



An Empirical Relationship between Foreign Direct Investment and Economic Growth: Evidence from India

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Abstract

The present study investigates the empirical relationship between energy consumption and economic growth in India using annual data from 1980 to 2014. Using ordinary least square (OLS) and fully modified ordinary least square (FMOLS) methods, the results from the ordinary least square and fully modified ordinary least square confirmed that there is a positive significant relationship between foreign direct investment and economic growth. The results from FMOLS suggest that a 1% increase in foreign direct investment leads to increase economic growth by 24%. The results suggest that emerging economy like India should give importance to attract foreign direct investment to promote economic growth

Keywords: Foreign Direct Investment; Economic Growth; OLS; FMOLS; India

1. Introduction

In developing and undeveloped countries Foreign Direct Investment plays a vital role. The need of FDI in these countries arises due to low level of savings and income in order to meet the needed level of investment required to sustain the growth of economy. Historically, India has followed very cautious and selective approach regarding foreign capital, but after economic reforms in 1991, it has liberalized the foreign direct investment (FDI) Policy. Number of measures was undertaken to promote FDI; Thus Government of India (GOI) has been succeeded in attracting more FDI in India. From the year 1991-1992 to 2011-12, India has fetched 4, 26,318 US \$ million FDI inflows (considering estimates made by RBI for the year 2010 to 2012).

According to UN report, India is the third most favored destination for investment after China and the US for major global companies. The report further expects that foreign investment in India could increase by more than 20% in 2012-1213. India needs foreign capital due to inadequate domestic capital and also for economic development. FDI is generally known to be the most stable component of capital flows needed to finance the current account deficit. India has become an investment hub over last decade. The major areas of FDIs are- oil, mining, coal and gas, banking, insurance, transportation, finance, manufacturing, retailing etc. FDI is significant to India as an engine of growth.

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2. Review of literature

The correlation between the FDI inflow into host countries and economic development has been subject to rigorous research for years. In theory, the causal relation between FDI and GDP growth can run in either direction. Andersen P.S and Hainaut P. (2004) in their paper “Foreign Direct Investment and Employment in the Industrial Countries” point out that while looking for evidence regarding a possible relationship between foreign direct investment and employment, in particular between outflows and employment in the source countries in response to outflows. They also find that high labour costs encourage outflows and discourage inflows and that such effect can be reinforced by exchange rate movements. The distribution of FDI towards services also suggests that a large proportion of foreign investment is undertaken with the purpose of expanding sales and improving the distribution of exports produced in the source countries. According to this study the principle determinants of FDI flows are prior trade patterns, IT related investments and the scopes for cross-border mergers and acquisitions. Finally, the authors find clear evidence that outflows complement rather than substitute for exports and thus help to protect rather than destroy jobs. Based on panel co-integration and causality tests, Basu et al. (2003) found that there is bidirectional causality between economic growth and FDI in 23 developing countries over the period between 1978 and 1996.

Andersen P.S and Hainaut P. (2004) identified the relationship between foreign direct investment and employment, in particular between outflows and employment in the source countries in response to outflows. They also find that high labour costs encourage outflows and discourage inflows and that such effect can be reinforced by exchange rate movements. The distribution of FDI towards services also suggests that a large proportion of foreign investment is undertaken with the purpose of expanding sales and improving the distribution of exports produced in the source countries. According to this study the principle determinants of FDI flows are prior trade patterns, IT related investments and the scopes for cross-border mergers and acquisitions. Finally, the authors find clear evidence that outflows complement rather than substitute for exports and thus help to protect rather than destroy jobs. Borensztein et al. (1998), FDI as an important vehicle for the transfer of technology, contributing to growth in larger measure than domestic investment. Findlay (1978) postulates that FDI increases the rate of technical progress in the host country through a contagion effect from the more advanced technology, management practices, etc., used by foreign firms.

Balasubramanyan et al. (1996), analyses positive interaction between human capital and FDI. They had earlier found significant results supporting the assumption that FDI is more important for economic growth in export-promoting than import-substituting countries. This implies that the impact of FDI varies across countries and that trade policy can affect the role of FDI in economic growth.

Caves (1996), reported that the rationale for increased efforts to attract more FDI stems from the belief that FDI has several positive effects. Among these are productivity gains, technology transfers, and the introduction of new processes, managerial skills and know-how in the domestic market, employee training, international production networks, and access to markets. As mentioned by Chowdhury and Mavrotas (2005), a large number of empirical studies on the role of FDI in host countries suggest that FDI is an important source of capital, complements domestic private investment, is usually associated with new job opportunities and enhancement of technology transfer

and spillover, human capital (knowledge and skill) enhancement, and boosts overall economic growth in host countries.

3. Data and methodology

The Indian annual data used for the study during the period from 1980 to 2014. The data were obtained from World Development Indicators reported by World Bank. Gross domestic product (GDP) is measured in constant 2005 US and Foreign direct investment (FDI). All the variables are transformed into natural logarithms. Here applied ordinary least square (OLS) regressions and Fully Modified Ordinary Least square (FMOLS) methods to access the empirical relationship between foreign direct investment and economic growth.

4. Empirical results

The analysis started by testing the statistical properties of the time series. First, the stationary of the variable is investigated using two unit root tests, namely the ADF Test. The results reported in Table 1. The results show that all of the variables are non-stationary (unit root) at the level and are stationary (no unit root) at the first order difference. This means that all of the variables have same order of integration that is I (1). This finding, therefore, suggest that there a cointegration relationship between the variables in the long-run.

Table 1 Unit root test Results

ADF Test		
Variables	Level	First Difference
GDP	1.336(0.998)	-5.743(0.000) **
FDI	-.0858(0.786)	-4.338(0.009) **

Note: The ADF test examines the null hypotheses of a unit root against the alternative of stationarity

and P values are parentheses. (**) denotes that 1% level of significance.

Table 2 reveals the results of OLS equation; it shows that a 1% increase in the foreign direct investment leads to a 0.20 % increase in economic growth meaning that foreign direct investment has a significant positive effect on economic growth.

Table 2 OLS Estimation Results (Dependent variable GDP)

Variable	Coefficient	t-Statistic	Prob.
FDI	0.204	10.638	0.000

The Table 3 explained the fully modified ordinary least square method results, which indicate that, foreign direct investment is positively significant with respect to economic growth. A 1% increase in foreign direct investment leads to increase economic growth by 21%. It confirms that foreign direct investment have positive impact on economic growth.

Table 3: Results of FMOLS

Variable	Coefficient	t-Statistic	Prob.
FDI	0.217	6.718	0.000
R-squared	0.757		

5. Conclusion

FDI in India will bring various benefits like advancement of knowledge, skill, technology, exports, employment and management. But MNCs may create forex drain from India. Indian companies will face stiff competition from foreign companies. As a conclusion, foreign direct investment has continued to play a significant role in the India's economy.

Economy development of a country can be achieved by encouraging more foreign direct investment, which can help to create more employment in the country. In addition, advanced technology in production will train more skilled labor; therefore it will enhance the productivity and fulfill the satisfaction and demand from the consumers. But, there is a negative effect on domestic producers, because they are losing market power, since the foreign investor becomes a monopoly in the market. This indirectly will make the domestic producer face difficulties to survive in the market in the long term as foreign companies can achieve an economy of scale with advanced technology.

The main objective of the study is to investigate the empirical relationship between energy consumption and economic growth in India using annual data from 1980 to 2014. Using ordinary least square (OLS) and fully modified ordinary least square (FMOLS) methods, the results from the ordinary least square and fully modified ordinary least square confirmed that there is a positive significant relationship between foreign direct investment and economic growth. The results from FMOLS suggest that a 1% increase in foreign direct investment leads to an increase in economic growth by 24%. The results suggest that emerging economies like India should give importance to attracting foreign direct investment to promote economic growth.

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