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REVIEW ARTICLE

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Assessment of Role of FDI on Economic Growth in India

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In order to assess the role of FDI on economic growth, two models were used. The estimation results of the two models are supported and further analysed by using the relevant econometric techniques viz. Coefficient of determination, standard error, f- ratio, t-statistics, D-W Statistics etc. In the foreign direct investment model , the main determinants of FDI inflows to India are assessed. The study identified the following macroeconomic variables: TradeGDP, R&DGDP, FIN.Position, EXR, and ReservesGDP as the main determinants of FDI inflows into India. And the relation of these variables with FDI is specified and analysed in equation . In order to study the role of FDI on Indian economy it is imperative to assess the trend pattern of all the variables used in the determinant analysis. It is observed that FDI inflows into India shows a steady trend in early nineties but shows a sharp increase after 2005, though it had fluctuated a bit in early 2000. However, Gross domestic product shows an increasing trend pattern since 1991-92 to 2007-08 (Table 4.2 and Chart - 4.2). Another variable i.e. tradeGDP maintained a steady trend pattern upto 2001-02, after that it shows a continuous increasing pattern upto 2008-09. ReservesGDP, another explanatory variable shows low trend pattern upto 2000-01 but gained momentum after 2001-02 and shows an increasing trend. In addition to these trend patterns of the variables the study also used the multiple regression analysis to further explain the variations in FDI inflows into India due to the variations caused by these explanatory variables.

MODEL

FOREIGN DIRECT INVESTMENT MODEL

FDI = f [TRADEGDP, R&DGDP, EXR, RESGDP, FIN. Position]

Table-

Variable	Coefficient	Standard Error	t- Statistic
Constant	26.25	.126	207*
TradeGDP	11.79	7.9	1.5*
ReservesGDP	1.44	3.8	.41
Exchange rate	7.06	9.9	.72**
Financial health	15.2	35	.45
R&DGDP	-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.

In Foreign Direct Investment Model (Table 4.8), it is found that all variables are statistically significant. Further the results of Foreign Direct Investment Model shows that TradeGDP, R&DGDP, Financial Position (FIN.Position), exchange rate (EXR), and ReservesGDP (RESGDP) are the important macroeconomic determinants of FDI inflows in India. The regression results of (Table 4.8) shows that TradeGDP, ReservesGDP, Financial Position, exchange rate are the pull factors for FDI inflows in the country whereas R&DGDP acts as the deterrent force in attracting FDI flows in the country. As the regression results reveal that R&DGDP exchange rate does not portray their respective predicted signs. However, R&DGDP shows the unexpected negative sign instead of positive sign and exchange rate shows positive sign instead of expected negative sign. In other words, all variables included in the foreign direct investment model shows their predicted signs (Table – 4.9) except the two variables (i.e. Exchange rate & R&DGDP) which deviate from their respective predicted signs. The reason for this deviation is due to the appreciation of Indian Rupee in the international market and low expenditure on R&D activities in the activities in the country.

Table

PREDICTED SIGNS OF VARIABLES

Variables	Predicted Sign	Unexpected Sign
TradeGDP	+	
ReservesGDP	+	
Exchange Rate	-	+
Financial Position	+	
R&DGDP	+	-

It is observed from the results that the elasticity coefficient between FDI & TradeGDP is 11.79 which

implies that one percent increase in Trade GDP causes 11.79 percentage increase in FDI inflows in India. The TradeGDP shows that the predicted positive sign. Hence, Trade GDP positively influences the flow of FDI into India. Further, it is seen from the analysis that another important promotive factor of FDI inflows to the country is ReservesGDP. The positive sign of ReservesGDP is in accordance with the predicted sign. The elasticity coefficient between ReserveGDP and FDI inflows is 1.44. It implies that one percent increase in ReserveGDP causes 1.44 percentage increases in FDI inflows into India. The other factor which shows the predicted positive sign is FIN.Position (financial position). The elasticity coefficient between financial position and FDI is 15.2 % which shows that one percent increase in financial position causes 15.2 percent of FDI inflows to the country. India prefers FDI inflows in export led strategy in boosting its exports.

Further, the analysis shows that the trend pattern of external debt to exports (i.e. FIN. Position) has been decreasing continuously since 1991-92, indicating towards a strong economy. This positive indication is a good fortune to the Indian economy as it helps in attracting foreign investors to the country. One remarkable fact observed from the regression results reveal that R&DGDP shows a negative relationship with FDI inflows into India. The results show that the elasticity coefficient between FDI and R&D GDP is -582.14. This implies that a percentage increase in R&DGDP causes nearly 582 percent reductions in the FDI inflows. This may be attributed to the low level of R&D activities in the country. This is also attributed to the high interest rate in the country and also investments in Brownfield projects are more as compared to investments in Greenfield projects. India requires more knowledge cities, Special Economic Zones (SEZs), Economic Processing Zones (EPZs), Industrial clusters, IT Parks, Highways, R&D hubs etc. so government must attract Greenfield investment. Another variable which shows the negative relationship with FDI is exchange rate. The elasticity coefficient between FDI and Exchange rate is 7.06 which show that one percent increase in exchange rate leads to a reduction of 7.06 percentage of FDI inflows to the country. The exchange rate shows a positive sign as expected of negative sign. Conventionally, it is assumed that exchange rate is the negative determinant of FDI inflows. This positive impact of exchange rate on the FDI inflows could be attributed to the appreciation of the Indian rupee against US Dollar. This appreciation in the value of Rupee helped the foreign firms in many ways. Firstly, it helped the foreign firms in acquiring the firm specific assets cheaply. Secondly, it helped the foreign firms in reducing the cost of firm specific assets (this is particularly done in case of Brownfield projects). Thirdly, it ensures the foreign firm higher profit in the longrun (as the value of the assets in appreciated Indian currency also appreciates). The results of foreign Direct Investment Model also facilitates in adjudging the relative importance of the determinants of FDI inflows from the absolute value of their elasticity coefficients. In this regard it is observed from the regression results of Table - that among the positive determinants, FDI inflows into India are more elastic to FIN. Position than to TradeGDP and ReservesGDP. It is also observable that FDI inflows are more sensitive to R&DGDP than to exchange rate as the elasticity coefficient between FDI and exchange rate is least, whereas the elasticity coefficient between FDI and R&DGDP is more. Further, to decide the suitability and relevancy of the model results the study also relies on other econometric techniques. The coefficient of determination i.e. R- squared shows that the model has a good fit, as 62% of foreign direct investment is being explained by the variables included in the model. In order to take care of autocorrelation problem, the Durbin – Watson (D-W statistics) test is used. The D-W Statistic is found to be .98 which confirms that there is no autocorrelation problem in the analysis. Further the value of adjusted R-square and F-ratio also confirms that the model used is a good statistical fit.

MODEL

ECONOMIC GROWTH MODEL

GDPG = f [FDIG]

Table-

Variable	Coefficient	Standard Error	t- Statistic
Constant	.060322925	0.000073931563 91	815.92
FDIG	0.039174416	.020661633	1.8959

R2= 0.959 Adjusted R2= 0.956

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

Note: * = Significant at 1%

In the Economic Growth Model (Table – 4.10), estimated coefficient on foreign direct investment has a positive relationship with Gross Domestic Product growth (GDPG). 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 R2 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 autocorrelation 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.

CONCLUSIONS

It is observed from the results of above analysis that TradeGDP, ReservesGDP, Exchange rate, FIN. Position, R&DGDP and FDIG are the main determinants of FDI inflows to the country. In other

words, these macroeconomic variables have a profound impact on the inflows of FDI in India. The results of foreign Direct Investment Model reveal that TradeGDP, ReservesGDP, and FIN. Position variables exhibit a positive relationship with FDI while R&DGDP and Exchange rate variables exhibit a negative relationship with FDI inflows. Hence, TradeGDP, ReservesGDP, and FIN. Position variables are the pull factors for FDI inflows to the country and R&DGDP and Exchange rate are deterrent forces for FDI inflows into the country. Thus, it is concluded that the above analysis is successful in identifying those variables which are important in attracting FDI inflows to the country.