Impact of Investment Activities on Economic Growth of Pakistan

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ABSTRACT

This study investigates the impact of investment on the economic growth of Pakistan. The data used in this study were collected from the period of 1981 to 2010. Multiple regression technique is used to analyze the relationship between dependent variable (gross domestic production) and independent variables (public investment, private investment and foreign direct investment). It is concluded all independent variables have significant and positive impact on the economic growth. The granger causality test found the bi directional relationship of gross domestic production with foreign direct investment & public investment while unidirectional relationship of gross domestic production is found with private investment. It is recommended that Pakistan should make stronger efforts to attract as much FDI as possible to the foreign exchange sectors in the short term. Political stability and satisfactory law and order are likewise critical to attract FDI.

Keywords: Gross Domestic Production, Private Investment, Public Investment, Foreign Direct Investment

1. INTRODUCTION

Investment plays an important role in driving growth through increase in productivity levels. Foreign direct investment brings technology and creates employment. It helps to adopt new methods of production and enhances productivity by bringing competition in the economy. Foreign direct investment also introduces to novice management and organizational skills, and explores hidden markets in the economy. It reduces the barriers in adoption of technology and brings improvements in the quality of labor and capital inputs in the host economy.

With rising macroeconomic imbalances and rising investment needs to grow at a faster pace in the developing countries, foreign investment has played crucial role in providing much needed macroeconomic stability. Foreign direct investment (FDI) has emerged as a major source of private external flows for Pakistan as well amidst widening savings-investment gap. Since current account deficits has generated need for financing, the FDI inflows has provided important source of non-debt creating inflows.

During the last two decades countries have liberalized their FDI regimes and pursued investment-friendly economic policies to attract investment to maximize the benefits of foreign presence in the host economy. In many developing countries, FDI has triggered technology spillovers, assisted human capital formation, contributed to international trade integration, helped in creating a more competitive business environment and promoted enterprise development. These developments contributed positively to higher economic growth in many developing countries, which is the most potent tool for alleviating poverty.

Another contribution of FDI in recent years to developing countries has been its crucial role of preventing economies from ill-effects of exploding debt accumulation to finance their development needs and thus enabled exchange rate stability. Inflow of foreign investment has remained subdued in emerging markets in FY 08, however, the case of Pakistan was more acute because the political economy many headwinds at continuous intervals. Higher foreign direct investment levels in recent times has relaxed the foreign exchange constraint for imports to a greater extent, and supported the increase in the investment-to-GDP ratio, necessary to deliver the higher growth rates.
Pakistan has become an attractive destination for foreign investors and even during the crisis ridden current fiscal year Pakistan is fortunately going through a period of stable macroeconomic regime, while major investments have also been made in education generally and tertiary/higher education in particular. The ICT infrastructure is also improving rapidly. Public institutions, however, are still in their formative stage and not yet as fully mature and neutral as may be desired. Pakistan has become an attractive destination for foreign investors and even during the crisis ridden.

The investment private has changed considerably during the last three years. Private sector investment grew by 9.7 percent this year as against 13.3 percent last year in nominal terms. The other interesting development that has taken place on investment scene is that the share of private sector investment in domestic fixed investment has increased from less than two-third (64.2 percent) to more than three-fourth (76.0 percent) in the last seven years clearly reflecting the growing confidence of private sector in the current and future prospects of the economy.

Private sector investment was broad-based. The energy sector has played key role in attracting private sector investment. The overall fixed investment destined to energy sub-sectors, namely, mining & quarrying, and electricity & gas distribution witnessed highest increase by growing at 41.0 percent and 22.1 percent, respectively. The investment in mining & quarrying sector grew by 29.4 percent in real terms while in electricity & gas distribution it grew by 12.0 percent. Other major contributors to private sector investment growth are manufacturing (8.1%), transport and communication (8.6%), and wholesale and retail trade (18.4%). The contribution of national savings to the domestic investment is indirectly the mirror image of foreign savings required to meet investment demand.

The requirement for foreign savings needed to finance the saving-investment gap simply reflects the current account deficit in the balance of payments. National Savings at 13.9 percent of GDP is the lowest ever level since 1999-2000 and has financed 64.5 percent of fixed investment in 2007-08 as against 77.7 percent last year. National savings as percentage of GDP stood at 13.9 percent in 2007-08 which is far below than last year’s level of 17.8 percent. Domestic savings has also declined substantially from 16.0 percent of GDP to 11.7 percent of GDP.

This paper is divided into 5 sections. The next section discusses related empirical. Section 3 showing modeling framework and data sources. Section 4 having the results and estimations of different tests. Finally, in Section 6 we provide some concluding remarks and recommendations.

2. LITERATURE REVIEW

Ndambendia, (2010)Empirically indentifying the long run relationship between Foreign Aid, FDI and economic growth over the period 1980 to 2007.In this study single time series data has been used to identify the ration ship between FDI and economic growth. The effectiveness of foreign aid and foreign direct investment on economic growth but the results are somewhat unreliable, due to the short span of data or the problem of misspecification. In this study we use data in the most efficient manner to test the relationship between foreign aid, foreign direct Investment, employment, domestic saving and economic growth.

Gachino, (2009) examines FDI focusing on positive spillovers, capability development and performance. FDI had a positive role on industrial development through Spillover benefits. Nevertheless, the paper argues that FDI’s role in industrialization can be enhanced by stimulating a strong science, technology and innovation culture. Although Institutions established portrayed a positive impact; they were severely constrained in terms of operational capacity making them inefficient. It is therefore recommended that the government continues to provide support to such institutions in earnest to particularly enhance their capacity such as co-ordination, finance and human capital. Lastly, consistent and carefully formulated industrial policies are advocated for as they allow firms long term planning horizons.
Dlamini & Masuku, (2009) this study examined the locational determinants of FDI inflows in Swaziland over the period of 1980 to 2001. The study uses the co integration and error correction model (ECM) to identify factors influencing FDI inflows. The study identified some policy implications which require effective measures. First, policies geared towards more economic openness to foreign trade are required. Secondly, there is a need for the government to continue upgrading the infrastructure and to drive towards successful completion of capital projects like the roads, and factory shells and other infrastructure like Sikhuphe airport. On external economic stability a sound macroeconomic stability is advocated intertwined with a flexible and stable exchange rate system is needed to attract FDI. Lastly, the government is advised to formulate policies advocating for the consumption of locally produced goods and services so that the country, while it has a very small consumer base, would have a strong and supportive local market, thus attracting more FDI inflows in to the country.

Adams, (2009) foreign direct investment (FDI) flows have grown rapidly all over the world. This is because many countries and especially developing countries see FDI as an important element in their strategy for economic development. This paper provides a review of the foreign direct investment economic growth literature in the context of developing countries, and particularly Sub-Saharan Africa. The two main findings are as follows, first, FDI contributes to economic development of host country in two main ways, augmentation of domestic capital and enhancement of efficiency through the transfer of new technology, marketing and managerial skills, innovation and best practices, secondly FDI has both benefits and costs and its impact is determined by the country specific conditions in general and the policy environment in particular in terms of the ability to diversify, the level of absorption capacity, targeting of FDI, and opportunities for linkages between FDI and domestic investment. The findings of the review suggest that FDI is necessary but not a sufficient condition for economic growth.

Jude & Silaghi (2009) investigate the economic crisis has raised serious concerns regarding negative growth rates and high unemployment levels. Policy makers are concerned nowadays in finding solution for recovery. The aim of our paper is to present the theoretical arguments for FDI as a possible solution in unemployment reduction and growth enhancement in CEE countries. We analyze the potential direct and indirect effects of the FDI, offering also a structural analysis of FDI shares in employment and in the total value-added. We conclude that, under certain conditions, the relationship FDI-employment economic growth can be a viable solution for CEE countries.

Rizvi & Nishat, (2009) investigate the empirical study on creation of employment opportunities by FDI during 1995-2008 in Pakistan, India and China. The Im-Pasaran-shin test of unit root is applied to find out the order of integration. This method is used for estimation of the impact of FDI inflows on employment in three countries. Implications of FDI policy are spelt out in the light of these empirical results.

Falki, (2009) investigate the impact of FDI on economic growth of Pakistan for the Period 1980 to 2006. In this study the relationship between FDI and economic growth is analyzed by using the production function based on the endogenous growth theory other variable that effect economic growth such as trade, domestic capital and labor are also used therefore it is Imperative for the government to make a policy for attracting FDI in such a way that it should be more growth enhancing than growth retarding.

Stanisic, (2008) investigates the effect of foreign direct investments (FDI) on a host economy: the effect on economic growth and the effect on export performances. Both economic features are important for the transition economies’ prospects of European Union (EU) accession from 1997 to 2005. This research is based on newer data and longer time series, from 1997 to 2006. Also, a unique feature of this paper is that correlation between FDI inflows and economic growth. Recent empirical studies confirm the positive effect of FDI inflows on economic growth in developing countries. FDI is recognized as an important channel of international technology transfer. However, studies of the same relation in European transition economies do not show such a consistent result. Based on more recent data and longer time series, also failed to reveal any positive correlation between
FDI inflows and economic growth rate. However, this paper offers one possible explanation. There is no doubt that foreign direct investments have a positive.

Alfaro & Charlton, (2007) Examine the relationship between FDI and growth. We use ‘quality’ to mean the effect of a unit of FDI on economic growth. However, this is difficult to establish because it is a function of many different country and project characteristics which are often hard to measure. Hence, we differentiate “quality FDI" in several different ways. First, we look at the possibility that the effects of FDI differ by sector. Second, we differentiate FDI based on objective qualitative industry characteristics including the average skill intensity and reliance on external capital. Third, we use a new dataset on industry-level targeting to analyze quality FDI based on the subjective preferences expressed by the receiving countries themselves. Finally, we use a two-stage least squares methodology to control for measurement error and endogeneity. Exploiting a new comprehensive industry level data set of 29 countries between 1985 and 2000, we find that the growth effects of FDI increase when we account for the quality of FDI.

Kornecki & Borodulin, (2006) empirically identifying the impact of inward on economic growth for the period 1981 to 2007.in this study regression analyze has been used and the impact of inputs such as: labor, domestic capital, FDI stock and multifactor productivity (MFP) On economic growth. Multifactor productivity index reflects the joint effects of many factors including new technologies, economies of scale, managerial skill, and changes in the organization Production. The regression analyzes indicates that the FDI stock in the U.S. economy shows relatively higher rate of growth in comparison with domestic capital and contributes 23.28 % to the GDP growth in comparison with domestic capital contributing 19.68%. This results point out that the FDI as compared to domestic capital has a significant influence on GDP growth in the U.S. economy and constitutes crucial factor determining economic growth. FDI as compared to domestic capital has a significant influence on GDP growth in the U.S. economy and constitutes crucial factor determining economic growth.

Tsen, (2005) Investigate the Foreign Direct Investment in its manufacturing industry which is in important engine in economic growth. The main aim of this study is to investigate the long term Relationship between FDI and its Located –Related determinants in the manufacturing industry of Malaysia over the period 1980-2002. The result of the Fully modified least square estimator show that an increase in education, Infrastructure, market size or current account balance lead to an increase in FDI Whereas an increase in inflation or exchange rate lead to a decrease.

Castejón & Woerz, (2005) the impact of FDI on output growth by taking explicitly two types of heterogeneity into account: heterogeneity among industries and among countries. Our empirical analysis is based on a specially compiled data set, including FDI inward stocks, output, employment, investment, as well as exports, imports and wages for eight industries and 35 countries (OECD, Asian and Eastern European catching-up countries) over the period 1987 to 2002. On this sample, we test the importance of both - stage of development and industrial Pattern of FDI – for the impact of foreign capital on an economy. It turns out that the stage of development is highly crucial for the impact of FDI on growth. Further, FDI alone rarely translates into higher output or productivity growth, however in certain industries a significant and positive relationship emerges when FDI is interacted with investment or export orientation.

Bogahawatte & Balamurali, (2004) examines the relationship between foreign direct investment and economic growth of Sri Lanka for the period 1977-2003 using Johansen’s full information maximum likelihood method by considering relationship between real gross domestic products, Foreign direct investment, domestic investment and openness of the trade policy regime. The results indicate that foreign direct investments exert an independent influence on economic growth and there is bidirectional causality between foreign direct investment and economic growth. The finding suggests that better trade policy reforms, implementation aimed at promoting foreign direct investment and domestic investment, and restoring international competitiveness to expand and diversify the country’s exports has the potential of accelerating economic growth in the future.
Carlin & Mayer, (2003) identifying the relation between the institutional structures of advanced ECD countries and the comparative growth and investment of 27 industries in those countries over the period 1970 to 1995. In this study show a strong relation between the structures of countries’ financial systems, the characteristics of industries, and the growth and investment of Industries in different countries. The regression technique has been used to indentifying the relation between growth and investment. The association between the structure of financial Systems and the types of activities in which different countries are engaged. The renegotiation Literature argues that fragmented banking systems and credit markets are associated with high-risk R&D investments, and concentrated credit markets are associated with long-term investments in more mature industries.

Alfaro, (2003) is examining the effect of foreign direct investment on growth in the primary, manufacturing, and services sectors. Regression technique has been used for the effect of FDI on economic growth. An empirical analysis using cross-country data for the period 1981-1999 suggests that total FDI exerts an ambiguous effect on growth. Foreign direct Investments in the primary sector, however, tend to have a negative effect on growth, while investment in manufacturing a positive one. Evidence from the service sector is ambiguous.

Azam, (2003) Investigate the effects of different economic determinants on foreign direct investment (FDI) for three countries selected from Central Asia namely Armenia, Kyrgyz Republic and Turkmenistan. Secondary data for the period from 1991 to 2009 taken from World Development Indicator (various issues) has been utilized. Simple econometric model in log form and the least squares technique have been used. Result found indicates positive effects of Market size, official development assistance on FDI and negative effect of inflation on FDI. However, in case of Armenia, the effect of official development assistance on FDI has been found insignificant and such as in case of Kyrgyz Republic, the effect of inflation on FDI has been found insignificant with expected negative sign. Thus, findings of the study recommend that market size and official development assistance needs to be encouraged and inflation needs to be managed in order to achieve higher level of FDI and accelerate the process of economic development.

Athukorala, (2003) The FDI inflows have a positive impact on economic growth of host countries. Although a large volume of econometric literature comprises on the impacts of FDI on economic growth in developing countries, there is not enough studies on the question of causality linkage between them. This paper focuses on the FDI-led growth hypothesis in the case of Sri Lanka. The study is based on time series data from 1959 to 2002 and the response of civil society and foreign firms. The econometric framework of co integration and error correction mechanism were used to capture two way linkages between variables interest. It is evident in the results that the regression analyses do not provide much support for the view of a robust link between FDI and growth in Sri Lanka. It does not imply that FDI is unimportant. Rather, its analysis reduces the confidence in the belief that FDI has exerted an independent growth effect in Sri Lanka. But net attitudes of the civil society on the impact of FDI on opportunities for domestic business and economic activities is positive and net attitudes of foreign firms Toward FDI reveals that the investment climate has not improved in Sri Lanka as a result of lack of good Governance, corruption, political instability and disturbance, bureaucratic inertia, and poor low and order situation.

Bengoa & Robles, (2002) investigate the relationship between economic freedoms, foreign direct investment (FDI) and economic growth using panel data analysis for a sample of 18 Latin American countries for 1970–1999. In this study regression analyze has been used. We find that economic freedom in the host country is a positive determinant of FDI inflows. The results also suggest that foreign direct investment is positively correlated with economic growth in the host countries. The host country requires, however, adequate human capital, economic stability and liberalized markets to benefit from long-term capital flows.

Berthélemy & Démurger, (2000) investigates the Relationship between foreign direct investment and economic growth from 1985 to 1996. A model of Endogenous growth first highlights the transfer of foreign technology as a key determinant of Economic growth, and suggests that economic growth may conversely influence the inflows of foreign Capital. Developed a model of endogenous growth built on recent contributions, highlighting
the importance of foreign direct investment in economic growth. The model highlights the transfer of foreign Technology as a key determinant of economic growth and also suggests that such economic growth may conversely influence the inflows of foreign capital.

Flexner, (2000) to examine the determinant of FDI and the effect of FDI on per capital GDP growth in Bolovia over the period 1990-1998. The regression result find that the real Effective multilateral Exchange rate, the ratio of External debt to GDP and a dump representing capitalization inflow significantly impact FDI, while FDI, along with term of trade, the ratio of Private sector credit to GDP, and the ratio of government spending to GDP are shown to have statistically significant impact on per capital GDP growth.

Berthélemy & Démurger, (2000) investigates the relationship between foreign direct investment and economic growth. A model of endogenous growth first highlights the transfer of foreign technology as a key determinant of economic growth, and suggests that economic growth may conversely influence the inflows of foreign capital. Simultaneous-equation model estimation based on a sample of 24 Chinese provinces, from 1985 to 1996, confirms the fundamental role played by foreign investment in provincial economic growth in China, and stresses the importance of potential growth in foreign investment decisions.

3. DATA & METHODOLOGY
To find the long run relationship between the variables we have used multiple regression analysis. In this research we have focused on secondary type of data, all data is collected from official website of ministry of finance of Pakistan. In this study we have used the data of private saving, public saving, foreign direct investment and gross domestic production for the period of 1981 to 2010. After selection of the above variables we can describe the equation function of Pakistan in the following way:

$$\text{GDP} = f(\text{PRIINV}, \text{PUBINV}, \text{FDI})$$

Where GDP is the gross domestic production, $f$ represents the function of and PRIINV, PUBINV & FDI represent respectively, private investment, public investment & foreign direct investment. After specifying the Economic Growth function in linear form with an addition of error term, we can write in following way:

$$\text{GDP} = \alpha + \beta_1 \text{PRIINV} + \beta_2 \text{PUBINV} + \beta_3 \text{FDI} + \epsilon$$

This research is based on the following hypothesis that clearly defines the research criterion.

H1: Private Investment has no significant impact on Economic Growth
H2: Public Investment has no significant impact on Economic Growth
H3: Foreign Direct Investment has no significant impact on Economic Growth

4. RESULT ANALYSIS

<table>
<thead>
<tr>
<th>Table 4.1: Descriptive Statistics</th>
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<tbody>
<tr>
<td>FDI</td>
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<tr>
<td>Mean</td>
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<tr>
<td>Maximum</td>
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<tr>
<td>Minimum</td>
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<tr>
<td>Std. Dev.</td>
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<tr>
<td>Observations</td>
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The table 4.1 represents the descriptive statistics of the model. In the above table GDP is a dependent variable and FDI, PRIINV & PUB INV are independent variables. The sample size comprises of 30 observations from the period of 1981 to 2010. The minimum and maximum value of GDP is (1448.18) & (6004.41) respectively, whereas the mean value is (3245.62) and standard deviation is (1325.37). FDI having minimum value (0.53),
maximum value (338.35), mean value (61.34) and standard deviation (100.93). PRIINV having minimum value (31258.00), maximum value (1620982.00), mean value (435065.50) and standard deviation (517133.10). PUBINV having minimum value (31258.00), maximum value (632542.00), mean value (195508.60) and standard deviation (171624.50).

Table 4.2: Results of OLS

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>1821.305</td>
<td>132.170</td>
<td>13.780</td>
<td>0.000</td>
<td>---</td>
</tr>
<tr>
<td>PUBINV</td>
<td>0.786</td>
<td>0.002</td>
<td>2.632</td>
<td>0.014</td>
<td>1.087</td>
</tr>
<tr>
<td>PRIINV</td>
<td>0.235</td>
<td>0.001</td>
<td>2.439</td>
<td>0.022</td>
<td>1.159</td>
</tr>
<tr>
<td>FDI</td>
<td>5.413</td>
<td>1.963</td>
<td>-2.758</td>
<td>0.011</td>
<td>1.245</td>
</tr>
</tbody>
</table>

R-squared | 0.940 | Mean dependent var. | 3245.617 |
Adjusted R-squared | 0.933 | S.D. dependent var. | 1325.369 |
S.E. of regression | 342.802 | Akaike info criterion | 14.640 |
Sum squared resid | 2937829.000 | Schwarz criterion | 14.828 |
Log likelihood | -208.275 | F-statistic | 131.183 |
Durbin-Watson stat | 2.257 | Prob. (F-statistic) | 0.000 |

In the above table gross domestic production is a dependent variable and public investment, private investment and Foreign Direct Investment are independent variables. Table 4.2 gives us the value of R squared, which represents the correlation between the observed values and predicted values of the dependent variable. R-Square is called the coefficient of determination and it gives the adequacy of the model. Here the value of R-Square is 0.933 that means the independent variable in the model can predict 93% of the variance in dependent variable.

The Beta coefficient value shows the relationship between the variables in the model, if the value of coefficient is positive it means that independent variables have positive relationship with dependent variable i.e. increase in dependent variable is caused by increase in independent variable and if the value of coefficient is negative than independent variables are having negative relation with the dependent variable i.e. decrease in dependent variable is caused by increase in dependent variable. The values of coefficients beta and constant are used to construct the regression model, the model is shown below:

\[
GDP = 1821.305 + 0.786 \times (PUBINV) + 0.235 \times (PRIINV) + 5.413 \times (FDI)
\]

All three independent variables PUBINV, PRIINV & FDI are having positive and significant impact on the economic growth (GDP) because the p-value is less than 0.05, that’s mean if the investment is increase then the gross domestic production will also increase. T-statistic measures the relative strength of independent variables to predict the dependent variable and is sometimes more reliable than the coefficient of regression because it also takes the error into account. As in our study all independent variables have t-stat value >1.96 and a P-value <0.05 which show that it is a significant predictor of inflation.

Variance inflation factor (VIF) is used for multicollinearity diagnostics. General rule for the VIF is that if it is greater than 10 then there is a problem with multicollinearity. As in our case we can see that VIF values for all the predictors are lower than 10, so there is not a problem of multicollinearity. Value of Durbin Watson in the table is 2.257 and null hypothesis for the autocorrelation error term existence is rejected with a P-value of 0.5111. (Hobijin, 2008)
The Granger Causality approach to the problem of whether ‘x’ causes ‘y’ is to see how much of the current ‘y’ can be explained by past values of ‘y’ and then to see whether adding lagged values of ‘x’ can improve the explanation. ‘Y’ is said to Granger-Caused by ‘x’ if ‘x’ helps in the prediction of ‘y’ or equivalently, if the coefficients on the lagged x’s are statistically significant. After applying the granger causality test we found the bi directional relationship of gross domestic production with foreign direct investment & public investment while unidirectional relationship of gross domestic production is found with private investment.

5. CONCLUSION
This study examines the impact of investment on economic growth of Pakistan on a yearly data for the period of 1981 – 2010. Multiple regression technique is used to analyze the relationship between dependent variable (gross domestic production) and independent variables (public investment, private investment and foreign direct investment). It is concluded all independent variables have significant and positive impact on the economic growth. The granger causality test found the bi directional relationship of gross domestic production with foreign direct investment & public investment while unidirectional relationship of gross domestic production is found with private investment.

It is recommended that Pakistan should make stronger efforts to attract as much FDI as possible to the foreign exchange sectors in the short term. Taking into account unfavorable balance of payments prospects, it should refrain from attracting any further massive FDI in the non foreign-exchange-earning sectors for some years in the future. Political stability and satisfactory law and order are likewise critical to attract FDI. In an environment of large fiscal deficit and precarious foreign exchange reserves position, foreign investors are unlikely to increase their participation. Pakistan’s fiscal situation and foreign exchange reserves position will remain under considerable strain for some time making the macroeconomic environment less conducive for foreign investors. Inconsistent economic policies discourage foreign investors in undertaking projects of medium to long-run duration.
REFERENCES