

Impact of Foreign Capital Inflows (FCI) on Economic Growth in Pakistan

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Abstract

The study on the impact of official developmental assistance (ODA) and foreign direct investment (FDI) on gross domestic production (GDP) revealed that ODA has replaced FDI in terms of its contribution. The beta for ODA is 34.503 where as FDI it is 17.1592 means that ODA's contribution is twice that of FDI which shows that economy is exposed to the risk of extra reliance on aid which is a nondurable source which could weaken the state growth at any time. ECM (Error Correction Mechanism) was used to find out the long term equilibrium that suggest non spurious relation but also came to the conclusion that the dependency of GDP on FDI and ODA is more significant as the residual's insignificance suggests. In this case it is recommended that reliance on ODA has increased which is sign of contingent economy that can vanish any time the foreign supports stops the policy makers should focus on this issue and should develop policies to lessen the dependency on ODA and turn their focus towards FDI which can bring the real long term growth in the economy.

Keywords: Foreign Capital Inflows; Foreign Direct Investment, Official Developmental Assistance; Error Correction Mechanism.

Introduction and Literature Review

The interest was to study all the economic growth variable as well as all the dependent variable coming under the head of foreign capital inflows but due to lack of time and availability of data the research is narrowed to study the impact of foreign capital inflow on GDP which can be considered as an extended study of the previous researches done by different researcher. Harrod Domar Model suggest that saving/investment must be thrice are more than keeping the GDP on a certain level. But underdeveloped countries are facing poverty hurdles all

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the time. So their resources as well as their income are low so left with no saving that leads to no investment. Under these circumstances the potential to pay taxes is lower thus lowering down the earning of the state. Ultimately Under developed countries (UDC's) leads to saving investment deficit as well as the deficit in balance of payments (BOP).

The Two-Gap Model and Solow growth model suggest that the developing countries have to rely on the foreign capital inflows (FCI) to fill these two gaps: the import-export gap and the saving-investment gap. Although it is a certain fact that UDCs and the developing needs FCI but the form differ from country some are looking for assistance as their basic need while other are going to seek aid as FDI.

In case of Pakistan, the FCI has a vital role in economic development. Foreign aid, Official Development Assistance, Official Aid, FDI, Foreign Portfolio Investment and borrowing through private sources shows an increasing trend. Pakistan reliance on FCI is because of lacking physical, financial & human capital resources and political & macroeconomic instability. Justification for dependence on foreign capital inflows are:

- i). 'Two-Gap Model'
- ii). The external assistance (FCI) is also assumed to accelerate the process of development by generating additional domestic savings as a result of the higher growth rates (that is presumed to be induced by the accurate utilization of FCI). Eventually, it is hoped that the need for the FCI will disappear as local resources are mobilized to make development self-sustaining.
- iii). The financial assistance needs to be combined with the technical assistance in the form of high-level worker transfer to ensure that the foreign funds are utilized most efficiently to generate economic growth. This Labor-Gap-Filling process is same as the Financial-Gap-Filling process. Finally, the amount of FCI is determined by the recipient country's Absorptive Capacity.

Typically it is on the donor countries willingness which LDC is to receive the aid, how much, in what form, for what purpose and under what conditions on the basis of the their donor countries' assessment of LDC's absorptive capacity. The main objective of this paper is to analyze the effectiveness and impact of the foreign capital inflows (FCI) on GDP growth of Pakistan.

The role of foreign economic assistance is not vacant of controversies because some of the researchers are in support of positive impact on economic development while others are not of the same opinion. On the basis of empirical evidence from LDCs (Chenery, 1966) they are of the opinion that foreign capital has a positive effect on the

economic growth. Afterwards some other studies also argued that foreign economic assistance stimulate the economic growth.

North (1956) concludes that foreign capital inflow brings the real resources in to track that is bringing overhead investment and import surplus that is consciously required in stages of development. Bosworth, Reinhart, & Collins (1999) find out that while going for measuring effectiveness of FCI on growth of the economy the results were showing strong positive impact of FDI on domestic savings investments rather than other form of FCI like loans, portfolio investment and borrowings and some of these forms of FCI have negative impact on domestic savings and investment.

However, some other economists like (Leff, 1969) and (Griffin, 1970) have analyzed its negative impacts on growth. They reasoned that the foreign capital adversely affect the growth because it substitute domestic saving. So, the literature on effectiveness of foreign aid shows both, positive as well as the negative effects, of foreign aid on the economic development.

Hansen and Tarp (2000) run a regression between aid and the growth and find increasing trend in growth no matter whatever the policy is good or bad. There are, however, decreasing returns to aid, and the estimated effectiveness of aid is highly sensitive to the choice of estimator and the set of control variables. When investment and human capital are controlled for, no positive effect of aid is found. Yet, aid continues to impact on growth via investment. We conclude by stressing the need for more theoretical work before this kind of cross-country regressions are used for policy purposes.

In contrast to Hansen and Tarp (2000), Burnside and Dollar (2000) have constructed an index of three policies (on fiscal surplus, inflation, and trade openness), interact it with foreign aid, and instrument for both aid and aid interacted with policies. They find that aid has a positive impact on growth in developing countries with good fiscal, monetary, and trade policies. In the presence of poor policies, on the other hand, aid has no positive effect on growth. The role of foreign aid varies from country to country.

Pakistan has been relying on foreign aid and still it is continuous since independence. Researchers are still trying to find out foreign capital inflows on as it is the major portion of our economy. As, Shabbir & Mahmood (1992) and Khan & Rahim (1993) conclusion are in support of acceleration in growth rate of GDP due to foreign capital inflow.

Aslam (1987) is of the view that the public FCI did not affect the domestic investment significantly, while the private FCI covered the domestic saving investment gap.

Some other studies were carried out to analyze the impact of FCI on savings in Pakistan. Khan, Hasan and Malik (1992) forecasted that the

FCI was responsible for decline in national savings in Pakistan during the period of 1959-60 to 1987-88. Shabbir and Mahmood (1992) also found the negative impact of foreign capital on the national savings in Pakistan for the same period. Mahmood (1997) point out that the country may face severe debt problems due to macroeconomic mismanagement, misutilization of foreign aid and inappropriate policies. Khan (1993) concluded that the role of foreign aid cannot be ignored in influencing the pace of development, especially investments and imports have to a large extent depended upon the amount of foreign aid. However, this dependence on foreign aid, on the other hand, is leading to high debt burden.

In short the literature suggest that there do exist a potential in FCI to foster economic growth on one side whereas on other side it substitutes domestic savings. It causes severe debt problems in Pakistan. So FCI can enhance economic growth in developing countries in presence of good policies otherwise in case of poor policies the effect is reversed.

Methodology

Researcher focused finding the impact of foreign capital inflows in their various studies on economic growth while taking different methods and variable in their researches. Some are keeping in view the impacts of foreign capital inflows on saving, investments and capital formation where as some put their focus on evaluating the impact on debt burden, GDP growth etc. There are further studies that are taking into account different sectors of the economy like telecom, agriculture and health sectors. Although it is not easy to cover the impact of foreign capital inflow in a single paper here I had taken only their impact on economic growth that is an extended study of one of the research on this area. FCIs, includes FDI, foreign portfolio investment, grants, loans, technical assistance and emergency relief funds. Out of these forms I had taken FDI and official development assistance as foreign capital inflows and is having plan to take other forms in coming research because the topic do include gap to fill which needs further research. The extended study covers the data of FDI, ODA and GDP from 1975-2008. FCI is composed of ODA and FDI. 'Official Development Assistance and Official Aid' (ODA) consists of disbursements of loans (on concessional terms) and grants by official agencies, by multilateral institutions, and by advanced countries to promote economic development and welfare in developing countries. It also includes loans with a grant element and aid flows from official donors. Foreign Direct Investment net inflow (FDI) is the net inflows of investment to acquire a lasting management interest in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term

capital, and short-term capital. To estimate the impact of FCI on the GDP growth rate in Pakistan a regression will be run between FCI (FDI+ODA) and the GDP data for 34 years (1975-2008). The 'Multiple Linear Regression Model' will be used in this paper.

The Multiple Linear Regression Model is given as;

$$GDP = \beta_0 + \beta_1 FDI + \beta_2 ODA + \varepsilon \quad \text{-----} \quad (\text{Eq. 1})$$

Here;

GDP = Gross Domestic Product

FDI = Foreign Direct Investment, net inflow

ODA = Official Development Assistance and Official Aid

B_1 = Regression Coefficients (to be estimated) measures how much units of GDP would be changed with a unit change in FDI.

B_2 = Regression Coefficients (to be estimated) measures how much units of GDP would be changed with a unit change in ODA.

ε = Error Term

Result Discussion in Table Form

The results of the Model (as shown in Eq. No. 1) are estimated as:

$$GDP = 17.159 FDI + 34.503 ODA \text{ ----- (Eq. II)}$$

Other estimated results and statistics are given as under:

Table 1: Goodness of Fit test

<i>Regression Statistics</i>	
R Square	0.929212367
Adjusted R Square	0.895750254
Standard Error	18202.39831
Observations	34

(a) For regression through the origin (the no-intercept model), R Square measures the proportion of the variability in the dependent variable about the origin explained by regression.

(b) Predictors: ODA (In Millions), FDI (in Millions)

Coefficient of determination (R^2) is 0.929 and Adjusted R^2 is 0.89. It means that the 92% of variations in the GDP are explained with the help of ODA and FDI i.e. this Multiple Linear Regression Model has higher value of R^2 . And standard error of the estimate is 18200.39

Table 2: Overall significance of the Model (ANOVA/F statistics) (a) (b)

	<i>Df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	2	1.39176E+11	69588071846	210.0281835	9.45211E-19
Residual	32	10602473737	331327304.3		
Total	34	1.49779E+11			

(a) Dependent Variable: GDP (in Millions)

(b) Multiple Linear Regressions through the Origin

(c) Predictors: ODA (In Millions), FDI (in Millions)

(d) This total sum of squares is not corrected for the constant because the constant is zero for regression through the origin.

Table No. 2 shows the overall significance of the model. For this purpose the Analysis of Variance (ANOVA) or F-Test approach is used. The value of the F-Statistic is 210.0281 significant at 1% level of Significance (and lower than 1% as shown as 0.000 in the table No. 2). So, using the Multiple Regression (with no-intercept) is statistically significant

Table 3: Regression coefficients of the model

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Fdi	17.15921744	2.564644383	6.690680996	1.49325E-07
Oda	34.50324746	3.412581032	10.11060166	1.73101E-11

Let's discuss the regression coefficients of the model now. Table No. 3 shows the β Coefficients of the regression equation-II, their respective level of significance. All the coefficients are significant even at lower than 1% level of significance. The value of the β_1 is 17.159 shows strong positive impact of the FDI on the GDP growth in Pakistan during the period of 1975-2008. And the value of the β_2 is 34.503 also shows the strong positive impact on the GDP Growth in Pakistan from 1975 to 2008. Therefore, the estimated results of the model demonstrate that there is a strong positive impact of the FCI on the GDP.

Although all of the results are looking significant but when the data was checked for stationarity it wasn't which signals spurious correlation. In order to check either the relation is spurious or not it was checked for co integration to find out the long term equilibrium. For co integration the differenced residual was regressed on its lag which turned out to be significant as evident from its low P value

$$\Delta U_{\text{hat}} = -0.599643 U_{\text{hat}}(t-1)$$

Co-integration Test

Model 2: OLS, using observations 1976-2008 (T = 33)

Dependent variable: d_uhat1

Co-efficient std. error t-ratio p-value

uhat1_1	-0.599843	0.163726	-3.664	0.0009 ***
Mean dependent var	912.7353	S.D. dependent var	19750.43	
Sum squared resid	8.81e+09	S.E. of regression	16595.60	
R-squared	0.295506	Adjusted R-squared	0.295506	
F(1, 32)	13.42266	P-value(F)	0.000892	

Now in order to rectify the data and finding out in how much time will the long run revert to the short run it will be identified from the Error correction mechanism. Taking the differenced GDP and regressing it on differenced ODA, FDI and first lag of the residual.

$$\Delta \text{GDP} = 10.6187\Delta \text{FDI} + 6.20207\Delta \text{ODA} - 0.0349663\text{Ut-1}$$

The results are given below:

ERROR CORRECTION MECHANISM

Model 2: OLS, using observations 1976-2008 (T = 33)

Dependent variable: d_gdp

Co-efficient	std. error	t-ratio	p-value
d_fdi	10.6187	2.07343	5.121 1.65e-05 ***
d_oda	6.20207	2.85039	2.176 0.0376 **
uhat1_1	-0.0349663	0.0695299	0.5029 0.6187
Mean dependent var	4642.121	S.D. dependent var	5983.809
Sum squared resid	9.68e+08	S.E. of regression	5681.588
R-squared	0.478483	Adjusted R-squared	0.443716
F(3, 30)	9.174845	P-value(F)	0.000184

The highest p value of the residual suggests the insignificance of the residual which further confirm the dependency of GDP on FDI and ODA. This also suggests that statistically the equilibrium error is zero, suggesting that GDP adjust to changes in FDI and ODA in the same time period. As the ECM results shows that short run changes in FDI has a positive impact on short run changes in FDI.

Conclusion

The current study shows that the data for finding the impact of Foreign capital inflows like foreign direct investment, official developmental assistance from 1975-2004 shows the significance of the impact but the FDI was more significant than ODA whereas the study on data from 1975-2008 shows that the position has been changed and the official developmental assistance has replaced the foreign direct investment. The beta for ODA is 34.503 where as FDI it is 17.1592 means that ODA's contribution is twice that of FDI which shows that economy is exposed to the risk of extra reliance on aid which is a nondurable source which could weaken the state growth at any time. Further more research was conducted without conduction of data stationarity testing and the current research exposed it non-stationary nature and solved the problem while going for co integration which came to be significant and further ECM was used to find out the long term equilibrium that suggest non spurious relation but also came to the conclusion that the dependency of GDP on FDI and ODA is more significant as the residual insignificance suggests.

In the it is recommended that reliance on ODA has increased which is sign of contingent economy that can vanish any time the foreign supports stops the policy makers should focus on this issue and should develop policies to lessen the dependency on ODA and turn their focus towards FDI which can bring the real long term growth in the economy.

Reference List

- Aslam, N. (1987) The impact of foreign capital inflow on savings and investment: the case of Pakistan. *Pakistan Development Review*. Islamabad, Pakistan Institute of Development Economics. 26(4), 787-89.
- Bosworth, B. P., Collins S. M. and Reinhart M. C. (1999) Capital flows to developing economies: implications for savings and investment. *Brookings Papers on Economic Activity*, pp.143-180.
- Burnside, C., & Dollar, D. (2000). Aid, policies, and growth. *American Economic Review*, 847-868.
- Chenery, H. B. and Strout A. M. (1966) Foreign assistance and economic development. *American Economic Review*. 56(4), 179-773.
- Griffin, K. B. (1970) Foreign capital, domestic savings and development. *Bulletin of Oxford University*, 32(2).
- Hansen and Tarp (2000) *Aid growth and regressions*. Centre for Research in Economic Development and International Trade (CREDIT), University of Nottingham. CREDIT Research Paper No: 00/7.
- Khan, A. H. L. Hasan and Malik A. (1992) Dependency ratio, foreign capital inflow and the rate of savings in Pakistan. *Pakistan Development Review*, 3(4), 843-56.
- Khan, N. Z. and Rahim E. (1993) Foreign aid, domestic savings and economic growth (Pakistan: 1960-1988)". *Pakistan Development Review*, 32(4), 1157-67.
- Khan, O. A. (1993) The impact of foreign aid on economic development. In Ahmad V. and Amjad R. *The management of pakistan's economy (1947-82)*". Karachi, Oxford University Press.
- Leff, N. H. (1969) Dependency rates and saving rates. *American Economic Review*, 59(5).
- Mahmood, A. (1997) The role of foreign aid in economic development of pakistan. *Pakistan Economic and Social Review*, 35(1), 57-90.
- North, D. C. (1956) International capital flow and development of American west. *Journal of Economic History*, 16(4), 493-505.
- Shabbir, T. and Mahmood A. (1992) The effects of foreign private investment on economic growth in Pakistan. *Pakistan Development Review*, 31(4), 831-41.
- Todaro, M. P. (2001). *Economic Development*. Delhi, Addison – Wesley and long-man Inc.