DETERMINANTS OF THE INFLOW OF FOREIGN DIRECT INVESTMENT: EMPIRICAL EVIDENCE FROM PAKISTAN

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Abstract

This study aims to investigate empirically the various factors which affect the inflow of Foreign Direct Investment (FDI) in Pakistan over the period of 1980 to 2018 and used in this study are population, GDP per capita represent market size, energy consumption, inflation rate and financial development as explanatory variables. The Augmented Dickey Fuller and Philips Perron tests were used to check stationarity level of the data series; the Autoregressive Distributed Lag (ARDL) approach was employed. The empirical results show that GDP, Inflation, Energy and population growth have positive and significant effect on FDI, while the financial development have negative and significant effect on FDI. Findings of the study suggest that the government should make suitable policies to attract more FDI into Pakistan in order to improve economic growth and thereby society welfare.

Keyword: *FDI; GDP per capita; population; financial development*

Introduction

Foreign Direct Investment (FDI) is an investment in the economy which is done by foreigners. The aim of the foreign investors to investment in developing countries is to earn more profit and give benefit to the country, in which, they give benefit in the form of employment opportunities and influence its economic growth. But risk such as inflation risk, Horizon risk, Longevity risk, Reinvestment risk, liquidity risk and market risk etc. is always connected with the inflow of FDI. Many prior studies highlighted the

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tremendous role plays by the global FDI inflows in the economic development, as it bring capital, managerial skill, create jobs opportunities, boost competition in local firm, increase productivity, and increase government revenues and much more (UNCTAD, 2014; Azam, 2015; Ahmad and Khan, 2018; Azam & Gavrila, 2015; Khan *et al.* 2014; Gupta & Singh, Balata *et al.,* 2016; Khan and Khan, 2018; Azam 2019ab; Khan *et al.,* 2019). FDI offers supply chain with the help of the local investors, economies of scale and cost benefit and the expenditure help to attract FDI. As government spending increases will lead to increases the economic growth, increase an employment and national incomes. When the economic growth of the nation raises will invite foreign investors for investment (Foster & Magdoff, 2009).

Multinational Corporations (MNCs) wants to do investment in those places where market size is large and macroeconomic environment are stable. However, the world market size increase day by day and there is increase in the competition among host countries to pull FDI. But, when the economic fundamentals are not capable for the inflow of FDI, then, it badly affect the home country economic indicators (Dunning 1993, Globeran & Shapiro 1999, Shapiro & Globermsn 2001). Indeed, FDI inflow is vital for developed and less developed economies to increase and improve their economic growth. If we look some years back FDI is the largest sources of capital flow in emerging economies his contribution in security, private lends, and official assistance. The support of FDI was forty five percent of net foreign resources streams to emerging countries in 1997 as compared to sixteen percent in the year of 1986 (Perkins, 2001). FDI is reflected an important source of financial development in emerging economies. Many studies shows FDI plays significant performance in the developing process of growth in emerging economies and also in the development process of human resources, technological progress, capital formation and international trade, standard living infrastructure (UNCTAD, 2006).

According to Dunning (2002) that the inflow of FDI from emerging countries it has been observed that old-style economic variables are more important, however, FDI from more advanced developed economies is increasingly looking for corresponding knowledge, rigorous resources and skills, a helpful and clear marketable, permissible communication infrastructure and government policies satisfactory to worldwide revolution and free enterprise. This has not been empirically verified the existing studies empirically explore the distinction response of FDI from advanced and emerging nation to the home nation depends on the selective FDI policies and investment settlements.

One advantage of FDI is that it helps in providing greater capital, foreign exchange, technology and entrance to external market thereby increasing economic benefits to the home country (World Bank, 2014; Crespo & Fontura, 2007; Romer, 1993). To developed and improve energy

sector, telecom sectors, transformation and infrastructure, banking and finance sector, health and education sector etc. (Aizenman & Noy, 2006). The Government of Pakistan introduced economic reform policies which were based on market in early 1980s. The management frees up its business regime by the holding of this reform in 1988 and monetary inducements to external investment by varies of tax reduction; lend facilities and tariff decrease and has improved stability in overseas exchange. The government opened agriculture sector, telecommunication sector, energy sector and insurance sector to FDI and they further liberalizes their policies in 1990. But the FDI remains small as associated with other emerging countries due to no stability in political system and policies (Khan, 1999). Paradigm (1993) states that cross-method of FDI is determine by size of the market and income level, infrastructure, stability in political and macroeconomics constancy. Nishat and Anjum (1998) concludes that FDI can be attracted by the power of politics, peaceful act and command position, level of technical labor force and mineral resources and the stable policies of the state. Breaking work dunning suggests that attraction of FDI from advanced economies depend on government strategies, obvious supremacy and compassionate organization of the country which are hosting FDI.

Rahman, (2016) stated that Pakistan is developing country and facing low foreign reserve in the past years. Since 1960 Pakistan has receiving foreign debt but due to no proper management to invest foreign debt is increasing overtime on Pakistan economy which adversely affects the development process of the nation. The government of Pakistan fails to increase the inflow of FDI due to some economical, social and political factors in past fifteen years.

The motivation of this study is based on the importance of inflow of FDI role in the process of economic growth and development of developing country Pakistan. Therefore, this study is conducted to investigate the various variables factors which determine the inflow of FDI into Pakistan.

This article is organized as follows; Section 2 present review of relevant literature. Section 3 present models of the study, data, and estimation techniques. Section 4 presents results and discussion. Finally, section 5 presents conclusions and recommendations.

Literature Review

Aqeel and Mohammed (2005) explored the main determents of FDI in Pakistan by the data period 1961- 2003.The outcome of the study confirm that the tariff rate, exchange rate, tax rate, credit to private sector and per capita GDP are significantly and positively related only wage rate general price index are negatively related to FDI. The study highlights short run and the long run role of these variables in inviting FDI and its progress. Khan and Nawaz (2010) concluded that gross domestic product growth rate show

progressive effect on inflow of FDI in Pakistan. The result confirmed that export is the chief determining factor of FDI in Pakistan. wan et al (2011) explored the determinants of FDI and their results indicated that gross domestic product, real growth rate of gross domestic product, gross fixed capital formation, foreign exchange reserve, degree of trade openness and per capita income are important and progressive influence on inflow of FDI in Pakistan**.** Azeem et al (2012) observed the determinants of FDI and concluded that there are negative impact on investment by partner investing and GDP and GDP growth rate, trade, total government expenses, are positive relationship and population growth has adversely connected with FDI inflow, while, Gravity has no affect on the inflow FDI.

Akram (2014) conclude that electric power consumption, total debt services, gross domestic fixed capital formation shows progressive effect on FDI while inflation has destructive effect on FDI. Latif and Latief (2019) explored the condition of power sector and energy sector of Pakistan and they investigated the causality between FDI in energy and power sectors. The results suggested that grater amount of FDI goes to power and energy sectors of Pakistan. The results also suggest short run causal relationship between economic growth and energy consumption and the results confirm long run causality of energy consumption.

Table 1: Summary of Literature Review

Author	Time period	Regressand	Regressors	Model	Major finding
Aqeel & Nishat (2005)	1961 - 2003	FDI	tariff, exchange rate, tax, private lend zone and overall price catalogue	cointegration and error-correlation techniques	All variables show significant and positive signs except wage rate, general price index.
Khan & Nawaz (2010)	1970 - 2005	FDI	yearly progression rate, exchange rate, export of goods and services, TAR	OLS	The impact of GDP growth rate has positive on FDI inflow of Pakistan. export is also major determining factor of FDI
Awan et al. (2011)	1996 - 2008	FDI	GDP, real GDP growth rate, gross fixed capital formation, foreign exchange reserve, degree of trade openness and per capita income	Error correlation Model	The results variables shows significant and progressive encouragement on inflow of FDI into Pakistan

Azeem et al. (2012)	1999 - 2009	FDI	GDP, GDP per capita, GDP growth rate, inflation rate, population growth rate, population growth rate and distance	two test fixed and random effect	All variables are progressive with FDI but population growth is destructively associated with FDI
Danish & Akram (2014)	1990 to 2010	FDI	Debt services, electric consumption, total exterior lends, gross fixed capital formation and inflation.	OLS	Electric power consumption, total debt services, domestic fixed capital formation have progressive effect on FDI while inflation has adverse effect on FDI
Masoof (2015)	1990 to 2014	FDI	GDP, Gross capital formation, inflation and incidental taxes.	Regression model	They suggest that taxes are increasing day by day, inflation rate is high and GDP growth rate is lower causes low FDI in Pakistan.
Rehman (2016)	1984 to 2015	FDI	market size, openness, inflation and natural resource	co-integration and error correction techniques	Economic and social have long run determinants on inflow of FDI and vector error correlation also confirms that short run relation exists.
Khalid & Chaudhry (2017)	1980 to 2015	FDI	GDP per capita, gross national income per capita, exchange rate, trade openness, dummy for dictatorship	ARDL model	GDP per capita, GNI, and trade openness shows positive impact on FDI while the impression of exchange rate is negative. Dictatorship results shows progressive result on inflows of FDI
Latif & Iatief (2019)	1990 to 2017	FDI	economic growth and power and energy sector	Johansen co-integration and granger causality tests	results confirm short run causal connection between economic development and energy depletion and also results suggest long run causality of energy use

Methodology of the Study

This study used five independent variables which are the important determining factors of FDI and annual time series data for the year 1980 to 2018. This study used descriptive statistics, correlation, ADF and PP test to check stationarity and ARDL and ARDL bound test are estimate the model and other diagnostic test.

Model Specification

This study used FDI as dependent and population, GDP, Energy, inflation and financial development as independent variables. The same model was used by Azeem et al. (2012), Haseeb et al. (2014), Muhammad et al. (2015). Khalid and Chaudhary (2017) and Azam et al. (2019).

In linear form

$$FDI_t = \beta_0 + \beta_1 POP_t + \beta_2 GDP_t + \beta_3 ENG_t + \beta_4 FD_t + \beta_5 INF_t + \mu_t$$

In ARDL Form

$$FDI_t = \beta_0 + \sum_{i=1}^{n_1} \beta_{1i} FDI_{t-i} + \sum_{i=1}^{n_2} \beta_{2i} POP_{t-i} + \sum_{i=1}^{n_3} \beta_{3i} GDP_{t-i} + \sum_{i=1}^{n_4} \beta_{4i} ENG_{t-i} + \sum_{i=1}^{n_5} \beta_{5i} FD_{t-i} + \sum_{i=1}^{n_6} \beta_{6i} INF_{t-i} + \mu_t$$

Table 2: Variables and Data Source

Variables	Description and source	Symbols
Foreign Direct Investment	FDI, net inflows (% of GDP) data is from WDI.	FDI
GDP per capita	GDP per capita (current US dollar) data is from WDI.	GDP
Population	Urban population growth (annual %) data is from WDI	POP
Energy	Energy use (kilo of oil equivalent per capita) data is from WDI	ENG
Inflation	Inflation, GDP deflator (annual %) data is from WDI.	INF
Financial development	M2 (% of GDP) is used as proxy for financial development data is from WDI.	FD

Table 3: Descriptive Analyses

	FDI	FD	GDP	INF	LENG	POP
Mean	0.699579	49.21790	843.4319	9.079500	6.113689	4.133053
Median	0.612998	48.20324	649.8048	7.879657	6.136581	4.091244
Maximum	2.010007	61.54371	1547.853	19.89115	6.261040	5.367890
Minimum	0.063242	38.59470	334.8476	0.400237	5.857626	3.575547
Std. Dev.	0.483321	6.838261	444.9449	4.955728	0.103486	0.445999
Skewness	0.687800	0.136509	0.344886	0.724931	-0.892680	0.768855
Kurtosis	2.790380	1.917882	1.429269	2.871294	2.926384	3.380203
Jarque-Bera	3.146350	2.023966	4.782348	3.442831	5.188513	4.077300
Probability	0.207386	0.363498	0.091522	0.178813	0.074701	0.130204
Sum	27.28360	1919.498	32893.84	354.1005	238.4339	161.1891
Sum Sq. Dev.	8.876754	1776.949	7523087.	933.2512	0.406952	7.558761
Observations	39	39	39	39	39	39

Table 4: Correlations Matrix

	FDI	FD	GDP	INF	LENERGY	POP
FDI	1.000000	0.402846	0.628013	0.255056	0.345582	0.633437
FD	0.402846	1.000000	0.864932	-0.046610	0.658251	0.817784
GDP	0.628013	0.864932	1.000000	-0.023709	0.623209	0.912916
INF	0.255056	-0.046610	-0.023709	1.000000	0.267953	0.034037
LENG	0.345582	0.658251	0.623209	0.267953	1.000000	0.694080
POP	0.633437	0.817784	0.912916	0.034037	0.694080	1.000000

Table 5: Unit Root Tests

Variables	ADF test Values (p-value)		PP test Values (p-value)		Decision
	At level	At 1st Difference	At level	At 1st Difference	
FDI	-4.041 (0.003)		-4.241 (0.0019)		Stationary at level
GDP	-0.065 (0.946)	-5.455 (0.0001)	-0.118 (0.940)	-5.47 (0.000)	Stationary At 1st Difference
POP	1.610 (0.999)	-5.415 (0.000)	1.728 (0.999)	-5.415 (0.0001)	Stationary At 1st Difference
INF	-5.052 (0.000)		-5.06 (0.0002)		Stationary at level
FD	-1.346 (0.597)	-6.72 (0.000)	-1.21 (0.659)	-6.925 (0.000)	Stationary At 1st Difference
ENERGY	-2.444 (0.136)	-5.874 (0.000)	-2.60 (0.099)	-5.87 (0.000)	Stationary At 1st Difference

The unite root tests result shows that FDI and inflation are stationary at level and GDP, population, Financial development and energy are stationary at first difference, therefore, these results recommend ARDL model.

Table 6: ARDL MODEL Results

Variables	Coefficient	Std. Error	t-Statistic	Prob.*
FDI(-1)	-0.172454	0.167090	-1.032104	0.3103
FD	-0.032001	0.017220	-1.858397	0.0729
GDP	0.000793	0.000358	2.217431	0.0343
INF	0.026990	0.012115	2.227754	0.0335
INF(-1)	0.019784	0.014090	1.404117	0.1706
LENERGY	1.944091	1.011330	1.922311	0.0641
POP	0.769191	0.358929	2.143018	0.0403
C	10.01507	5.366171	1.866335	0.0718
R-squared	0.604083	Adjusted R-squared		0.511703
F-statistic (P-value)		6.539079 (0.0001)		

The ARDL results shows that GDP, Inflation, Energy and population growth have positive and significant effect on FDI, while the financial development have negative and significant effect on FDI. Awan et al. (2011) and Masoof (2015) was found that GDP has positive and significant effect on FDI. Rehman (2016) was also confirmed that inflation has significant effect on FDI. Latif & Iatief (2019) confirmed that economic growth and power and energy have significant and positive effect on economic growth. The R-squared value is 0.60, which means that 60% variation in the FDI due these variables.

Table 7: ARDL Bound Test Results

Null Hypothesis: No long-run relationships exist		
Test Statistic	Value	k
F-statistic	5.206467	5
Critical Value Bounds		
Significance level	**I0 Bound**	**I1 Bound**
10% level of significance	2.26	3.35
5% level of significance	2.62	3.79
2.5% level of significance	2.96	4.18
1% level of significance	3.41	4.68

The ARDL bound test results shows that there exists the long run relationship among these variables because the calculated value of bound test is greater than upper bound value, therefore, this study reject the null hypothesis that there existed no relationship in the long run.

Table 8: Diagenetic Tests Results

Test Name	Test Statistics value (p-value)	Null Hypothesis (H_0)	Decision
Jarque-bera	1.4137 (0.4932)	The residual are normally distributed.	Can't Reject H_0
Breusch-Godfrey Serial Correlation LM Test	0.8426 (0.4412)	There are no serial correlations in the data.	Can't Reject H_0
Breusch-Pagan-Godfrey test	0.7296 (0.6484)	There are Homoskedasticity in the data.	Can't Reject H_0
Ramsey RESET Test	0.9584 (0.3458)	There is no specification error in the model.	Can't Reject H_0

Conclusion and Recommendation

FDI play a vital role of economic growth of a country, therefore, this study was conducted with the main aim is to investigate the major determinant of FDI in Pakistan for the year of 1980 to 2018. Main objective of the study is to catch varies variables, which have significant effects on FDI in Pakistan. For this purpose the study tests the effect of population, GDP per capita, energy, financial development and inflation on FDI. GDP, Inflation, Energy and population growth have positive and significant effect on FDI, while the financial development have negative and significant effect on FDI. Therefore, this study concludes that GDP, Inflation, Energy, population growth and financial development are the major determinants of FDI in Pakistan.

FDI is a best opportunity of emerging nations to increase its economic growth. Though, Pakistan is developing country thus Pakistan needs to invite FDI in order to raise its economic growth. The results of this study providing the way to policy maker to pull FDI in Pakistan. The administration must implement suitable and correct procedures to raise FDI in Pakistan. The government must support local investors to start investing in Pakistan it will also help in inviting external investors to come for investing in Pakistan. The country must possess political stability and improve act and command position in the nation in order to attract external investors in the home nation.

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