



## Effects of Foreign Direct Investment on Economic Growth: Empirical Evidence from Pakistan

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### ABSTRACT

**Purpose:** FDI is one of the very eminent factors of world economy. It especially plays an effective role in developing countries' economic growth, for that reasons developing economies struggle a lot to invite FDI. The previous researches provide support that FDI has a positive impact on growth of an economy. In this study the role of FDI along with other explanatory variables like gross capital formation, labor force participation and public spending against the economic growth.

**Methodology/Sampling:** The variables supplemented into the model are based on well-established and long standing economic theory, tested under the standard OLS regression. The data were referred from United Nation Conference for Trade and Development (UNCTAD) and State Bank of Pakistan FDI database. Time period for this is from 1980 to 2012. All in all 32 years samples were taken for study in this research.

**Findings:** The main conclusions drawn are that in the case of Pakistan, FDI and Labor force participation is found to be positively associated with economic growth.

**Practical Implications:** This study is going to help policy makers to take active measures and formulate strategies that will enhance economic growth in the country.

**Keywords:** Foreign direct investment; economic growth, Pakistan.

**JEL Classification:** E220, E270, O160

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## **1. INTRODUCTION**

In this era of knowledge and development pace, the investment chances around the globe are increasing and it effectively contribute in economic growth of countries. There are regular practices of Foreign Direct Investment (FDI) that wins the major elements of development for a country after that the portal of investment provide maximum channels for small medium enterprises (SMEs). Numerous illustrations where the FDI inflows have been brought boom in the economic movement of various nations. For example Chinese & South Korean economies have changed their economic outlook and attracted huge FDI investment inflows, they have risen more quickly than other developing countries in the present scenario. India is also trying to adopt the developed economic practice as the growth of economy can meet the FDI insight and investor comes to invest over there. Accordingly the inquiry does approach up, Pakistan should properly utilize FDI to maintain its weak economy into sustainable developed economy as mentioned in the case of China and Korea.

FDI is a mechanism that plays a vital role. For a host country, it can endow a spring of new advancement, capital investment, organizational creations and administration propensity, as mortal what is emphasize can give a journey force to budgetary advancement of economy of the country. It is distinguished as an association from one nation making an asset into building a manufacturing facility in an alternating nation. FDI is switching of modernization, from capital inputs to growth that can be accomplished through fiscal policy or exchange products process & management control.

### **1.1 FDI in Pakistan**

Pakistan is a developing country in south Asia, having strategic position in business and operation practices. Foreign corporate and commerce houses have tried in different regimes best to attract and bring resources into Pakistan, despite many challenges. These challenges are, terrorism, energy crises, political and economic instability.

The dominating segments of Pakistan's FDI are as follows;

1. Socio-political Factor
2. Regulatory Factor
3. Economic Factor

Pakistan has formulated various laws to facilitate foreign investors. Laws which attract maximum investors' sight are as under;

1. Foreign private investment Act 1976, (for promotion & motivating maximum investors)
2. Protection of Economic reforms Act 1992,
3. Ordinance of foreign currency account 2001.

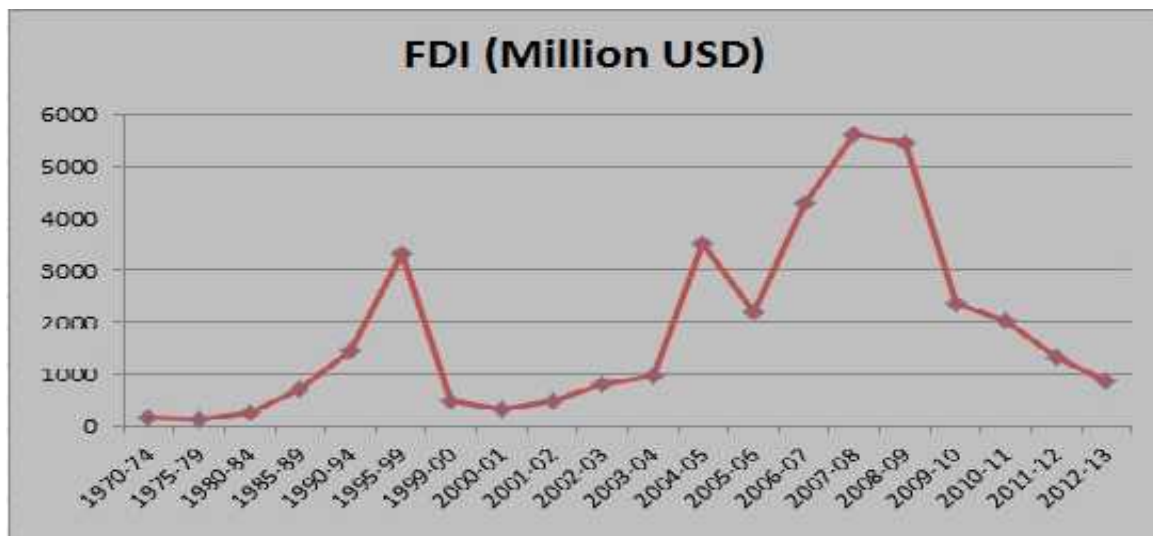
**FDI Flows in Pakistan 1970-2012 (in million USD)**

Period	Value (Million USD)	As Percentage of GDP
1970-74	163.8	0.99
1975-79	119.6	0.66
1980-84	254.1	0.96
1985-89	694.7	2.27
1990-94	1457.8	4.24
1995-99	3299.8	5.33
1999-00	469.9	0.55
2000-01	322.5	0.82
2001-02	484.7	1.17
2002-03	798	0.98
2003-04	949.4	0.99
2004-05	3521	1.38
2005-06	2201	2.01
2006-07	4273	3.35
2007-08	5590	3.9
2008-09	5438	4.31
2009-10	2338	1.44
2010-11	2018	1.14
2011-12	1308.77	0.62
2012-13	853.68	0.37

Source: World Development Indicators

FDI is more useful for developing countries and beneficiaries of this belong to same category. In 1970s, flows of FDI were lesser than \$164million, while in 1990s it increased to \$1457 million and in 1999 it crossed \$3300million. This ratio represents lion’s share of FDI as percentage of GDP. According to State Bank of Pakistan (SBP), FDI flows are growing with passage of time. In 1970s these FDI were around SD 170 million and while it crossed USD 5 billion by the fiscal year 2008. The statistics of FDI flows in Pakistan from 1970 to 2012 are as under;

**Figure-1**  
FDI Flow in Pakistan



Source: World Development Indicators

## 2. LITERATURE REVIEW

Foreign direct investments construct the extensive impact on economic growth of the country; the main objective behind this cause the impact of growth and investment is the transfer

returns of technological pace, capital and investment skill force the competitive advantages and creates the maximum opportunists in international and domestic markets. On other hand, economic development may encourage FDI for customer care oriented markets because investor feels more confident with investing in a country with unique attributes and elements. Hence; relationship between FDI and economic growth is a two way process of business transactions. The findings reflections of the financial institutions there is the significant relationship between FDI and economic growth for SAARC countries. It highlight that the, India, Bhutan, Srilanka & Pakistan there is a bidirectional relation, for the countries such as Afghanistan and Nepal positive unidirectional. (Shakir & Bashir, 2012)

FDI has a significant impact on the growth & elements of the country. FDI impact vary from country to country it indicates that the developing countries are the most beneficiary for the global economic development. The countries with less capital investment can be accrue more capital investment in business process activates with the regular practices of FDI, which has play a vital role in economic development of the country. New changes and innovation of technology and quality enhancing procedures can also be part of achievements of growth of micro economics variables with help of FDI. In open market of economies have significant impact on the profitability and productivity of the industries; it also creates the opportunities to the beneficiary country to invest maximum capital on business capital expenditure which results in intensification in the, gross domestic product and per capita income of the country, with that practices the overall living standard in the field of education and health can be more appropriate. Correlation analysis of previous studies shows that the growth of economy, advancement, liberty and FDI all have sound symbol of correlation. Regression analysis further clarifies the end results about the FDI & its contribution to growth of countries (Tintin, 2012).

Veugelers, (1991), Grosse and Trevino, (1996), described in their research papers & reached at the conclusion that FDI boosts the economic growth of the host country and due to increase in economic growth capital stocks increases. So it is evident that inflows of FDI accelerate GDP, which ultimately create more economic movement in the beneficiary country. In (1996) in the opinion of Gross & Trevino, host country's comparatively faces increased interest scale and that has a significant & positive impact on earnings of FDI. Apart from these, FDI indirectly lifts technology enhancements of the recipient country via introducing new practices, it also increase labor force skills through acquisition and imparting trainings (Mello, 1999).

The concept is based on the investigation of experimental research findings on economic development & FDI. It emphasized the primarily on the Western Union countries and America. Adaptation of data inflows for the FDI and fixed with GDP (USD) for the years of 1995 to 1998 was applied in this research. Further approaches are made for numerical investigation model & test. When the sample test was distributing to lower & higher income countries, returns were obtained the insight of capitalist as per the investment perception (Katerina, John, & Akidis Athanasios, 2004).

The effects of FDI have shown conflicting empirical results from the insight of the targeted countries. These practices transferred by multinational and national corporations for the implementation of FDI in a country. In the recipient countries of economic progress is the effective tool for FDI which has a numerous implications for welfare of society. Overall impact of foreign investment on the development of micro economic variables that targeted polices of government institutions. If FDI gaining the country economic growth, that's why the

government institutions should have to provide tax incentives, subsidies, trade exemptions and other measurement factors that attract foreign investment inflows. FDI in host economies with portfolio investment and bank loans is among the major forms of private investment institutions of a country. FDI has 60% of total private capital investment that flows to emerge growth in year 2000. (Crakovic & Levine)

FDI has unique variation in manufacturing & service sector industries. Regression technique applied on valid data of 47 countries considered from 1980 to 1999, in this study, objective was to find out how FDI affecting the economic growth. The result of the study reveals that there is a variation in Governments policies and intuitions policies. It can be said that mining and agriculture sectors have higher potential for the investors which ultimately enhances growth, for the primary sectors that affect almost negatively and for manufacturing sector it also have direct relation with FDI. For the service sector it also have good positive impact (Alfaro, 2003). In addition, FDI is more likely to create the mini sources of earning for the domestic peoples of small traders. Thus, the foreign investors invest for the huge investment, while with this practices of investment s seeks the lower level of employment opportunities (Atique, Ahmed, & Azhar, 2004).

### 3. RESEARCH METHODOLOGY

The model applied in this research depends on five variables, gross capital formation (K), Gross domestic product(Y), public spending on education as percentage of GDP (H), labor force participation rate (L), and foreign direct investment (FDI). The data were referred from United Nation Conference for Trade and Development (UNCTAD), World Development indicators and State Bank of Pakistan FDI database. Time period for this is from 1980 to 2012. All in all 32 years samples were taken for study in this research.

Previous research describes significant positive relation between FDI & economic growth with justifications. The FDI may have vast end results for growth because of its effect on, capital framing, technology exchange, expertise achievement and competition in domestic sector. FDI & economic growth may lead to negative & positive development.

So far many research methodologies have been applied to find relation between FDI & economic growth of the country. In this research work regression has been applied to test relation. To assure the link between economic growth and foreign investment, basically we have used the Cobb Douglas Production function to formulate estimated regression equation.

$$Y_t = \sigma K_A^\beta L_A^{1-\beta} \theta \quad 0 < \beta < 1 \quad \dots \text{(I)}$$

Where  $Y_t$  is the real output,  $\sigma$  is the residual showing the effects of FDI, capital, labor and other explanatory variables on economic growth. It is assumed A is constant which shows total productivity impact on development of economy. Implicitly this research work assumes the effect of FDI on economic growth is through variable A.

$$Y = f(A, K, L) \quad \dots \text{(II)}$$



However technology is one of the weak points of this production function instead of classical model formatted on technological changes as exogenous element which cannot be fully overcome. The technological change can be controlled by investing in human and physical capital, it was found by new growth theorist in 1970 (Balasubramanyam, Salisu, & Sapsford, 1996). On the basis of above facts, below amendments can be structured in the above equation;

$$Y = f(A, K, L, H) \dots \text{(III)}$$

Where A = f (FDI)

Therefore equation (iii) is modified to;

$$Y = f(K, L, H, FDI) \dots \text{(IV)}$$

Dependent variable in the above equation is Economic growth Y & capital stock, labor & human capital are independent variables. According to purpose of this study estimation we have used gross capital structures (K), labor force participation rate (L), public spending on education as percentage of GDP (H) and (FDI).

According to above mentioned equation the estimated regression equation used in this research work for analysis of results. Equation can be represented as follows;

$$\ln Y_t = \beta_0 + \beta_1 \ln FDI_t + \beta_2 \ln K_t + \beta_3 \ln L_t + \beta_4 \ln H_t + \mu_t \dots \text{(V)}$$

Where ( $\beta_0, \beta_1, \beta_2, \beta_3, \beta_4 > 0$ )

The coefficients  $\beta_1, \beta_2, \beta_3$  and  $\beta_4$  show that how much Y responds to the changes in gross capital formation (K), labor force participation rate (L), public spending on education as percentage of GDP (H) and foreign direct investment (FDI).

For appropriate modeling of time series data under OLS (Ordinary Least Square), requirement is time series under study should be “stationary” in its type. This study also uses unit root tests (Augmented Dickey-Fuller and Phillips Perron) to check the stationarity of data. ADF test is used by the following equation;

$$\Delta Y_t = \beta_0 + \beta_1 t + \beta_2 Y_{t-1} + \beta_3 \sum_{i=1}^n \Delta Y_{t-i} + \epsilon_t \dots \text{(VI)}$$

If coefficient of Y,  $\beta_2$  is negative sign, is less than critical t value, which is based on Fuller (1976) criteria than  $Y_t$  is said to be stationary.

#### **4. ESTIMATION AND INTERPRETATION:**

The summary statistics of the dataset is provided in Table 1.

**Table 1**  
Summary Statistics of Dataset

Descriptive Statistics	Y	K	L	H	FDI
Mean	3.55E+10	53.14813	18.46463	2.429288	1.01E+09
Median	3.15E+10	52.65	18.65985	2.51223	4.02E+08
Maximum	7.40E+10	57.21	22.55651	3.0223	5.59E+09
Minimum	6.32E+09	50.2	13.07483	1.83782	29457027
Std. Dev.	2.06E+10	1.809526	1.93883	0.363904	1.48E+09
Skewness	0.288575	0.284202	-0.196464	-0.19378	2.14393
Kurtosis	1.893309	1.907867	4.001257	1.776416	6.594935
Mean	3.55E+10	53.14813	18.46463	2.429288	1.01E+09
Median	3.15E+10	52.65	18.65985	2.51223	4.02E+08
Maximum	7.40E+10	57.21	22.55651	3.0223	5.59E+09
Minimum	6.32E+09	50.2	13.07483	1.83782	29457027
Jarque-Bera	2.077156	2.021117	1.542544	2.196488	41.74574
Probability	0.353958	0.364016	0.462425	0.333456	0.0000
Sum	1.14E+12	1700.74	590.8681	77.73721	3.24E+10
Sum Sq. Dev.	1.32E+22	101.5059	116.531	4.105208	6.79E+19

**TABLE 2**  
Augment Dickey Fuller Unit Root test

Variables	t statistics	
	Level	First Difference
Y	0.743805	-5.742886*
L	-2.652741*	-4.206716*
K	-3.813326*	-3.218092**
H	-3.108851*	-3.98415*
FDI	2.495129*	-4.92413*
* 1% Level of significance		
** 5% Level of significance		

To check the stationary behavior of the variables the Augmented Dickey – Fuller Unit Root Test in levels and in first differences of the data with an intercept was applied with the results presented in Table 2. The results show that all the variables are stationary at level except that of Y. However all of the series including Y becomes stationary at first difference.

**TABLE 3**  
Regression Analysis

Variable	Coefficient	t-Statistic	Prob.
Constant	15.25201*	12.2040	0.0000
ln FDI <sub>t</sub>	2.16E+08*	6.25906	0.0000
ln L <sub>t</sub>	1.96E+09*	3.31549	0.0026
lnK <sub>t</sub>	-1.65E+09*	-7.44474	0.0000
lnH <sub>t</sub>	-4.85E+09*	-1.04448	0.3055
R <sup>2</sup>	0.556724	Adj. R <sup>2</sup>	0.535498
F-Statistic	40.3619*	DW Statistic	1.685896

Where \* indicates significance at 1% level.

Table 3 show results OLS regression indicating that all the estimated regressors are statistically significant except that of H, the coefficient for public spending, hence losing any further significance in this study.

The coefficient for FDI is highly statistically significant with the expected sign, depicting that keeping other things constant, FDI contributes in the economic growth of Pakistan on average for about 2%. Similarly Labor force participation is contributing for about 1.9% towards economic growth in the case of Pakistan. However capital is found to be significantly negative in the case of Pakistan indicating that with a 1% percent increase in gross capital formation, about 1.6 % decrease can be observed in GDP growth in the case of Pakistan.

Furthermore the R<sup>2</sup> tells us that almost 55% of the variation in GDP growth has been explained by our underlying model which is quite a promising level for a small sample like ours. Moreover to check the robustness of our estimates the following diagnostic tests were performed in order to rule out any possible issues or violation of the assumptions of the classical linear regression model. The diagnostics are presented in table 4 as follows:

**TABLE 4**  
Diagnostic Tests

Test	F-statistic	P. Value
$\chi^2$ Normal	1.3117	0.4911
$\chi^2$ Serial Correlation	1.8911	0.1621
$\chi^2$ ARCH	0.1681	0.7110
$\chi^2$ White	0.4311	0.8135
$\chi^2$ Ramsey RESET	0.1158	0.6613

The diagnostic tests for our model as presented in table 4 indicates that the errors in final estimated model is normally distributed and homoscedastic, there is no issue of serial correlation at the given level of significance. Similarly the RESET test indicates that the model is structurally and functionally well specified.



## 5. CONCLUSION:

FDI is one of the very eminent factors of world economy. It especially plays a very effective role in developing countries economic growth and for that reasons developing economies struggle a lot to invite FDI. The previous researches provide support that FDI has a positive impact on growth of an economy. It is presumed that in growing economies, FDI enhances economic growth.

In this study the role of FDI along with other explanatory variables like gross capital formation, labor force participation and public spending against the economic growth. The variables supplemented into the model are based on well-established and long standing economic theory, tested under the standard OLS regression. The main conclusions drawn are that in the case of Pakistan, FDI and Labor force participation is found to be positively associated with economic growth, whereas gross capital formation is found to be negatively affecting economic growth in the case of Pakistan during the length of this study. However public spending is found to be insignificant in this study. Finally the model was tested for potential issues like normality of error term, heteroscedasticity, functional specification and serial correlation.

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