

FDI and Economic Growth – A Case Study of India

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Abstract---This study examines the role of FDI on economic growth in India for the period 1991-2010. In order to study the contribution of FDI on economic growth and the factors influencing the pattern of foreign direct investment in India, two models are fitted. The study also works out the trends and patterns in FDI inflows at sectoral level. Finally, the study shows that FDI significantly contributes to enhancing the economic growth in the country. It is also found that FDI is a very important variable which is influencing the level of economic growth in India.

Keywords--- FDI, Growth, Development

I. INTRODUCTION

EXPANDING magnitude of FDI inflows during the 1990s have prompted governments - in both developed as well as developing countries alike - to attract capital, technology, skills, market access, etc, in order to expedite the process of their sustained economic growth and development. Developing countries in particular, facing the paucity of all types of resources viz. financial, capital, entrepreneurship, technological know-how, efficient managerial skills and techniques, access to markets- abroad- in their economic development, have looked to FDI as a panacea for all their scarcities. Developing countries are directly interested in inviting private FDI, because 'both' countries benefit a lot from such type of investment. The 'host' countries want to acquire technological and managerial skills and supplement domestic savings and foreign exchange. On the other hand, 'home' countries want to take the advantage of the vast new markets opened by industrial growth. However, the role of FDI in ensuring sustainable economic growth and development in developing countries has remained a subject of debate in contemporary international relations and economic development theory.

II. REVIEW OF LITERATURE

The comprehensive literature pertaining to the contribution of FDI to economic growth of cross-section of countries indicates a well established correlation between FDI and the size of the market. Emrah Bilgic (2007) indicates that FDI has positive effect on economic growth as a result of technology

spillovers and physical capital inflows. Miguel D. Ramirez (2006) suggests that increases in both private and foreign investment per worker has a positive and economically significant effect on the rate of labor productivity growth. Tomasz Mickiewicz, Slavo Radosevic and Urmas Varblane (2005) identify that FDI complement rather than act as a substitute in employment generation. Bhagwati J.N. (1978), analyzed the impact of FDI on international trade and found that countries actively pursuing export led growth strategy can reap enormous benefits from FDI. Mathiyazhagan Maathai K. (2005) examines the long-run relationship of Foreign Direct Investment (FDI) with the Gross Output (GO), Export (EX) and Labour Productivity (LPR) in the Indian economy at the sectoral level. He concluded that the advent of FDI has not helped to wield a positive impact on the Indian economy at the sectoral level.

III. OBJECTIVES

Keeping in view the above facts, the main objectives of the study are as under:

1. To study the trends and patterns of flow of FDI in India at sectoral level.
2. To assess the role of FDI on economic growth in India.

IV. RESEARCH METHODOLOGY

A. Data Collection

This study is based on secondary data. The required data have been collected from various sources i.e. World Investment Reports, Asian Development Bank's Reports, various Bulletins of Reserve Bank of India, publications from Ministry of Commerce, Govt. of India, Economic and Social Survey of Asia and the Pacific, United Nations, Asian Development Outlook, Country Reports on Economic Policy and Trade Practice- Bureau of Economic and Business Affairs, U.S. Department of State and from websites of World Bank, IMF, WTO, RBI, LTNCTAD, EXIM Bank etc. It is a time series data and the relevant data have been collected for the period 1991 to 2010. In order to analyse the collected data, various statistical and mathematical tools are used

B. Model Building

Further, to study the impact of foreign direct investment on economic growth, two models are framed and fitted: The foreign direct investment model shows the factors influencing the foreign direct investment in India. The economic growth

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model depicts the contribution of foreign direct investment to economic growth. The two model equations are expressed below:

$$1 \text{ FDI} = f[\text{TRADEGDP}, \text{R\&DGDP}, \text{EXR}, \text{RESGDP}, \text{FIN. HEALTH}]$$

$$2 \text{ GDPG} = f[\text{FDIG}]$$

where,

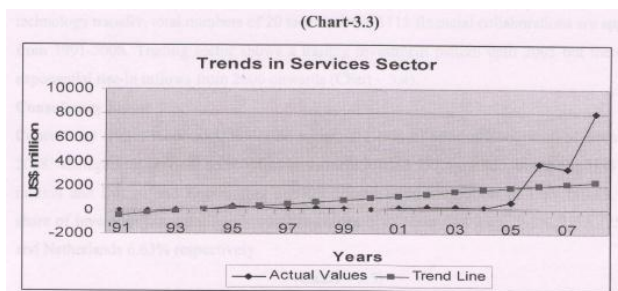
- FDI: Foreign Direct Investment
- TRADEGDP: Total Trade as percentage of GDP.
- R&DGDP-Research & development expenditure as percentage of GDP.
- EXR: Exchange rate
- RESGDP- Foreign Exchange Reserves as percentage of GDP.
- FIN. HEALTH: Ratio of external debts to exports
- GDPG - level of Economic Growth
- FDIG - Foreign Direct Investment Growth

Regression analysis (Simple & Multiple Regression) was carried out using relevant econometric techniques. Simple regression method was used to measure the impact of FDI flows on economic growth (proxied by GDP growth) in India. Further, multiple regression analysis was used to identify the major variables which have impact on foreign direct investment. Relevant econometric tests such as coefficient of determination R², Durbin - Watson [D-W] statistic, Standard error of coefficients, T-Statistics and F- ratio were carried out in order to assess the relative significance, desirability and reliability of model estimation parameters.

V. TRENDS OF FDI AT SECTORAL LEVEL

A. Infrastructure Sector

From the very initiation of economic reform, India has encouraged FDI in infrastructure sector, but the demand for it is still not being fulfilled. In fact, investment is heavily concentrated in consumer durables sector rather than in long - term investment projects such as generating power, maintaining roads, water management and on modernizing the basic infrastructure. Maitra (2003) reveals that the shortage of power is estimated at about 10% of the total electrical energy and approximately 20% of peak capacity requirement



Source: compiled and computed from the various issues SIA Bulletin, Ministry of Commerce, GOI

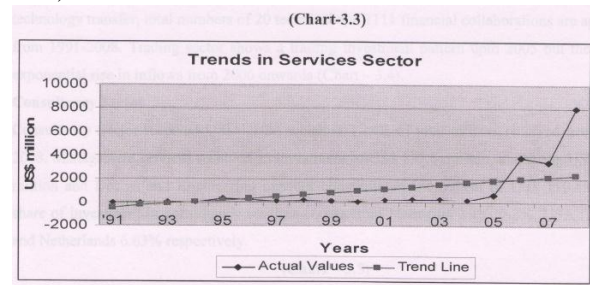
The infrastructure sector accounted for 28.62% of total FDI inflows from 2000 to 2010. Initially the inflows were low but there is a sharp rise in investment flow from 2005 onwards

(Chart - 3.2. Telecommunication received the highest percentage (8.05%) followed by construction activities (6.15), real estate (5.78%), and power (3016). The major investment comes from Mauritius (56.30%) and Singapore (8.54%). In order to attract the investment, New Delhi (23.2%) Mumbai (20.47%) enjoy the two top positions.

However, insufficient and poor condition of India's infrastructure is the major factors to the slowdown in growth which the trust and enthusiasm for FDI from investors and economic growth of the country. Further, insufficient power supply, inadequate and unmaintained roads, an over-burdened railway system, severely congested urban areas, may continue to plague the Indian economy in the coming years.

B. Services Sector

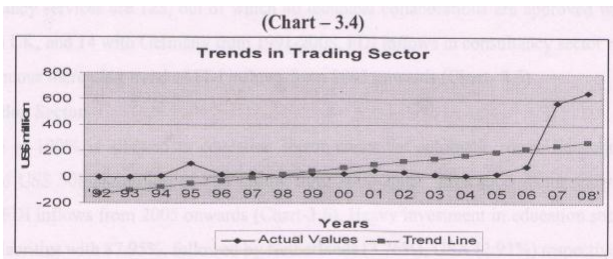
Services sector puts the economy on a proper glide path. It is among the main drives of sustained economic growth and development by contributing 55% of GDP. There is a continuously increasing trend of FDI inflows in services sector with a steep rise in the inflows from 2005 onwards (Chart - 3.3). Service sector received an investment of US\$ 19.2 bn which is 19.34% of the total FDI inflows from 1991-2010. Financial services attract 10.25% of total FDI inflows followed by banking services (2.22%), insurance (1.60%) and non-financial services (1.62%) respectively. Outsourcing, banking, financial, information technology oriented services make intensive use of human capital FDI would be much more efficient and result oriented in these services vis- a-vis services which make intensive use of semi-skilled and unskilled labour. Mauritius top the chart by investing 42.52% in services sector followed by UK (14.66%), Singapore (11.18%).



In India, FDI inflows in services sector are heavily concentrated around two major cities-Mumbai, (33 .77%) and Delhi (16.14%). The total financial and technical collaborations approved in the services sector is the order of 1626 (5.78%) with an equity participation of 14.28% of the total investment in services. Majority of technology transfer is from USA (30) and UK (8).

C. Trading Sector

Trading sector received 1.67% of the total FDI inflows from 1991-2010. Trading (wholesale cash and carry) received highest percentage (84.25%) of total FDI inflow to this sector from 2000-2010 followed by trading (for exports)with 9.04%, - commerce with (2.38%).

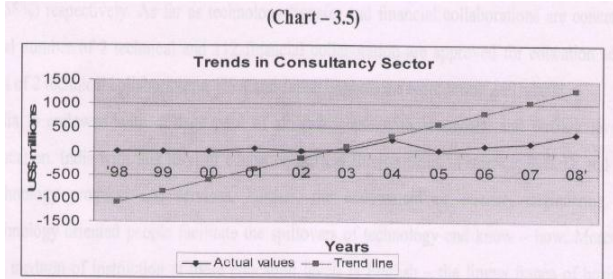


Source: compiled and computed from the various issues SIA Bulletin, Ministry of Commerce, GOI

Further, major investment inflows came from Mauritius with 24.69%, Japan with 14.81%, Cayman Island 14.60% respectively from 2000-2010. Investment in India is heavily concentrated in three cities viz. Mumbai (40.76%), Bangalore (15.97%), and New Delhi (12.05%). In case of technology transfer, total numbers of 20 technical and 1111 financial collaborations are approved from 1991-2010. Trading sector shows a trailing investment pattern upto 2005 but there is an exponential rise in inflows from 20A6 onwards (Chart - 3.4).

D. Consultancy Sector

Consultancy Sector received US\$ 1.1 bn which is 1.1 4% of total inflows received from 2000-2010. Management services received an investment of US\$ 737.6million, marketingUS\$138.65million and Design and Engineering services constitute an investment of US\$ 110.43. Major share of investment in consultancy services comes from Mauritius with 37.2%, USA (25.47%)and Netherlands6 .63% respectively.

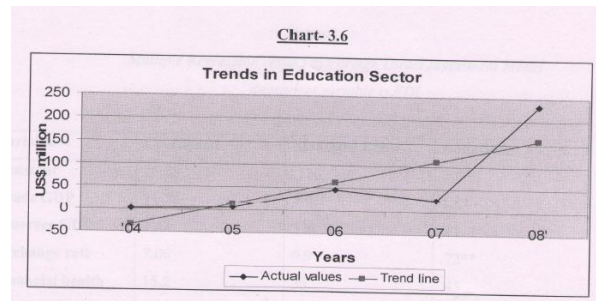


Source: compiled and computed from the various issues SIA Bulletin, Ministry of Commerce, GOI

Further, in India Mumbai (38.76%) and New Delhi (13.01%) received major percentages of FDI inflow for consultancy sector from 2000-2010. Total numbers of technology transfer in consultancy services are 125, out of which 40 technical collaborations are approved with USA, 21 with UK, and 14 with Germany from 1991-2010. FDI inflows in consultancy sector registered a continuous increasing trend of FDI inflows from 2005 onwards (Chart- 3.5)

E. Education Sector

FDI up to 100% is allowed in education sector under the automatic route. Education sector received US\$ 308.28 million of FDI inflow from 2000-2010. Education sector shows a steep rise in FDI inflows from 2005 onwards (Chart-3.6). Heavy investment in education sector came from Mauritius with 87.95%, followed by Netherlands (3.76%), USA (2.93%) respectively.



Source: compiled and computed from the various issues SIA Bulletin, Ministry of Commerce, GOI

In India, Bangalore received 80.14% of total FDI inflow followed by Delhi (6.45%), Mumbai (5.58%) respectively. As far as technology transfer and financial collaborations are concerned, total number of 2 technical and 112 financial collaboration are approved for education sector. Out of 2 technical collaborations, USA and Japan begge done each during 1991-2010.

India is endowed with a large pool of skilled people with secondary and tertiary level of education. India with this level of education attracts foreign firms in science, R & D, and high technology products and services. Further, the endowment of science, engineering, and technology oriented people facilitate the spillovers of technology and know - how. Moreover, the medium of instruction at these education levels is English - the lingua franca of business. India with this added advantage benefits in attracting foreign firms.

VI. ROLE OF FDI ON ECONOMIC GROWTH

In order to assess the role of FDI on economic growth, two models are used. Table- 1 shows the model estimation results after employing the adopted econometric techniques. It is found that in the foreign direct investment model, all variables are statistically significant. Exchange rate shows positive relationship with FDI. However, Research and Development Expenditure(R&DGDP) shows negative relationship with FDI. Further, coefficient of determination shows that the model has a good fit as 62% of foreign direct investment is being explained by the variables included in the model. D-W statistic value is found to be .98 which confirms that there is no auto correlation problem in the analysis.

TABLE-I
MULTIPLE REGRESSION RESULTS OF FOREIGN DIRECT INVESTMENT MODEL
dependent variable is FDI

Variable	Coefficient	Standard Error	t-Statistic
Constant	26.25	.126	207*
Trade GDP	11.79	7.9	1.5*
Reserves GDP	1.44	3.8	.41
Exchange rate	7.06	9.9	.72**
Financial health	15.2	35	.45
R&D GDP	-582.14	704	.83**

R² = 0.623 Adjusted R² = 0.466
D-W Statistic = .98, F-ratio = 7.74

Note: * = Significant at 0.25, 0.10 levels; ** = Significant at 0.25 level.

Further, in the economic growth model, estimated coefficient on foreign direct investment has a positive

relationship. It is revealed from the analysis that FDI is a significant factor influencing the level of economic growth in India. The coefficient of determination, i.e. the value of R^2 explains 95.6% level of economic growth by foreign direct investment in India. The F-statistics value also explains the significant relationship between the level of economic growth and FDI inflows in India. D-W statistic value is found 1.0128 which confirms that there is no auto correlation problem in the analysis.

Thus, the findings of the economic growth model show that FDI is a vital and significant factor influencing the level of growth in India.

TABLE-II
REGRESSION RESULTS OF ECONOMIC GROWTH MODEL
DEPEND VARIABLE IS GDPG

Variable	Coefficient	Standard Error	t-Statistic
Constant	.060322925	0.00007393156391	815.92
FDIG	0.039174416	0.020661633	1.8959

$R^2 = 0.959$ Adjusted $R^2 = 0.956$

D-W Statistic = 1.0128, F-ratio = 28.076

Note: * = Significant at 1%

Coefficient Standard Error

VII. CONCLUSION

Finally, the study observes that FDI is a significant factor influencing the level of economic growth in India. It provides a sound base for economic growth and development by enhancing the financial position of any country. No doubt, India can improve its economic performance and can achieve its target of double digit growth rate by creating conditions conducive to investment. For this, the policy makers should ensure optimum utilization of funds and timely implementation of projects. The study also urges the policy makers to focus much more on attracting diverse types of FDI.

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