Foreign Direct Investment and Sustainable Long Run Economic Growth Nexus: A Case Study of Pakistan

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Abstract

The present study examined the relationship between economic growth and FDI in Pakistan by utilizing the data for the time period 1975-2015. The study employed a number of statistical and econometric tools for the analysis. ADF test for stationarity of data, and ARDL approach to cointegration is used for parameter estimations. The study includes GDP growth rate, foreign direct investment, trade openness, inflation and labour force as the variables of the study. The results indicated that the association between FDI and GDP growth is negative, for Pakistan, in the long run, while the results illustrated the positive association among variables in short run. Trade openness enhances GDP growth both in the long and short run, the result also revealed.

Introduction

Foreign direct investment (FDI) appeared fruitful for the less developed countries as these countries lake in financial resources to stimulate the economic growth process along with the reasonable rate of industrial development. A trend can be observed that FDI inflows in any under developed nation are contributing in the development of a country to a great extent. These inflows assist in improving the productive capacity of the existing resources and satisfying a technical gap to enable the development process in recent years (Shahzad and Al-Swidi, 2013).

FDI has emerged in recent times known as the most effective tool to draw capital from external source. The most important aspect of FDI is the transfer of technology that is indispensible to boost economic indicators. Geweke (1982) established a positive connection among economic growth and FDI in USA. In case of Pakistan the rate shows some volatility because of numerous internal and external factors such as political instability, foreign debt, adverse balance of payment etc. FDI flows are affected by different factors such as infrastructure of the host country, trade policies, tax collection methods, availability of resources, nurturing novelty and advanced technology might boost foreign investors to participate in the host country. Further, Foreign direct investment provides benefits to the economy for long period of time.

Exports enhance growth of the country as being a major source of the inflow of the foreign exchange. The link between exports and FDI is very stimulating. FDI inflows in the host country will increase the exports of the country, such as investment will increase the productivity of the economic arrangement. This increase can be due to new or improved machinery, advanced technology and better production process. The export led strategy will further attract the investors, which in turn further improve the economy. With more liberalized the trade policies, the more foreign investors will move towards the host country to invest.

Numerous investigators also emphasized the significance of FDI that it can motivate the domestic investors for investment in country (Brooks & Sumulong, 2003). There are a lot of incentives for foreign investors to invest in the local markets of the host country. Foreign investors come forward with their investment to enhance domestic markets of the host country

and to increase productivity of the economy. Zaman *et al*. (2012) established that inflation has a encouraging and substantial impact on the FDI inflows in Pakistan

Investment improves the infrastructure of the country through the construction of new roads, plants and more. Improved infrastructure motivates foreign investors to come and invest in host country. The mainstream of preceding focusing on the association between FDI and fixed capital formation analyzed the correlation between asset made by foreign-owned and domestic-owned companies (Agosin and Machado, 2005; Escobar, 2011; Iqbal et al., 2017). Foreign direct investors invest in an economy by looking at its economic growth rate which indicates profitability for their investment. Liberalized trade policies are not enough, political stability is also very necessary for the attraction of domestic and foreign investors. Many developing countries like Pakistan are trying to improve their inflows of foreign direct investment (Yousaf, 2008).

Foreign Direct Investment in Pakistan

Like other developing countries, Pakistan, focusing to improve of its external policies to enhance FDI inflow in Pakistan. Pakistan achieved a remarkable inflow of FDI in recent past years. Pakistan offers attractive opportunities to the foreign investors based on its vast privatization programs. These opportunities contain profits, addition of capital, technological changes and many other facilities. Pakistan is becoming an exciting destination for the investors; both local and foreigner due to its liberalized and convincing trade policies.

Figure 1: FDI inflows in Pakistan
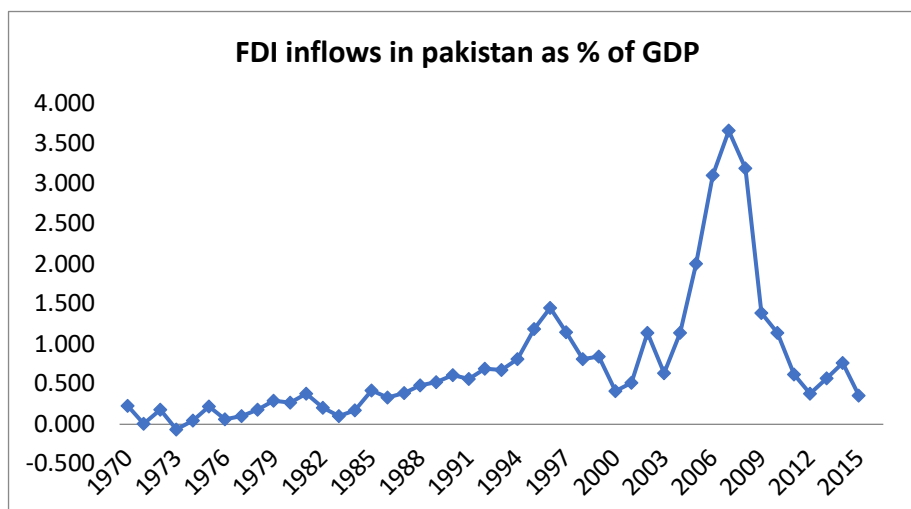
Literature Review

The present study collects a comprehensive review of the past studies, and turns with a conclusive findings on a number of grounds on the related issue of FDI and economic growth. Buckley and Casson (1976) delivered additional rationalization of FDI by positioning emphasis on intermediate inputs and technology. Hymer 1976) was of the view that domestic firms have beneficial pose in terms of culture, language and customer's preference as compared to the foreign firms. Irrespective of the geographic differences the benefits are transferred from one region to another region. Kindleberger (1969) and Knickerbocker (1973) identified that tendencyto raise profits by taking improvement in technological preeminence organizational structure was the main reasons for direct investment.

Khan and Kim (1999) studied that foreign investors made investments in sub-sectors of Pakistan; such as the energy sector, iron industry, fertilizer industry. The study showed that most of the foreign investment is made in the industry sector and no attention is given to the agricultural sector (Ullah, 2011).

Zhang (2001) pointed out that an increase in economic growth through FDI took place in those countries where domestic infrastructure like transportation system, telecommunication system, availability of raw material and other facilities; is in good condition and trade policies related to FDI adopted by those countries are more liberal and favorable for the investor country.

Buckley et al. (2002) argued that the share of FDI in the growth of recipient economy depends on the economic, political and social conditions or in other words it depends on the overall environment of the host country. This environment contains the saving rate, technological development and trade policies of the host country. The contribution of FDI in the growth of host country is more if the saving rates are high and technology used in the production of goods is developed.

Liu et al. (2002) studied the relation between FDI and exports and imports for China. The positive impact of trade or exports and imports on FDI was noticed in the study. Martinez-Zarzoso (2003) high level of production is the result of high level of growth in the host country; which in turn can boost the level of confidence of the foreign investors to invest in that country.

Ahmad and Hamdani (2003) discussed the role of domestic investment in the economic growth of a country. Foreign direct investment plus domestic investment can boost up the economy of developing countries in an impressive way. In that discussion to enhance the productivity of the economy, private domestic investment was given as a permanent solution.

 Zaidi (2004) showed that the host country can attract the foreign investors and it will increase their inflow of FDI by offering tax concessions, reduction in tariffs, credit facilities and liberalization of trade policies. Domestic economic activities stimulates by FDI, for that government should allow foreign investors to use domestic raw materials for the production of final goods.

Zaman *et al*. (2012) analyzed that the relationship between FDI and the inflation rate is positive and significant in Pakistan. Muhammad (2007) pointed out that foreign direct investment is an important and popular tool for the economic growth of developing countries. Developing countries can develop their economy by increasing flow of income in the country through FDI.

Thomas et al. (2008) analyzed that in developing countries expansion in technology and innovation took place when developed countries and MNC'S invest in developing countries in the form of FDI. In other words, technology transfers from developed countries to developing countries. These transfers of technology in turn increase employment opportunities and boost exports in developing countries.

Apergis et al. (2008) studied the innovation, technology transfer and labor productivity linkages. The study revealed that foreign direct investment helps the developing countries to increase their labor productivity, technological progress and domestic investment. Amount of goods and services produced by an hour of labor is known as labor productivity. FDI enhance labor productivity by creating new and more job opportunities in the host country and also the introduction of new and latest machinery in the economy tend to increase production in the country.

Gudaro et al. (2010) examined that FDI helps the developing countries in the utilization of natural and human resources, to introduce new and improved business practices; in both fields management and marketing, it also increases employment opportunities and raise the standard of living of people in the recipient country.

Data and Methodology

Accuracy of results comprehensively depends upon the accuracy and reliability of the data. This research is based upon the ARDL that has been selected on the basis of characteristics of the data. The data used in this research has been taken from World Development Indicators for the time period of 1975-2015.

Model specification

To analyze the connection between FDI and GDP following model is designed:

$$\Delta GDPt = a0 + a1 \sum_{j=1}^{k} \Delta GDP_{t-j} + a2 \sum_{j=1}^{k} \Delta FDI_{t-j} + a3\Delta TOPt - j + a4\sum kj =$$
$$0\Delta INFt - j + a5\sum kj = 0\Delta LFt - j + a6\sum kj = 0\Delta GDSt - j + {}^{\delta}1GDPt - 1 +$$
$$\delta 2FDIt - 1 + \delta 3TOPt - 1 + \delta 4INFt - 1 + \delta 5LFt - 1 + \delta 6GDSt - 1 + \varepsilon 1t \quad (1)$$

Where,

$GDP = grossdomesticproduct$

$FDI = foreigndirectinvestment \% of GDP$

$TOP = tradeopenness$

$INF = inflationrate$

$GFCF = grossfixedcapitalformation \% of GDP$

$GDS = grossdomedticsavings \% of GDP$

$\varepsilon = randomerrorterm.$

$a1, a2, a3 \dots \dots \dots a6$ represent the slope coefficients. The subsequent equation enlightens the long run relation between the variables.

$$GDPt = a0 + \sum ki = 0\theta 1JGDPt - j + \sum ki = 0a1jFDIt - j + \sum ki$$
$$= 0a2TOTt - j + \sum ki = 0a4jINFt - j + \sum ki = 0a5jLFt - j + \sum ki$$
$$= 0a6j + \sum ki = 0a7jGDS + \varepsilon t$$

$$(2)$$

Where, $a0$ represents intercept term. The Error Correction (ECM) or short-run relationship as follows,

$$\Delta GDPt = a0 + \sum kj = 1\theta 1jGDPt - j + \sum kj = 0a1j\Delta FDIt - j + \sum kj$$
$$= 0a2j\Delta TOPt - j + \sum kj = 0a3j\Delta INFt - j + \sum kj$$
$$= 0a4j\Delta GFCFt - j + \sum kj = 0a5j\Delta GDSt - j + \prod ECMt - 1 + \mu t \qquad (3)$$

The above written equation assessed the long and short run involvement between relevant variables. Ɛis the stochastic disturbance term.

Results and, Discussion

This section will enables us to look deeper into the association between FDI and GDP.

a. Descriptive Data Analysis

Descriptive analysis is performed before the econometric investigation to check the deep insights of the data.

Table1: Descriptive Analysis

	GDP	FDI	TOT	INF	LF	GDS
Mean	4.8795	0.8305	13.5386	9.8639	16.2951	11.331
Median	4.8328	0.5765	13.4413	8.6964	16.9608	10.2691
Std. Dev.	2.0891	0.8270	2.3486	5.3096	1.6454	3.9259
Skewness	0.2942	2.0957	-0.0660	1.3003	-0.6233	0.2325
Kurtosis	2.6785	6.9914	1.8930	4.2476	2.5357	1.6829

Source: calculations are done by using E-Views 9.5.

From the above table we can see that the mean value of FDI has been 0.8305 for the last 40 years with SD 0.8270. The mean value of EX is 13.5386 and SD is 2.3486. INF in Pakistan shows the average value as 9.8639, it depicts a high level of inflation in Pakistan. The mean value for LF is 16.2951 while GDS has mean value 11.33. In the above table row 3 explains median values of GDP, FDI, TOT, INF, LF and GDS are 4.8328, 0.5765, 13.4413, 8.6964, 16.9608, and 10.2691 respectively. Similarly row 5 and 6descibes the skewness and kurtosis means the peakness and the distribution of the data set of the respectively for the variables under study.

b. Empirical data analysis

For the empirical investigation, first we have to check the stationarity of the data series and then we will be able to estimate the parameters.

Table 3: ADF test results

Variables	I	I & T	I	I & T	Results
GDP	-4.0796*	-4.8266*	-10.1326	-9.9943	I (0)
FDI	-2.7661	-5.3213	-4.1679*	-4.5654*	I (1)
TOT	-1.5265	-1.0098	-5.6773*	-4.5654*	I (1)
INF	-6.2668*	-6.3137*	-7.8574*	-7.7177*	I (0)
GFCF	-2.0091	-3.4362	-5.9476*	-5.7846*	I (0)
GDS	-2.1204	-1.7763	-7.3657*	-7.3992*	I (1)

Source: calculations are done by using E-Views 9.5.

Table 3 represents the Stationary of the data series that illustrate that no changes in mean and variance over time. Outcomes of ADF test are summarized in the above table. It can be observed from the above table that GDP growth, INF and LF are stationary at level while FDI, TOT, and GDS are not stationary at the level stationary at their first difference.

c. Bound Test for Cointegration

As we know from the stationarity analysis that the time series under consideration that are not stationary and are of different order of integration. So we have to check that the existence of the long run relationships among them. For checking the existence of long run relationship bond test is applied.

Table 4: Cointegration results

F-Statistic	Upper Bound (Critical Value)		Results
7.6654	3.28	Co-integration exists	

Source: calculations are done by using E-Views 9.5.

It can be observed from the table 4 the calculated value of the F - statistic is 7.6654 which are larger than the Upper Bound value or critical value which is 3.28. The F - statistic illustrates that there exist a long run connection among these variables.

d. Short Run and long Estimates of Model

Table 5: Short Run Table

Variables	Coefficient	Std. Error	t-Statistic	Probability
D (GDP (-1))	0.3949	0.2063	1.9138	0.0798
D (FDI (-3))	1.1487	0.5632	2.0395	0.0687
D (TOT)	0.4197	0.6601	0.6359	0.5391
D (INF)	-1.9043	0.2381	-7.9950	0.0000
D (LF (-2))	0.5090	0.7728	0.6587	0.5249
D (GDS (-2))	1.1447	0.2128	5.3793	0.0003
CointEq (-1)	-0.3862	0.1495	-0.0738	0.0000

Source: calculations are done by using E-Views 9.5.

Table 6: Long run Table

| Variables	Co-Efficient	Std. error	t-statistics	Probability
FDI	0.5529	0.3576	1.5459	0.1531
TOT	1.2852	0.7366	1.7411	0.1123
INF	0.0668	0.0873	0.7652	0.4618
LF	1.5407	0.2806	5.4894	0.0003
GDS	0.7453	0.7235	1.0301	0.3272
C	9.4375	2.1849	4.3179	0.0015

Source: calculations are done by using E-Views 9.5.

The above table 6 shows the short run estimation of variables with cointegration equation. The cointegration term is -0.3862 which is highly significant as it can be seen from the value of its probability 0.0000. The results of the study describe that the linkages among FDI and GDP is positive in Pakistan in the long run and also in the short run. The coefficient is 1.1487 is for the short run but it is 0.5529 in the long run results as analyzed by (Ould, 2015). Trade openness is positively related to GDP growth both in long and short run. The coefficient is 0.4197 for short run and for long run it is 1.2852 clearly says that the relationship is stronger for the long run. Inflation rate has positive influence on the growth of the economy in the long run but have inverse in the short run with the coefficients in short and long run 0.0668 and -1.9043 in short run respectively.

While other variables; inflation and gross domestic savings illustrate positive inclination towards GDP growth. To enhance GDP of Pakistan high inflation rate that motivate producers and increase their accounting profits is important to increase the economic growth rate. Labor force will enhance the economic productivity positively and highly significantly (Alam,2013).

e. Cumulative Sum of Square Recursive Residual Test

The Cumulative Sum of Recursive Residual of Squares (CUSUMS) is plotted in the following graph, with the 5% level of significance.

Figure 2: Plot of Cumulative Sum of Square Recursive Residual Test
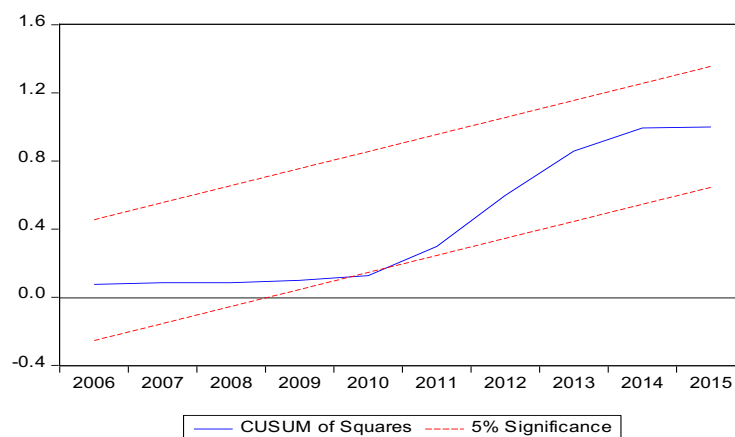
Conclusion and Policy Recommendations

The results of the study describe that FDI and GDP are positively correlated, for Pakistan, in long run as well as in short run. Trade openness is positively related to GDP growth both in the

long and in the short run. Inflation rate has positive influence on the growth of the economy in the long run but hits the economy negatively in short run. On the basis of the results, there it may be devised some policy recommendations. Policy makers should focus on policies that may increases the trade volume that ultimately enhances economic activity. Government should provide suitable conditions for the producers outside the domestic limits who are willing to invest in country. Saving plans should be introduced that that encourage people to save more.

References

Agosin, M. R., & Machado, R. (2005). Foreign investment in developing countries: does it crowd in domestic investment?. *Oxford Development Studies*, *33*(2), 149-162.

Ahmad, E., & Hamdani, A. (2003). The role of foreign direct investment in economic growth. Pakistan economic and social review, 29-43.

Alam, A., Arshad, M.U. and Rajput, W. (2013) Relationship of Labor Productivity, Foreign Direct Investment and Economic Growth: Evidence from OECD Countries, Vol. 1, No. 6, 133-138.

Apergis, N., Economidou, C., & Filippidis, I. (2008). Innovation, technology transfer and labor productivity linkages: evidence from a panel of manufacturing industries. *Review of World Economics*, *144*(3), 491-508.

Brooks, D. H., Fan, E. X., & Sumulong, L. R. (2003). Foreign direct investment in developing Asia: trends, effects, and likely issues for the forthcoming WTO negotiations.

Buckley, P. J., & Casson, M. (1976). Thefuture of the multinational enterprise. *New York: The McMillan CompanyBuckleyThe Future of the Multinational Enterprise1976*.

Buckley, P., Clegg, J. and Wang, C. (2002) "The impacts of FDI on the performance of Chinese Manufacturing Firms", Journal of International Business Studies, Vol.19.no.2, pp 55-67.

Escobar, R. F., Astorga-Zaragoza, C. M., Téllez-Anguiano, A. C., Juárez-Romero, D., Hernández, J. A., & Guerrero-Ramírez, G. V. (2011). Sensor fault detection and isolation via high-gain observers: Application to a double-pipe heat exchanger. *ISA transactions*, *50*(3), 480-486.

Geweke, J. (1982). Measurement of linear dependence and feedback between multiple time series. *Journal of the American statistical association*, *77*(378), 304-313.

Gudaro, A. M., Chhapra, I. U. and Sheikh, S.A. (2010) Impact Of Foreign Direct Investment On Economic Growth Of Pakistan; A Case Study of Pakistan Vol. 6, No.2, Pp 84-92, Karachi, Pakistan.

Hymer, S. H. (1976). *International operations of national firms*. MIT press.

Iqbal, Pervez, Sajjad Nawaz, Zeeshan UmerPervez Iqbal, and Zeeshan Umer. "Impact of macroeconomic fundamentals on stock exchange market: Empirical evidence from Pakistan." *Paradigms* 11, no. 1 (2017): 103.

Khan, A. H., & Kim, Y. H. (1999). Foreign direct investment in Pakistan: policy issues and operational implications, EDRC REPORT SERIES NO. 66

Kindleberger, C. P. (1969). American business abroad. *The International Executive*, *11*(2), 11-12.

Knickerbocker, F. T. (1973). Oligopolistic reaction and multinational enterprise. *The International Executive*, *15*(2), 7-9.

Liu, X., Burridge, P., & Sinclair, P. J. (2002). Relationships between economic growth, foreign direct investment and trade: evidence from China. Applied economics, 34 (11), 1433-1440.

Ould, L. (2015). An Investigation of the Impact of Foreign Direct Investment on Economic Growth: A Case Study of Mauritania. *Int J Econ Manag Sci*, *4*(224), 2.

Thomas, H., Li, X. and Liu, X. (2008) Ownership Structure and Now Product Development Transnational Corporation in China, Transnational Corporations, 17(2), 17-44.

Yousaf, M. M., Hussain, Z., & AHMAD, N. (2008). Economic evaluation of foreign direct investment in Pakistan. *Pakistan economic and social review*, 37-56.

Zaidi, H. H. (2004) Snags in the Inflow of FDI. DOWN-Business 09 August, 2004.

Zaman, K., Shah, I. A., Mushtaq Khan, M., & Ahmad, M. (2012). Macroeconomic factors determining FDI impact on Pakistan's growth. *South Asian Journal of Global Business Research*, *1*(1), 79-95.

Zhang, K.H. (2001) How Does Foreign Investment Affect Economic Growth in China? Economics of Transition, **9**, 679-693