indirect relationship of tourism with a shortfall in the balance of payments of Pakistan and recommended policies for promoting this sector in a way to lessen the deficit in the balance of payments. Meo *et al.* (2018) found long term asymmetric association-ship between tourism demand, inflation, exchange rate and oil prices in Pakistan. Ahmed and Anwar (2016) concluded adverse effects of terrorism and violence on tourism in Pakistan and the positive influence of infrastructure on tourism in the country. Groetzbach (2014) stated that during the last decade, tourism has amplified rapidly in the North mountainous regions of Pakistan and there is a large potential of growth of this sector.

Hye and Khan (2013) confirmed long term association between income from tourism and economic progress in Pakistan but shed no light on the link between tourism and FDI in Pakistan. Arshad *et al.* (2018) analyzed Pakistan's tourism industry and the challenges faced by the industry. The study found that Pakistan is blessed with biological bio-diversity, bestowed with beautiful landscapes, serene sites, rich culture and historical places and the tourism sector holds the potential of growth and offers distinctive opportunities for the tourists. The tourism industry is greatly associated with other industries, tourism enhances opportunities of trade, boost private investments, improves infrastructure and increases foreign investment. But this study did not empirically analyze the relationship of tourism and inflows of foreign investment. Khalil *et al.* (2007) examined the influence of touism development on short-run economic development in Pakistan. The study found strong associationship between tourism and growth of Pakistan's economy.

Various researches have been aimed to explore the association between tourism and growth of Pakistan's economy. But the causality relation amid tourism and foreign direct invest has not been explored with respect to Pakistan. This study will add to the literature by investigating the causality amid FDI and tourism along with macroeconomic variables in Pakistan.

1.4. Research Objectives

The motive of this research examines the relationship between tourism and foreign direct investment in Pakistan in conjunction with macroeconomic variables. This research will help to determine the causation between foreign direct investments, tourism and macroeconomic indicators namely, inflation, gross domestic product, trade openness and exchange rate.

The primary objectives of this study are:

i. To analyze co-integration between FDI, tourism, trade openness, GDP, inflation and exchange rate.
ii. To examine short-run and long-run causality between FDI, tourism, trade openness, GDP, inflation and exchange rate.

2. LITERATURE REVIEW

Some studies focusing on the importance and association of tourism, FDI and macroeconomic variables are reviewed below:

2.1. Tourism

Tourism is growing as an essential sector in the world's economy. Economies are increasingly focusing on tourism to attract foreign investment.

Alam et al. (2016) explored the short and long term association between the growth of FDI and tourism in Saudi Arabia. The results concluded that there exists a short term association between the variables. Co-integration test results detailed that long term relation prevails between FDI, tourism value and tourist arrivals in Saudi Arabia. Yazdi et al. (2017) found no causality between tourist receipts and foreign direct investment and found two-way causality among trade openness, real exchange rate and tourist receipts and concluded that FDI significantly expands the tourism industry in European countries.

Kaur and Sarin (2016) used time series models for the time period spanning from 1991 to 2014 and found one directional long term causality evidence from tourism activities to India's economic growth. Imports, exports and international tourism are positively related to each other at the aggregate level.

Katircioglu et al. (2018) inspected the interaction between financial developments and the growth of the tourism industry in Turkey. Turkey has a well-functioning financial system and is an attractive tourist destination. The study concluded that tourism and financial developments have a reinforcing and long-term association. Cárdenas-García et al. (2015) analyzed a sample of 144 countries and found that economic growth achieved by an expansion in tourist activities influence the economic development, but such relation of tourism being the driving force to economic development has been observed in highly developed countries. Tang et al. (2016) used copula GARCH method and found that exchange rate fluctuations do not determine fluctuations in tourism demand of China from the nations being studied. Russia demonstrated risk-averse behavior with great CNY appreciation and SUR depreciation related to an extreme decrement in tourist arrivals. Falk (2015) applied a panel error correction model and found tourist arrivals in Switzerland are exceedingly sensitive to relative price changes and exchange rates. Furthermore, depreciation in Euro against Swiss Franc caused an increase in tourist arrivals for the ski resorts of Austria in the last four winter seasons.

The tourism sector has evolved to be multi-trillion, multi-dimensional and multi-cultural sector. Many countries including Pakistan are trying to revive the tourism sector. Meo et al. (2018) used NADRL approach and found long term asymmetric association-ship between inflation, exchange rate, oil prices and demand of tourism in Pakistan. He also concluded that institutional quality is also associated with the demand for tourism in the long run. Ahmed and Anwar (2016) by applying linear regression on data from 1989 to 2011 concluded adverse effects of terrorism and violence on tourism in Pakistan and the positive impact of infrastructure on the tourism sector in Pakistan. The tourism sector of Pakistan has huge potential. Pakistan is blessed with natural scenic beauties. But this sector due to the absence of strategies, improper management and other mismanagements is unable to fully contribute towards the economic growth of Pakistan (Ahmed et al., 2017).

2.2. Foreign Direct Investment

In order to gain a competitive advantage, countries are designing their macroeconomic policies to facilitate MNEs. Boateng et al. (2015) investigated the influence of macroeconomic variables on FDI inflows in Norway. The results of VAR and VECM model indicated that real GDP, sector GDP, the openness of trade and exchange rate have positive and noteworthy relation with inward FDI and inflation, interest rates, money supply and unemployment showed negative association-ship. A study conducted by Gupta and Singh (2016) on BRICS, on the data from 1983 to 2013 analyzed the vital determinants of foreign direct investment. The drivers under

consideration were inflation, industrial production index (IPI), trade openness, wage rates, unemployment rates and exchange rates. After examining with different regression models, the results exhibited that exchange rate, unemployment rate, IPI, exchange rate and trade openness were significant in explaining FDI at one percent. Dellis et al. (2017) found empirical association from the economic structure of the host country to FDI inflows. Uddin et al. (2019) concluded property rights, legal structure, government size have a significant and positive influence on FDI inflows. Regulations in Pakistan were determined to be more important than institutional factors and military government has strong long term influence on inward FDI inflows in Pakistan. Pattayat (2016) found GDP a significant driver of FDI inflows in India. The results of the Johansen co-integration test indicated that FDI inflows, trade openness, exchange rate and GDP are co-integrated. Saleh et al. (2017) by applying SEM approach found the drivers of MNCs' motives for the investment in service industries. Culture and market seeking government policies contribute significantly to FDI.

The importance of FDI as an important driver to growth has been found with respect to Pakistan. Naqeeb (2016) concluded FDI to be an important driver of growth in Pakistan. Khan and Adnan (2014) highlighted the association ship of financial liberalization and openness of trade with foreign direct investment. Asif and Majid (2018) found the institutional quality is positively and significantly associated with foreign direct investment in Pakistan. Per capita, gross domestic product was likewise found to have positive long-run and short-run association with FDI. Institutional quality measures, natural resources, per capita GDP and exchange rate were integrated into the long run.

2.3. Conceptual and Historical Analysis of FDI

Foreign direct investment decisions depend on characteristics of a foreign country like human capital, trade deficit, budget deficit, inflation, tax, political stability, labor costs, tariffs, physical infrastructure, energy costs, trade costs, investments costs, openness, government consumption, etc. Meyer (2015) found MNE processes of capability building an important and different FDI investment motives and suggested refining the definitions of categories.

In 1980's, Pakistan implemented policies of trade and financial liberalization in a way to increase FDI and eventually to take the country to the path of economic development (Khan and Adnan, 2014). Investors are appealed by nations that facilitate them with better investment policies and infrastructure. Foreign direct investment is significantly paying its role in the progression of developing nations like Pakistan (Shahzad et al., 2016).

In order to boost foreign direct investment, the Government of Pakistan is formulating promising policies for overseas investors. Pakistan is experiencing issues of the continuous deficit in the balance of payments, rapid population growth, low industrialization, low level of income, deficiency of capital, dependence of foreign aid, corruption, excessive reliance on external debt etc. These problems amongst others are the obstacles in attracting foreign direct investment in Pakistan. Due to these factors, the contribution of Pakistan to the global FDI is nearly negligible.

3. METHODOLOGY

3.1. Variables

The literature review revealed that foreign direct investment inflows are associated with size of the market (Crotti et al., 2010) tax (Chung, 2010) infrastructure of the host country (Kosekahyaoglu, 2010) interest rate (Angelo et al., 2010) exchange rate (Liargovas and Skandalis, 2012) inflation (Singhania and Gupta, 2011) trade openness and domestic investment (Anyanwu and Yameogo, 2015). Grounded on the empirical studies and conceptual review, subsequent variables have been chosen for the research:

- FDI: It is measured by net inflows as a percentage of gross domestic product (GDP).

- Tourism: It is measured by no. of arrivals. Tourism has been consistently measured with Ahmed and Anwar (2016).
- GDP: It is measured by GDP in current US$.
- Inflation: It is measured by consumer prices, annual % change.
- Exchange rate: It is measured by official exchange rate in local currency unit per US$, period average.
- Trade Openness: It is stated by imports plus exports as percentage of gross domestic period. Trade openness has been measured consistently with Hakro and Ghumro (2011) and Liargovas and Skandalis (2012).

Tourism is an additional variable that has been the part of the study. Singh *et al.* (2008) and Ho and Rashid (2011) found tourism as an important factor in relation to FDI.

3.2. Data

Data of 39 years from 1979 to 2017 have been taken. This study intends to examine the association ship of trade openness, exchange rate, GDP, inflation, tourism and FDI inflows in Pakistan. Trade openness is expressed as imports plus exports as percentage of gross domestic product, data of export and imports and GDP have been taken from World Development Indicators. Data for GDP, inflation, exchange rate and net foreign direct investment inflows have been taken from World Development Indicators. The data of number of tourist arrivals have been taken from Pakistan yearly statistical book.

3.3. Nature of Study

This is a causal research. Causal research explains the cause and effect relationship of variable on other variable. Causal research explores the association ship between two or more variables (Bajpai, 2011).

3.4. The Model

In a way to avoid omitted variable bias issue, this study has included macroeconomic variables namely GDP, inflation, exchange rate and trade openness as additional variables in determining tourism and FDI function. This inclusion is in line with Singh *et al.* (2008), Samiullah *et al.* (2012), Hakro and Ghumro (2011), Yazdi *et al.* (2015) and Ho and Rashid (2011).

The model can be presented as follows:

$$ln\ FDI_t = \beta 1\ (NOA)_t + \beta_2\ (ln\ GDP)_t + \beta_3\ (INF)_t + \beta_4\ (ER)_t + \beta_5\ (ln\ TO_t) + \varepsilon_t$$

Where, FDI= foreign direct investment net inflows, NOA=number of tourist arrivals, INF=inflation, ER= exchange rate, TO trade openness, ε =error term. FDI, GDP, TO have been transformed in natural log (*ln*) form in consistency with Bekhet and Smadi (2014).

The research is causal and aims to inspect the association of tourism, exchange rate, inflation, GDP, trade openness and FDI in Pakistan. The motive of this study is to discover the long term and short term association among the variables by employing test of Johansen co-integration, VEC model and VECM granger causality test.

3.5. Co-Integration Analysis

In order to check time series stationarity, Augmented Dickey Fuller technique is employed. Augmented (Dickey and Fuller, 1979) is a popular tool to find whether the data series has a unit root or not. This test is done because time series data is often non-stationary (Perić and Radić, 2016). Stationarity is presence when variances and means are constant with time, whereas auto covariance series are not dependent over time.

The ADF (Augmented Dickey-Fuller) t-test null hypothesis is:

H_0 = the variable has a unit root.

That is the variable is non stationary and the data series must be differenced to make it stationary.

In general terms, ADF can be expressed as:

$$y_t = \alpha_0 + \alpha_1 y_{t-1} + \sum_{i-1}^{k} \beta_i y_{t-1} + \varepsilon_t$$

Where, y_t is the data series of LFDI, NOA, LGDP, INF, ER and LTO, k is the optimal lag length and ε is the error term.

Defining the optimal length of lags is the precondition for many econometric analysis (Brooks, 2008). In the econometric specifications, after testing stationarity using ADF, the co -integration relation between FDI, tourism, GDP, inflation, trade openness and exchange rate can be investigated by applying test of Johansen co-integration.

The application of test of Johansen co-integration will help to ascertain the quantity of co-integrating vectors through the test statistics. The test will help to estimate long term equilibrium association among the variables. Johansen methodology of co-integration has two statistics; trace statistic and max Eigen statistic. Trace statistics test follows the null hypothesis that the number of co-integrating vectors is less or equal to r, whereas the alternate hypothesis states the presence of more than r co-integrating vectors. Max Eigen statistics, however, checks the occurrence of co-integrating rank of 0 or 1 and is equated against the 5% corresponding critical values. If test statistics is greater than critical values in the Johansen table, the null hypothesis that conditions that there are r co-integrating vectors is not accepted against the alternative hypothesis of r+1 co-integrating vectors (Dorodnykh, 2013). For applying Johansen integration test, the data series must be non-stationary and same order integrated.

3.6. Causality Analysis and Quality of the Model

If variables are co-integrated, there prevails an equilibrium or long run association ship. However, there's a possibility of short-run disequilibrium. So, the error term can be treated as equilibrium error. Error term can be used to determine the short term behavior to the long-term value (Gujarati, 2007). Error correction mechanism was firstly introduced by Sargan (1984). Granger representation theorem explains that if there prevails co-integrated among the variables, then the relationship among the variables can be stated as ECM (Gujarati, 2007). VECM allows to analyze the discrepancies between long term and short term causality (Dheerasinghe, 2011).

The test of Johansen co-integration do not indicate the presence of causality between the variables. Granger causality grounded on VECM explores the causality relationship among the variables. VECM granger causality test integrates error correction term (ECT) as an additional variable to the VAR system. Causal models intends to discover causal relation between the variables. Causality refers to chronological order of movements in data series (Brooks, 2008). VECM helps to identify dynamic causality among the variables (Tan and Hooy, 2005).

An error correction mechanism has been developed as the following equation. The equation exhibits short run influence of exchange rate, tourism, GDP, inflation and openness of trade on FDI in Pakistan.

$$\Delta lnFDI_t = \gamma_0 + \sum_{i=1}^{m} c_i \Delta lnFDI_{t-i} + \sum_{i=0}^{n} d_i \Delta NOA_{t-i} + \sum_{i=0}^{o} e_i \Delta lnGDP_{t-i} + \sum_{i=0}^{p} f_i \Delta lnINF_{t-i}$$

$$+ \sum_{i=0}^{q} g_i \Delta ER_{t-i} + \sum_{i=0}^{r} h_i \Delta lnTO_{t-i} + \Psi Ecm_{t-i} + v_t$$

Where, Ecm stands for error correction term and Ψ is the co-efficient of the error correction term. The co-efficient explains the speed of adjustment towards equilibrium of variables in the long term, every year.

To identify the stability of the model Homoskedastic test, normality test and serial correlation test are employed. Heteroskedastic error terms shows unlike scatter of the errors, differences occur due to the values of one or more independent variable. The hypothesis of heteroskedasticity test is:

H_0: the model doesn't have heteroskedasticity in the residuals.

Test of Jarque –Bera is employed to test the normality (Thadewald and Büning, 2007). The Jarque-Bera test uses kurtosis and skew-ness measurements. Normality of the data is the prerequisite in many econometric testing. The Jarque-Bera test hypothesis is:

H_0: residuals are normally distributed.

In a way to check the presence of serial correlation, Breusch-Godfrey Serial Correlation LM Test is applied. The serial correlation test null hypothesis is:

H_0: there is no serial correlation in the residuals.

4. RESULTS

4.1. Co-Integration Analysis

In order to confirm that the data series are not $I(2)$, Augmented Dickey Fuller technique is employed. The results are summarized in Table 1.

Table-1. Augmented Dickey-Fuller Unit Test Root.

	Level		First Difference	
	Intercept	Intercept and Trend	Intercept	Intercept and Trend
LFDI	–1.222231	–3.461158	–5.281428	–5.217989
NOA	–0.032059	–2.846276	–4.957232	–4.650463
LGDP	0.082486	–1.597484	–5.598600	–5.602927
INF	–2.695300	–2.651761	–7.499539	–7.384159
ER	1.288932	–2.356950	–4.179907	–4.305255
LTO	–1.497361	–2.458195	–7.842097	–7.901653

Note: Schwarz automatic selection of the lag length for the unit root test.

LFDI stands for logarithm of foreign direct investment, NOA stands for number of tourist arrivals, LGDP stands for logarithm of gross domestic product, INF stands for inflation, ER stands for exchange rare and LTO stands for logarithm of trade openness.

*implies significance at 5% level.

In each case, the null hypothesis states that time series data is non stationary i.e. the data series has a unit root (Gujarati, 2007). Our results indicate stationarity of the variables after first differencing and variables are integrated of same order. Empirical results point out that foreign direct investment (LFDI), exchange rate (ER), tourism (NOA), inflation (INF), gross domestic product (LGDP) and trade openness (LTO) are integrated of order one i.e. $I(1)$. The results are in line with the trending recognition of most macroeconomic time series of being $I(1)$ (Nelson and Plosser, 1982). Determining the optimal lag length is the prerequisite for many econometric analysis. The following table present the various criteria for selecting optimal lag length.

Table-2. VAR Lag Order Selection Criteria.

Lag	LogL	LR	FPE	AIC	SC	HQ
0	–711.3900	NA	8.20e+09	39.85500	40.11892	39.94712
1	–531.8371	289.2797	2907107.	31.87984	33.72728*	32.52464
2	–482.1442	63.49644*	1617650.	31.11912	34.55008	32.31662
3	–430.5454	48.73222	1128778.*	30.25252*	35.26700	32.00271*

* indicates lag order selected by the criterion
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion.

Table 2 details the VAR lag order selection criteria. LR test statistics select order two as optimal lag length, FPE, Hannan-Quinn information criterion and Akaike information criterion chooses VAR lag order three, whereas

Schwarz criterion selects order one as optimal. AIC is generally more efficient than other methods (Brooks, 2008). Lowest Akaike information criterion i.e. lag length of three is selected as an optimal lag for the model. So, lag length of three will be used as an optimal lag in the econometric metrics employed in the current study.

The study employed test of Johansen co-integration to investigate the long term association between foreign direct investment and explanatory variables of the study. Johansen co-integration test results are presented in Table 3 and Table 4.

The trace statistics tests the null hypothesis with no co-integration i.e. H_0: r=0, against the alternate hypothesis of presence of co-integration H_1: r > 0 (Brooks, 2008). The probability value of null hypothesis that there are none co-integrated equations is 0.0000, which is less than the significance level of 5%, indicating rejection of null hypothesis. Probability values of at-most one co-integrating equation is less than the significance level, signifying rejection of the null hypothesis that there is at-most one co-integrating equation. Similarly, probabilities values of at-most two and at-most three co-integrated equations are less than the significance level, indicating refusal of null hypothesis, that there are at-most two and three co-integrating equations respectively. Trace test specifies presence of four co-integrating equations at significance level because the probability value of 5.34% is more than the significance level. Likewise, the critical value of 15.49471 is higher than the trace statistic of 15.30275, referring acceptance of null hypothesis that there are 4 co-integrating equations.

Table-3. Unrestricted Co-integration Rank Test (Trace).

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.956193	272.0641	95.75366	0.0000
At most 1 *	0.892711	162.5855	69.81889	0.0000
At most 2 *	0.723544	84.45760	47.85613	0.0000
At most 3 *	0.498499	39.45801	29.79707	0.0029
At most 4	0.333482	15.30275	15.49471	0.0534
At most 5	0.031042	1.103681	3.841466	0.2935

Trace test indicates 4 co-integrating eqn(s) at the 0.05 level.
* denotes rejection of the hypothesis at the 0.05 level.

Table-4. Unrestricted Co-integration Rank Test (Maximum Eigenvalue).

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.956193	109.4786	40.07757	0.0000
At most 1 *	0.892711	78.12786	33.87687	0.0000
At most 2 *	0.723544	44.99959	27.58434	0.0001
At most 3 *	0.498499	24.15527	21.13162	0.0182
At most 4	0.333482	14.19907	14.26460	0.0512
At most 5	0.031042	1.103681	3.841466	0.2935

Max-eigenvalue test indicates 4 co-integrating eqn(s) at the 0.05 level.
* denotes rejection of the hypothesis at the 0.05 level.

Similarly, the results of max Eigen statistics also present similar results. Null hypothesis that conditions, that there is no co-integration amid the variable is rejected, indicating prevalence of long term association ship among the variables. The null hypotheses of at-most one, two and three co-integrated equations are also rejected because their probability values are lower than significance level of 5%. Max Eigen test indicates presence of four co-integration equations at 5%, the probability value of 5.12% is more than the level of significance, similarly the critical value of 14.26460 at 5% exceeded the max Eigen statistics of 14.19907 indicating acceptance of the null hypothesis. The results indicate that FDI, tourism, GDP, exchange rate, inflation and trade openness are co-integrated. So, in the model the association between the variables is for long term, but the direction of the causality needs to be identified.

4.2. Analysis of Causality and Quality of the Model

The model provided by the VEM model is:

D(LFDI) = C(1)*(LFDI(-1) + 0.911947805699*ER(-1) - 1913.04784033 *LTO(-1) - 2163.78254259) + C(2)*(NOA(-1) - 191934.363822*ER(-1) + 367511253.868*LTO(-1) + 411208321.359) + C(3)*(LGDP(-1) - 0.231755723048*ER(-1) + 419.685834699*LTO(-1) + 445.76300531) + C(4)*(INF(-1) - 3.86677781434*ER(-1) + 7833.62447137*LTO(-1) + 8757.53201554) + C(5)*D(LFDI(-1)) + C(6)*D(LFDI(-2)) + C(7)*D(LFDI(-3)) + C(8)*D(NOA(-1)) + C(9)*D(NOA(-2)) + C(10)*D(NOA(-3)) + C(11)*D(LGDP(-1)) + C(12)*D(LGDP(-2)) + C(13)*D(LGDP(-3)) + C(14)*D(INF(-1)) + C(15)*D(INF(-2)) + C(16)*D(INF(-3)) + C(17)*D(ER(-1)) + C(18)*D(ER(-2)) + C(19)*D(ER(-3)) + C(20)*D(LTO(-1)) + C(21)*D(LTO(-2)) + C(22)*D(LTO(-3)) + C(23)

C (1) measures the speed of adjustment towards equilibrium and it is the error correction term (Kaushal & Pathak, 2015). The co-efficient of the co-integration equation C (1) is -1.338722 and the corresponding probability value is 0.0004. The error correction term possesses negative sign and the probability value is statistically significant at 5%. This indicates occurrence of long term causality running from tourism, exchange rate, inflation, GDP, and openness of trade to FDI in Pakistan.

The results of VEC granger causality results indicate that tourism, GDP, inflation, trade openness granger causes FDI in the short run in Pakistan. Similarly, Gross domestic product and inflation leads to tourism in the short run. Tourism, GDP and exchange rates Granger causes openness of trade in the short run. So, unidirectional short run causation is found from tourist arrivals to foreign direct investment and no short-run causation is found from foreign direct investment to tourist arrivals. Bi-directional short run causation is found between FDI and exchange rate.

Table 5 illustrate the presence of long term causality from tourism, GDP, exchange rate, inflation and openness of trade to the dependent variable FDI because the corresponding overall chi square's probability value is statistically significant. Table 6 details that the probability value of overall tourism chi-square is statistically significant at 5%, signifying existence of long term Granger causality from GDP, inflation, exchange rate, trade openness and FDI to tourism in Pakistan. Table 7 and Table 8 details that the probability value of overall GDP and inflation is statistically insignificant which indicates absence of long-run causality from FDI, tourism, inflation, exchange rate and trade openness to GDP and from FDI, tourism, GDP, exchange rate, trade openness to inflation in Pakistan. Table 9 exhibits existence of long-run causation from FDI, tourism, GDP, inflation and trade openness to exchange rate, since the respective probability value of overall exchange rate chi-square is significant. Table 10 details presence of long run causality from FDI, tourism, GDP, inflation, exchange rate to trade openness in Pakistan, since the corresponding probability value of overall trade openness chi-square is significant.

Table-5. Dependent variable: D (LFDI).

Excluded	Chi-sq.	Df	Prob.
D(NOA)	26.73334	3	0.0000
D(LGDP)	11.22755	3	0.0106
D(INF)	26.65866	3	0.0000
D(ER)	15.83595	3	0.0012
D(LTO)	14.54536	3	0.0022
All	60.10506	15	0. 0000

Source: World development indicators and Pakistan statistical yearbooks.
VEC Granger causality/Block Exogeneity Wald tests on Eviews 7.1.

Table-6. Dependent variable: D(NOA).

Excluded	Chi-sq.	Df	Prob.
D(LFDI)	6.859602	3	0.0765
D(LGDP)	18.77784	3	0.0003
D(INF)	10.66906	3	0.0137
D(ER)	6.138271	3	0.1051
D(LTO)	7.300055	3	0.0629
All	51.82097	15	0

Source: World development indicators and Pakistan statistical yearbooks.
VEC Granger causality/Block Exogeneity Wald tests on Eviews 7.1.

Table-7. Dependent variable: D(LGDP).

Excluded	Chi-sq.	Df	Prob.
D(LFDI)	1.233515	3	0.7450
D(NOA)	0.231390	3	0.9724
D(INF)	0.270516	3	0.9655
D(ER)	3.430790	3	0.3298
D(LTO)	3.060173	3	0.3824
All	17.23919	15	0.3048

Source: World development indicators and Pakistan statistical yearbooks.
VEC Granger causality/Block Exogeneity Wald tests on Eviews 7.1.

Table-8. Dependent variable: D(INF).

Excluded	Chi-sq.	Df	Prob.
D(LFDI)	6.019996	3	0.1106
D(NOA)	6.895246	3	0.0753
D(LGDP)	6.130813	3	0.1054
D(ER)	1.769996	3	0.6215
D(LTO)	0.235788	3	0.9716
All	19.26056	15	0.2022

Source: World development indicators and Pakistan statistical yearbooks.
VEC Granger causality/Block Exogeneity Wald tests on Eviews 7.1.

Table-9. Dependent variable: D(ER).

Excluded	Chi-sq.	Df	Prob.
D(LFDI)	13.41754	3	0.0038
D(NOA)	5.583339	3	0.1337
D(LGDP)	2.836005	3	0.4176
D(INF)	7.474612	3	0.0582
D(LTO)	1.015172	3	0.7976
All	37.28462	15	0.0011

Source: World development indicators and Pakistan statistical yearbooks.
VEC Granger causality/Block Exogeneity Wald tests on Eviews 7.1.

Table-10. Dependent variable: D(LTO).

Excluded	Chi-sq.	Df	Prob.
D(LFDI)	0.099898	3	0.9918
D(NOA)	10.18192	3	0.0171
D(LGDP)	9.535819	3	0.0230
D(INF)	7.130955	3	0.0678
D(ER)	18.13949	3	0.0004
All	39.17097	15	0.0006

Source: World development indicators and Pakistan statistical yearbooks.
VEC Granger causality/Block Exogeneity Wald tests on Eviews 7.1.

In order to analyze the quality of the model heteroskedasticity test, normality test and serial correlation LM test are employed. Table 11 shows the outcomes of heteroskedasticity test. The probability value of 59.28% is more than the level of significance, indicating the acceptance of the null hypothesis at 5%, that there is no heteroskedasticity present in our model.

Table-11. Heteroskedasticity Test: Breusch-Pagan-Godfrey.

F-statistic	0.685882	Prob. F(24,10)	0.7845
Obs*R-squared	21.77307	Prob. Chi-Square(24)	0.5928
Scaled explained SS	1.449993	Prob. Chi-Square(24)	1.0000

Source: Heteroskedasticity Test: Breusch-Pagan-Godfrey test on Eviews 7.1.

Jarque-bera test is applied to tests the normality of residuals. The probability value of Jarque –bera is 57.8%, which is more than the level of significance of 5%, meaning the null hypothesis cannot be refused that the residuals are normally distributed.

Table-12. Breusch-Godfrey Serial Correlation LM Test.

F-statistic	1.481775	Prob. F(3,30)	0.2394
Obs*R-squared	4.182487	Prob. Chi-Square(3)	0.2424

Source: Breusch-Godfrey Serial Correlation LM Test on Eviews 7.1.

Serial correlation test illustrates that probability value of chi square is more than the level of significance of 5%, indicating acceptance of the null hypothesis. This implies that there is no serial correlation present in the model. The model does not have heteroskedasticity and serial correlation problem and residuals are normally distributed. This suggests stability of the model. Diagnostic tests specify that overall model is robust. See Table 12.

R-squared explains the amount of variance in dependent variable that is described by the explanatory variables. Table 13 shows that 88.7% variation in inward foreign direct investment is explained by tourism, exchange rate, gross domestic product, inflation and trade openness. The probability of the F statistic is significant because 0.5965% is less than the significant level of 5%, implying that the data fitted well in the model. Durbin Watson statistic check existence of autocorrelation. The value of Durbin Watson is 2.629011 and it indicates no presence of autocorrelation in the data.

Table-13. Least Squares.

R-squared	0.887466	Prob (F-statistic)	0.005965
Adjusted R-squared	0.681153	F-statistic	4.301552
Durbin-Watson stat	2.629011		

Source: Least Squares test on E-views 7.1.

5. CONCLUSION

This paper empirically examines the association between FDI, tourism, GDP, exchange rate, inflation and trade openness in Pakistan over the time period of 1979 to 2017. Augmented Dickey Fuller test (ADF) results indicate the presence of stationarity at first difference.

Johansen co-integration test results indicate the existence of long-run relationship between foreign direct investment, exchange rate, tourism, GDP, trade openness and inflation. VEC model confirms long run causation from tourism, GDP, exchange rate, inflation and openness of trade to foreign direct investment in Pakistan.

The results of vector error correction granger causality also imply the presence of short-run causation among the variables. Uni-directional causality is found running from tourism to FDI, from GDP to FDI, from inflation to FDI, from trade openness to FDI, from inflation to tourism, from GDP to tourism, from tourism to trade openness, from GDP to trade openness and from exchange rate to trade openness in the short run in Pakistan. Two-way causation is found between the exchange rate and FDI and no short-run causation is found from FDI to tourism in Pakistan. Bi-directional short-run causality is found in between FDI and exchange rate. The bidirectional causality findings are parallel with Khan *et al.* (2015) who also found two-way causality between foreign direct investment and exchange rate in Pakistan but contradicted the findings of Samiullah *et al.* (2012) found exchange rate instability leads to FDI in Pakistan and not otherwise. Bano *et al.* (2019) found short term causality from exchange

rate to FDI in Pakistan. The causality from FDI to exchange rate supports the understanding that FDI aggravates volatility of the exchange rate.

Unidirectional short-run causality is found from tourist arrivals to FDI. Unidirectional causality from tourist arrivals to FDI followed the findings of Kaur and Sarin (2016). Salleh *et al.* (2011) found one-way causality from tourism development industry to FDI in Malaysia and Thailand. Tomohara (2016) found significant and positive impact of tourism on foreign direct investment in non-tourism industries.

The one-way short term causation is found from GDP to FDI. The one-way causality is found to be consistent with Kivyiro and Arminen (2014), Gupta and Singh (2016), Kaur and Sarin (2016) and Abdul and Amjad (2013). Cicak and Soric (2015) found evidence that GDP causes FDI in Slovenia and Latvia. This supports the theory that investors are attracted to countries with higher GDP. Bhasin and Gupta (2017) found significant, positive and bilateral association between GDP and FDI inflows in India.

No causality is found from foreign direct investment to GDP in the short run, in Pakistan. The findings of no causality are consistent with India, where FDI inflows from Japan, UK and USA did not significantly impact India's GDP (Rawat, 2015).

Short run Granger causality is found from inflation to FDI. The one-way causality is parallel with Esew and Yaroson (2014). Bano *et al.* (2019) found inflation positively affects FDI. Nunnenkamp *et al.* (2012) found one percent increase in inflation in the host country increases the FDI outflows by 0.37%, indicating Indian investor are resilient to economic instability in the host countries and are attracted towards countries with higher inflation rates. This supports our finding that inflation granger causes FDI in Pakistan.

Similarly, short run one-way causality is established from trade openness to FDI. The unidirectional results followed the findings of Hakro and Ghumro (2011), Liargovas and Skandalis (2012) and Singhania and Gupta (2011). This supports the understanding that countries with higher trade openness and less restrictions attract more foreign direct investment.

One way causality is also found running from inflation to tourism and from GDP to tourism in the short run. Causality from GDP to tourism is in line with the findings of Kaur and Sarin (2016) who found uni-directional causality from GDP to foreign tourist arrivals in India. Eeckels *et al.* (2012) found short-run causation from GDP to tourism. Lee (2012) also found GDP led tourism nexus in Singapore. This infers that foreign tourists are attracted to nations with greater GDP and higher economic growth.

Short run Granger causality is established from tourism to trade openness. The causality from tourism to trade openness is consistent with Wong and Tang (2010). This causality supports the understanding that growth in the tourism sector will encourage trade opportunities between the countries. This causation will result in the formulation of policies encouraging trade openness. Shahbaz *et al.* (2017) established two-way causality between tourism and trade openness.

Short run one-way causality is established from GDP to trade openness. The unidirectional causality is parallel with Kaushal and Pathak (2015) who found growth rate in GDP Granger caused trade openness. One-way causal relation from exchange rate to trade openness is parallel with Yazdi *et al.* (2017) findings. No short term causality is found from FDI to tourism in Pakistan indicating foreign direct investment inflows do not granger cause tourism in the short term in Pakistan.

The results of the normality test, heteroskedasticity test and serial correlation LM test specify stability of the model. This research holds implications for the policymakers. The unidirectional causality from tourism to FDI accentuate the need of sustainable tourism policies. This sector holds potential to contribute towards the economic growth of Pakistan by stimulating the inflows of foreign direct investment. Despite the beautiful landscapes and huge tourism potential, this sector has remained neglected by the authorities. Political and economic certainty, better management, good law and order situation, policy direction towards extending warm hospitality to

tourists, improved infrastructure, cleanliness and positive image of Pakistan can help in the revival of tourism sector in Pakistan.

5.1. Limitations

Although this study accomplished its objectives, there were some inevitable. At first, the research aimed to incorporate other macroeconomic variables like interest rates, literacy rate, unemployment rate, etc., but due to the unavailability of data of 39 years, the research ended with the analysis of fewer macroeconomic variables. Another limitation was lack of prior research on tourism with respect to FDI in Pakistan particularly to determine the previous trends of tourism with FDI. Time was another constraint.

REFERENCES

Abdul, M.I. and S. Amjad, 2013. Foreign direct investment and stock market development in Pakistan. Journal of International Trade Law and Policy, 12(3): 226-242.Available at: https://doi.org/10.1108/jitlp-02-2013-0002.

Ahmed, M. and M.A. Anwar, 2016. The nexus between terrorism, infrastructure and tourism industry in Pakistan. International Journal of Economics and Empirical Research, 4(1): 25-31.

Ahmed, Q.-U.-A., U. Ilyas, S. Tariq and F. Zafar, 2017. Tourism towards economic growth of Pakistan. Bulletin of Business and Economics, Research Foundation for Humanity, 6(2): 92-97.

Alam, A., M.J. Malik, K. Gadar and E.A. Idris, 2016. The relationship between tourism, foreign direct investment and economic growth: Evidence from Saudi Arabia. European Academic Research, 4(4): 4091-4106.

Aleemi, A.R. and M.A. Qureshi, 2015. Tourism receipts and economic growth: Empirical evidence from Pakistan. International Journal of Research, 2(2).

Ali, I., A. Barrientos, A. Saboor, A.U. Khan and J. Nelson, 2017. A decade of sub-national pro-poor growth in Pakistan. Social Indicators Research, 133(1): 47-65.Available at: https://doi.org/10.1007/s11205-016-1349-7.

Angelo, F.d.C., R.V. Eunni and M.D.F.N. Manoel, 2010. Determinants of FDI in emerging markets: Evidence from Brazil. International Journal of Commerce and Management, 20(3): 203-216.Available at: https://doi.org/10.1108/10569211011076901.

Anwar, S. and L.P. Nguyen, 2010. Foreign direct investment and economic growth in Vietnam. Asia Pacific Business Review, 16(1-2): 183-202.

Anyanwu, J.C. and N.D. Yameogo, 2015. What drives foreign direct investments into West Africa? An empirical investigation. African Development Review, 27(3): 199-215.Available at: https://doi.org/10.1111/1467-8268.12141.

Arshad, M.I., M.A. Iqbal and M. Shahbaz, 2018. Pakistan tourism industry and challenges: A review. Asia Pacific Journal of Tourism Research, 23(2): 121-132.Available at: https://doi.org/10.1080/10941665.2017.1410192.

Asif, M. and A. Majid, 2018. Institutional quality, natural resources and FDI: Empirical evidence from Pakistan. Eurasian Business Review, 8(4): 391-407.Available at: https://doi.org/10.1007/s40821-017-0095-3.

Bajpai, N., 2011. Business research methods. Pearson Education India.

Bano, S., Y. Zhao, A. Ahmad, S. Wang and Y. Liu, 2019. Why did FDI inflows of Pakistan decline? From the perspective of terrorism, energy shortage, financial instability, and political instability. Emerging Markets Finance and Trade, 55(1): 90-104.Available at: https://doi.org/10.1080/1540496x.2018.1504207.

Bekhet, H.A. and A.-R.W. Smadi, 2014. Determining the causality relationships among FDI determinants: Evidence from Jordan. International Journal of Sustainable Economy, 6(3): 261-274.Available at: https://doi.org/10.1504/ijse.2014.063184.

Bhasin, N. and A. Gupta, 2017. Macroeconomic impact of FDI inflows: An ARDL approach for the case of India. Transnational Corporations Review, 9(3): 150-168.Available at: https://doi.org/10.1080/19186444.2017.1362860.

Boateng, A., X. Hua, S. Nisar and J. Wu, 2015. Examining the determinants of inward FDI: Evidence from Norway. Economic Modelling, 47: 118-127.Available at: https://doi.org/10.1016/j.econmod.2015.02.018.

Brooks, C., 2008. Introductory econometrics for finance.

Cárdenas-García, P.J., M. Sánchez-Rivero and J.I. Pulido-Fernández, 2015. Does tourism growth influence economic development? Journal of Travel Research, 54(2): 206-221.Available at: https://doi.org/10.1177/0047287513514297.

Chung, K., 2010. Foreign debt, foreign direct investment and volatility. International Economic Journal, 24(2): 171-196.Available at: https://doi.org/10.1080/10168731003649628.

Cicak, K. and P. Soric, 2015. The interrelationship of FDI and GDP in European transition countries. International Journal of Management Science and Business Administration, 1(4): 41-58.Available at: https://doi.org/10.18775/ijmsba.1849-5664-5419.2014.14.1003.

Crotti, S., T. Cavoli and J.K. Wilson, 2010. The impact of trade and investment agreements on Australia's inward FDI flows. Australian Economic Papers, 49(4): 259-275.Available at: https://doi.org/10.1111/j.1467-8454.2010.00401.x.

Dellis, K., D. Sondermann and I. Vansteenkiste, 2017. Determinants of FDI inflows in advanced economies: Does the quality of economic structures matter? ECB Working Paper No. 2066.

Dheerasinghe, R., 2011. Relative effectiveness of policy choices during the global financial crisis in SEACEN countries. Research Studies.

Dickey, D.A. and W.A. Fuller, 1979. Distribution of the estimators for autoregressive time series with a unit root. Journal of the American Statistical Association, 74(366a): 427-431.Available at: https://doi.org/10.1080/01621459.1979.10482531.

Dorodnykh, E., 2013. Stock market integration: An international perspective. Springer.

Eeckels, B., G. Filis and C. Leon, 2012. Tourism income and economic growth in Greece: Empirical evidence from their cyclical components. Tourism Economics, 18(4): 817-834.Available at: https://doi.org/10.5367/te.2012.0148.

Esew, N.G. and E. Yaroson, 2014. Institutional quality and foreign direct investment (FDI) in Nigeria: A prognosis. IOSR Journal of Humanities and Social Science, 19(6): 37-45.

Falk, M., 2015. The sensitivity of tourism demand to exchange rate changes: An application to Swiss overnight stays in Austrian mountain villages during the winter season. Current Issues in Tourism, 18(5): 465-476.Available at: https://doi.org/10.1080/13683500.2013.810610.

Fereidouni, H.G. and U. Al-mulali, 2014. The interaction between tourism and FDI in real estate in OECD countries. Current Issues in Tourism, 17(2): 105-113.Available at: https://doi.org/10.1080/13683500.2012.733359.

Groetzbach, E., 2014. Mountain tourism in North Pakistan—tourist regions and problems of further development. Tourism Recreation Research, 14(2): 69-73.Available at: https://doi.org/10.1080/02508281.1989.11014556.

Gujarati, D.N., 2007. Sangeetha (2007) Basic econometrics. New Delhi: Tata McGraw Hill Publishing Company Limited, 110(008): 451-452.

Gupta, P. and A. Singh, 2016. Causal nexus between foreign direct investment and economic growth: A study of BRICS nations using VECM and Granger causality test. Journal of Advances in Management Research, 13(2): 179-202.Available at: https://doi.org/10.1108/jamr-04-2015-0028.

Gupta, P. and A. Singh, 2016. Determinants of foreign direct investment: A panel data analysis. Emerging Economy Studies, 2(2): 181-198.Available at: 10.1177/2394901516661095.

Hakro, A.N. and I.A. Ghumro, 2011. Determinants of foreign direct investment flows to Pakistan. The Journal of Developing Areas, 44(2): 217-242.

Ho, C. and H. Rashid, 2011. Macroeconomic and country specific determinants of FDI. The Business Review, 18(1): 219-226.

Hye, Q.A. and R.A. Khan, 2013. Tourism-led growth hypothesis: A case study of Pakistan. Asia Pacific Journal of Tourism Research, 18(4): 303-313.Available at: https://doi.org/10.1080/10941665.2012.658412.

Katircioglu, S., S. Katircioğlu and M. Altinay, 2018. Interactions between tourism and financial sector development: Evidence from Turkey. The Service Industries Journal, 38(9-10): 519-542.Available at: https://doi.org/10.1080/02642069.2017.1406479.

Kaur, H. and V. Sarin, 2016. Causality relationship between GDP, FDI, tourism: Empirical evidence from India. International Journal of Applied Business and Economic Research, 14(5): 247-255.

Kaushal, L.A. and N. Pathak, 2015. The causal relationship among economic growth, financial development and trade openess in Indian economy. International Journal of Economic Perspectives, 9(2): 5-22.

Khalil, S., M.K. Kakar and A. Malik, 2007. Role of tourism in economic growth: Empirical evidence from Pakistan economy. The Pakistan Development Review, 46(4): 985-995.Available at: https://doi.org/10.30541/v46i4iipp.985-995.

Khan, R.E., R. Sattar and H. Rehman, 2015. Effectiveness of exchange rate in Pakistan: Causality analysis. Pakistan Journal of Commerce and Social Sciences, 6(1): 83-96.

Khan, R.E.A. and H.Q.M. Adnan, 2014. Foreign direct investment and liberalization policies in Pakistan: An empirical analysis. Cogent Economics & Finance, 2(1): 944667.Available at: https://doi.org/10.1080/23322039.2014.944667.

Kivyiro, P. and H. Arminen, 2014. Carbon dioxide emissions, energy consumption, economic growth, and foreign direct investment: Causality analysis for Sub-Saharan Africa. Energy, 74: 595-606.Available at: https://doi.org/10.1016/j.energy.2014.07.025.

Kosekahyaoglu, L., 2010. A comparative analysis of FDI in Turkey and the CEECs: Is there any link between FDI and trade? Journal of Business Economics and Management, 7(4): 183-200.Available at: https://doi.org/10.3846/16111699.2006.9636140.

Lee, C.G., 2012. Tourism, trade, and income: Evidence from Singapore. Anatolia, 23(3): 348-358.Available at: https://doi.org/10.1080/13032917.2012.701596.

Liargovas, P.G. and K.S. Skandalis, 2012. Foreign direct investment and trade openness: The case of developing economies. Social Indicators Research, 106(2): 323-331.Available at: https://doi.org/10.1007/s11205-011-9806-9.

Meo, M.S., M.A.F. Chowdhury, G.M. Shaikh, M. Ali and S.S. Masood, 2018. Asymmetric impact of oil prices, exchange rate, and inflation on tourism demand in Pakistan: New evidence from nonlinear ARDL. Asia Pacific Journal of Tourism Research, 23(4): 408-422.Available at: https://doi.org/10.1080/10941665.2018.1445652.

Meyer, K.E., 2015. What is strategic asset seeking FDI?. The Multinational Business Review, 23(1): 57-66.Available at: https://doi.org/10.1108/mbr-02-2015-0007.

Morales, R.R., D. Gamberger, I. Jenkins and T. Smuc, 2011. Modelling investment in the tourism industry using the world bank's good governance indicators. Journal of Modelling in Management, 6(3): 279-296.Available at: https://doi.org/10.1108/17465661111183694.

Naqeeb, U.R., 2016. FDI and economic growth: Empirical evidence from Pakistan. Journal of Economic and Administrative Sciences, 32(1): 63-76.Available at: https://doi.org/10.1108/jeas-12-2014-0035.

Nelson, C.R. and C.R. Plosser, 1982. Trends and random walks in macroeconmic time series: Some evidence and implications. Journal of Monetary Economics, 10(2): 139-162.Available at: https://doi.org/10.1016/0304-3932(82)90012-5.

Nunnenkamp, P., M.S. Andrés, K.C. Vadlamannati and A. Waldkirch, 2012. What drives India's outward FDI?. South Asian Journal of Macroeconomics and Public Finance, 1(2): 245-279.Available at: https://doi.org/10.1177/2277978712473402.

Pattayat, S.S., 2016. Examining the determinants of FDI inflows in India. Theoretical & Applied Economics, 23(2): 225-238.

Perić, J. and M.N. Radić, 2016. FDI-led tourism growth hypothesis: Empirical evidence from Croatian tourism. European Journal of Tourism, Hospitality and Recreation, 7(3): 168-175.Available at: https://doi.org/10.1515/ejthr-2016-0019.

Rasheed, R., M.S. Meo, R.U. Awan and F. Ahmed, 2019. The impact of tourism on deficit in balance of payments of Pakistan: An application of bounds testing approach to cointegration. Asia Pacific Journal of Tourism Research, 24(4): 325-332.Available at: https://doi.org/10.1080/10941665.2018.1564345.

Rawat, B., 2015. Impact of FDI on India's GDP: An inter- comparative study between USA, UK and Japan. Transnational Corporations Review, 4(3): 95-99.

Roudi, S., H. Arasli and S.S. Akadiri, 2018. New insights into an old issue—examining the influence of tourism on economic growth: Evidence from selected small Island developing states. Current Issues in Tourism: 1-21.Available at: https://doi.org/10.1080/13683500.2018.1431207.

Saleh, A.S., T.L.A. Nguyen, D. Vinen and A. Safari, 2017. A new theoretical framework to assess multinational corporations' motivation for foreign direct investment: A case study on Vietnamese service industries. Research in International Business and Finance, 42: 630-644.Available at: https://doi.org/10.1016/j.ribaf.2017.07.007.

Salleh, N.H., R. Othman and T. Sarmidi, 2011. An analysis of the relationships between tourism development and foreign direct investment: An empirical study in selected major Asian countries. International Journal of Business and Social Science, 2(17): 250-257.

Samiullah, S.Z. Haider and P. Azim, 2012. Impact of exchange rate volatility on foreign direct investment: A case study of Pakistan. Pakistan Economic and Social Review, 50(2): 121-138.

Sargan, J.D., 1984. Contributions to econometrics. Quantitative economics and econometric analysis. Oxford, U.K: Basil Blackwell.

Selvanathan, S., E.A. Selvanathan and B. Viswanathan, 2012. Causality between foreign direct investment and tourism: Empirical evidence from India. Tourism Analysis, 17(1): 91-98.Available at: https://doi.org/10.3727/108354212x13330406124296.

Shahbaz, M., R.R. Kumar, S. Ivanov and N. Loganathan, 2017. The nexus between tourism demand and output per capita with the relative importance of trade openness and financial development: A study of Malaysia. Tourism Economics, 23(1): 168-186.Available at: https://doi.org/10.5367/te.2015.0505.

Shahzad, S.J.H., M. Zakaria, M.U. Rehman, T. Ahmed and B.A. Fida, 2016. Relationship between FDI, terrorism and economic growth in Pakistan: Pre and post 9/11 analysis. Social Indicators Research, 127(1): 179-194.Available at: https://doi.org/10.1007/s11205-015-0950-5.

Siddique, H.A., K. Ullah and I.U. Haq, 2016. External debt and economic growth nexus in Pakistan. Procedia-Social and Behavioral Sciences, 230: 325-334.

Singh, D.R., H. McDavid, A. Birch and A. Wright, 2008. The determinants of FDI in small developing nation states: An exploratory study. Social and Economic Studies, 57(3): 79-107.

Singhania, M. and A. Gupta, 2011. Determinants of foreign direct investment in India. Journal of International Trade Law and Policy, 10(1): 64-82.

Tabassam, A.H., S.H. Hashmi and F.U. Rehman, 2016. Nexus between political instability and economic growth in Pakistan. Procedia-Social and Behavioral Sciences, 230: 325-334.Available at: https://doi.org/10.1016/j.sbspro.2016.09.041.

Tan, H.B. and C.W. Hooy, 2005. Understanding the behavior of the Malaysian stock market. Universiti Putra Malaysia Press.

Tang, J., S. Sriboonchitta, V. Ramos and W.-K. Wong, 2016. Modelling dependence between tourism demand and exchange rate using the copula-based GARCH model. Current Issues in Tourism, 19(9): 876-894.Available at: https://doi.org/10.1080/13683500.2014.932336.

Thadewald, T. and H. Büning, 2007. Jarque–bera test and its competitors for testing normality–a power comparison. Journal of Applied Statistics, 34(1): 87-105.Available at: https://doi.org/10.1080/02664760600994539.

Tomohara, A., 2016. Japan's tourism-led foreign direct investment inflows: An empirical study. Economic Modelling, 52: 435-441.Available at: https://doi.org/10.1016/j.econmod.2015.09.024.

Travel & Tourism Economic Impact 2018 Pakistan, 2018. Retrieved from world travel and tourism council. Available from https://www.wttc.org/-/media/files/reports/economic-impact-research/archived/countries-2018/pakistan2018.pdf.

Uddin, M., A. Chowdhury, S. Zafar, S. Shafique and J. Liu, 2019. Institutional determinants of inward FDI: Evidence from Pakistan. International Business Review, 28(2): 344-358.Available at: https://doi.org/10.1016/j.ibusrev.2018.10.006.

Wong, K.N. and T.C. Tang, 2010. Tourism and openness to trade in Singapore: Evidence using aggregate and country-level data. Tourism Economics, 16(4): 965-980.Available at: https://doi.org/10.5367/te.2010.0017.

Yazdi, K.S., K. Homa Salehi and M. Soheilzad, 2015. The relationship between tourism, foreign direct investment and economic growth: Evidence from Iran. Current Issues in Tourism, 20(1): 15-26.

Yazdi, K.S., N. Nateghian and R.N. Sheikh, 2017. The causality relationships between tourism development and foreign direct investment: An empirical study in EU countries. Journal of Policy Research in Tourism, Leisure and Events, 9(3): 247-263.Available at: https://doi.org/10.1080/19407963.2017.1297310.

Zheng, Y., 2011. Credibility and flexibility: Political institutions, governance, and foreign direct investment. International Interactions, 37(3): 293-319.Available at: https://doi.org/10.1080/03050629.2011.596008.