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Integrated Model to Measure the Impact of Terrorism and Political Stability on FDI Inflows: Empirical Study of Pakistan

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Abstract

To condense saving-investment gap, transformation of technology, creation of employment opportunities and more importantly, increasing economic development of host countries, Foreign Direct Investment (FDI) is proven to be a significant source of investment predominantly for developing countries. Numerous standing studies have scrutinized the economic impact of terrorism and political stability by referring to decrease in FDI. This study empirically enlightens the determinants of FDI for Pakistan over the period 1970 to 2013, by using annual secondary time series data. Adopting the optimistic approach, in this study, variables in the combination of terrorism, political stability, trade openness and GDP have been analyzed applying Ordinary Least Square (OLS) method. As expected, the projected results confirm that GDP, trade openness and political stability have positive and significant impact whilst terrorism has negative influence on FDI inflows in Pakistan. Because of the political stability along with stable GDP growth rate, inverse impact of terrorism has been found statistically insignificant.

Keywords: foreign direct investment, terrorism, political stability, Pakistan

1. Introduction

Foreign Direct Investment (FDI) is considered as one of the significant catalyst of economic growth of developing countries. China is the prime example amongst developing countries for utilizing the advantages of FDI. According to researchers Wafure and Nurudeen (2010), FDI not only provides needed investment but also enhances managerial skills, transfer of technology, and job creation, which ultimately leads to the growth and development of an economy. But some developing countries are benefiting from this phenomenon and others are not, which stimulates our minds to ponder the issues behind this predicament. By bridging saving-investment gap, transferring advanced and innovative technology, creating employment, increasing competition and escalating productivity; FDI has vindicated to be a breath providing feature to third world countries in reinforcing their domestic markets. Hence, most of the developing countries are walking on eggshells to attract more FDI inflows into their economies like China, India, Bangladesh, Singapore, Philippines, and indeed Pakistan. The global FDI has witnessed an extraordinary growth during the last 20 to 25 years. Due to its investment enabling environment and market leaning strategies, Pakistan received relatively higher FDI inflows during the last decade. After 1991, due to market liberalization efforts, FDI increased from $ 23 million to $ 64 million in 1980 (UNSDD, 2011).

In late 1980s, when Government of Pakistan eliminated limitations for FDI inflows, second spur happened in this field. The period of 1988 is associated with privatization and liberalization strategies, which increased FDI up to $ 711 million (Husain, 2000). The magnitude of FDI inflows after 2000 to 2013, has been summarized in Figure 1.

FDI is very crucial for Pakistan, not only to bridge the saving-investment gap but also to increase employment opportunities, enhancing domestic managerial skills, financing development projects, attaining latest technology, building foreign exchange reserves, enhancing productivity and output, strengthening industrial sectors, improving physical infrastructure and human resources, and ultimately achieving higher rate of economic growth.

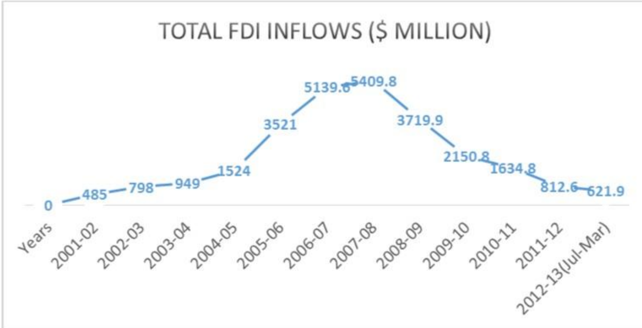

Figure 1. Total FDI inflows 2000-2013

Undoubtedly, the economy of Pakistan is bearing huge cost of war against terrorism. Since 2000, a large portion of its resources has been exploited in this war. According to Economic Survey of Pakistan (2013), this cost has been increased to $ 17.8 billion during 2010-2011 from $ 2.669 billion during 2001-2002. Consequently, the investment to GDP ratio has been declined, which affected FDI inflows toward Pakistan. While selecting the locations for investment, political stability remains top of the list in the eyes of MNEs (Thompson & Jessie, 2000). Unfortunately, since its independence in 1947, Pakistan has been lacking the blessing of political stability and at the present it is a common phenomenon, which is hindering the economic growth as well as shaking the confidence of foreign investors (Akhtar, 2000).

In Pakistan FDI, political instability and terrorism are interlinked with each other for the last decade. Hence in this study we hypothesize the relation among these fundamentals to investigate the facts to suggest a strategy to overcome the cost of terrorism and political instability.

Subsequent parts of this study have been structured as follows: section 2 enlightens the related work under the heading of literature review; section 3 describes methodology and data description; results have been demonstrated in section 4; in section 5 discussion along with recommendations based on results of this study have been concluded.

2. Literature Review

A number of standpoints and models have been developed to explain the patterns of FDI since the late 1950s. The formation of Multinational Enterprises (MNEs) and both theoretical, empirical research on the stimulation of FDI inflows have pointed out its different determinants, which emphasize the need of research in this era.

Erdel and Tatoglu (2002) examined the fundamentals of FDI inflows in Turkey by using Johansen co-integration technique; the results demonstrated that host country’s openness of economy, market size, and infrastructure were positively linked to inflows of FDI. Fedderke and Romm (2006) explored factors of FDI within South Africa by applying co-integration along with error correction techniques; their findings confirmed that openness of market, flexible tax rates, labour cost, political risk and property cost were significant variables in enticing FDI (Fedderke & Romm, 2006). Moolman, Roos, Le Roux, and Du Toit (2006) fixated on the supply side factors of FDI in South Africa; the results jagged that size along with openness of market, stability in nominal exchange rate and infrastructure should be considered in making policies to attract FDI in South Africa. Mottaleb (2007) recognized significant variables of FDI in 60 developing countries through OLS methodology; he ascertained that stable growth rate of GDP, advanced infrastructure and friendly environment for business confirmed inflows of FDI in selected countries. Sen and Mohsin (2010) inspected the elements and problems, which slowed decreasing trends of FDI in Bangladesh for the period of 1986 to 2008; they experienced that urban violent activities, inconsistency of economic policies, inferior infrastructure, political disturbances and bureaucracy were the crucial restrictions for FDI. Rihab and Lotfi (2011) studied significant variables to define the level of FDI for 71 developing countries for the period 2001-2006; their work suggested that economy’s openness, GDP, governance systems’ quality, and human resources had noteworthy progressive association, while corruption control individualism and hierarchal distance had negative association with FDI inflows.

Researchers have also explored numerous factors, which govern the level of FDI inflows in Pakistan. For example, Akhtar (2000) investigated locational factors of FDI; the author contended that relative interest rate, market size and exchange rate had positive and noteworthy relationship with FDI stock. Shah and Ahmad (2003) observed the fundamentals of FDI by applying Johansen co-integration technique, which was monitored by Error Correction Model (ECM); results showed that tariffs, infrastructure, market size and political stability had positive relation, while cost of capital had negative relation with FDI inflows.

Aqeel, Nishat, and Bilquees (2004) empirically recognized the variables of FDI growth in Pakistan through the co-integration along with error correction techniques over the period of 1961 to 2003. The results revealed that import tariffs, devaluation of Pakistani Rupee and corporate tax rate had positive and significant linkages with FDI inflows.

Azam and Lukman (2010) examined effects of numerous economic factors on FDI inflows for Pakistan, Indonesia and India over the period 1971 to 2005. Findings showed that infrastructure, trade openness, market size, return on investment and domestic investment had significant and positive relationship with FDI inflows.

Azam and Khattak (2009) investigated the impact of political instability and human capital over the FDI inflows into Pakistan by using OLS, over the period ranging from 1971 to 2005; the results demonstrated that human capital has positive and significant impact on FDI while, political instability is positively insignificant linked with FDI. The most and interesting study has been conducted by Hakro and Gumro (2011), wherein they observed the determinants of FDI in Pakistan over the period of 1970-2007; they divided the determinants into four broad groups like cost related variables, factors for improving the environment of investment, macro-economic variables and political stability based factors. Furthermore, the September 11, 2001 incidence, structural shocks related to 1988 and nuclear tests in 1998 were also incorporated to find out the impact on the FDI inflows; the study suggested that macro-economic variables and openness have long-run relationship with FDI while other factors have short term impact on FDI inflows into Pakistan.

Presently, Pakistan is bearing huge cost of war against terrorism and political instability, which obviously showing the negative effects on FDI inflows into Pakistan. Since investors are losing their confidence in Pakistan’s political and economic environment. Conclusively, for the case of Pakistan, a lot of studies have been conducted to investigate the determinants of FDI inflows. In our study, we have attempted to investigate a unique combination of Political Stability, Terrorism Attacks (Bomb blasts), GDP and Trade Openness by using the OLS method over the period 1970-2013. This study aims to measure the impact of this combination on FDI inflows in Pakistan by developing an integrated model.

3. An Illustrated Framework

Fundamental of this study is to measure the impact of political stability and terrorism on FDI in Pakistan. Two other control variables GDP and TOP [(Import + exports/GDP] have also been incorporated. An illustrated framework has been developed, which covers the period from 1970 to 2015. Relevant data has been collected from Federal Bureau of Statistics Pakistan, Board of Investment Pakistan, Economic Surveys of Pakistan, Federal Board of Revenue, State Bank of Pakistan, International Monetary Fund, International Macroeconomic Database, World Bank Development Indicators and United Nations Statistical Division Database for all variables except political stability (Data on Political stability is obtained from Political index, polity IV database). To achieve the above defined goal, OLS Regression method has been utilized, and modelled equation is shown below:

$$Ln\ FDI = \beta_0 + \beta_1\ TERROR + \beta_2\ LnGDP + \beta_3\ TOP + \beta_4\ POL + e \qquad (1)$$

Where:

Ln FDI = Inflows of Foreign Direct Investment in Pakistan (In million Pakistani Rupees and natural log);

Ln GDP = Natural Log of Gross Domestic Product of Pakistan;

TERROR= Number of bomb blasts in Pakistan;

TOP = Total Import + Exports/GDP. It assist to get the impact of trade openness;

POL = Political Stability in Pakistan;

e = Error term.

3.1 Designed Hypotheses

Following are four hypotheses for the defined variables:

- Terrorism has +/- impact on LnFDI.
- POL is +/- impact on LnFDI.
- TOP +/- impact on LnFDI.
- LnGDP has +/- impact on LnFDI.

3.2 Statistics of Data

Firstly, the descriptive statistics have been calculated to describe the data. Secondly, matrix of correlation has been designed to analyze the pervasiveness of correlation between dependent and independent variables. Thirdly, the Augmented Dickey-Fuller (ADF) test has been applied on the data to check its stationariay which is conditional to time series data as it has been calculated in Table 3.

Table 1. Descriptive statistics

Variables	Mean	Std. Deviation
Ln FDI	18.6999	3.5069
TOP	0.3322	0.0398
POL	0.2326	7.5462
TERROR	0.2326	234.7504
Ln GDP	24.4781	0.9330

Table 2. Correlation matrix

	LnFDI	TOP	POL	TERROR	LnGDP
LnFDI	1				
TOP	0.408862	1			
POL	0.604363	0.362268	1		
TERROR	0.379751	0.212218	0.518834	1	
LnGDP	0.754232	0.431432	0.855039	0.626131	1

Table 3. Augmented Dickey-Fuller (ADF) unit root test

Variables	T- ADF Statistics	Critical Values	Decision
	-11.69714	1% Level = -3.615588	Stationary at 1st difference
LnFDI	(0.0000)	5% Level = -2.941145	
		10% Level = -2.609066	
LnGDP	-5.406612	1% Level = -3.600987	Stationary at 1st difference
	(0.0001)	5% Level = -2.935001	
		10% Level = -2.605836	
POL	-6.628287	1% Level = -3.600987	Stationary at 1st difference
	(0.0000)	5% Level = -2.935001	
		10% Level = -2.605836	
TOP	-3.481712	1% Level = -3.596616	Stationary at Level
	(0.0134)	5% Level = -2.933158	
		10% Level = -2.604867	
TERROR	-7.090016	1% Level = -3.600987	Stationary at 1st difference
	(0.0000)	5% Level = -2.935001	
		10% Level = -2.605836	

4. Results and Testing of Hypotheses

After employing ADF test to check whether data is stationary, in section testing of estimated relationships among FDI and other independent variables through OLS model (1) has been performed.

Table 4. Results of least square regression

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-21.98422	5.884317	-3.736069	0.0006
LnGDP	1.550274	0.248314	6.243207	0.0000*
POL	0.049908	0.025760	1.937393	0.0604**
TOP	9.377268	2.744074	3.417280	0.0016*
TERROR	-0.000241	0.000547	-0.440194	0.6624

Variable	Coefficient	Std. Error t-Statistic	Prob.
R-squared	0.905348	Mean dependent var	19.14512
Adjusted R-squared	0.895116	S.D. dependent var	1.966347
S.E. of regression	0.636818	Akaike info criterion	2.046678
Sum squared resid	15.00487	Schwarz criterion	2.253543
Log likelihood	37.98023	Hannan-Quinn criter.	2.122502
F-statistic	88.47677	Durbin-Watson stat	1.727284
Prob(F-statistic)	0.000000		

Note. * Significance at 1% and ** significance at 10%.

The projected outcomes of regression equation is signifying the Adjusted R2 = 0.895116, which is close to 1, this accentuates that the regression fits successfully to explain the relationship between dependent variable (FDI) and independent variables (TERROR, POL, TOP, GDP) at 89.5%. At the significance level of 5%; this model is a good fit to describing the overall significant impact of TERROR, POL, TOP and GDP on FDI in Pakistan as Prob. (F-Statistics) is 0.000000. In our study DW= 1.727284, which is nearest to 2, leading toward the conclusion that there is positive serial correlation, nonexistence of auto correlation and accuracy of the mathematical equation.

4.1 Testing of Hypotheses

The results describe that terrorism has negative effect on FDI as expected in hypotheses 01. Thus, the results are in consistence with (Agrawal, 2011), who examined effect of terrorism on FDI inflows and stated that "transnational terrorism" events negatively shake total FDI inflows in advanced countries. As in the case of Pakistan (developing country), this variable has insignificant relationship with FDI inflows, which is in accordance with Talat and Anwar (2013), who investigated the impact of Terrorism and FDI inflows in Pakistan along with other macroeconomic variables. But still it is a major impediment in attracting the foreign direct investment, because of it, foreign investors are facing security threats, uncertainty for return on investment and they are losing confidence in any type of investment in Pakistan. Since its independence, political stability remained a foremost dream of Pakistan. As in studies like Talat and Anwar (2013) and Azam and Khattak (2009) regarding the relationship of political instability and FDI inflows in Pakistan it has been concluded that foreign investors are hesitating to invest in Pakistan because of instable policies and deteriorating political landscape. But in our study, keeping optimistic approach to suggest the better recommendations, we attempted to look from a different perspective for this variable and the results have demonstrated that political stability has positive impact on FDI inflows in Pakistan. Openness of the markets, in any territory, attracts FDI inflows a lot and the identical case has been observed in the estimated results that TOP is positively related with FDI inflows and has a significant attribute, which is consistent with the results of study conducted by Azam and Khattak (2009). Last but not the least, our hypothesis has been proved as expected and partially stable with the results of a study conducted by Falki (2009) that GDP is positively affecting FDI inflows in Pakistan. When GDP of a country increases, it shows increase in production within that territory, new opportunities of investments, expansion of domestic markets, enhanced demand and supply factors. Table 5 below, gives summary of results.

Table 5. Summary of OLS model

Hypotheses	Estimated Results of OLS Model
Terrorism has +/- impact on LnFDI.	Insignificant, -ive
POL is +/- impact on LnFDI	Significant, +ive
TOP +/- impact on LnFDI.	Significant, +ive
LnGDP has +/- impact on LnFDI	Significant, +ive

5. Discussion and Conclusion

This study has explored the determinants of FDI in Pakistan including Terrorism, Political Stability, Trade Openness and GDP for the period 1970 to 2013 based on time series data. The results denote that GDP, Trade Openness and Political Stability have significant and positive relationship with FDI inflows, whereas Terrorism Attacks (Bomb blasts) have negative and insignificant impact on FDI inflows in Pakistan because terrorism in Pakistan has been quantified by the number of bomb attacks and usually these are more in those areas, which have very limited value addition in GDP and FDI of Pakistan. The fundamental contribution of this study is investigation of the impact of political stability and terrorism on FDI in Pakistan. As per the researchers' best knowledge, there has been lesser focus on investigation of these variables especially in the optimistic approach. Pakistan has been facing political instability and terrorism attacks. Surely, the situation would have been altogether different if there has been sustained political stability despite terrorism attacks. The results of OLS model enlighten that in the presence of Political Stability, Trade Openness and stable GDP, the negative impact of terrorism on the FDI will be insignificant. So far, no investigation with this combination of variables (Terrorism and Political Stability) has been conducted in Pakistan. Indeed political stability leads a country toward economic sustainability and proves its competitive edge in globalization era, which is essential for the developing and sensitive (geographically, demographically) countries such as Pakistan. Manifold opportunities can be generated just because of the political stability in a country. International trade polices remain stable, which lead toward concrete decision making and assured rate of returns for domestic and foreign investors. In this way, the human capital, technology and other resources get fresh blood (capital) along with a strong infrastructure, which make them stronger to become competitive with the world for attracting FDI. Though, a country gets the power to confront with internal and external negative forces. Thus, the negative forces, like in case of Pakistan, terrorism will be beaten by herself for achieving the sustained economic, social and political prosperity.

Following key recommendations have been put forwarded in order to captivate FDI in Pakistan, based on empirical findings:

- The cost of war against terror, defense and security problems along the borders of Pakistan and in critical cities like Karachi, Quetta, Lahore, and Peshawar should be minimized to optimize the results.
- Government of Pakistan should promote democracy and strengthen the institutional foundations to establish a strong law and order situation. Pakistan is shifting towards trade openness but still has to work in this arena especially exports promotion based strategies since Pakistan is enriched with natural, human and financial resources.
- Stable GDP growth, no doubt, is essential to fulfill the above mentioned results and recommendations.

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