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Foreign Direct Investment in Nepal: Regression analysis in aspect of GDP growth and export

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Abstract:

Foreign Direct Investment (FDI) emerges as new source of resources in the world economy along with economic integration. This is observed most favorable but debatable resource. In Nepal, the policy response to FDI is found increasing by the liberal policy in WTO eras, although it is debatable issue in the academic and business community. Size, structure and trend of FDI inflow in Nepal determines its degree of effectiveness in South Asian context. This paper focuses on the relationship of FDI with Economic growth and export trade to India and third world countries to understand FDI 's contribution to Nepalese economy. This has tested a simple regression model based on based on the secondary data.

1. Introduction:

The classical theories of growth emphasize that high investment ratio is an important factor of economic growth (Poudyal, 1987:31). The relationship between investment and growth was empirically established in the Harrod-Domar Growth Model. Therefore, investment is a determinant factor of economic growth. In the investment, foreign capital appeared as an important factor that has played a determinant role in the growth process of Nepal (Regmi, 2004: 108). Therefore, FDI is very important in this course.

FDI is the emerging new foreign capital as new source of capital resources in the world economy. Its inflow to developing countries has more important for industrial development led high economic growth and economic development. The IMF broadly defines FDI as the establishment of, or acquisition of, substantial ownership in as enterprise in a foreign country; and in a narrower sense, as enterprises in which nonresidents hold 25 percent or more of the voting share capital. FDI that is not simply a transfer of capital but the transfer of a package in which capital, management and new technology (Hymer, 1976) is one of its important elements of globalization moves across the political border of the nation in different economic sectors. So, the inflow of FDI is accepted as an indicator and measure of the globalization.

Larger share of FDI in the world economy roams in the developed country while the remaining small share goes in the developing countries, although developing countries deserve and need it and there is higher policy flexibility to attract FDI. Nunnenkamp (2002) indicates that multinational enterprises have increasingly considered these host countries to be profitable investment locations. At the same time, various theorists and experts argue that the determinants of and motivations for FDI in developing countries have changed in the process of the globalization. Chakrabarti (2003) describes that FDI depends on the size of market and a country's openness to trade. Empirical literature shows that policy flexibility, cheap labor and Indian market in Nepal are major determinants of FDI.

Nepal has been one receiver of FDI since 1980's structural reform. Instability trend and insignificant size of FDI inflow doesn't bind the higher policy flexibility, although Nepal has carried high expectation with FDI inflow. However, characteristics of FDI shown by FDI statistics are found as follows: the pre-operational FDI projects (61 percent) dominates to operational FDI projects (39 percent), Indian FDI is larger than other country's FDI and manufacturing sector receives larger FDI

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like as Tourism and service sector and financial FDI is found larger size (Bista, 2005 & Bista, 2005a).

The situation and contribution of FDI at macro and micro level of Nepalese economy are specifically unknown, although the situation and contribution of FDI is generally known at macro level through the report of UNACTAD, the World Bank, Asian Development Bank etc. and features of Journalists.

2. Objectives and methodology:

Objectives

This paper has an objective: to find out the relationship between FDI and economic growth and FDI and export trade specifying the export trade to India and to the third World Countries.

Rationale of the study

This paper will portray reality of FDI relationship with economic growth and export of Nepalese economy. It would erase significance myth about FDI size and trend to the policy maker, the planner, the business community and the scholar. Thus, its outcomes would be valuable information for them standing “for” or “against” to FDI inflow and the liberal FDI policy in Nepal for measuring degree of effectiveness of the FDI policy, Investment environment and the administrative procedures and provisions. Lastly, it would be good feedback for improving in the required areas for attracting significant FDI as expected in Nepalese economy.

Data used

The time series data (from 1990 to 2004) is used in this paper. They are collected from the secondary sources. They are the summary sheets of FDI, Department of Industry/HMG, Economic Survey, Ministry of Finance/HMG, Trade statistics, Trade Promotion Center/HMG and FNCCI.

Methodology

Descriptive and analytical methods addressing above objectives are applied. This paper employs two variable simple logarithmic regression models. The model follows similar previous studies and methodologies followed by Pesmazoglu(1972), Modigliani (1970), Thirlwall(1974) and also Poudyal(1974)

3. Application of simple Regression model

Simple Logarithmic Linear Regression is a statistical tool used and well known to find out the stochastic relationship between two variables including independent and dependent variables in economics.

a) Functional relationship between real GDP and FDI

Real GDP (Y) is a function of FDI (X). Symbolically,

$$RGDP = f(a, FDI, e)$$

In the simple logarithmic regression model, it is

$$\ln Y_i = \ln a + b \ln X_i + e_i \dots \dots \dots (I)$$

b) Functional relationship between export to India and Third World Countries with FDI

Export to India (Y_{in}) is a function of FDI (X).

$$Y_{in} = f(a, FDI, e) \dots \dots \dots (ii)$$

Export to Third World Countries (Y_{twc}) is a function of FDI (X)

$$Y_{twc} = f(a, FDI, e) \dots \dots \dots (iii)$$

The functional relationship is set up in the simple regression model format for regression test on the empirical data used in the study.

$$\ln Y_{in} = \ln a + b \ln X_i + e_i \dots \dots \dots (iv)$$

$$\ln Y_{twc} = \ln a + b \ln X_i + e_i \dots \dots \dots (v)$$

Where, a= intercept, b, = coefficients of FDI, e= error term

4. Major Empirical Observations:

The contribution of FDI in Nepalese economy is estimated by considering the operational FDI as the explanatory variables. The dependent variables are Real GDP, Export to India and Export to Third World Countries. The result of simple logarithmic regression model of FDI and Real GDP, FDI and Export to India and FDI and Export to Third World Countries are summarized in the table no –1 below.

Table No-1: Regression Analysis of FDI, Economic Growth and export trade

Dependent variable	Constant	b	R ²	Adj R ²	F-stat	t-stat	Std.error	DW-stat
Real GDP	221609.6	7.894	.191	.128	3.062	1.750	40831.0570	.260
Export to Third World Countries	15333.843	.955	.085	.014	1.204	1.097	7875.5045	.302
Export to India	6988.714	1.948	.203	.142	3.311	1.820	9689.3797	.436

i) FDI and Real GDP

The estimated parameter shows that FDI is positive in 10 % level of significant implying that the contribution of FDI to the real GDP is positive but very smaller than the expected in the economy. The model explains that 1 percent increase in the FDI would bring a change in real GDP by 7.89 percent point.

The model explains positive regression coefficient (Adj. R2) at 0.128 magnitude that is an explanation to only 12.8 percent variation of real GDP. The estimated parameter in the model explains FDI has 7.89 power to change in real GDP but there may be dominant residual unknown factors. In addition, the smaller percentage that is explained by regression coefficient to the variation in real GDP explains the insignificant size of FDI inflow in Nepal.

The model explains 0.260 magnitude of DW statistics. The calculated value is smaller than theoretical DW of 0.95 and 1.23. It implies there is no correlation between FDI and real GDP.

The model explains 3.062 magnitude of F statistics. The calculated value is smaller than theoretical F of 4.67 and 9.07 at the 5 and 1 % probability level of significance respectively. It explains the regressor is ineffective.

ii) FDI and Export including *Export to India, Y_{in} and Export to third world countries Y_{twc}*

The estimated parameter shows that FDI is positive in 10 % level of significant implying that the contribution of FDI to the export trade including export to India and Third World Countries is positive but very smaller than the expected in the economy. The model explains that 1 percent increase in the FDI would bring a change in export to India by 1.948 percent point and in export to Third World Countries by .995 percent point. It implies that the FDI inflow in Nepal has brought a change more in the export to India than to Third World Countries, despite an insignificant FDI size. Behind it, there may be improving India and Nepal Trade relationship after the 1996 and also the dominant factor of Indian FDI.

In the second and third models, the estimated regression coefficients (Adj. R²) of the second and third model are .142 and .014 respectively. The coefficient explains 14.2 percent variation of the export to India more than 1.4 percent variation of the export to Third World Countries. These are not observed strong and good because of existence of large size of unknown residual values.

The second and third models explain 0.436 and 0.302 magnitudes of DW statistics respectively. They don't lie in the range of theoretical DW of 0.95 and 1.23 because of smallness. It implies there is no correlation between FDI and export trade including export to India and Third World Countries.

The second and third models explain 3.311 and 1.204 magnitude of F statistics respectively. These calculated values are smaller than theoretical F of 4.67 and 9.07 at the 5 and 1 % probability level of significance respectively. It explains the regressors are ineffective like as the first model did.

5. Conclusion

This paper estimates the contribution of FDI to real GDP and export trade including Export to India, Y_{in} and Export to third world countries Y_{twc} . This is based on the secondary data of FDI, real GDP and Export trade. The simple logarithmic regression model is used for estimating the determinants of FDI contribution to real GDP and export trade. The application of the model has resulted that the contribution of FDI to real GDP and export trade is positive with significant change value. Behind it, there may be small size of FDI inflow in Nepal in which individual FDI may dominate to the institutional FDI because of quota system in garment and carpet given by USA and Germany. Therefore, for increasing the contribution of FDI to real GDP and export trade, the FDI size should be made significantly larger. It is possible when Nepal will have effective FDI policy, good Investment climate and political stability along with liberal India Nepal and China and Nepal Trade and Transit Treaty. Therefore, the policy maker and executor should consider it and also answer that why FDI inflow come in Nepal before formulating the policy.

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