EVALUATION OF FDI IN INDIA AS A GROWTH ENGINE OF GDP IN THE COUNTRY

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Abstract-In the present scenario of the world, the Foreign Direct Investment has become the battlefield for emerging market. The (GDP) is used as independent variables. As we know that, the (FDI) has received importance since the liberalization. Therefore, in the present research study, we have covered the time from 1991 to 2015. The objective of the present research paper is to study the impact of foreign direct investment on gross domestic product of India since liberalization.

The present study is not only confined to test the impact of FDI on gross domestic product but also to analyze the trend of foreign direct investment in India since liberalization. Whenever, we talk about the growth of developing countries like India, South Africa, Brazil etc. in their cases it would be difficult to keep aside the vital role of foreign direct investment in the growth of the economy. The current study is mainly based on secondary source of information and the relevant secondary data have been taken from different publications of Government of India, Reserve Bank of India, World Investment Report published by UNCTAD, different journals, FDI fact sheets etc.

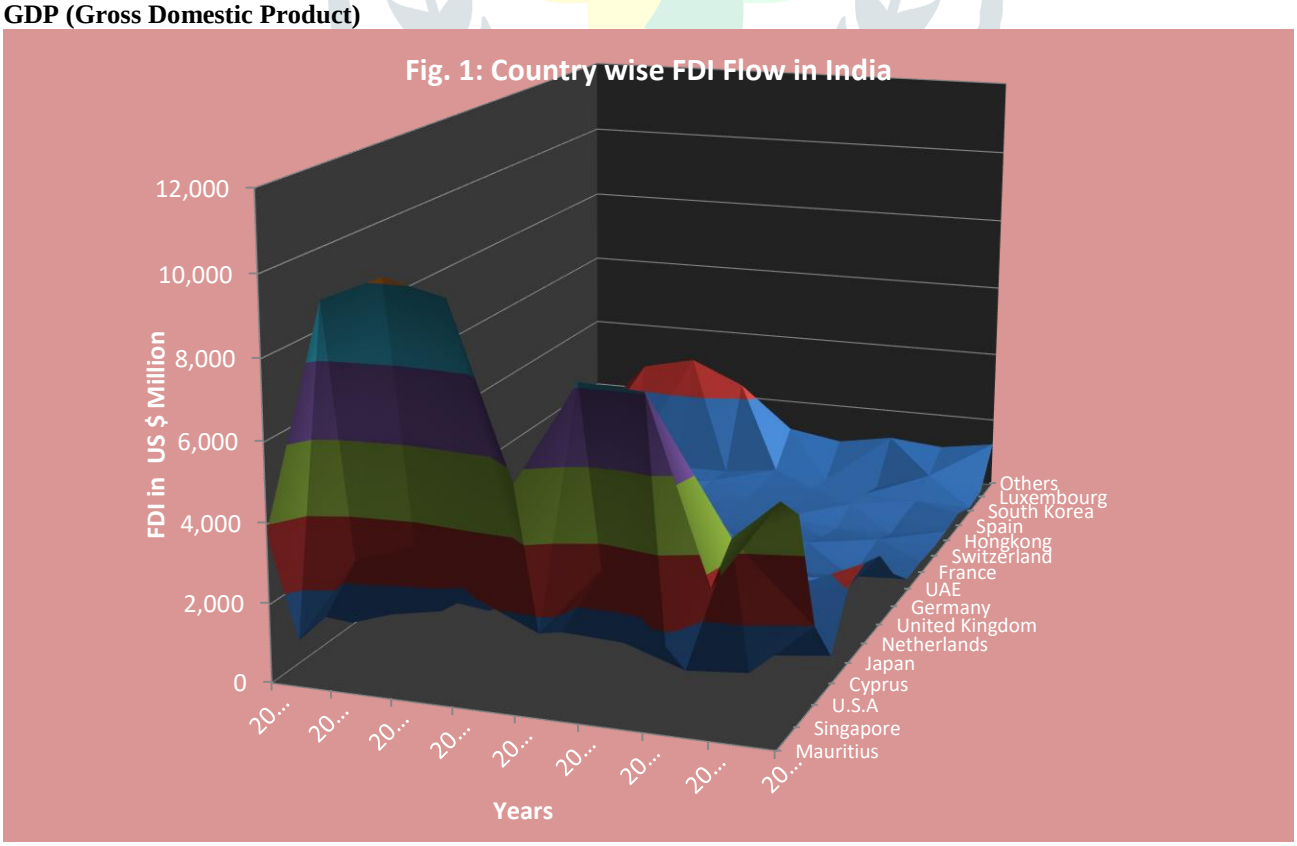
Key Words: GDP, FDI, industrial policy.

FDI Defined

As defined by IMF, in case of direct investment it says that "*It is the category of international investment that reflects the objective of a resident entity in one economy obtaining a lasting interest in company, resident in another economy.* **RBI (2003)** *The lasting interest implies the existence of a long term relationship between the direct investor and the company and a significant degree of influence by the investor on the management of the company."(Where the resident entity is the direct investor and the company is the direct investment company).* A direct investment company is defined in the IMF BPM5 (Balance of Payments manual 5) as an incorporated or unincorporated company in which a direct investor, who is a resident in another country, owns 10 percent or more of the ordinary shares or voting power (for an incorporated company) or the equivalent (for an unincorporated company) **IMF, (1993)**.

GDP (Gross Domestic Product)

Fig. 1: Country wise FDI Flow in India



Gross Domestic Product represents the productive capacity of the economy it reflects both the size of the domestic market and the purchasing power of the citizens. If the relationship between FDI and GDP is positive then it implies that FDI flows in to an economy with a sufficiently large host country market to accommodate the increase in local supply. The said relationship is not always positive, but if it is, then the host country is liable to get a higher growth rate and become competitive in the international market.

Better infrastructure and large size of the market are the basic requirements of FDI in the host country, this helps in making the effective use of the available resources. If the size of the market is large then it reduces the cost incurred on production and supply on the other hand managing the economy of scale becomes easier. As the market size of a country, measured in terms of GDP grows, it is expected that inflow of FDI will also increase as more goods and services can be produced. Investors are keen to invest in a growing economy where they can benefit from the economies of scale and efficient utilization of resources from the large market size. This study converted GDP at factor cost from 1991-2010using the constant prices of base year 2004-05, to provide uniformity of the GDP data and used as one of the explanatory variable of determinants of FDI inflows in to India.

Objective of the Study

a. To identify the factors which affect the flow the FDI in India.

To understand the important factors related to the infrastructural development of the country, which are liable to attract FDI in India. Here the researcher will also analyze the influence of FDI inflows.

b. To evaluate the impact of FDI on the growth of Indian economy.

As it is evident from the different sources that the FDI is one of the pillars on which the development of Indian economy is based, hence the researcher will try to analyze the impact of FDI on the growth of the Indian economy.

Hypothesis

Hypothesis I

H_1 – There has been significant impact of FDI flow on Indian economy in terms of GDP.

H_0- There has been no significant impact of FDI flow on Indian economy in terms of GDP.

Research Methodology

The current study was bifurcated into two parts; the first part dealt with the trends in FDI inflows, determinants of FDI inflows and the causal nexus between FDI and economic growth for the period 1990-91 to 2015-16; and the second part dealt with the impact of FDI on future growth of Indian economy.

The secondary data for analyzing the trends in FDI, determinants of FDI and the causal nexus between FDI and economic growth was obtained from various issues of SIA Newsletters and Factsheet on FDI, and the Data Tables published by the Planning Commission, Government of India were also used.

Both statistical and econometric analysis was carried out with the data to accomplish the objective for the study. A multiple regression equation is generated and the results were tested on the said parameters, other than this Granger Causality test is applied to test the hypothesis.

Determinants of FDI Inflow

The said determinants were also identified using a multiple regression analysis. This analysis will assist in evaluating the policies relating to each one of these determinants so as to make the overall environment favorable for increased inflows of FDI in to India In this context, the following determinants were selected; GDP (G), Exports (E), Imports (I).

With the above selected variables, the multiple regression equation fitted is given below:

$$\mathbf{FDI = a + b_1G + b_2E + b_3I} \text{ .....eq 1}$$

In the above equation 'a' is the intercept and b_1, b_2, ...b_4 are the coefficient of the respective variable.

But before coming to the analysis results of the above model, researcher would like to represent a more wide parametric valuation of the FDI data; this will include a more number of macro environment components, than given in the above equation.

Table 1: Determinants of FDI

Year	Inflow of FDI	GDP	Imports	Exports
2000-01	104,411	22223150.0	21523.7	15956.1
2001-02	160,711	23190630.0	23087.3	20357.1
2002-03	161,344	24537870.0	24520.0	20901.8
2003-04	95,639	25479280.0	29720.6	25513.7
2004-05	147,814	27649590.0	35910.8	29336.7
2005-06	192,707	29714640.0	50106.5	37534.0
2006-07	503,573	32542160.0	66040.9	45641.8
2007-08	654,950	35660110.0	84050.6	57177.9
2008-09	1,397,255	38989580.0	101231.2	65586.4
2009-10	1,309,799	41625090.0	137443.6	84075.5
2010-11	960,149	44937430.0	136373.6	84553.4
2011-12	1,283,877	45463699.1	140942.5	88505.7
2012-13	1,411,669	47790231.8	153675.2	95883.4
2013-14	1,674,733	50116764.5	172238.2	105573
2014-15	1,832,619	52443297.3	185557.8	113081

Source: RBI, Data Base on Indian Economy, Reserve Bank of India, various issues.

Regression Analysis

Table 2:Regression Analysis

Descriptive Statistics			
	Mean	Std. Deviation	N
FDI	644915.23	550565.292	13
GDP	33831035.46	9152074.294	13
EXR	45.23	2.084	13
IM	77278.96	51061.735	13
EXP	51617.19	29281.466	13

Table 3: Correlations						
		FDI	GDP	EXR	IM	EXP
Pearson Correlation	FDI	1.000	.932	-.413	.944	.940
	GDP	.932	1.000	-.145	.992	.996
	EXR	-.413	-.145	1.000	-.185	-.168
	IM	.944	.992	-.185	1.000	.999
	EXP	.940	.996	-.168	.999	1.000
Sig. (1-tailed)	FDI	.	.000	.080	.000	.000
	GDP	.000	.	.318	.000	.000
	EXR	.080	.318	.	.273	.291
	IM	.000	.000	.273	.	.000
	EXP	.000	.000	.291	.000	.
N	FDI	16	16	16	16	16
	GDP	16	16	16	16	16
	EXR	16	16	16	16	16
	IM	16	16	16	16	16
	EXP	16	16	16	16	16

- There is a positive (+) 0.932 coefficient of correlation (r) between GDP and FDI inflow in India. This implies that the two variables move in the same direction, so that with an increase in the values of GDP, the values of FDI inflow increases in India and vice versa.
- There is a positive (+) 0.944 coefficient of correlation (r) between IM and FDI inflow in India. This implies that the two variables move in the same direction, so that with an increase in the values of IMP, the values of FDI inflow increases in India and vice versa.
- There is a positive (+) 0.940 coefficient of correlation (r) between EXP and FDI inflow in India. This implies that the two variables move in the same direction, so that with an increase in the values of EXP, the values of FDI inflow increases in India and vice versa.
- There is a negative coefficient of correlation (r) −.413 between Exchange Rate(EXR) and FDI inflow in India. This implies that the two variables are not significantly correlated.

Granger Causality Test

Two econometric models were used i.e. Augmented Dicky-Fuller (ADF) test for testing stationary of data and Granger Causality test were used to test the bi-directional causal relationship between FDI and GDP. The logarithm value of GDP and FDI were used for analysis for make normality of data.

Augmented Dicky-Fuller test (ADF test)-

This particular test the integration of the variables by considering the growth of GDP and the growth of FDI in their log levels and log differenced forms.

$$y_t = \alpha + x_t\beta + \varepsilon_t$$

If the probability value is less than 5% level of 1 t-2significance, the null hypothesis can be rejected which depicts that the series is stationary and vice versa and The hypothesis of the study is described as follows:

Null hypothesis: A Unit Root (Non-Stationary)

Alternative hypothesis: No Unit Root (Stationary)

Granger Causality test-

As a matter of fact the level of causality of the two related economic variable is being tested by the use of Granger causality test **(Granger 1969)**. In any of the bi-variate analysis the granger test initially gives "if a variable x Granger causes variable y", this refers to the condition that the MSE (*Mean Square Error*) related to the forecast of 'y' variable is based on the previous values of the two variable and the same is less than the forecast and uses only the past values of y.

The following equations (1) and (2) will be used to perform the Granger Causality Test:

$$Y_t = \alpha + \sum_{i-1}^{p} \beta_i Y_{t-i} + \sum_{i=1}^{p} \delta_i X_{t-i} + \eta_t \qquad (1)$$

$$X_t = \varphi + \sum_{i-1}^{p} \gamma_i Y_{t-i} + \sum_{i=1}^{p} \lambda_i X_{t-i} + \mu_t \qquad (2)$$

Where Y_t and X_t represent the time series of GDP and FDI respectively, α and φ are the related intercepts, η_t and μ_t are white noise error terms, and p is the maximum lag length used in each time series.

The decision criterion is that accept null hypothesis (no causal relationship between variables) if p – value is greater than the significance level, otherwise we reject the null hypothesis and accept the alternative hypothesis (there exist causal relationship between variables) if p – value is less than significance level and the hypothesis is:

Null hypothesis: GDP doesn't granger cause FDI of Indian economy and vice-versa.

This section describes the causal relationship between GDP and FDI of India by using Granger causality mechanism.

Firstly we conducted Augmented Dickey-Fuller (ADF) test for testing the stationary of log value of FDI and GDP and found that it has unit root meaning that FDI inflow and GDP were not stationary. FDI and GDP are accepted which meaning that it has unit root and after first differencing the variables, null hypothesis are rejected which indicates FDI inflow and GDP of India are stationary. So for further analysis purpose, we are using first difference of logarithm of GDP and FDI inflow to test the bi-directional relationship between each other. Thus the two variables are integrated of order one, I(1).

Table 4: ADP Test for GDP and FDI

Variables	Level/1st Diff.	ADF Test Statistics			
		With Intercept		With Trend and Intercept	
		't' Stat.	'P' value	't' Stat.	'P' value
'L' GDP	Level	−0.543761	0.6249	−1.521462	0.6512
	1st Difference	−2.771234	0.0167	−3.315612	0.0362
'L' FDI	Level	−2.562145	0.0254	−2.332476	0.1957
	1st Difference	−5.612391	0.0871	−2.414672	0.0157

Table 5: Granger Causality Test

Null Hypothesis	Prob. Value	Lag	Decision	Outcome
DLFDI does not Granger Cause DLGDP	.00129	1	Reject Null	GDP Causes FDI
DLGDP does not Granger Cause DLFDI	.4210	1	Accept Null	FDI doesn't causes GDP
DLGDP does not Granger Cause DLFDI	.00096	4	Reject Null	GDP causes GDP
DLFDI does not Granger Cause DLGDP	.60101	4	Accept Null	FDI doesn't causes GDP

Interpretation

Variables in regression are not equal to zero. So "*GDP does not Granger causes FDI*", which was the null hypothesis, was rejected with lag 1 and 4were rejected which indicates GDP causes FDI for India and "*FDI does not Granger causes GDP*" were not rejected for the sample period which indicates that FDI doesn't cause GDP in of context Indian economy. Here results are significant up to 4 lag as shown in table which indicates that at both lag, result are same as GDP causes FDI. Thus, There is unidirectional causality between both variable as economic growth of India are potential factor that causes foreign direct investment for the capital formation, advancing know how, corporate governance practices etc as found by Chakraborty & Mukherjee (2012). Therefore, there isn't a strong evidence of a bi-directional causality between FDI inflows and GDP.

Conclusion

This present study expands the point that, by all means FDI has an important role to play in economic growth of the country. In order to achieve the sustainable growth of the country and economy as well FDI is essential. This can be done by directing the FDI towards the improvement in export facilities, creation of jobs, and expansion of existing manufacturing industries. The inflow of FDI in service sectors and construction and development sector, from April, 2000 to June, 2015 attained substantial sustained economic growth and development through creation of jobs in India. Computer, Software & Hardware and Drugs & Pharmaceuticals sector were the other sectors to which attention was shown by Foreign Direct Investors (FDI). The other sectors in Indian economy the Foreign Direct Investors interest was, in fact has been quite poor.

As a matter of fact There should be means and ways to improve the utilization of the funds gained by the way of FDI, this might be done by investing the same in the international projects, realization of the FDI amounts as early as possible and that too in terms of real time realization. More thrust should be give on the development of the bureaucracy i.e. it should become more responsive. Steps might be taken to curb corruption from the lowest level of the economy.

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