How Terrorism Affects Foreign Direct Investment in Pakistan

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ABSTRACT

This study is an attempt to investigate the long run interplay between the terrorism and foreign direct investment (FDI) in Pakistan. Terrorism is measured by the number of events, fatalities and injuries with other variables. In this paper, annual time series data is taken from the Global Terrorism Database and World Development indicators, from the period 1980-2015. In the study, we have employed Johansen co-integration approach to examine the long run relationship between the mentioned variables. The study concludes that FDI has a negative significant relationship with fatalities and injuries whereas events have no long-run relationship with FDI. This reflects that fatalities and injuries which occur due to terrorist activities significantly affect the flow of foreign inflows into Pakistan.

Keywords: Terrorism, Foreign Direct Investment, Emerging Economy
JEL Classifications: F21, E22, C22, G18

1. INTRODUCTION

Terrorism is not a new phenomenon; in fact it has a very long history. The most drastic event is the terrorist attack of 9 September 2001 on the World Trade Center in New York. It has radically changed the view about the geopolitical and socioeconomic system of the entire world. Terrorism hampers the peace, tranquility and security process of countries all over the world. The act of terrorism destabilizes the states which leads to political imbalance resultantly influencing the government decisions. In addition to this, such acts have significantly adverse repercussions for the countries. Bomb blasts, murders, suicide attacks, abduction and kidnapping, hijacking of airplane etc. are different ways of terrorist activities.

The concept of terrorism in the general sense is any use of intentionally indiscriminate violence with a view to avail the ideological, political, economic or religious goal. In this era, it is considered as a key threat to the society and therefore it is viewed as an illegal act under the laws of Anti-terrorism. There is a close linkage of the terrorist outfits with each other and they are strategically supporting each other like they are exchanging

illegal ammunition providing administrative and other kind of logistic aid.

From the last few years, the academic literature on the subject of consequences of terrorism on the global financial market gained considerable attention. Terrorism is an immense menace having adverse effect on the financial market, whereas, managing terrorism is not an easy task for the states facing this challenge. The states facing this predicament experience severe challenges in the economic outlook.

According to Sandler and Enders (2002), the word terrorism can be defined as "the premeditated use, or threat of use, of extra normal violence to obtain a political objective through intimidation or fear directed at a large audience." There are different ways through which terrorism influences the economic structure, such as, it has an impact on the international trade, banking sectors, and financial system. International trade and financial system are highly integrated and interdependent and can be exploited by organized, international terrorism. Terrorism does not only impact the performance of the stock market where the terrorist incident has occurred, but also on the other stock markets of the world.

The incident of 9/11, Madrid 2004, London 2005 and other critical terrorist events during the last decade reveal that such incidents have increased the unbearable risk component for the businessmen and other investors in the various stock markets of the world. Before these crucial incidents, the financial scholars have not paid too much attention to the terrorism. With the happening of these events, the financial researchers have swiftly diverted their attention to cope with situation arising out of the terrorist activities.

As the World Trade Centre incident has brought a massive change on the economic prosperity of various countries of the world, as the USA has a vital role in combating the terrorism, Pakistan has suffered a lot after providing support to America in war against terrorism. For the economic growth and development of a country, investment from foreign investors is the key factor. Before the involvement of Pakistan in the war against terrorism, there was a gigantic inflow of investment through the foreign direct investment (FDI) in Pakistan. After 9-11, the terrorist activities have increased day by day, which ultimately have indirect effect on the behavior of investors to invest their funds in Pakistan. It is a known fact that every investor prefers to invest their money in a safe and secure sector/industry. A lot of work has been carried out regarding the effect of terrorism on the economic growth and stock market performance but some work has been witnessed regarding the impact of terrorism on the FDI, especially in Pakistan. Since Pakistan is an emerging state and her economy is highly dependable on the FDI, a great deal of work on the subject is therefore inevitable.

The aim of this study is to explain the long run relationship between the key economic variable i.e., FDI and terrorism. The study has been conducted for the period starting from January 1980 to June 2016, while multivariate co-integration analysis has been used to find out the long term relationship between terrorism and FDI.

With the help of this study, the investors, business community and policy makers will get assistance in determining the dynamic relationship between the terrorist acts and FDI. As we know that the sole motive of the investor is to maximize the profit, so in this connection, the study is very fruitful for the investor to figure about the economic streams where they sense higher dividends. The study will help the academicians by extending the existing literature. This paper consists of five sections. Section 1 is about the introduction and back ground of the study, Section 2 will provide some latest literature on the framework of terrorism and FDI. Sections 3 and 4 will explain the research methodology, model specifications and the empirical evidence respectively. Lastly, Section 5 will give the concluding remarks and discussions.

2. LITERATURE REVIEW

Chneider and Frey (1985) were of the view that there is a negative relationship between political instability and the FDI. Similarly Abadie and Gardeazabal (2008) also noticed an inverse relationship between the terrorist activities and FDI. But Fatehi-Sedeh and Safizadeh (1989) observed statistically insignificant correlation between the FDI and political instability.

Larraín and Tavares (2004) examined the explicit and implicit costs of terrorism in the emergent economies and he also suggested that terrorist violence in a country has an adverse impact on the economic growth of that country. According to the Economic Cooperation and Development (ECD) (2002) report, the collection of taxes and public revenue depends on the political situation of that country. As the terrorist activities increase in a country, the tax revenue of that country will go down, which will ultimately increase the financial burden for the government of that country.

The theoretical foundation of FDI is primarily based on the most prominent approach termed as Electric theory or OLI model, which has its roots in the literature of International political economy and management. A list of research work has been carried out on the OLI model in order to examine the cross-national trend of FDI (Dunning, 1980; 1988; 1995). The essence of this theory is that why a firm decides FDI in contrast to staying in the home country or going to license a foreign company to produce. The choice of the firm to engage in FDI occurs logically and empirically prior to the decision about where to locate (Graham, 1994).

Volker and Schumach (2004) have used an augmented gravity model in their study in order to determine the economic growth of various countries which have suffered from the terrorist activities. For this purpose, they used the data from the period 1960-1993. They concluded that the growth rate of such countries is <4%. Shahbaz et al. (2013) studied the relationship of Terrorism and FDI in Pakistan. They found that as the terrorist violence is increased, the confidence of foreign investors is declined, which shows that there is a negative association between the foreign investors' confidence for the investment and the terrorist activities.

There is a great threat to the business community in Pakistan due to the fact that terrorists and criminal activities created alarming situations for the investors. There are a lot of incidents in which several individuals were kidnapped, like American Consultant, son of a former prime minister and the son of the former governor of Punjab. Several businessmen belonging to the city of industrial hub, Karachi were abducted and later on released after paying a handsome amounts as ransom.

Ullah and Rehman (2014) have made an attempt to find the long run correlation between the FDI and Terrorist violence in Pakistan. Number of terrorist attack incidents, injuries and fatalities were taken as the measures of terrorism index. For this very purpose, they used monthly time series data. They further used Johanson co-integration technique in order to determine the long run relationship between the FDI and terrorist violence. The results of the study showed that there is an inverse relationship between the terrorist violence and FDI in Pakistan. This shows that the terrorist violence and criminal activities will reduce the confidence of the investors, which ultimately shrinks the FDI inflows into Pakistan.

Economic globalization is usually measured in terms of global trade and FDI. In the last three decades, both are growing very briskly as compare to the global GDP. In this era of economic globalization, countries are encouraging and relaxing the regulations concerned

to the liberalization of FDI, which ultimately triggers the FDI even faster than the global trade. It can be inferred that FDI has a more significant impact on the economic development of domestic economies as compare to the trade. The main reason for this is that the host countries have not only access to the capital inflows but also to new technologies, research and development, product and managerial expertise (Agrawal, 2011).

Generally speaking, terrorist activities has four kinds of economic costs. First, in case there is a terrorist violence, it will shrink the tourist activities in a country due to which country losses a lot of tourist revenues. Second, if the terrorist attacks are on the FDI interests, again it will decline the inflows to country. Third, if there is a terrorist attack on the infrastructure, it will lead to economic crunch. Lastly, everything has an opportunity costs. In order to combat against terrorist violence, it requires resources which will have an opportunity costs (Enders et al., 1992).

Filer and Stanišić (2012) have tried to analyze the effect of terrorist attacks on the capital flows. They measured capital flows in three different forms, which are FDI, Investment and lending (debt) and Equity Portfolio. They have taken the data from 160 countries for 25 long years. During their study, they came to the conclusion that there is no evidence for the effect of terrorist activities on Debt and equity investment, however, they observed an inverse significant effect of terrorism on the FDI.

Our study is different from other study. Because we took the long period data form 1980 to 2015 and we used the different variables from previous study and used co-integration model for long run relationship between FDI and terrorism. The aim of this study is to explain the long run relationship between the key economic variable i.e., FDI and terrorism. We have depend variable FDI FDI, and independent variables are terrorism, market size (MS), bank credit to private sector (BS), gross capital formation (CF), saving (SAV), investment (INV), events (EV), fatalities (FA), injuries (IN). The study has been conducted for the period starting from January 1980 to June 2015, while multivariate co-integration analysis has been used to find out the long term relationship between terrorism and FDI.

3. RESEARCH DESIGN: METHODOLOGY, VARIABLES, AND DATA

3.1. Variables and Data Description

The aim of this paper is to investigate the long run interplay between terrorism and FDI in Pakistan. Table 1 shows that FDI is considered as dependent variable in our study while Bank credits to the private sector (BC), investments (INV), savings (SAV), gross capital formation (CF), and market size (MS). These are the determinants of FDI. By these variables we measure FDI. We have taken these variables from (WB) World Bank Indicators. One of the key independent variables terrorism is measured by events (EV), fatalities (FA) and injuries (IN). For this study, time series data will be accessed from the Global Terrorism Database index and World Development Indicators for the time frame starting from 1980 to 2015.

Table 1: Variables and data description

Items	Description
Dependent variables	FDI
Independent variables	MS, BS, CF, SAV, INV, EV, FA, IN
Data	Time series data
Model	Liner regression and co-integration model

FDI: Foreign direct investment, MS: Market size, BS: Bank credit to private sector, CF: Gross capital formation, SAV: Saving, INV: Investment, EV: Events, FA: Fatalities, IN: Injuries

The liner regression and co-Integration model used for below analysis.

$$LNFDI = \beta_0 + \beta_1 LNMS + \beta_2 LNBC + \beta_3 LNCF + \beta_4 LNSAV + \beta_5 LNINV + \beta_6 LNEV + \beta_7 LNFA + \beta_8 LNIN + \varepsilon$$

Where,

LN refers to natural log and used for the stationarity of data. FDI is foreign direct investment, MS: Market size, BS: Bank credit to private sector, CF: Gross capital formation, SAV: Saving, INV: Investment, EV: Events, FA: Fatalities, IN: Injuries, whereas β_i are the unknown parameters and ε is the error term.

Following are the econometric techniques used for testing the long run relationship between FDI and Terrorism.
- Descriptive statistics and correlation matrix
- Unit root test
- Lag length criteria
- Johansen's co-integration test
- Granger causality test
- Variance decomposition analysis.

Descriptive statistics is a domain of statistics, which aims at presenting the mass data in summarized and understandable form. It attempts to explain a large set of data into a single numbers. These measures are mean, median and mode which are used to describe the central location of mass data. There are some other measures such as mean deviation, standard deviation, quartiles and percentiles used to show the variability or spread in a data set. Skewness and kurtosis are also important descriptive measures which are used to show the probability distribution of the data set and degree of peekness and flateness, respectively. Normality is determined by Jorque Bera test. Correlation table is used to know the relationship of strength and direction of the variables with each other. It ranges from +1 to −1.

Before applying co-integration approach, it is mandatory to check the stationary in time series data. There are different tests used to check the stationarity in time series data. These are Unit Root Test, Augmented Dickey Fuller (ADF) and Phillip Peron (PP) test. A test of stationarity (or non-stationarity) that has become widely popular over the past several years is the unit root test. ADF stands for Augmented Ducky Fuller, and this test was proposed by Dickey and Fuller in the year 1979 for testing the stationarity in the time series data. ADF has some strict assumptions while finding the stationarity.

The econometric form of ADF test is $V_t = \pi V_{t-1} + \varepsilon_t$, where V_t is variable under study, t is the time period, π is coefficient and ε_t is the error term.

Co-integration approach is used to determine the long term association between two or more variables of the study. It is the important assumption of co-integration that the data should be integrated in the same order.

Before estimating the regression, the stochastic assumptions of the series will be tested.

The ADF test relies on rejecting a null hypothesis of unit root (the series are non-stationary) in favor of the alternative hypothesis of stationarity. To determine the number of co-integration vectors, Johansen and Juselius (1990) suggested statistical test: The first one is the trace test (λ trace). It tests the null hypothesis that the number of distinct co-integrating vector is less than or equal to q against a general unrestricted alternative.

Akaike Information Criterion and Schwarz Information Criterion are the two well-known lag length criteria selections used for co-integration.

4. EMPIRICAL RESULT

4.1. Descriptive Statistics and Correlation Matrix

In Table 2, descriptive statistics and the correlation matrix are explained. Market size is positively correlated to FDI. The relation between Bank credits to the private sector (LNBC) and FDI is negative. Investments (LNINV), savings (LNSAV) and gross capital formation (LNCF) are positively correlated to FDI. The correlation results show that terrorism events (LNEV), fatalities (LNFA) and injuries (LNIN) are highly correlated to FDI. The average yearly flows of FDI into Pakistan in terms of percentage are 19.99%. The maximum and minimum flows of FDI into Pakistan are 22.44% and 17.198%, respectively. Percentage change in market size (LNMS) is 0.7316%. Average saving per year is 2.783%. The average value of savings is recorded as 2.537%, along with maximum value of 3.597% and minimum value of 1.477%. The average terrorist attacks in Pakistan are recorded as 4.4258%. The percentage change in these events is 1.9861%. Similarly, the average fatalities in Pakistan are 5.5845%, along with maximum value of 8.3528% and minimum value of 0%. The average volatility in injuries in Pakistan due to terrorist attacks is 1.7058%. The data is negatively skewed.

Table 2: Descriptive statistics and correlation matrix

	LNFDI	LNMS	LNBC	LNCF	LNSAV	LNINV	LNEV	LNFA	LNIN
LNFDI	1								
LNMS	0.8634	1							
LNBC	−0.104	−0.501	1						
LNCF	0.9311	0.9069	−0.231	1					
LNSAV	0.8137	0.9834	−0.532	0.8596	1				
LNINV	0.8985	0.993	−0.436	0.9291	0.9714	1			
LNEV	0.7726	0.853	−0.453	0.8641	0.8061	0.8594	1		
LNFA	0.8164	0.8306	−0.335	0.892	0.7822	0.8429	0.9236	1	
LNIN	0.7001	0.7722	−0.311	0.8009	0.7237	0.7776	0.9247	0.9099	1
Mean	19.997	4.269	3.148	23.639	2.7832	2.537	4.4258	5.5845	5.462
Maximum	22.444	5.5983	3.3942	24.077	4.1404	3.5973	7.7021	8.3528	7.9621
Minimum	17.198	3.1651	2.7318	22.971	1.8017	1.477	0	0	1.3863
SD	1.3262	0.7316	0.1707	0.3053	0.694	0.6654	1.9861	2.115	1.7058
Skewness	−0.082	0.3701	−0.989	−0.604	0.4661	0.2701	−0.293	−0.958	−0.583
Kurtosis	2.3747	1.8875	3.4493	2.5554	1.8888	1.7736	2.5876	3.3001	2.8824
Jarque-Bera	0.6265	2.6784	6.1706	2.4855	3.1556	2.6939	0.7715	5.6363	2.0617

SD: Standard deviation

Table 3: ADF test and PP test

Variables	ADF test		PP test	
	At level	At first difference	At level	At first difference
LNFDI	−1.559769	−4.950717	−1.590408	−4.950717
LNMS	0.677395	−5.584153	0.794705	−5.584153
LNSAV	0.493796	−6.312008	0.906491	−6.354921
LNBC	−0.265975	−4.110493	−0.94039	−4.110493
LNCF	−2.055798	−4.271039	−1.97464	−4.271039
LNEV	−1.968811	−5.951077	−1.947866	−6.666063
LNFA	−1.695978	−7.599017	−1.396551	−8.363089
LNIN	−2.000338	−7.119603	−2.000338	−7.165417
LNINV	−0.513618	−5.220133	−0.513618	−5.220133
LNIND	−0.411011	−5.599238	−0.411011	−5.599238
At critical value				
1% level	−3.6329	−3.639407	−3.6329	−3.639407
5% level	−2.948404	−2.951125	−2.948404	−2.951125
10% level	−2.612874	−2.6143	−2.612874	−2.6143

ADF: Augmented Dickey Fuller, PP: Phillip Peron

Table 4: Statistics for selection of lag order

Lag	LogL	LR	FPE	AIC	SC	HQ
0	−1.639057	NA	1.51E-11	0.625827	1.029863	0.763615
1	224.6632	319.4856*	3.45E-15	−7.921366	3.881000*	−6.543485
2	334.3026	96.74066	2.00e-15*	−9.606037*	−1.929342	6.988064*

*Indicates lag order selected by the criterion, LR: Sequential modified LR test statistic (each test at 5% level), SC: Schwarz Criteria

4.2. Unit Root Test

Co-integration test is used to find the long run relationship between terrorism (events, fatalities, and injuries) and FDI. Assumption for co-integration is that the data should be stationary at the same level. For finding stationarity, unit root test is used. Two tests are important in unit root test, ADF and PP Test. These tests show that all the variables are non-stationery at level and stationery at first difference. In unit root test, ADF has rigid assumption that there should be no relation among variables, but in PP test, the assumption is not too much rigid. It gives somewhat space for interrelationship among variables. Philip Peron test is used to confirm the result of ADF tests. The Table 3 shows the ADF and PP tests for the LNFDI, LNMS, LNBC, LNCF, LNSAV, LNEV, LNFA, and LNIN. Thus, we confirm that the series is 1(1).

4.3. Lag Length Criteria

For suitable lag, lag length criteria is used. Schwarz Criteria value is used for the selection of lag length criteria as it is minimum at lag 1. It means that this test is best for finding the co-integration between terrorism (events, fatalities, and injuries) and FDI. Table 4 shows lag length criteria.

4.4. Johansen's Co-integration Test

Multivariate Johansen's and Juselius co-integration test is used to find out the long run relationship between FDI and terrorism, which consists of events, fatalities and injuries. Tables 5 and 6 are about the results of Trace Statistics and Maximum Eigenvalue, respectively. The analysis of trace statistics shows that there are 4 co-integrating equations, which explore that there are four long run relationships between FDI and dependent variables.

Table 6 shows the presence of 3 co-integration equation at 5% significant level. This examines that there exists a long run relationship between terrorist activities and FDI. Normalized co-integration coefficient was estimated as reported in Table 7.

The focus of this study is on ΔFDI as a dependent variable, therefore, evaluating the long run impact of ΔMS, ΔBC, ΔCF, ΔSAV, ΔINV, ΔEV, ΔFA, and ΔIN on FDI. The co-integration vector is normalized with respect to ΔFDI.

$$\Delta FDI = \alpha + \beta_0 \Delta MS + \beta_2 \Delta BC + \beta_3 \Delta CF + \beta_4 \Delta SAV + \beta_5 \Delta INV + \beta_6 \Delta EV + \beta_7 \Delta FA + \beta_8 \Delta IN + \mu$$

As terrorism is divided into three main categories, i.e. events, fatalities and injuries. Table 8 shows that events have no relationship with FDI. On the other hand, fatalities and injuries have significant negative relationship with FDI. This means that when the cost of terrorism increases in Pakistan, the flow of foreign inflows into Pakistan will decrease, thereby supporting the results of Abadie and Gardeazabal (2005) and Ullah and Rehman (2014).

Table 5: ADF test and PP test

Number of CE(s)	Eigenvalue	Trace statistic	Critical value	P**
None*	0.952148	321.5651	197.3709	0.0000
At most 1*	0.858373	218.2174	159.5297	0.0000
At most 2*	0.778361	151.7625	125.6154	0.0005
At most 3*	0.688157	100.5345	95.75366	0.0225
At most 4	0.506715	60.91582	69.81889	0.2083
At most 5	0.380558	36.88913	47.85613	0.3528
At most 6	0.304468	20.60532	29.79707	0.3827
At most 7	0.198059	8.260662	15.49471	0.4379
At most 8	0.021995	0.756176	3.841466	0.3845

Trace test indicates 4 Co-integrating equation(s) at the 0.05 level, *denotes rejection of the hypothesis at the 0.05 level, **MacKinnon-Haug-Michelis (1999) P values

Table 6: Maximum Eigen value statistics

Number of CE(s)	Eigenvalue	Max-Eigen	Critical value	P**
None*	0.952148	103.3477	58.43354	0.0000
At most 1*	0.858373	66.45495	52.36261	0.0010
At most 2*	0.778361	51.22798	46.23142	0.0135
At most 3	0.688157	39.6187	40.07757	0.0562
At most 4	0.506715	24.02669	33.87687	0.4536
At most 5	0.380558	16.28381	27.58434	0.6416
At most 6	0.304468	12.34466	21.13162	0.514
At most 7	0.198059	7.504487	14.2646	0.4313
At most 8	0.021995	0.756176	3.841466	0.3845

Max-eigenvalue test indicates 3 co-integrating equation(s) at the 0.05 level, *denotes rejection of the hypothesis at the 0.05 level, **MacKinnon-Haug-Michelis (1999) P values

The normalized equation indicates that there is significant positive relationship between market size and FDI in Pakistan, the result is in line with the studies of Bandra and White (1968), Dunning (1980) and Ullah and Rehman (2014). Bank credit to private sector and gross capital formation is highly correlated to FDI.

4.5. Granger Causality Test

Table 9 shows both the unidirectional and bidirectional relationship between FDI and independent variables. Between Bank Credit to Private Sector and FDI, there exists unidirectional relationship. Gross capital formation Granger causes FDI and FDI Granger also causes gross capital formation. Domestic investment Granger causes FDI and the relation is unidirectional. There exists unidirectional causality between FDI and fatalities. There is no lead lag relationship between FDI and events and injuries.

4.6. Variance Decomposition Analysis

Table 10 shows the results of variance decomposition analysis. The result shows decomposition of forecast error variance for the FDI, that is explored by events, fatalities and injuries (Terrorism) and other independent variables. The results explain that 85% volatility in FDI is due to its own internal volatility. The other

Table 7: Long run relationship between independent variables and FDI

ΔFDI	ΔMS	ΔBC	ΔCF	ΔSAV	ΔINV	ΔEV	ΔFA	ΔIN
1	−3.669	−5.891	4.4307	0.528	0.7809	−0.117	−0.927	0.5025
SE	(0.461)	(0.335)	(0.431)	(0.268)	(0.409)	(0.076)	(0.061)	(0.054)

MS: Market size, BC: Bank credit to private sector, CF: Gross capital formation, SAV: Saving, INV: Investment, EV: Events, FA: Fatalities, IN: Injuries, FDI: Foreign direct investment

Table 8: Regression results

Predictor	Coefficient	t-statistics	Significance
MS	3.669	(7.958)	0.006
BC	5.891	(17.585)	0.011
CF	−4.4307	(10.280)	0.007
SAV	−0.528	(1.970)	0.042
INV	−0.7809	(1.909)	0.063
Terrorism EV	−0.117	(1.539)	0.411
FA	−0.927	(15.19)	0.003
IN	−0.5025	(9.305)	0.000

MS: Market size, BC: Bank credit to private sector, CF: Gross capital formation, SAV: Saving, INV: Investment, EV: Events, FA: Fatalities, IN: Injuries

Table 9: Granger causality test

Null hypothesis	Observed	F-statistic	P
LNMS does not granger cause LNFDI	34	0.41566	0.6638
LNFDI does not granger cause LNMS		1.69608	0.2011
LNBC does not granger cause LNFDI	34	0.24395	0.7851
LNFDI does not granger cause LNBC		2.51072*	0.0987
LNCF does not granger cause LNFDI	34	5.46903***	0.0097
LNFDI does not granger cause LNCF		6.35419***	0.0051
LNSAV does not granger cause LNFDI	34	1.15356	0.3296
LNFDI does not granger cause LNSAV		0.70147	0.5041
LNINV does not granger cause LNFDI	34	1.09716	0.3473
LNFDI does not granger cause LNINV		2.72754*	0.0821
LNEV does not granger cause LNFDI	34	0.17253	0.8424
LNFDI does not granger cause LNEV		1.98054	0.1562
LNFA does not granger cause LNFDI	34	2.31698	0.1165
LNFDI does not granger cause LNFA		4.61798**	0.0182
LNIN does not granger cause LNFDI	34	2.0732	0.144

***Significant at 1%, **significant at 5% level and *significant at 10% level, FDI: Foreign direct investment

Table 10: Variance decomposition analysis

Period	SE	LNFDI	LNMS	LNBC	LNCF	LNSAV	LNINV	LNEV	LNFA	LNIN
1	0.39279	100	0	0	0	0	0	0	0	0
2	0.50984	85.3989	0.00201	0.38668	2.57	3.28543	7.17841	0.84246	0.3048	0.0313
3	0.59842	62.2056	0.04345	1.56162	9.98379	9.81178	11.1511	4.0008	0.69955	0.54232
4	0.68465	48.0669	1.62975	5.50101	11.9856	19.4734	8.54942	3.05732	0.54869	1.18802
5	0.76666	40.5713	2.76735	8.74968	11.5438	22.675	7.90196	3.28029	0.52821	1.98242
6	0.83087	35.0831	2.75201	10.0812	11.7686	23.7609	8.09626	4.19118	0.53338	3.73333
7	0.88209	31.3256	2.48407	10.8442	11.32	23.3179	9.67305	5.40603	0.64186	4.9873
8	0.92651	28.8347	2.26079	11.1363	10.5715	22.0378	12.2045	6.59265	0.67581	5.68595
9	0.95713	27.9403	2.31004	10.7934	10.0551	20.7092	14.2211	7.33419	0.68144	5.95533
10	0.97542	27.6598	2.86919	10.3934	9.84721	20.0269	14.9857	7.47054	0.67323	6.07418

variables play a little role in the volatility of FDI. The contribution of events, fatalities and injuries in the volatility is 7%, 0.67% and 6% respectively. The main variables which contribute in the volatility of FDI are Investments and savings.

5. CONCLUSION AND DISCUSSION

This study is conducted to explore the long run dynamic relationship between terrorism which consists of events, fatalities and injuries with other variables and FDI in Pakistan. The annual time series data is used for this study. For finding the long run relationship, Johansen co-integration test is used. The study shows the negative significant relationship between fatalities and FDI and between injuries and FDI. Events have no long run relationship with FDI. The negative relationship shows that fatalities and injuries which happened due to terrorist activities highly affect the flow of foreign inflows into Pakistan. The investors change their sentiment due to these events and divert their investment into the economy where there are secure conditions. They feel hesitation to invest in Pakistan. In Pakistan, such kind of attacks diverts more of the foreign investors to our neighbor countries. When terrorist activities increase, the flow of foreign investment

decreases. Market size has significant positive relation with FDI. It is a location factor which attracts FDI.

This study found the effect of terrorist activities on FDI. Terrorism leads to decline in FDI. So there should be policy implications for minimizing the terrorist activities. This study is unique in a sense that it covers a long range of time frame i.e., 1980-2015. In this study we employed Co-Integration model and also used more variables then the previous studies. Thus the policy should use terrorism as a determinant of FDI. This study found the long run relationship between terrorism and FDI but there also exist certain limitations. This study only incorporates the effect of terrorism on FDI. There are also a number of factors exist that can affect the FDI, like corruption, rules regulation, political instability, and democratic and military regime may have influence flow of FDI.

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