

Determinants of Foreign Direct Investment: An Empirical Analysis of Pakistan

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Abstract

The purpose of this study is to find out the key determinants of Foreign direct investment (FDI) in Pakistan in long run and short run time period. For this purpose, Co-integration approach and Error correction model (ECM) is used covering the time period 1973 to 2011. This study considers the Gross Domestic Product, Consumer Price Index, Political Instability, Exchange rate and Population. Augmented dickey fuller (ADF) has used to check the stationarity level of the variables in the model and found that all variables have the I(1) integrated order. All variables are found statistically significant in long run and concluded that Gross domestic product (GDP) in Pakistan is the most significant predictor of the FDI, followed by in order of importance the Political Instability, Exchange rate and consumer price index. In short run Gross Domestic Product (GDP), Political Instability (POI) and Population (POP) are the most significant determinants of FDI in Pakistan. The Error correction term shows that 21.11 % convergence in short run to long run within a year. This study concluded that Government should concentrate on the enhancement of growth rate and promote political stability in the country to bring the foreign investment inflow in the country.

1. Introduction

Investment in any shape brings a productive outcome in an economy, May on national level or international level. The international flows of financial resources are divided in two categories i.e. foreign private investment and public development assistance. Foreign private investment is further divided into two types as portfolio investment and foreign direct investment (FDI). Foreign direct investment (FDI) is mostly conceded out by multinational firms. Actually foreign direct investment (FDI) is a measure of foreign ownership of productive assets, such as factories, mines and land. FDI is not only affecting the economy as an external resource inflow but it can also revolutionize industry and well integrate the economy into international production.

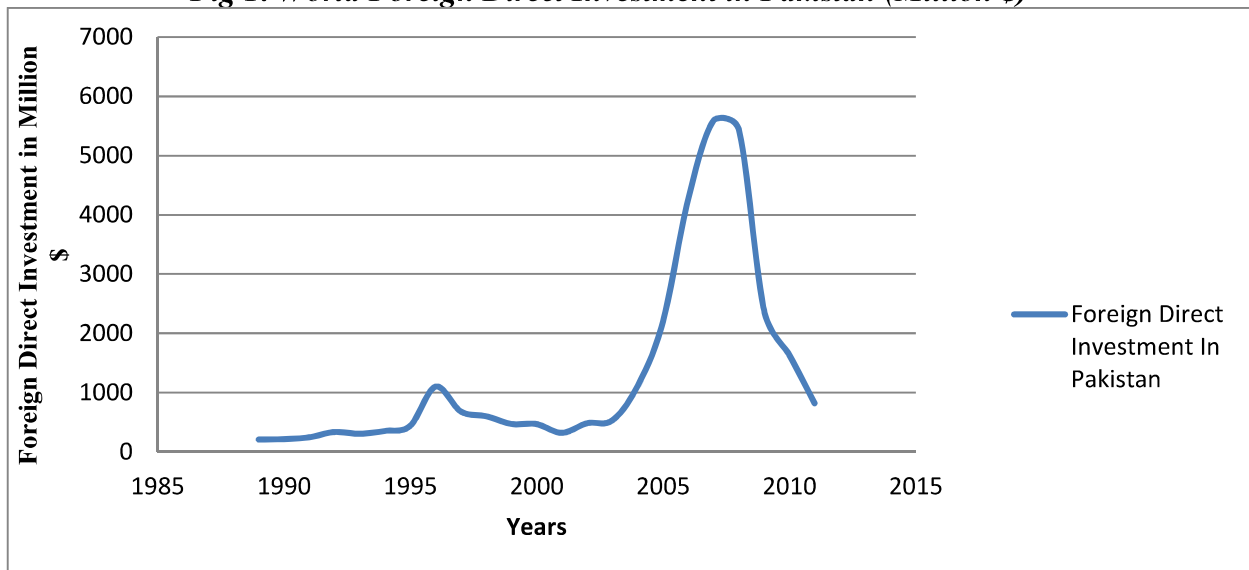
Now a day's foreign direct investment (FDI) is very subtle part of international economics. Developing economies like Pakistan are in need of foreigner investor weather come or not, how to attract them to came in their country and invest (Salman 2012). Foreign direct investment (FDI) brings in an economic growth, development and also enhances the employment, managerial skill, and technology. In the recent years a downward fall has been seen in the FDI as it is obvious from the following figure.

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Fig 1: World Foreign Direct Investment in Pakistan (Million \$)

SOURCE: INTERNATIONAL FINANCIAL STATISTICS (IFS)

Fig 1 indicates that the investment during the fiscal year (2010-11) was \$ 821 million, while it was around \$ 5438 million in 2007-08 and \$ 5590 million in 2006-07. This figure clearly indicates that FDI has been dropping for the last few years. Foreign investors were not coming to Pakistan for the last 3-4 years mainly due to the security situation. They informed that there were currently worth \$10 billion projects available for investment in Pakistan but the global economic meltdown and the internal situation, especially security situation, were creating impediments to attract investment. It is important to mention here that some of the local businessmen and industrialist are also shifting their business to the neighboring countries like Bangladesh, India, and Nepal due to unfriendly and unstable business atmosphere in Pakistan. FDI inflows in Pakistan are concentrated in a few major sectors namely telecommunication, oil and gas exploration, and financial business while commodity producing sectors and infrastructure are almost neglected.

FDI is very important for Pakistan to fill resource gap, it brings in the most needed capital, improved managerial skill, modern production and marketing techniques, global links etc. Many factors affect FDI in Pakistan, such as social, political and economic, we have to consider them for expansion of the economy and for the welfare of the people of our country. Many researchers have done research to find out the determinants of FDI, some have used panel data, some cross sectional, and other have used time series data.

The objective of this paper is to empirically investigate the significant explanatory indicators of FDI in Pakistan which affect the foreigner investment. This study is organized in the following order. Section 2 consists of the literature review. Section 3 deals with data and methodology. Section 4 pertains to estimation and interpretation of the results. Finally, the last section contains the summary of the study.

2. Literature Review

There are four types of foreign direct investment (FDI), resource seeking, market seeking, efficiency seeking and strategic asset seeking (Salman 2010). Botric and Skuflic (2006) reported that FDI is an essential source of finance for developing countries and FDI inflow to less developed countries is related with vertical investment. Yol and Ngie (2009) found the positive association between exchange rate and FDI. Market size, relative interest rate and exchange rate are the important factors that effect FDI (Akhtar 2000).

Market size, infrastructure quality, free trade zone, economic and political stability are essential for FDI (Lim 2001). While, Anjum and Nishat (2004) have seen the effects of tax and tariff policies, Fiscal policy and exchange rate policy in determining of FDI. Mottaleb and Kalirajan (2010) determine that the countries with high growth rate remained successful in attracting the FDI. Zaman et al. (2004) have traditionally categorized the determinants as Social, Political and economic determinants but in research they have undertaken only economic determinants due to the estimation failure in social and political variables.

Ahamad and Shah (2002) concluded that fiscal policy and high return from the investment have played a major role in attracting the FDI in Pakistan. Asedu (2002) found that corporate tax rate and degree of openness are significant determinants of FDI. Shamusddin (1994) finds that per capita income, GDP, wage rate and per capita debt are the most imperative determinant of FDI. Petrochilas (1989) and Mody (1992) investigated the determinants of FDI and found the market size as significant determinant of FDI.

3. Methodology and Data Collection

Annual data set was used in this study over the period 1973 to 2011. The data was acquired from International Financial Statistics (IFS), Hand book of statistics and Economic Survey of Pakistan. The regression form is.

$$FDI = \beta_0 + \beta_1 LGDP + \beta_2 CPI + \beta_3 ExR + \beta_4 POI + \beta_5 POP + \mu_t$$

Where FDI, LGDP, CPI, ExR, POI, POP and μ represents Foreign Direct Investment, Natural Log of Gross Domestic Product, Consumer Price Index, Exchange rate, Political Instability, Population and the error term.

To estimate the above model Johansen and Juselius co-integration approach has been used, which helps us not only to determine long run relationship among dependent and independent variables but also determine the short-run relationship among them. This approach is much better than Engel Granger because it consists on maximum likelihood method that delivers the test statistics to find number of Co-integrating vectors and also their estimates.

4. Estimation and Results

Augmented Dickey Fuller (ADF) test is used to check the stationarity level of the variables. ADF test consists on Autoregressive AR (1) and takes the extra lags terms of dependent variable in order to eradicate the autocorrelation. Null hypothesis (H_0) of unit root is tested against the alternate hypothesis (H_1) of no unit root at level and 1st difference.

Table 1. Results of Unit Root Test

Variables	ADF Test on	With Intercept	With Trend and Intercept	Conclusion
FDI	Level	4.822 (-3.689)	2.598 (-4.323)	Non stationary
	1 st difference	0.344 (-3.699)	-5.020 (-4.323)	Stationary
LGDP	Level	0.228 (-3.621)	-2.434 (-4.226)	Non stationary
	1 st difference	-5.678 (-3.626)	-5.606 (-4.234)	Stationary
CPI	Level	3.588 (-3.689)	3.163 (-4.323)	Non stationary
	1 st difference	1.397 (-3.679)	-5.363 (-4.234)	Stationary
ExR	Level	2.855 (-3.661)	-1.684 (-4.284)	Non stationary
	1 st difference	-1.220 (-3.689)	-4.958 (-4.284)	Stationary
POI	Level	-1.985 (-3.621)	-2.098 (-4.226)	Non stationary
	1 st difference	-5.743 (-3.626)	-5.826 (-4.234)	Stationary
POP	Level	-3.255 (-3.689)	-0.831 (-4.323)	Non stationary
	1 st difference	-2.556 (-3.653)	-6.239 (-4.339)	Stationary

Note: Results indicate that all variables are stationary at first difference at 1% level of significance.

Results of the Model

ADF test shows that the integrated order of all the variables in the model is I (1). Now we investigate whether co-integration exist or not among the variables. Firstly we estimate the VAR to choose the lag length of the model, and the maximum lag length of our model is one. Aikake information criteria (AIC) are used to identify the significant lag length. So, we applied J.J co-integration test. The co-integration test result is shown in Table 2, which shows that long run relationship exists among the variables.

Table 2. J.J Co-Integration Test Result

Trace Test		5% Critical Value	Prob.	Hypothesized no. of Co-integration equation (CE).
Eigenvalue	Statistics			
0.852130	169.399	95.75	0.0004	None*
0.668915	100.58	69.81	0.0012	At Most 1*
0.611309	60.78	47.85	0.0024	At Most 2*
Maximum Eigenvalue		5% Critical Value	Prob.	Hypothesized no. of Co-integration equation (CE).
Eigenvalue	Max-Eigen Statistics			
0.852130	68.81	40.07	0.0043	None**
0.668915	39.79	33.87	0.0088	At Most 1**
0.611309	34.01	27.58	0.0065	At Most 2**

* Trace test indicates 3 Cointegrating equations at the 0.05 percent level

** Max-Eigenvalue test indicates 3 Cointegrating equations at the 0.05 percent level

$$\text{FDI} = 0.367 + 113.71 \text{ LGDP} + 2.68 \text{ CPI} + 3.50 \text{ ExR} - 1.53 \text{ POI} + 1.47 \text{ POP}$$

(2.065) (8.638) (4.982) (8.258) (-3.645) (1.694)

These results show that, LGDP has positive and significant impact on foreign direct invest (FDI). GDP of a country is associated with the greater inflow of FDI. Mottaleb and Kalirajan (2010) also found the similar results. The coefficient of CPI is positive and significant. This indicates that when inflation is high, it attracts more foreign investors because there is incentive for the investors to sell their commodities at higher prices and obviously they will earn more money. Coefficient of Exchange rate is positive that represents 1% increase in exchange rate mean depreciation in Pakistan currency brings 0.035 unit increase in FDI. The coefficient of Political instability is negative which shows that 1 unit increase in political instability brings 1.53 decreases in FDI. Foreigner investors prefer and invest on those countries where political environment is stable. Foreigner investors shift their capital from unstable countries to stable countries. Result demonstrates that Political instability is the most important determinant of foreign direct investment (FDI). Population also has positive effect on FDI and significant at 5% level. More population mean more buyers and hence more sale which in turn means high profit.

Short Run Relationship

Table 3. Error Correction Model

Variables	Co-efficient	T-Statistics
DFDI	-3.1456	-1.8745
DLGDP	4.46	2.90255
DCPI	2.92	1.7567
DExR	8.92	1.924
DPOI	-4.91	-2.60
DPOP	1.54	3.5
ECM	-.21112	-2.2427

In short run GDP, POI and POP is the most significant predictor of FDI in Pakistan. The Error correction term is -.21112 which shows that 21.11 % convergence in short run to long run within a year with a change of LGDP, CPI, ExR, POI, POP variables.

5. Conclusion and Policy Recommendation

The purpose of this study is to find out the main determinants of Foreign Direct Investment (FDI) in Pakistan in the long run and the short run time period. For this purpose Co-integration and Error Correction Model (ECM) is applied covering the time period 1973 to 2011. This study considers the Gross Domestic Product (GDP), Consumer Price Index (CPI), Political Instability (POI), Exchange rate (ExR) and Population (POP). All variables are found statistically significant and concluded that GDP in Pakistan is the most significant predictor of the FDI, followed by in order of importance the Political Instability, Exchange rate and Consumer Price Index.

So, on the basis of this research we can conclude that Government should concentrate on the enhancement of growth rate and promote political stability in the country. Government should also try its best to stabilize the exchange rate. Foreign investors are like birds, they are very much sensitive and they are free to go anywhere where they want, everyone will be happy on their arrival. After all they modernize the economy and fulfill the financial and capitalistic gap in a country's economic activities.

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