

THE IMPACT OF TERRORISM ON ECONOMIC GROWTH AND FOREIGN DIRECT INVESTMENT IN SOUTH ASIA

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ABSTRACT

Terrorism is not a new phenomenon, but it has gained prominence in recent years, particularly in South Asia due to its geographical location. The goal of this study is to determine the empirically categorized impact of terrorist attacks in South Asia (bombings, assassinations, armed assaults, hostage situations, and other minor incidents). The panel data model collects data from four countries (Bangladesh, India, Pakistan, and Sri Lanka) from 1987 to 2016. To investigate the interrelationships among variables and to test for the identification and endogeneity of the model, the simultaneous approach, three Stages Least Square (3SLS) method is used. Hansen J and Hausman tests are also used. The main findings indicate that categorical terrorism has a negative and significant impact on GDP and FDI. As a control variable, inflation, labour, capital, trade openness, and the exchange rate are used. To examine the bidirectional relationship between GDP and FDI, the endogeneity growth model is also used. Terrorism significantly reduces economic growth and foreign direct investment, according to the findings. Economic growth and foreign direct investment are both positive and closely linked.

Key Words: Categorical terrorism, foreign direct investment, economic growth, Simultaneous approach, Bidirectional relationship

1. INTRODUCTION

Terrorism is not a recent occurrence. Terrorism theory can be traced back to the battle against the Romans (Kutlu, 2010; Akçay, 2012). Terrorism derives from the French word "terror," which means "life-threatening event that has a specific impact on the public" and generally means "interface of unconscious response" (AKAY & ELENAY, 2012; Kİç, 2007; Uytun, 2000).

Terrorism is defined as “the deliberate use of risk to use violence by individuals or subnational groups to achieve a political or social goal through the intimidation of a large audience beyond that of the immediate victims” (Sandler & Enders, 2008). Beyond a modern phenomenon, though much substance has been achieved in research since the 9/11 attacks on the United States in 2001. Because of their geographical location, South Asia and the Middle East are particularly vulnerable to terrorist attacks (IMF, 2001a).

Terrorist activities such as bombings on multinational corporations and government buildings, kidnappings of ships, planes, and passengers are all too common on a global scale. Political depictions, shopping malls, airports, terrorist attacks on train stations, airports, and government executives, kidnapping of businessmen as assassination of the general public, and conflict of interest of the transnational public (Topal, 2004)

Terrorism can cause significant economic damage in any country. These harms are primarily the result of anxiety caused by the loss of self-confidence caused by terrorism (Frey et al., 2007; Hyder, Akram, & Padda, 2015; Khalid et al., 2014)(Karagöz, 2016). A terrorist, on the other hand, can directly target basic economic sectors. The terrorist's goal of obtaining political and financial demand through illegal means is a strong signal for management to convey by putting pressure on political power and absorbing public attention through the terrorism act (Karaduman & Batu, 2011).

Terrorism has a greater impact on developing countries than on developed countries because these countries do not have diverse economies (Sandler & Enders, 2008). Terrorism and economic growth are inextricably linked, both directly and indirectly. However, the track of this association may be double-sided in order to demonstrate the relationships. Because developing countries do not have diverse economies, terrorism has a greater impact on them

than on developed countries (Sandler & Enders, 2008). Terrorism and economic development are inextricably linked, both directly and indirectly. However, in order to demonstrate the relationships, the track of this association may be double-sided.

Foreign direct investment is regarded as a boon for developing countries seeking to boost productivity (Azam & Ahmed, 2015; M. Shah, 2009). Foreigners do not take the risk of investing in suspected countries, and they withdraw their assets to any unharmed location (Rasheed & Tahir, 2012). FDI has a longer-term impact on developing economies' economic growth than global trade because the hosting country not only receives capital but also advanced technology and labour opportunities (Agrawal, 2011; M. H. Shah, 2010; Tavares, 2004).

2. LITERATURE REVIEW

According to the acceptable literature, many researchers used various indicators to investigate their effects on the endogenous variables GDP and FDI. Terrorism reduces Pakistan's productive spending by shifting government investment from growth-oriented investments to less productive investments indicative of defense-related actions (Blomberg et al., 2004; M. Shahbaz & Shabbir, 2012).

Terrorist organizations contribute to economic growth by reducing terrorist activities. In exchange, you can reduce terrorist incidents throughout or within a section of society by creating conditions that increase the likelihood of a terrorist act. Thus, terrorism and growth are inextricably linked (Agrawal, 2011; Blomberg et al., 2004).

Murdoch and Sandler (2004) investigated the effects of civil war on neighboring countries. They realized that in the short run, warfare can reduce economic growth by up to 85 percent in the affected economy, but in the long run, the effect can be as low as 30 percent. Whereas in neighboring countries, terrorist activities reduce economic growth by 24 percent in the short run and 30 percent in the long run.

Sandler and Enders (2008), as well as Meierrieks and Gries (2012), examined the impact of terrorist activities on developing and developed economies. Terrorism has a greater impact on developing economies than it does on developed countries. According to Koh (2007), terrorist

activities have a negative impact on the global economy and research and development (R&D) resources. Lunn, Taylor, and Youngs (2007) investigated the impact of terrorism on business and growth in Italy from 1985 to 1997 and discovered that service opportunities had decreased as a result of terrorism.

According to Gaibulloev and Sandler (2009) and Thompson (2008), the effect of terrorist activities on business enterprise is more damaging in developing countries than in developed countries. Gries, Krieger, and Meierrieks (2011) discovered that a significant monetary and political event has a significant impact on the example of fear mongering act as well as financial development.

Fatima, Latif, Chughtai, Hussain, and Aslam (2014) investigate whether terrorism has a negative impact on Pakistan's economic growth. For the analysis, seven years of data were used. According to Choi (2014)'s analysis of 127 countries, economic growth was significant between the 1970s and 2007, but the likelihood of suicide attacks more than doubled. However, national and international terrorist incidents have decreased. Karagöz (2016) investigates how the Workers' Party of Kurdistan (PKK) in Turkey's southeast has implemented a comprehensive management strategy. The regions involved in terrorism were between 1975 and 2001, when compared to the region's main gross domestic product (GDP).

M. A. Shahbaz, Javed, Dar, and Sattar (2013) investigated the relationship between terrorism and FDI. The researchers examined the impact from 2000 to 2011. They discovered that terrorist acts have a significant negative impact on Islamic Republic of Pakistan FDI. They concluded that an increasing number of terrorist attacks had a negative impact on foreign investors' willingness to invest money in the Islamic Republic of Pakistan.

According to Powers and Choi (2012), business-related terrorism has an inverse effect on FDI, whereas non-related business targeted attacks have no effect on growth. Choi and Powers propose a live strategy for reducing business-related terror. The outcomes of suggesting direct efforts to reduce business-targeted terrorist act provide pay-off, and it is more likely to attract FDI once more because the risk from the terrorist act is reduced.

Bezi et al. (2016) investigate the impact of terrorism on FDI in some European Union (EU) and European Economic Area (EEA) countries. As a result, terrorist activities were observed in nine countries between 2000 and 2013, indicating that terrorism is becoming a cause of FDI

reduction. The findings establish an indirect and negative relationship between terrorism incidents and the economy.

According to Johnson (2006), direct foreign investment has a positive impact on economic growth due to the inflow of physical capital. In the cross-simulation panel, they discovered that FDI flows into process development in developing economies but not in developed economies. According to Johnson (2006), direct foreign investment boosts economic growth by bringing in physical capital. They discovered in the cross-simulation panel that FDI flows into process development in developing economies but not in developed economies.

Foreign direct investment has an endogenous impact on economic growth, resulting in the interdependence of FDI and GDP. Foreign direct investment may be required to have a positive impact on the host economy, resulting in market expansion (Oteng-Abayie, Amanor, & Frimpong, 2011). Ray (2012) examined the effects of foreign direct investment on the continent's economic growth from 2001 to 2010 using various economic strategies such as Dickey-Fuller tests, cointegration, and the Vector Error Correction model. They demonstrated a positive and critical long-term relationship between foreign direct investment and growth, as well as a running unidirectional relationship between FDI and GDP.

Andinuur (2013) investigated the positive impact of foreign direct investment on the growth of the South Asian Association for Regional Cooperation countries. Younas (2014) investigates whether or not international openness mitigates the negative effects of terrorist activities on economic growth in developing economies. This study looked at 120 underdeveloped countries from 1976 to 2008 and found that the answer was yes. Basheer, Hussain, Hussan, and Javed (2015) investigate the long-run relationship between terrorism, GDP, and foreign direct investment. The Rancher connection demonstrates that there is a bidirectional long-run and short-run relationship between monetary development, FDI, and terrorist activities.

Methodology and Data

Table 1 Variables description and sources

Variables	Description	Measurement Scale	Transformation	Data Source
GDP	Gross Domestic Production per capita	The data used is in constant (2010) US dollars	Natural Log	WDI
BOM	Bombing attacks	No. of attacks	Natural Log	GTD
ASS	Assassination attacks	No. of attacks	Natural Log	GTD
ARM	Armed assault attacks	No. of attacks	Natural Log	GTD
HOS	Hostage attacks	No. of attacks	Natural Log	GTD
OTH	Other minor attacks	No. of attacks	Natural Log	GTD
FDI	Foreign Direct Investment	Net Inflow Percentage of GDP	Natural Log	WDI
INF	Inflation	Consumer Price Annual Percentage	Natural Log	WDI
LAB	Labor	Total labour	Natural Log	WDI
K	Capital	Fixed capital formation % of GDP	Natural Log	WDI
EXT	Exchange Rate	Local currency rate	Natural Log	Penn 8.1
TRO	Trade Openness	Import & exports % of GDP	Natural Log	WDI

➤ Variable constructions and Definitions

Table 1 shows the explanation, sources of availability, measurement, and transformation of the selected variables used in the empirical study to examine the impact of terrorism on foreign direct investment and economic growth with additional control variables.

➤ **Econometric modelling**

To achieve the goals of this study, we will employ the Cobb–Douglas production function as a control factor, along with labour, capital, exchange rate, trade openness, and inflation. M. Shahbaz, Khan, and Tahir (2010); S. Anwar and Nguyen (2013), Terrorism and foreign direct investment, for example, are included in their observed methodology to analyses the effect of these primary variables on economic growth. However, according to their findings, foreign direct investment and terrorism stimulate economic growth.

To drive an econometric model for the present study Cobb-Douglas production is used.

$$Y = Bom^{a1} Ass^{a2} Arm^{a3} Hos^{a4} Oth^{a5} Fdi^{a6} Inf^{a7} K^{a8} Lab^{a9} Ext^{a9} Tro^{a10} \epsilon^u \quad (I)$$

The time-series measurement takes the following arrangement after applying the logarithmic formation to the above equation (I):

$$\ln(Y_t) = \alpha_0 + \alpha_1 \ln(Bom_t) + \alpha_2 \ln(Ass_t) + \alpha_3 \ln(Arm_t) + \alpha_4 \ln(Hos_t) + \alpha_5 \ln(Oth_t) + \alpha_6 \ln(Fdi_t) + \alpha_7 \ln(Inf_t) + \alpha_8 \ln(K_t) + \alpha_9 \ln(Lab_t) + \mu_t \quad (II)$$

As a result, the current study is a panel study, and the data from the above equation (II) can be specified as follows:

$$\ln(Y_{it}) = \alpha_0 + \alpha_1 \ln(Bom_{it}) + \alpha_2 \ln(Ass_{it}) + \alpha_3 \ln(Arm_{it}) + \alpha_4 \ln(Hos_{it}) + \alpha_5 \ln(Oth_{it}) + \alpha_6 \ln(Fdi_{it}) + \alpha_7 \ln(Inf_{it}) + \alpha_8 \ln(K_{it}) + \alpha_9 \ln(Lab_{it}) + \mu_{it} \quad (III)$$

where $i=1, \dots, N$ represents the countries (in this study, we have four South Asian countries: Bangladesh, India, Pakistan, and Sri Lanka) and $t=1, \dots, T$ represents the time period (the period chosen is 1987–2016).

The following simultaneous equations model will be used to investigate the relationship between categorical terrorism, foreign direct investment, and economic growth. The following two equations empirically investigate the bidirectional relationship between the selected variables: $\ln(Y_{it}) = \alpha_0 + \alpha_{1i} \ln(Bom_{it}) + \alpha_{2i} \ln(Ass_{it}) + \alpha_{3i} \ln(Arm_{it}) + \alpha_{4i} \ln(Hos_{it}) + \alpha_{5i} \ln(Oth_{it}) + \alpha_{6i} \ln(Fdi_{it}) + \alpha_{7i} \ln(Inf_{it}) + \alpha_{8i} \ln(K_{it}) + \alpha_{9i} \ln(Lab_{it}) + \mu_{it} \quad (IV)$

$$\ln(FDI_{it}) = \beta_0 + \beta_1 \ln(Bom_{it}) + \beta_2 \ln(Ass_{it}) + \beta_3 \ln(Arm_{it}) + \beta_4 \ln(Hos_{it}) + \beta_5 \ln(Oth_{it}) + \beta_6 \ln(Y_{it}) + \beta_7 \ln(Inf_{it}) + \beta_8 (Tro_{it}) + \beta_9 \ln(Exc_{it}) + \mu_{it} \quad (V)$$

The primary goal of this study is to use a concurrent methodology to describe the interrelationship between terrorism, foreign direct investment, and economic growth, where GDP is dependent on foreign direct investment and terrorism, and foreign direct investment is dependent on terrorism and GDP. The Cobb–Douglas production allows us to look for bidirectional relationships between variables such as foreign direct investment, terrorism, and economic growth (Omri, 2013; Tiba et al., 2016). The appendix contains results tables for the heteroscedasticity test, correlation test, and multicollinearity tests, which are used to assess the validity of data normality tests.

Results and Discussion

➤ Descriptive Statistics

Table 2 Descriptive Statistics (Logarithmic Scale)

	GD P	MO B	ASS	AR M	HO S	OT H	FDI	INF	LA B	K	TR O	EX T
Mean	6.8	3.60	2.34	2.94	1.48	1.92	-	1.92	0.43	3.10	3.62	3.95
Median	6.7	3.59	2.39	3.23	1.09	1.86	-	2.01	0.56	3.17	3.58	3.94
Maximum	8.2	7.18	5.55	6.51	5.04	5.25	1.29	3.21	1.16	3.57	4.48	4.98
Minimum	5.9	0.00	0.00	0.00	0.00	0.00	-	-	-	2.52	2.54	2.56
Std.Dev.	0.56	1.58	1.42	1.87	1.60	1.60	1.52	0.65	0.43	0.25	0.45	0.51
Skewness	0.50	-0.13	-	-	0.79	0.29	-	-	-	-	-	-
Kourtosis	2.7	2.86	2.25	1.92	2.35	1.91	6.73	11.3	2.30	2.22	2.45	2.85
Jarque-Bere	5.5	0.43	2.09	6.18	14.5	7.67	144	413	9.01	5.97	1.56	2.04

Probab	0.06	0.80	0.35	0.05	0.00	0.02	0.00	0.00	0.11	0.05	0.45	0.36
	6											
Observ	120	120	120	120	120	120	120	120	120	120	120	120

Descriptive statistics give the basic summaries of the data of the variables under consideration. These statistics are used to describe the characteristics of data. Table 2 shows the results of a descriptive statistic on a logarithmic scale.

➤ Panel Unit Root Test

Table 3 Results of panel unit root Lev- in-Lin-Chu (LLC) Test

Variables	(LLC) Test					
	Level		First Difference		Second Difference	
	T-Statistic	Prob.	T-Statistic	Prob.	T-Statistic	Prob.
GDP	8.38178	1.0000	0.06330	0.5252	-6.81627	0.0000*
Bom	-0.24858	0.4018	-3.71581	0.0001*	0.10268	0.4591
Assa	-5.24665	0.0000*	-4.97652	0.0000*	16.8994	0.0000*
Arm	-0.95896	0.1688	-4.70745	0.0000*	6.33400	0.0000*
Hos	0.60548	0.7276	-6.28996	0.0000*	5.37924	0.0000*
Oth	-1.50341	0.0664**	-7.40635	0.0000*	-5.44013	0.0000*
FDI	-1.65452	0.0490**	-4.91867	0.0000*	6.29518	0.0000*
Inf	-0.90072	0.1839	-6.58041	0.0000*	3.58219	0.0002*
K	-1.13574	0.1280	-5.53696	0.0000*	-7.01563	0.0000*
Lab	-2.18589	0.0144*	-5.44677	0.0000*	2.81395	0.0024*
Exr	0.16801	0.4333	-4.27580	0.0000*	-8.74917	0.0000*
Tro	1.47151	0.9294	-2.52802	0.0057	-7.95899	0.0000*

Before proceeding with any further estimation, the stationarity of any model must be verified. To increase the durability of these results, we will use two-panel unit root tests, Lev-in-Lin-Chu (LLC) & Im-Pesaran-Shin (IPS), as described by Lean and Smyth (2010); Lee (2005). The Lev-in-Lin-Chu model considers the cause of heterogeneity, but it lacks sufficient capability

in small sample models to eliminate serial correlation bias, which cannot be eliminated. The IPS test resolves the issue of series heterogeneity and eliminates serial correlation.

That the IPS test has a greater ability to examine small samples than the LLC test. The null hypothesis of (LLC) and (IPS) unit roots indicates that the series are stationary (inar, 2017; Tiba et al., 2016). Tables 3 and 4 show the results of unit root tests.

Table 4 Results of panel unit root(Im-Pesaran-Shin (IPS)) Test

Variables	(IPS) Test					
	Level		First Difference		Second Difference	
	T-Statistic	Prob.	T-Statistic	Prob.	T-Statistic	Prob.
GDP	5.27312	1.0000	-1.72791	0.0420**	-6.107	0.0000*
Bom	1.40007	0.9193	-5.53696	0.0000*	-9.036	0.0000*
Assa	-1.92878	0.0269**	-8.45712	0.0000*	-16.23	0.0000*
Arm	-0.13607	0.4459	-6.39226	0.0000*	-10.79	0.0000*
Hos	0.72609	0.7661	-5.60919	0.0000*	-9.005	0.0000*
Oth	-1.20752	0.1136	-6.10867	0.0000*	-9.501	0.0000*
FDI	-1.06498	0.1434	-6.90584	0.0000*	-12.32	0.0000*
Inf	-2.40031	0.0082*	-4.98109	0.0000*	-8.430	0.0000*
K	-10.10800	0.4570	-3.81329	0.0001*	-8.482	0.0000*
Lab	-4.84700	0.0000*	-6.23775	0.0000*	-4.384	0.0000*
Exr	-0.48570	0.3136	-4.19858	0.0000*	-10.39	0.0000*
Tro	0.96858	0.8336	-3.17671	0.0007*	-9.977	0.0000*

➤ Endogeneity Test

According to Blundell Richard and Smith Richard (1986); Newey and Newey (1985), the Durbin-Wu-Hausman (DWH) test was used first to identify the endogeneity and exogeneity issues of two equations. The null hypothesis in the DWH endogeneity test is that there is no endogeneity. The absence of the null hypothesis indicates that endogenous effects of variables are statistically significant for the model, and thus instrumental techniques are the best methods for investigating the results.

Table 5 Endogeneity test (Hausman)

Null Hypothesis: variables are Exogenous

Test	Chi-sq	Probability
Durbin-Wu-Hausman	10.1547	0.0019*

➤ **Over-identification Test**

According to Blundell Richard and Smith Richard (1986); Newey and Newey (1985), the Hansen J test examines the restriction of the simultaneous equations model's over-identification. The Hansen J test is used to validate equation identification. Table 6 over-identification Test (Hansan J)

Null Hypothesis: Equations are over-identified

Test	Chi-sq	Probability
Hansen-J Stats	3.58685	0.1664

➤ **Regression Results**

Table 7 shows the estimation highlights and the results of the related investigative assessments for the estimation findings that are applicable to the following equations.

$$\ln(Y_{it}) = 9.11 - 0.108 (Bom_{it}) - 0.077(Ass_{it}) - 0.112(Arm_{it}) - 0.116(Hos_{it}) - 0.007(Oth_{it}) + 0.225(Fdi_{it}) - 0.059(Inf_{it}) + 0.468(K_{it}) - 0.189(Lab_{it}) + \mu_{it}$$

(IV)

$$\ln(FDI_{it}) = -18.17 - 0.478 (Bom_{it}) + 0.002(Ass_{it}) - 0.178(Arm_{it}) - 0.106(Hos_{it}) - 0.02(Oth_{it}) + 2.267(Y_{it}) + 0.118(Inf_{it}) - 0.083(Tro_{it}) + 0.268(Ext_{it}) + \varepsilon_{it}$$

(V) In Economic growth (GDP) in South Asia (Pakistan, Bangladesh, Sri Lanka, and India) is negatively associated with terrorism categories. While other things remain constant, a one-unit change in bombing causes a 0.1089 percent decrease in economic growth as GDP per capita. A 1% increase in assassination results in a 0.0771

percent decrease in economic growth. Furthermore, a 1% increase in armed assault results in a 0.1119 percent decrease in GDP, and this has a statistically significant effect on the dependent variable. A 1% increase in hostages causes a 0.1163 percent decrease in GDP, while a 1% increase in minor other categories of terrorism causes a 0.0071 percent decrease in GDP but has no effect on the dependent variable.

Terrorism categories have a negative impact on FDI. A 1% increase in bombing results in a 0.478 percent decrease in foreign direct investment as a percentage of GDP, whereas a 1% increase in armed assault results in a 0.1783 percent decrease that is statistically significant. One percent increase in assassination causes a 0.0201 percent increase in FDI; one unit change in hostage causes a 0.1055 percent decrease; and one percent increase in minor other categories of terrorism causes a 0.0201 percent decrease in FDI; however, these results are insignificant.

Table 7 Three Stages Least Square (3SLS) Result

Dependent Variable: GDP				
Variable	Co-efficient	Std. Error	t-Statistic	Prob.
FDI	0.2250956	0.0164001	13.73	0.000*
BOM	-0.1089531	0.0338385	-3.22	0.001*
ASS	-0.07714	0.0328381	-2.35	0.019*
ARM	-0.111942	0.0317575	-3.52	0.000*
HOS	-0.1163317	0.0304978	-3.81	0.000*
OTH	-0.0070424	0.0289879	-0.24	0.808
INF	-0.0594558	0.0393972	-1.51	0.131
LAB	-0.1893886	0.0213096	-8.89	0.000*
K	0.4684256	0.1013294	4.62	0.000*
Cons	9.112977	0.3716583	24.52	0.000*
R²	0.7196			

Dependent Variable: FDI				
	Coefficient	Std. Error	t Statistic	Prob.
GDP	2.267487	0.8709193	2.60	0.009*
BOM	-0.478584	0.185178	-2.58	0.010*

ASS	0.0023244	0.1794013	0.01	0.990
ARM	-0.1782684	0.1964595	-1.91	0.050**
HOS	-0.105545	0.1552369	-0.68	0.497
OTH	-0.0201245	0.1376684	-0.24	-0.884
INF	0.1185428	0.1922967	0.62	0.538
XRT	0.2686937	0.4192688	-2.14	0.010*
TRO	-0.0833628	0.6116547	-2.14	0.014*
CONS	-18.17534	0.1533046	-5.97	0.000*
R²	0.4315			

STATA 12 software is used to estimate Three Stages Least Square (3SLS) systematically. *and ** shows significance at the 1% and 5% levels, respectively; GDP stands for per capita income; Bom stands for bombing; Ass stands for assassination; Arm stands for armed-assault; Hos stands for hostage; Oth stands for others; FDI stands for foreign direct investment; Inf stands for inflation; K stands for capital; Lab stands for labour; Ext stands for exchange rate; Tro stands for trade openness.

A 1% increase in FDI results in a 0.1090% increase in economic growth (GDP), but a 1% increase in GDP results in a 2.2267% increase in FDI, both of which are statistically significant.

3. DISCUSSION

Is there a link between South Asian terrorism, economic growth, and foreign direct investment? If so, does the impact of terrorism on GDP and FDI matter in terms of categorical terrorism? At a 1% significance level, the primary variable of a terrorist act is bombing, which has a strong inverse relationship with economic growth. Assassination is the second variable of a terrorist act. At a 1% significance level, it has a negative but statistically significant effect on economic growth. Armed assault is a third exogenous variable in this framework. It is also negatively associated with economic growth and statistically significant at the 1% level. The findings support those of (Aknc et al., 2014; Fatima et al., 2014; Gaibulloev & Sandler, 2009; Gries et al., 2011; Krieger & Meierrieks, 2010; S. J. H. Shahzad, Zakaria, Rehman, Ahmed, and Fida, 2016).

The first independent variable in the FDI equation is bombing, which has a negative impact on the endogenous variable FDI and is significant at a 1% level of significance. Armed assault is detrimental to FDI and statistically significant at a 5% significance level. The findings of the bombing and armed assault back up the findings of previous studies on the overall impact of terrorism on foreign direct investment. Hostage taking has a negative impact on FDI, but it is statistically insignificant. Other minor types of terrorism are associated with FDI, but this is not significant at any level of significance. However, the findings are consistent with previous studies that show a negative relationship between FDI and terrorism. According to the findings of (Abadie & Gardeazabal, 2008; Agr), these findings are also reliable.

Assassination has a positive relationship with FDI, but it is no longer statistically significant, implying that it has no longer an impact on FDI. The findings contradict previous research in that terrorism harms FDI, but the study shows that assassination has a positive relationship with FDI. However, we are not concerned about the findings because they are not statistically significant.

4. CONCLUSION

Terrorism can cause damage in a variety of ways, but the primary goal of this study is to observe the relationship between micro-terrorism categories such as bombing, assassination, armed assault, hostage, and others (minor categories) and macro-economic variables such as inflation, labour, capital, exchange rate, and others, Trade openness provides enough data to assess the impact on foreign direct investment and economic growth, particularly in South Asia (Bangladesh, Pakistan, India & Srilanka). The secondary goal of this research is to determine the bidirectional effect of GDP and FDI. The current study is a panel study, but it spans the years 1987 to 2016. Except for the exchange rate, which is collected from PEN 0.8, the data for terrorism is collected from GTD and the data for other macroeconomic variables are collected from WDI. This study considered economic growth and foreign direct investment to be endogenous variables, whereas bombing, assassination, armed assault, hostage, and other variables, inflation, labour, capital, exchange rate, and trade openness were exogenous variables. These macroeconomic variables have been used in a variety of studies. However, micro terrorism variables are newly introduced variables that have not been used in any previous study prior to the current research. The findings of this study indicate that terrorism

(bombing, assassination, armed assault, hostage & others), Except for inflation and others that are insignificant, inflation and labour have an inverse but statistically significant impact on economic growth, whereas foreign direct investment and capital are positively associated with economic growth and statistically significant at the 1% level of significance. Terrorism (bombing, armed assault, hostage-taking, and other forms) and trade openness have an inverse relationship with foreign direct investment, according to the results of the tests. Hostage, inflation, economic growth, and exchange rate have a positive effect on FDI. Economic growth and the exchange rate are statistically significant, but hostage and inflation are not. Except for hostage, which is a category of terrorism and has an effect on positive FDI but is not a cause for concern because it is not statistically significant, all of these results are consistent with literature and theory.

REFERENCES

- Abadie, A., & Gardeazabal, J. (2008). Terrorism and the world economy. *European Economic Review*, 52(1), 1-27
- Ağır, H., & Kar, M. (2010). Terörizmin Makroekonomik Sonuçları Üzerine Bir Değerlendirme. *Finans Politik & Ekonomik Yorumlar*, 47(539), 13-32.
- Agrawal, S. (2011). The impact of Terrorism on Foreign Direct Investment: which sectors are more vulnerable?
- Akçay, E. Y. (2012). Terör ve medya ilişkisinin 2003 yılında İstanbul'da meydana gelen saldırılar örneğiyle incelenmesi.
- Andinuur, J. (2013). *Inflation, Foreign Direct Investment and Economic Growth in Ghana*. University of Ghana.
- Anwar, S., & Nguyen, L. P. (2010). Foreign direct investment and economic growth in Vietnam. *Asia Pacific business review*, 16(1-2), 183-202.
- Anwar, S., & Sun, S. (2011). Financial development, foreign investment and economic growth in Malaysia. *Journal of Asian Economics*, 22(4), 335-342.
- Azam, M., & Ahmed, A. M. (2015). Role of human capital and foreign direct investment in promoting economic growth: evidence from Commonwealth of Independent States. *International Journal of Social Economics*, 42(2), 98-111.

- Basheer, M. F., Hussain, T., Hussan, S. G., & Javed, M. (2015). Impact Of Customer Awareness, Competition And Interest Rate On Growth Of Islamic Banking In Pakistan. *International Journal of Scientific & Technology Research*, 4(8), 33-40
- Başbüyük, O., Sozer, M. A., & Altun, N. (2012). *Terörle mücadelede makro ve mikro perspektifler*: Polis Akademisi Yayınları.
- Bezić, H., Galović, T., & Mišević, P. (2016). The impact of terrorism on the FDI of the EU and EEA Countries.
- Blomberg, S. B., Hess, G. D., & Orphanides, A. (2004). The macroeconomic consequences of terrorism. *Journal of monetary economics*, 51(5), 1007-1032.
- Blundell Richard, W., & Smith Richard, J. (1986). An exogeneity Test for a Simulation Equation Tobit Model with an Application to Labour Supply. *Econometrica*, 54(3).
- Choi, S.-W. (2014). Economic growth and terrorism: domestic, international, and suicide. *Oxford Economic Papers*, 67(1), 157-181.
- Çinar, M. (2017). The effects of terrorism on economic growth: Panel data approach. *Zbornik Radova Ekonomski Fakultet u Rijeka*, 35(1), 97.
- Enders, W., Sachida, A., & Sandler, T. (2006). The impact of transnational terrorism on US foreign direct investment. *Political Research Quarterly*, 59(4), 517-531.
- Fatima, M., Latif, M., Chughtai, S. F., Hussain, N., & Aslam, S. (2014). Terrorism and its Impact on Economic Growth: Evidence from Pakistan and India. *Middle-East Journal of Scientific Research*, 22(7), 1033-1043.
- Frey, B. S., Luechinger, S., & Stutzer, A. (2007). Calculating tragedy: Assessing the costs of terrorism. *Journal of Economic Surveys*, 21(1), 1-24.
- Gaibulloev, K., & Sandler, T. (2008). Growth consequences of terrorism in Western Europe. *Kyklos*, 61(3), 411-424.
- Gries, T., Krieger, T., & Meierrieks, D. (2011). Causal linkages between domestic terrorism and economic growth. *Defence and Peace Economics*, 22(5), 493-508.
- Hyder, S., Akram, N., & Padda, I. U. H. (2015). Impact of terrorism on economic development in Pakistan. *Pakistan Business Review*, 839, 704-722.
- IMF. (2001a). How Has September 11 Influenced the Global Economy? *World Economic Outlook*.

- Johnson, A. (2006). The effects of FDI inflows on host country economic growth. *The Royal Institute of technology. Centre of Excellence for studies in Science and Innovation* http://www.infra.kth.se/cesis/research/publications/working_papers.
- Karaduman, S., & Batu, N. M. (2011). Televizyon Haberlerinde Terörizm Olgusunun TRT'nin Haber Söylemi Bağlamında İncelenmesi. *Selçuk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*(25), 359-374.
- Karagöz, H. (2016). Terörizmin Türkiye'de turistler ve turizm gelirleri üzerine etkileri. *İstanbul Ticaret Üniversitesi Dış Ticaret Enstitüsü Working Paper Series*, 19, 1-13
- Khalid, A., Clough, L. A., Symons, R., Mahnken, J. D., Dong, L., & Eid, A. J. (2014). Incidence and clinical predictors of ocular candidiasis in patients with Candida fungemia. *Interdisciplinary perspectives on infectious diseases*, 2014..
- Koh, W. T. (2007). Terrorism and its impact on economic growth and technological innovation. *Technological Forecasting and Social Change*, 74(2), 129-138.
- Kutlu, R. (2010). Uluslararası terörizm ve 11 eylül sonrasında türkiye'nin terörizmle mücadelesi. *Yayınlanmamış Yüksek Lisans Tezi, Karadeniz Teknik Üniversitesi, Sosyal Bilimler Enstitüsü, Trabzon*.
- Lean, H. H., & Smyth, R. (2010). Multivariate Granger causality between electricity generation, exports, prices and GDP in Malaysia. *Energy*, 35(9), 3640-3648.
- Lee, C.-C. (2005). Energy consumption and GDP in developing countries: a cointegrated panel analysis. *Energy economics*, 27(3), 415-427.
- Lunn, J., Taylor, C., & Youngs, T. (2007). Pakistan's Political and Security Challenges (London: International Affairs and Defence Section. *House of Commons Library, Research Paper*, 7, 68.
- Meierrieks, D., & Gries, T. (2012). Economic performance and terrorist activity in Latin America. *Defence and Peace Economics*, 23(5), 447-470.
- Murdoch, J. C., & Sandler, T. (2004). Civil wars and economic growth: Spatial dispersion. *American Journal of Political Science*, 48(1), 138-151.
- Newey, W. K., & Newey, W. K. (1985). *Semiparametric estimation of limited dependent variable models with endogenous explanatory variables*. Paper presented at the Annales de l'INSEE.

- Oteng-Abayie, E. F., Amanor, K., & Frimpong, J. M. (2011). The measurement and determinants of economic efficiency of microfinance institutions in Ghana: A stochastic frontier approach. *African Review of Economics and Finance*, 2(2), 149-166.
- Powers, M., & Choi, S.-W. (2012). Does transnational terrorism reduce foreign direct investment? Business-related versus non-business-related terrorism. *Journal of Peace Research*, 49(3), 407-422
- Rasheed, H., & Tahir, M. (2012). FDI and terrorism: Co-integration & granger causality. *International Affairs and Global Strategy*, 4(0), 1-5.
- Ray, S. (2012). Impact of foreign direct investment on economic growth in India: A co integration analysis. *Advances in Information Technology and Management*, 2(1), 187-201.
- Sandler, T., & Enders, W. (2008). Economic consequences of terrorism in developed and developing countries. *Terrorism, economic development, and political openness*, 17.
- Shah, M. (2009). *FDI induced growth in developing countries: does human capital matter*. Paper presented at the PhD Conference. 5th and 11th March.
- Shah, M. H. (2010). Bilateral Linkages with OECD and FDI Inflows in Leading Developing Countries. *International Journal of Interdisciplinary Social Sciences*, 5(7).
- Shahbaz, M. A., Javed, A., Dar, A., & Sattar, T. (2013). Impact of terrorism on foreign direct investment in Pakistan. *Archives of Business Research*, 1(1).
- Shahbaz, M., & Shabbir, M. S. (2012). Military spending and economic growth in Pakistan: New evidence from rolling window approach. *Economic research-Ekonomska istraživanja*, 25(1), 119-131.
- Shahbaz, M., Khan, S., & Tahir, M. I. (2013). The dynamic links between energy consumption, economic growth, financial development and trade in China: fresh evidence from multivariate framework analysis. *Energy economics*, 40, 8-21.
- Tavares, J. (2004). The open society assesses its enemies: shocks, disasters and terrorist attacks. *Journal of monetary economics*, 51(5), 1039-1070.
- Thompson, A. (2008). *Terrorism's Effect on Tourism: Developed vs. Developing Countries*.
- Tiba, S., Omri, A., & Frikha, M. (2016). The four-way linkages between renewable energy, environmental quality, trade and economic growth: a comparative analysis between high and middle-income countries. *Energy Systems*, 7(1), 103-144.

- Tiba, S., Omri, A., & Frikha, M. (2016). The four-way linkages between renewable energy, environmental quality, trade and economic growth: a comparative analysis between high and middle-income countries. *Energy Systems*, 7(1), 103-144.
- Trevino, L. J., Daniels, J. D., Arbelaez, H., & Upadhyaya, K. P. (2002). Market reform and foreign direct investment in Latin America: Evidence from an error correction model. *The International Trade Journal*, 16(4), 367-392.

