Impact of Governance Indicators on FDI Inflows: Empirical Evidence from Pakistan

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The inflows of foreign direct investment are extremely crucial for economic growth of developing countries. The purpose of this study is to determine the relationship of governance indicators including voice and accountability, political stability and absence of violence / terror, government effectiveness, regulatory quality, control of corruption and governance index with inflows of foreign direct investment in Pakistan for the period of 1996 to 2010 through applying ARMA and Ordinary Least Squares (OLS) regression techniques. The results of the study have shown that voice and accountability, political stability and absence of violence / terror, government effectiveness, regulatory quality, control of corruption and governance index have positive and significant relationship with FDI inflows in Pakistan. Therefore, it is imperative to improve the condition of governance indicators in order to strengthen the confidence level of overseas investors and to increase inflows of foreign direct investment in Pakistan.

Keywords: Governance indicators; foreign direct investment; Pakistan.

1. Introduction

The contribution of FDI in economic growth of developing countries has been the most debated topic from last two decades. Wafure and Nurudeen (2010) argued that FDI provides investment capital for developing countries along with employment opportunities, management skills and updated technology which eventually leads the developing countries towards economic growth. Therefore, the third world countries are contesting for obtaining greater FDI inflows in order to strengthen their businesses and industries. For achieving this goal, the policies and procedures are revised continually for making it convenient for the investors to make investment in these countries. Some counties are successful in attracting greater FDI inflows; whereas, some have faced problems in attracting

FDI. The inflows of foreign direct investment are considered as one of the crucial elements for the growth and development of the developing nations. Consequently, the developing nations are extremely eager for attracting greater FDI inflows.

Pakistan also needs FDI inflows for its economic growth because of the gap in its savings and investments. Pakistan is not able to continue its economic activities because of insufficient internal resources; consequently, inflows of FDI are indispensable for supplementing local investment to accomplish economic goals. Foreign direct investment is also critical for the developmental projects, industrial growth, raise employment level, technological advancement, enhancing industrial production, reducing balance of payment deficit, increasing foreign reserves, better infrastructure,

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skilled human resources and eventually realizing economic growth (Afza and Anwar, 2013).

World FDI inflows have increased magnificently within last 25 years. During 1980, total FDI flows were only 6.59% of world GDP, which grew to around 23% during 2003 (UNCTAD, 2004). Aggregate FDI flows in 2010 were $1,244 billion (UNCTAD, 2010) – in comparison to FDI flows of $1,185 billion in 2009. FDI flows for developing countries increases from $2.4 billion per annum during 1962 to around $17 billion in 1980 and further increased by 40% ($233 billion) in 2004. However, FDI inflows in developing world increased by 12 % (i.e. $ 574 billion) during 2010 in contrast to developed world which faced a decline in FDI.

Pakistan has been able to attract higher inflows of FDI during the last twenty years owing to investors' friendly policies and strategies. The inflows of FDI were very small upto year 1991 due to restrictive investment policies, though, the FDI inflows steadily increased after liberalization (Khan, 2000). The inflows of FDI were grown to $ 64 million in year 1980 (UNCTAD, 2010), whereas, the inflows of FDI increased significantly to $711 million in 1997 in comparison to $110 million in 1987 (Husain, 1999). However, the FDI inflows decreased in year 2000 to $ 183 million. After the year of 2004, the inflows of FDI have huge growth which amounted to $5.4 billion in year 2008, whereas, the inflows of FDI had declining trend since 2007 and reached to $3.21 billion in 2009, a decline of 51.1%.

The economic growth of a country is also influenced by the government selection processes, monitoring and replacement of the governments; governmental ability to implement and formulate policies and procedures; respect of their people and position of institutions which administer social and economic interactions. There are six dimensions of governance mechanisms which may be useful to evaluate the governance level for the countries, identified as governance indicators (Kaufmann et. al., 2009). These governance indicators are elaborated as:

Voice and Accountability: It captures the perceptions regarding the extent to which the citizens of a country are participating in government selection, the freedom of association and expression and existence of free media.

Political Stability and Absence of Violence / Terror: It captures the perceptions regarding probability regarding governmental destabilization by violent or unconstitutional ways which also include politically motivated terrorism and violence.

Government Effectiveness: It captures the perceptions regarding quality of civil services, public services, independence level of these services from political forces, quality of policies and procedures formulation and execution and governmental credibility regarding commitment for these policies.

Regulatory Quality: It captures the perceptions regarding the governmental ability for formulation and implementation of sound regulations and policies which allow and support development of private sector.

Rule of Law: It captures the perceptions regarding the degree confidence and acceptance of the societal rules by the citizens of a country, quality of contractual enforcement, the police, the courts, the property rights and probability of violence and crime.

Control of Corruption: It captures the perceptions regarding the level to which public authority is used to obtain private benefits which includes both forms of corruption i.e. petty and grand corruption.

Pakistan has greater potential to attract FDI inflows and FDI trend of various sectors shows success of governmental policies, but recently FDI inflows have decreased drastically. It is expected that worsening condition of governance indicators in Pakistan is affecting FDI inflows in Pakistan. Therefore, this study intends to investigate the impact of voice and accountability, political stability and absence of violence / terror, government effectiveness, regulatory quality, control of corruption and governance index on FDI inflows in Pakistan from 1996 to 2010 by applying ARMA and Ordinary Least Squares (OLS) regression techniques.

The rest of the paper has been arranged as follows: literature review has been mentioned in section two, materials and methods has been discussed in section three while section four describes the results and discussion has been presented in section five.

2. Literature Review

Different researchers have investigated the factors influencing inflows of foreign direct investment. For example, Rusike (2008) in his study analyzed the determinants and trends of inward FDI to South Africa for the period of 1975-2005. He pointed that exchange rates, openness and financial progress were key variables to determine FDI inflows in the long run. Financial development and increased openness attracted FDI while depreciation of exchange rates deterred FDI inflows to South Africa. The market size variable appeared short run determining variable for FDI inflows though it was decreasing in magnitude. Pantelidis and Nikolopoulos (2008) identified variables which enhanced or impaired Greece's FDI attractiveness via OLS technique covering the period 1976-2004. The variables assessed were size of market, relative interest rate, exchange rates, technical capability, human capital, intensity of capital, imports, exports, endowment of natural assets, economic activity, labor cost per unit and membership of Greece in EU. The crucial variables lowering FDI stock were public governance inefficiency, higher taxes, infrastructural inefficiency and general macroeconomic situations.

Masuku and Dlamini (2009) probed locational determining variables of FDI in Switzerland by utilizing Cointegration along with ECM techniques over period of 1980-2001. The variables tested were home market size, openness of economy, infrastructure, domestic market attractiveness, external economic stability and internal economic stability. The authors described that external economic stability, internal economic stability, infrastructure and economy's openness had positive correlation whereas home market size and domestic market attractiveness had negative correlation with FDI stock. Mohamed and Sidiropoulos (2010) explored major determinants of FDI in MENA countries by employing random and fixed panel data methodologies for the period 1975-2006. The findings revealed that host economy size, size of government, institutional factors and natural resources significantly influenced FDI inflows within MENA countries. Azam (2010) investigated effects of economic variables on FDI for Kyrgyz Republic, Armenia and Turkmenistan through least squares methodology for period from 1991 to 2009. The variables incorporated in model were market size, inflation and official development assistance. Findings indicated positive influences of market size, official development assistance and negative influence of inflation for FDI. Findings further indicated that official development assistance variable in Armenia and inflation in Kyrgyz Republic demonstrated insignificant relationship.

Researchers have also investigated the determinants of FDI in Pakistan, e.g. Hashim et al (2009) assessed relative importance of variables that attract FDI in telecommunication sector of Pakistan by utilizing regression analysis for the period 2000-2006. The variables which were tested included the market size, competition, literacy rate, foreign trade and per capita income. The results depicted that all the factors had significant and positive impact on FDI inflows in telecommunication sector of Pakistan. Azam and Kahttak (2009) evaluated the influence of political instability and human capital on FDI stock in Pakistan for the period 1971-2005 by utilizing least square method. The estimated results reported a positive and significant link between human capital and FDI stock, while the correlation between political instability and FDI was positive but statistically insignificant. Khan and Nawaz (2010) studied the economic determinants of FDI inflows in Pakistan for the period 1971-2005 by using OLS technique. The factors which had been considered to explain the FDI patterns included market size, wholesale price index, custom duty on imports, average annual exchange rate and exports of goods. The study reported that GDP, volume of exports, tariffs on imports and whole sale price index were positively related while exchange rate was negative related to FDI inflows. Rehman et al (2011) observed the impact of infrastructure on FDI flows in Pakistan along with market size and exchange rate covering the period of 1975-2008 by employing ARDL and ECM econometric techniques. The results depicted that infrastructure and market size significantly and positively affected inflows of FDI in Pakistan both in short run and long run periods, whereas, exchange rate significantly and negatively affected FDI both in short term and long term periods.

Mughal and Akram (2011) analyzed the impact of market size along with corporate tax rate and exchange rate on inflows of FDI in Pakistan for the period 1984 to 2008. They used error correction model (ECM) and ARDL techniques to determine that relationship and found the market size as the most significant variable which positively affected FDI inflows, whereas, the exchange rate negatively and significantly affected FDI. The corporate tax

rate did not have any influence of FDI inflows in Pakistan. Mahmood and Ehsanullah (2011) examined the association between macroeconomic variables and FDI inflows in Pakistan covering the period of 1972-2005. The relationship concerning size of host economy (measured by population), democracy, real exchange rate, manufacturing products, real exports, secondary level school enrollment and import duty was determined through OLS regression technique. The results demonstrated that size of host economy, secondary level school enrollment and democracy had significant positive influence on FDI inflows while real exchange rate, manufacturing products, import duty and real exports had significant negative impact on FDI in Pakistan.

Afza and Anwar (2013) investigated the determinants of foreign direct investment in Pakistan for the period of 1980 to 2010. The impact of cost of war against terrorism, electricity generation, political stability, inflation, GDP, incentives offered to investors, trade openness and exchange rate with inflows of foreign direct investment was estimated by applying ARMA and ordinary least squares (OLS) regression techniques. The results revealed that electricity generation, GDP, exchange rate, incentives provided to investors and trade openness had significant and positive relationship, whereas, political instability and cost of war against terrorism had significant and negative relationship with FDI inflows in Pakistan. Anwar et al. (2013) analyzed the determinants of foreign direct investment in Pakistan's agricultural sector for the period of 2000 to 2010. The relationship of market size, trade openness, inflation, exchange rate and government debt with FDI inflows in Pakistan was determined through OLS regression technique. The results depicted that the variables of trade openness and market size significantly and positively affected FDI inflows, whereas, government debt significantly and negatively affected FDI inflows in Pakistan's agricultural sector. The variables of exchange rate and inflation have insignificant relationship with FDI inflows.

The literature review reflects that very few studies have investigated the relationship of governance indicators and FDI inflows in general and for Pakistan in particular. Therefore, the objective of this study is to determine the relationship of voice and accountability, political stability and absence of violence / terror, government effectiveness, regulatory quality, control of corruption and governance index with FDI inflows in Pakistan from 1996 to 2010 by applying ARMA and Ordinary Least Squares (OLS) regression techniques.

3. Materials and Methods

The secondary data from 1996-2010 has been collected form Pakistan's Economic Surveys, SBP reports and World Bank Development Indicators Database. The ARMA and OLS regression models has been applied in order to determine the impact of governance indicators including voice and accountability, political stability and absence of violence / terror, government effectiveness, regulatory quality, control of corruption and governance index on inflows of FDI in Pakistan.

The following regression model has been estimated:

$$LnFDI = \beta_0 + \beta_1\,VA + \beta_2\,PV + \beta_3\,GE + \beta_4\,RQ + \beta_5\,CC + \beta_6\,GI + Ut$$

Where:

LnFDI = Inflows of foreign direct investment in millions of rupees

VA = Voice and Accountability

PV = Political Stability and Absence of Violence / Terror

GE = Government Effectiveness

RQ = Regulatory Quality

CC = Control of Corruption

GI = Governance Indicators Index based on governance indicators

4. Fuzzy Step Fixed Charge Transportation

Firstly, Pearson Correlation technique has been used to determine the level of correlation among the dependent and independent variables and also to check the existence of autocorrelation problem among the independent variables. The results of correlation have been presented in Table 1:

Table 1. Correlation Matrix

Name of Variable	LnFDI	VA	PV	GE	RQ	CC	GI
FDI	1						
VA	.341	1					
PV	-.853**	-.220	1				
GE	-.268	-.284	.472	1			
RQ	.368	.383	-.147	-.183	1		
CC	.104	-.460	-.069	.362	-.178	1	
GI	-.604*	.230	.445	.538	.330	-.031	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

The results of correlation matrix depicts that there is no problem of auto correlation among the independent variables. At the second stage, ADF unit root test has been applied for checking stationarity of all the variables due to time series nature of the dataset. The results of ADF unit root test are reported in table 2:

Table 2: ADF Stationarity Unit Root Test for Variables

Variables	T-ADF Statistics	Critical Values	Decision
LnFDI	-4.843915 (0.0033)	1% level = -4.356068 5% level = -3.595026 10% level = -3.233456	Stationary at level
VA	-3.306256 (0.0365)	1% level = -4.057910 5% level = -3.119910 10% level = -2.701103	Stationary at 1st difference
PV	-3.341167 (0.0344)	1% level = -4.057910 5% level = -3.119910 10% level = -2.701103	Stationary at 1st difference
GE	-3.678204 (0.0208)	1% level = -4.121990 5% level = -3.144920 10% level = -2.713751	Stationary at 1st difference
RQ	-3.840105 (0.0492)	1% level = -4.886426 5% level = -3.828975 10% level = -2.362984	Stationary at 1st difference
CC	-3.102348 (0.0515)	1% level = -4.057910 5% level = -3.119910 10% level = -2.701103	Stationary at Level
GI	-3.801510 (0.0156)	1% level = -4.057910 5% level = -3.119910 10% level = -2.701103	Stationary at 1st difference

Stationarity results in table 2 describes that FDI and control of corruption variables are stationary at level, whereas voice and accountability, political stability and absence of violence/terror, government effectiveness, regulatory quality and governance index are stationary at first difference.

After checking stationarity of dependent and independent variables, the ARMA model has been applied for estimating the impact of voice and accountability, political stability and absence of violence/terror, government effectiveness, regulatory quality, control of corruption and governance index on FDI inflows. Least Squares method has been utilized for estimating the ARMA parameters. The results for ARMA technique have depicted that moving average term for explanatory variable i.e. LnFDI(-1) has insignificant coefficient, describing that lag value of FDI is not influencing Pakistan's FDI flows. Hence, the ARMA technique is inappropriate for this study, and accordingly, OLS regression technique has been used for estimating the impact of voice and accountability, political stability and absence of violence/terror, government effectiveness, regulatory quality, control of corruption and governance index on FDI inflows. The results for adjusted R-square, log likelihood, F-statistic and Durbin-Watson statistics have also indicated that the results of OLS regression technique are superior to results of ARMA technique. So, results for OLS regression technique have been described in table 3.

Table 3: OLS Regression Estimates

Dependent Variable: LNFDI

Method: Least Squares

Included observations: 15 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
VA	5.599572	2.632436	2.127145	0.0661***
PV	4.110448	1.939420	2.119421	0.0669***
GE	7.868524	2.284892	3.443719	0.0088*
RQ	7.507752	2.233525	3.361392	0.0099*
CC	3.862954	1.807847	2.136770	0.0651***
GI	13.33369	4.555890	2.968361	0.0179**
C	2.927435	1.541331	1.899291	0.0941
R-squared	0.921141	Mean dependent var		7.140533
Adjusted R-squared	0.861996	S.D. dependent var		0.982496
S.E. of regression	0.364986	Akaike info criterion		1.126809
Sum squared resid	1.065718	Durbin-Watson stat		1.657564
Log likelihood	-1.451067			
F-statistic	15.57444			
Prob(F-statistic)	0.000509			

* Significant at 1 Percent.

** Significant at 5 Percent.

*** Significant at 10 Percent.

The results reported in table 3 with Adjusted R-square value of 0.86 indicate that the explanatory variables used in regression model have described approximately 86 percent of the variations taking place in FDI inflows in Pakistan. The Durbin Watson value is 1.68 which reflects that there is no problem of autocorrelation among independent variables of regression model as this value is well within acceptable range of 1.5-2.5. The AIC value is 1.13, which indicates that the regression model has considerable support regarding goodness of fit and it is capable for being used to make inferences.

Moreover, the regression results show that the variables of regulatory quality (RQ) and control of corruption (CC) are also positively and significantly affecting FDI inflows in Pakistan which describes that if these variables will be improved by 1%, they will cause FDI inflows in Pakistan to increase by 7.51 % and 3.86 % respectively.

Finally, the results indicate that the governance index is also positively and significantly affecting FDI inflows in Pakistan and suggests that if the aggregate governance indicators will be improved by 1%, they will result in an increase of 13.33% in FDI inflows for Pakistan.

5. Discussion

The purpose of this study is to determine the relationship of governance indicators including voice and accountability, political stability and absence of violence / terror, government effectiveness, regulatory quality, control of corruption and governance index with inflows of FDI in Pakistan for the period of 1980 to 2010. The results of this study show that all the variables of governance indicators used in this study have positive and significant relationship with FDI inflows in Pakistan. The major contribution of this research is to examine, for the first time, the association of governance indicators with inflows of foreign direct investment in Pakistan. The results are showing that the governance indicators have majors influence on FDI flows in Pakistan. Thus, these factors should be considered in policy formulation for attracting greater inflows of FDI.

Based on the findings of this study, the policy makers and regulatory authorities should take some effective measures to improve the condition of governance indicators in order to strengthen the confidence of domestic and foreign investors and to increase inflows of foreign direct investment in Pakistan because without improving governance indicators, it may not be possible to provide better business environment and to attract overseas investors.

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