

THE CAUSAL LINK BETWEEN FOREIGN DIRECT INVESTMENT (FDI) AND ECONOMIC GROWTH IN PAKISTAN ECONOMY

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Abstract

The impact of Foreign Direct Investment (FDI) on the economic growth of host countries, especially on the developing ones, is a major point of discussion by economists since 1980's. The study examines the impact of FDI on the factors of economic growth like gross domestic product (GDP), exports and imports of Pakistan by applying different econometric tests like Augmented Dickey Fuller (ADF) Unit Root Test, Johansen Cointegration Test, Vector Error Correction Model (VECM) and Granger Causality Test on time series data from 1981 to 2009. The result obtained proves that there is long run relationship between the macro-economic variables. It has been proved that FDI granger the growth process of host counties, but the result obtained is not confirmed in the case of Pakistan. But, the economic growth of Pakistan does granger the FDI influx. In the end, there is bi-direction causality between GDP and exports; and FDI and exports.

Key Words: Foreign Direct Investment, Economic growth, Exports, Cointegration Analysis

INTRODUCTION

The world total Foreign Direct Investment (FDI) has been increasing gradually for the last three decades. According to Bashier, and Talal (2006) that the multinational companies (MNCs) are making huge investments in the developing economies (DEs), taking control on the assets, and has successfully managed the production

systems in these countries. In 2009, the global level of FDI cross the limit of \$ 17.7 trillion around the world, over 27.5% of the total is invested in DEs. This type of FDI influx not only shows the business trend of MNCs toward DEs but also increases the number, and sales volume of MNCs. Because by exploring the new foreign markets to introduce their products in DEs markets, they are utilizing the host country's resources, enjoying the lower production costs, lower labor costs and more profits.

In 1981, the most of East Asian developing countries started to liberalize their economies, introduced new set of laws, and regulations relevant to FDI influx, and presented themselves as safe heaven for the FDI influx. In 1996, Pakistan also attracted the highest ever FDI influx which worth almost \$ 1.011 billion. In spite of depicting more potential, open, and liberalize market to attract more foreign investment, Pakistan could not maintain the same influx level due to political instability, conflicts, high level of corruption, insecurity, low government savings, annual budget deficit, inefficient financial structure, weak economic and legal institutions, distorting trade regime, high trade tariff and revenue dependency on taxes. Such types of weakness depict no longer a positive picture to foreign investors and restricted them from making more fine investment in Pakistan up to 2003. But in the same period, Pakistan closest friend, and neighbor country, China, not only became the fourth largest trade country but also received the highest foreign inflows. This fast economic growth made him the main contributor in the world economy.

In spite of improving the obvious weakness in national economy, the Pakistan government started to knock at the doors of International Monetary Fund (IMF), World Bank and other financial institutions, which help them in form the foreign aids and grants. Khan (1997) examined the terms on which Pakistan was receiving foreign aid from international markets and impact of it on economic growth by covering the period 1972 to 1993. He found that these types of influx despite of enhancing any

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productivity in the economy, weaken the saving inform by paying heavy interest and having negative impact on the economy.

“A poll of Asian executives conducted by the *Far Easter Economic Review* in August, 1997 found that 92 percent of respondents rated India a better location for investment than Pakistan” (Guisinger, 1997, p. 415). Khan (1997) analyzed the Pakistan government policies, and trends adopted in the context of FDI. He presented 4Cs: (a) cost; (b) convenience; (c) capability; (d) concession and according to him, the government is focusing only concession, and had kept other Cs aside. In his paper, he strongly recommended that the government should pay more attention to other Cs in order to encourage the foreign investors. In 2005, \$ 1.676 billion FDI influx, highest ever inflow after 1996, had showed the interest of foreign investors, and the liberal policy of government to some extent.

Of this total \$ 1.676 billion, the portfolio investment contributed \$ 152.6 million; and \$363 million proceeds came from the privatization of Pakistan Telecommunication Company Limited, and Habib Bank Limited. United Arab Emirates became the leading investor country with \$ 367.5 million of FDI, followed by United States with \$ 362 million. The telecommunication sector remained at top by receiving the highest FDI influx of \$ 517 million sharing 34% of total FDI \$ 1.524 billion excluding the portfolio investment, and followed by financial; oil, gas and petroleum sectors by \$ 269.4 million, and \$ 217 million respectively (Haque, 2005, p. 5). Ahmad, Alam, and Butt (2003), suggested that the economic development progress not only depends upon the performance of government in making strategy to attract the foreign capital influx but also the export promotion strategy, which is the key part in development (p. 721).

THEORETICAL BACKGROUND

The FDI issue is not new in the economic literature. It has been discussed by a great number of experts, research scholars, and policy makers in different periods; that have explored, and evaluated its different aspects. “Fidel Castro (1993) stated: Who would have thought that we, so doctrinaire, we who fought foreign investment, would one day view foreign

investment as an urgent need? Nelson Mandela (1994) stated: Please come and invest in my country. Fernando Henrique Cardoso (1995) stated: We need private capital” (Soysa & Oneal, 1999, p.766).

In 1960s, large scale overseas investment in DEs began. In the late 1970s, some members of the Organization of Petroleum Exporting Countries (OPEC) in the Middle East turned their investment policy away from giving loans into indirect investment and then from indirect investment into direct investment. In 1990s, there have been sharp increases in FDI flux to East and South-East Asian countries like India, Indonesia, Malaysia, Pakistan, Philippines, Republic of Korea and Singapore.

Rosenboima, Luskib, and Shavit (2008) stated “The globalization processes that have taken place for the past two decades, as well as the development of MNCs, have led to a search for new sites for investment” (p. 601). According to Pantelidis, and Nikolopoulos (2008) that the competition among same graphical zone countries like European Union, Asian, and others countries have increased to attract more FDI influx (p. 90). The effect of FDI on the economic growth depends upon the open trade policies, and macroeconomic stability of the host country. The trade liberalization policy of host country not only enhances the trade volume but also increases the FDI influx, which contributes to economic growth of that country (Dritsaki, Dritsaki, & Adamopoulos, 2004, p. 230).

“Foreign direct investment (FDI) has a potentially important contribution to make to the growth of developing economies in that it constitutes an additional source of investment capital (foreign savings)” (Read, 2008, p. 503). The FDI influx is considered to be a vehicle to stimulate the capital formation which enhances domestic investment of the host country by supplying the foreign fund. If this domestic investment is interlinked with the production chain of the host country that supplied standardized goods to the foreign buyers, its affects the exports of the country. That is the why export-led-growth strategy has the significant effect on the economic growth of the host country (Fosu, & Magnus, 2006, p. 2079).

“The multinationals have constraints both globally and in regions. This means that a flow of FDI in one country might have, as a result, a

reduction somewhere else, and this is how the race for the attraction of FDI among the countries" (Pantelidis & Nikolopoulos, 2008, p. 91). Taiwan is the victim of that large volume of FDI outflow after 1990s, when a lot of Taiwan's industries shifted to China. This decline in FDI influx had an important impact on Taiwan's economy (Chen, Chiang, & Lin, 2008, p. 863). Thus, the competition among the countries for attracting the FDI influx has been influencing the economic growth of the countries.

Most of researchers suggest that more attention should be paid to formulate policies that will maximize the benefits from FDI influx through its appropriate sectoral composition (Khaliq, & Noy, 2007, p. 17). Aslam (1987) suggested that the public capital influx had a negative impact on the domestic saving in case of Pakistan. But the foreign private capital influx had the significant positive effect on the domestic saving as well as on the investment (p. 789). The relationship between FDI and economic growth is considered to be positive. In Namibia, the FDI influx and exports had a significant impact on its economic growth during 1991 to 2001 (Ogbokor, 2005, p. 60). Uganda has also done a remarkable job in attracting FDI by liberalizing its economy and allowing the foreign investment in accelerating the country's development (Obwona, 2001, p. 69).

Most of recent econometric analyses have focused on understanding the causality between the economic variables, for example: (a) does FDI cause GDP to grow, or (b) GDP attracts FDI influx? The results supported the argument that FDI can promote output growth (Yao, 2006, p. 340). While some studies found inverse of it means there is a negative relationship between FDI, and growth. (Zhao & Dou, 2008, p. 69). Therefore, this research paper is about to investigate FDI and economic growth relationship in case of Pakistan by conducting some econometric analysis with time series data that either FDI has some significant impact on these macro-economic variables or vice versa.

METHODOLOGY

The article analyzes the relationship between the macro economic variables by using the different econometric techniques. The model adopted

here to analyze the relationship between FDI, GDP, exports and imports has the following function form:

$$fdi_t = f(gdp_t, xp_t, mp_t) \quad (1)$$

where:

fdi = foreign direct investment at time t

gdp = gross domestic product at time t

xp = exports at time t

mp = imports at time t

t = discrete time period

The equations derived from the above function is:

$$fdi_t = \beta_0 + \beta_1 gdp_t + \beta_2 xp_t + \beta_3 mp_t + \varepsilon_t \quad (2)$$

The respective natural log transformations of the above equations are:

$$\ln fdi_t = \beta_0 + \beta_1 \ln gdp_t + \beta_2 \ln xp_t + \beta_3 \ln mp_t + \varepsilon_t \quad (3)$$

Where β_0 is a constant and β_1 , β_2 and β_3 are the slope parameters. The long term relationships among the economic variables that are used in the above equations are measured; first by verifying the existence of unit root (non-stationary) for each variable (Dickey, Fuller, 1979, p. 427). Because the most of the economic variables are non-stationary and *Stochastic Process* is used to make these variables stationary. The Augmented Dickey Fuller (ADF) test is usually used to infer the number of unit roots. The lag differences (k) are chosen according to Schwarz Info Criterion (SIC). If these variables are non-stationary at level $I(0)$, to make them stationary, they are tested at order one $I(1)$, and at order two $I(2)$.

If the linear combination of these economic variables is stationary at same order, then cointegration test can be applied. In order to measure the cointegration, *Log Likelihood Ratio* (L.R.) will be used to verify the relationship between variables which is forwarded by Johansen (1995), and the null hypothesis (H_0) is that there is no cointegration exit and alternative hypothesis (H_A) there is at least relationship.

In order to explain the changes in FDI, both short and long term relationships are estimated using the *Vector Error Correction Model* (VECM), which explains the changes in terms of changes in GDP as well as deviations from the long term relationship between FDI and GDP.

The two ways causality means the cause and effect relationship between two variables are measured by *Wiener Granger Causality Test*

popularly known as Granger Causality test put forward by Granger (1969). The two variables x_t and y_t are analyzed by measuring either x_t granger y_t ($x_t \rightarrow y_t$) or y_t causes x_t ($y_t \rightarrow x_t$) or there is bi-directional causality between x_t and y_t ($x_t \rightleftharpoons y_t$) or both variables are independent of each other ($x_t \not\rightleftharpoons y_t$). The arrow sign show the direction of causality. The Figure 1 outlines the research method applied here.

Insert figure-1 here

The variable of foreign direct investment is measured by the real value of foreign direct investment influx in local monetary unit (Rs.). The variable of economic growth (GDP) is measured in local monetary unit (Rs.). The variable of exports is measured by the real revenue of exports in in local monetary unit (Rs.). The variable of imports is measured by the real revenue of imports in in local monetary unit (Rs.). The annual time series data that has been analyzed in this article, covered the realization period from 1981 to 2009, has been taken from Hand Book of Statistics of Economy of Pakistan (2010).

ANALYSIS

At the first step, ADF Unit Root test is often used to check that these variables have unit root. The test includes constant with no trend at level $I(0)$ and first difference $I(1)$ of variables. The ADF test results had shown in table 1:

Insert table-1 here

The test result shown in table 1, indicates that the time series data at level $I(0)$ is non-stationary at 1% level of significance. The rejection of null hypothesis (H_0) to make the series stationary at 5% significance level at level $I(0)$; and fdi , gdp , xp and mp became stationary at first difference $I(1)$, which shows the deterministic trend.

The cointegrating vector and the coefficient for the FDI obtained from the *Ordinary Least Square (OLS)* are shown Table 2.

Insert table-2 here

It can be seen that the coefficient of GDP is 0.008 and statistically significant. This means that an increase of 1 unit in GDP will lead to an increase of 0.0008 units in FDI in the long run. The coefficient of export is 0.006 and statistically significant, implying that an increase of 1 unit in exports will lead to increase of 0.006 units in FDI in the long run. The coefficient of imports is -0.003 and statistically significant, implying that

an increase of 1 unit in imports will lead to decrease of 0.003 units in FDI in the long run.

Economically speaking, long run equilibrium relationship exists between these macro-economic variables, because they are integrated at same order. The co-integration relationship between variables is shown in Table 3.

Insert table-3 here

The results of test reported that there is long run equilibrium exists between the variables (fdi , gdp , xp & mp). The trace statistics indicate that there are two numbers of cointegration equations at the 5% level.

The next step is to measure the short run behavior of economic variables by using *Vector Error Correction Model (VECM) Test*, which measures short run relationship with long equilibrium without losing long run information. The results show that short term relationship among the variables. The value of R^2 also indicates that the model is a good fit, as shown in Table 4.

Insert table-4 here

In the last, Granger Causality test, to verify the direction of causality between macro-economic variables of Pakistan. The results are shown in table 5. The test results show that the *FDI* does not granger *GDP*, and *imports*, the p value is insignificant at 10% level. In case of *GDP*, it does granger both *FDI* and *exports*, because the p value is significant at 10% level. In the end, there is bi-direction causality between *GDP* and *exports*; and *FDI* and *exports*.

Insert table-5 here

CONCLUSION

The purpose of this paper is to examine the causal relationship between FDI and different macro-economic variable like GDP, exports and imports in case of Pakistan. The paper analyzes the annual time series data from 1981 to 2009. In the formal investigation, the stochastic properties of variables are examined, and the cointegration regression indicates the presence of long run equilibrium relationship between FDI and these macro-economic variables. Regarding the cause and effect relationship in case of Pakistan, Granger causality test suggest that FDI does not cause GDP.

The finding suggests that GDP of Pakistan is still not at developed stage to play its critical role in influencing the foreign investors. The economic

instability is the major reason because due to this instability the foreign investors are not interested to invest in Pakistan. Another issue is dependency on loans, and aid from IMF, World Bank, and other financial institutions. Because these types of inflow have no positive effect on economy due to heavy interest payments on these loans, which have the negative impact on the FDI. And last not the least, the political instability is the major reason for putting the barrier for FDI inflow. From 1976 to 2009, two dictators and eleven different political parties ruled in Pakistan. In this era, other Asian countries showed themselves as safe haven for foreign investments, and liberalized their trade policies, but Pakistan did not.

RECOMMENDATIONS

The government should have to develop the strong monetary and fiscal policy. The policy of dependency on loans, and grants should be changed, and new policies of FDI should be introduced to attract the foreign investors. The efficient capital and financial structure should be introduced; and the export led growth strategy by decreasing the trade tariff should be adapted and open the new sector for investment. The housing and construction sector has potential to grow, if the possible facilities and concessions will be given to the foreign investors by the government.

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Figure 1: Flow Diagram of Research Methodology.

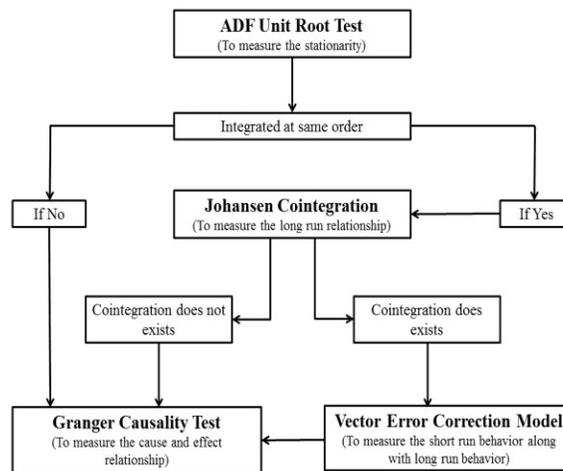


Table 1

ADF Unit Root Test Statistics of ln(fdi), ln(gdp), ln(xp) and ln(mp) of Pakistan from 1981 to 2009

| Variable | Level I(0) | | Level I(1) | |
|----------|------------|---|------------|---|
| | No trend | k | No trend | k |
| ln(fdi) | -0.980 | 0 | -6.134* | 0 |
| ln(gdp) | -0.893 | 0 | -4.140* | 0 |
| ln(xp) | -0.578 | 0 | -6.476* | 0 |
| ln(mp) | 0.703 | 0 | -5.131 * | 0 |

Note: ADF Unit Root Test Statistics of ln(fdi), ln(gdp), ln(xp) and ln(mp) of Pakistan from 1981 to 2009

*denotes MacKinnon critical values for rejection of null hypothesis of a unit root and significance at the 1% level.

Table 2
 Cointegrating Vector Results: Pakistan 1981 to 2009

$$\ln fdi_t = 0.0008 \ln gdp_t + 0.006 \ln xp_t - 0.003 \ln mp_t$$

(2.006*) (2.662*) (5.526*)

Note Cointegrating Vector equation of Pakistan from 1981 to 2009.

*indicates 10% level of significance and figures in the parentheses indicate t-statistics.

Table 3
 Cointegration Test Statistic: Pakistan 1981 to 2009

| Hypothesized no. of CE | Eigen Value | Trace statistics | Critical Value | Prob** |
|------------------------|-------------|------------------|----------------|--------|
| None* r=0 | 0.901 | 100.976 | 47.856 | 0.00 |
| At Most 1* r≤1 | 0.653 | 38.454 | 29.797 | 0.00 |
| At Most 2 r≤2 | 0.245 | 9.839 | 15.494 | 0.29 |
| At Most 3 r≤3 | 0.079 | 2.224 | 3.841 | 0.13 |

Note: Cointegration Test of ln(fdi), ln(gdp), ln(xp) & ln(mp) of Pakistan from 1981 to 2009

* denotes rejection of hypothesis at the 5% significance level.

** MacKinnon-Haug-Michelis (1999) p-values.

Table 4
 VECM Test Statistic: Pakistan 1981 to 2009

| Dependent Variable: $\Delta \ln(\text{fdi})$ | | |
|--|-------------|----------|
| Regressor | Coefficient | T-values |
| $\Delta \ln(\text{gdp})$ | -0.0009 | -3.983* |
| $\Delta \ln(\text{xp})$ | -0.0027 | -1.926 |
| $\Delta \ln(\text{mp})$ | 0.0025 | 2.453* |
| Diagnostic test statistics | | |
| R-squared | 0.7841 | |
| F-statistic | 6.4591 | |

Note: Vector Error Correction Model Test between $\ln(\text{fdi})$, $\ln(\text{gdp})$, $\ln(\text{xp})$ and $\ln(\text{mp})$ of Pakistan from 1981 to 2009

*denotes significance at the 1% level.

Table 5
Granger Causality Results: Pakistan 1976 to 2005

| Variables | f-tests | p-values |
|---|---------|----------|
| $\ln(\text{gdp}) \rightarrow \ln(\text{fdi})$ | 5.70 | 0.01* |
| $\ln(\text{fdi}) \rightarrow \ln(\text{gdp})$ | 1.93 | 0.16 |
| $\ln(\text{xp}) \rightarrow \ln(\text{fdi})$ | 5.46 | 0.01* |
| $\ln(\text{fdi}) \rightarrow \ln(\text{xp})$ | 2.45 | 0.09* |
| $\ln(\text{mp}) \rightarrow \ln(\text{fdi})$ | 6.28 | 0.00* |
| $\ln(\text{fdi}) \rightarrow \ln(\text{mp})$ | 2.15 | 0.14 |
| $\ln(\text{xp}) \rightarrow \ln(\text{gdp})$ | 3.85 | 0.03* |
| $\ln(\text{gdp}) \rightarrow \ln(\text{xp})$ | 5.83 | 0.00* |

Note: Causality test between $\ln(\text{fdi})$, $\ln(\text{gdp})$, $\ln(\text{xp})$ & $\ln(\text{mp})$ of Pakistan from 1981 to 2009

*indicates the rejection of null hypothesis at 5% significant level.