



## IMPACT OF FOREIGN DIRECT INVESTMENT (FDI) ON MANUFACTURING INDUSTRY IN INDIA: EMPIRICAL ANALYSIS

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### ABSTRACT

*This paper aims to investigate the impact of Foreign Direct Investment (FDI) on the economic growth of India for the period 2007 to 2017 quarterly data. It evaluated the Gross Domestic Product (GDP) performance and the trends of FDI and Gross Fix Capital Formation (GFCF) in India. Methodology/sample: to demonstrate the relationship between Indian Gross Domestic Product (GDP) and Foreign Direct Investment (FDI) and Gross Fix Capital Formation (GFCF) Multiple-Regression-Model has been applied alongside with various econometrics techniques such as Unit-Root Test, Granger-Causality Test and Ordinary Least Square (OLS). GDP in this model is used as dependent variable whereas FDI and GFCF are measured as independent variables. Findings: According to the results, Unit Root Test indicated that all the variables included in the model were not stationary at level except FDI, whereas GDP and GFCF are stationary at first difference. The model is overall significant with the positive and significant relationship of GDP, FDI and GFCF. Result also indicate a good fit for the model with  $R^2=85\%$ . The Granger Causality Test revealed that there was no causality between the variables since all p-value obtained are more than 5%. Practical implications: Based on the empirical result of this paper, policy recommendation*

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*proposed that for India to generate more foreign direct investment, hard work should be made at solving problems of government involvement in business; relative closed economy; corruption; weak public institutions; and poor external image, and political instability.*

**Keywords:** GDP; FDI; GFCF; India

## **Introduction**

India is an attractive hub for foreign investments in the manufacturing sector. Several mobile phone, luxury and automobile brands, among others, have set up or are looking to establish their manufacturing bases in the country. With impetus on developing industrial corridors and smart cities, the government plans enormous development of the nation. The corridors assist in integrating, monitoring and developing a friendly environment for the industrial development and will promote advance practices in manufacturing.

India is ranked fourth in the world in terms of manufacturing capability, according to the “2013 Global Manufacturing Competitiveness Index (GMCI)” by Deloitte Touche Tohmatsu and the US Council on Competitiveness. Though there are many studies on FDI still it needs more attention on how to attract more FDI for that it requires more studies on FDI on manufacturing sector. Over the last two decades India open its market and slowly it becomes second in the world in terms of financial attractiveness. The Prime Minister Mr. Narendra Modi has launched the ‘Make in India’ campaign to place India on the world map as a manufacturing hub and recognize Indian economy worldwide as a preferred destination for foreign direct Investment. FDI brings a huge capital, technological knowledge, employment opportunities to the host country. FDI boosts manufacturing industry by aiding setting up of various manufacturing units in different parts of India.

For any country to generate adequate employment, its manufacturing sector’s contribution to GDP has to improve in a faster rate. But this is not the case in Indian manufacturing sector because of its low contribution of 16% to GDP. Research says the manufacturing sector in India has the potential to reach USD 1 trillion by 2025 and contribute approximately 25 percent to India’s GDP. So, it is expected to generate approximately 90 million jobs by 2025. Currently India has a contribution of approximately 2.2 percent of world’s total manufacturing output, which is at par with developed economies like U.K. and France.

Foreign Direct Investment (FDI) is seemed to have a positive influence on the economic growth of the developing countries through direct and indirect ways. It increases the domestic investment, which is claimed to have crucial role on the sustainability of growth and development. As a result, many developing countries, including India, have presented munificent intensives in order to attract FDI inflow.

Foreign direct investment incentives may be in shape of low corporate and income tax rates, tax holidays, other types of tax concessions, preferential tariffs, special economic zones, investment financial subsidies, soft loan or loan guarantees, free land or land subsidies, relocation and expatriation subsidies, job training and employment subsidies, infrastructure subsidies, research and development support and derogation from regulations, usually for very large projects [1]. However, This important incentives offered by developing countries have been taken by foreign firms to fulfil their objective by increasing profits through numbers of advantage such as control over local market, low cost of labour.

Developing countries undertake some macroeconomic reforms to ensure investor-friendly environment. The positive impact of FDI inflow has been increasingly famous as a vital tool to encourage economic growth [2]. The pivotal effect of FDI inflow on economic growth encompass, an increase in aggregate productivity, an increase opportunities of employment, a greater outflow of export, and finally exchange technology advancement between investor and the country [3]. According to a number of studies such as [4] foreign direct investment can serve as a means of transfer of technology and knowledge [4].

In case of India, although the country being blessed with huge natural resources but it recorded very low proportion of global FDI inflow. As a part of sub-Saharan countries India has been relatively open to FDI. The attractive natural resource in mining, fishing and hydrocarbon sectors helped the country to acquire inflow. Even though FDI flows to West Africa declined by 5% to \$ 16.8 billion, India mining sector helped the country to obtained double inflow to \$ 1.2 [5]. India works with the International Monetary Fund (IMF), the World Bank (WB), and the international donor community to move forwards basic infrastructure projects and to update laws and regulations.

This paper aims to discover the impact of foreign direct investment (FDI) on India economic growth (GDP) for the period 2007 to 2017 quarterly data and to observe the relationship between (GDP) and Gross Fixed Capital Formation (GFCF). India economy primarily depends on agriculture and service sectors, a per capita income are low, and much

of the population lives under poverty line. Therefore policies to benefit from FDI inflow in the country are the vital objectives of the macroeconomic policy makers. India is striving to fight against effects of global panic such as unemployment rise, shortage liquidity. FDI and GFCF play a very crucial role in its future growth and development.

The FDI is preferred over FII since it is considered as the most important beneficial form of foreign investment for the economy as a whole. The direct investment augments the capacity to ensure that the capital inflows get translated into additional production. In the case of the foreign institutional investment that flows in the secondary markets affects the increase in capital availability in general and this money is considered as the hot money that comes and goes. Therefore FDI is considered as more stable than FII. On the other hand FII refers to the investor or investment fund which is registered in the country outside the one in which the investor is investing. 2

#### a) Routes of FDI

##### Automatic Route

The FDI is allowed under the automatic route without the prior approval of either the government or the Reserve Bank of India related to all activities mentioned in the consolidated FDI policy issued by the Government of India from time to time

##### Government Route

The activities that are not covered under automatic route require the approval of the government which is considered in the Foreign Investment Portfolio Board (FIPB), Department of Economic Affairs, and Ministry of Finance.

#### b) Routes of FII

Equity Investment The 100 percent investment is related to equity instrument or can be done through 70 percent (Equity Investment).

##### 100 Percent Debt

The 100 percent investment has to be made in the debt instruments only (Debt Investment).

c) Importance of FDI and FII The need of the foreign capital is important in the form of the FDI and FII for the development of the infrastructure which includes railways, sea ports, roads and warehouses. The rapid industrialization also takes place from the period 1991 which further strengthened the need of foreign capital. Many of the developing countries suffer because of the problem of the infrastructure. In other countries the interest rate is

around 1 to 3 % but in India it is around 7 to 9 % so the investors want to invest in India where they get maximum return on their investments

## **Literature Review**

In the literature review section, the researchers try to examine the trends of FDI inflows in to Indian Manufacturing sectors, though enter to the Indian market. There are hardly few studies which look into manufacturing sector. So, the researcher makes an attempt to examine the flow of FDI into manufacturing sector. In their research work the researchers go for the empirical study to collect the data in order to complete the proposed article, as they've studied & focused about the previous research experimental findings like Mohan in his research paper "FDI and Indian Economic growth factors-An Empirical Analysis-2014" reveals in his study that trade, GDP, Reserves, Exchange rate are the main determinant of FDI inflows to the country. Finally, his study observed that FDI is a significant factor influencing the economic growth in India. It also contributes to the GDP and foreign exchange reserves of the country.

**Dr. Jasbir Singh, Ms. Sumita Chadha and Dr. Anupama Sharma (2012)** focus on the role of the foreign direct investment in India: An Analytical Study. It shows that foreign investment is increasing in terms of FDI and FII and FDI has better performance which attracts maximum amount of foreign capital.

**The analytical study of trend of FDI in India has been conducted by Naveen Sood(2015).** The correlation and regression shows that FDI and FII is insignificant and on the other hand association and dependence of GDP in India is found to be statistically insignificant

**Vinay Kumar (2014)** have precipitated the trend of FDI in India and its Impact on economic growth. The Karl Pearson correlation shows that FDI and FII have weak positive correlation between them and on the other hand FDI have positive correlation with Indian GDP.

**Mohammad Iftexhar Khan and Amit Banerji(2014)** conducted the study on drivers, impact and pattern of foreign direct investment in India. The unit root test and times series analysis shows that FPI and FDI are non-stationary

**Sirisha S and Malayadri I(2015)** have investigated the study on changing trends in flow of FDI. The CAGR(Compounded Annual Growth Rate) percentage is used to show that Luxemburg has highest inflows of FDI and on the other hand communication and manufacturing sector has the highest level inflows of foreign direct investment

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**Kanta Rani and Sanjiv Kumar (2015)** analyze the dynamic interaction between foreign investment and Indian Stock Market. The Karl Pearson correlation shows that FDI have high correlation with Sensex and Nifty

### **Problem Formulation**

This paper refers to study the flow of FDI into manufacturing sector in India & its impact for manufacturing Growth in Indian Industries for enhancing the economic growth per capital as well as the domestic sector. The present study tries to assessing the determinants and impact of FDI in Indian economic factors. Thus, the present study is an endeavour to discuss the trends and patterns of FDI, and its impact of FDI on Indian economy [6].

Objectives of the study

- i. To study the trend and pattern of FDI into manufacturing sector.
- ii. To study the trends and pattern of foreign capital (FDI and FII) flow to India
- iii. To internal factors which influence the FDI inflows into manufacturing sector.
- iv. To identify the factors which influence the flow of FDI in India?
- v. To investigate empirically the role and effect of Foreign Direct Investment (FDI) on manufacturing industry and its economic growth factors and their causality using annual data of Indian Economy over the post reforms period 2007 to 2017

### **Research Methodology**

The purpose of this research paper is to examine the impact of FDI inflow on the economic growth of India (GDP) and the relationship between Gross Fix Capital Formation (GFCF) and GDP. Study covers the time period from 2007 to 2017. The quarterly data obtained form World Bank Indicator (WBI) which is considered as an authentic source of data collection. To examine the relation of India's GDP with FDI and (GFCF), the following theoretical model is used.

$$\text{GDP}=\text{F}(\text{FDI and GFCF}) \quad (1)$$

The hub intention of the paper is to study the effect of FDI on GDP of India. The trend of foreign Direct Investment inflows is also observed with relevance to GDP growth and

GFCF. To examine the relation of India's GDP with FDI and GFCF, the following multiple regression model is used,

$$GDP = \alpha + \beta_1 FDI + \beta_2 GFCF + \mu \quad (2)$$

Where,

FDI = Foreign Direct Investment

GDP = Gross Domestic Product

GFCF = Gross Fix Capital Formation

Level of Significant: 5 to 10 percent

### **Method of data analysis**

In analysing the dataset the following tests are expected to be employed: Unit root test for stationary, Augmented Dickey-Fuller Test (ADF), Ordinary Least Square (OLS) method, Granger causality test was applied in order to determine the presence of the relationship among variables and its direction (Granger, 1969). The study used E-views 6 software to analyse data.

### **Empirical Results**

#### **Descriptive statistic**

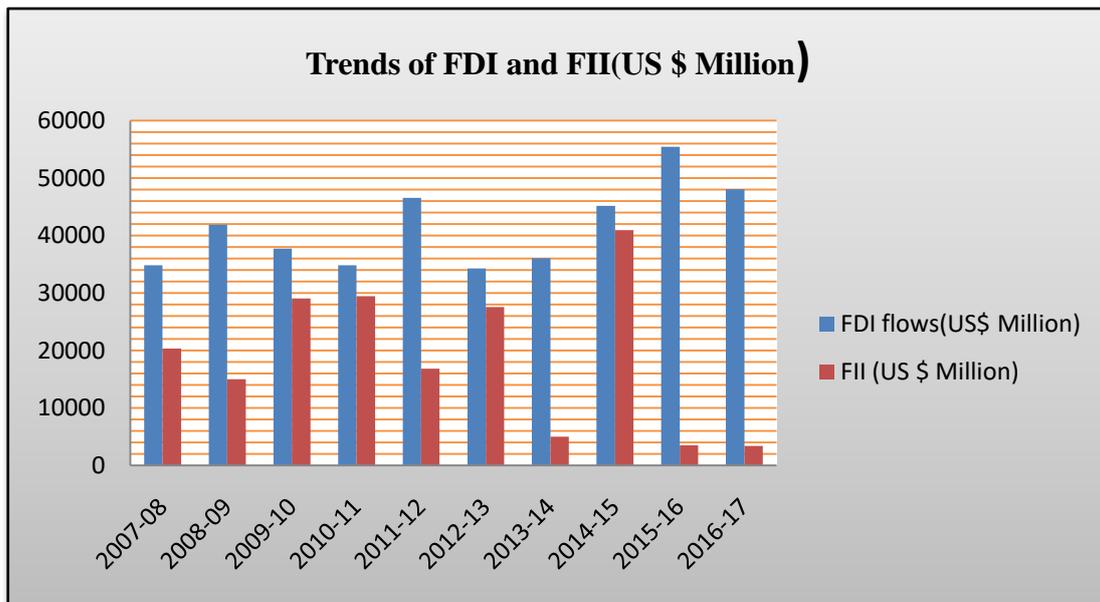
The Multiple Regression Model was run on E-Views to find out the Impact of FDI and GFCF on the Gross Domestic Product of India. In this multiple regression model, GDP is used as dependent variable whereas FDI and GFCF are defined as independent variables. To estimate the effect of FDI on GDP of India, Multiple Regression Model is applied over the period of 1976 to 1995 quarterly. Descriptive statistics of GDP, FDI and GFCF are as follows.

**Table: 1 FDI Flows between 2007 to 2017 years**

| year    | FDI flows(US\$ Million) | FII (US \$ Million) |
|---------|-------------------------|---------------------|
| 2007-08 | 34842                   | 20327               |
| 2008-09 | 41872                   | (-)15016            |
| 2009-10 | 37744                   | 29047               |
| 2010-11 | 34846                   | 29421               |
| 2011-12 | 46555                   | 16811               |
| 2012-13 | 34297                   | 27581               |
| 2013-14 | 36045                   | 5008                |
| 2014-15 | 45147                   | 40922               |
| 2015-16 | 55456                   | (-)3515             |
| 2016-17 | 48031                   | (-)3377             |
| Total   | 437671                  | 150438              |

Source: RBI Report, 2017

**Figure:1 FDI Flows between 2007 to 2017 years**



The table 1 and Graph 1 presents the amount of flow of the FDI and FII in terms of US\$ million. The flow of the FDI has shown an upward trend during the considered period but during the period 2015-2016 and 2011-2012 the flow of FDI is highest that is 55456 and 46555. The flow of FII has shown the mixed trend, during the period of 2008-09 and 2015-2016 it is negative that is (-) 3515 and (-) 15016. When the flow of the FDI and FII are compared the flow of the FII is less than flow of the FDI in India.

The **Table 2** showed a summary of the descriptive statistic for the three variables included in this study GDP, FDI, and GFCF. The table contains the mean, standard deviation, minimum and maximum for 80 observations covering the period 2007 to 2017 quarterly.

**Table 2: Descriptive Statistic**

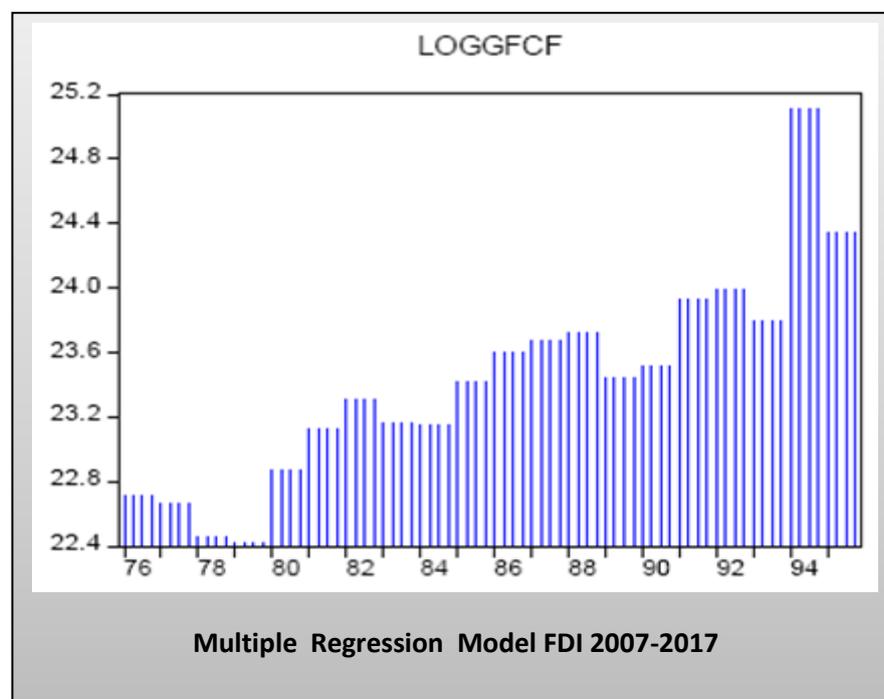
|           | <b>LOGGDP</b> | <b>LOGFDI</b> | <b>LOGGFCF</b> |
|-----------|---------------|---------------|----------------|
| Mean      | 24.80329      | 15.52075      | 23.42091       |
| Median    | 24.75002      | 15.52027      | 23.43083       |
| Maximum   | 25.93635      | 17.96236      | 25.10333       |
| Minimum   | 23.88494      | 14.12910      | 22.42348       |
| Std. Dev. | 0.660647      | 1.033912      | 0.655725       |

Source: E-Views 6.

### Measures the dependent variable (GDP)

In this study we used GDP as a dependent indicator in the Multiple Regression Model. Quarterly data covers the period from 1976-1995, and it is taken from WBI. GDP measured in Million US\$. It is used as dependent variable. The result from descriptive statistic indicates that India real GDP recorded 24.8 Million US\$. The minimum value of real GDP was 23.8 Million US\$, while the maximum value was 25.9 Million US\$ (**Figure 2**).

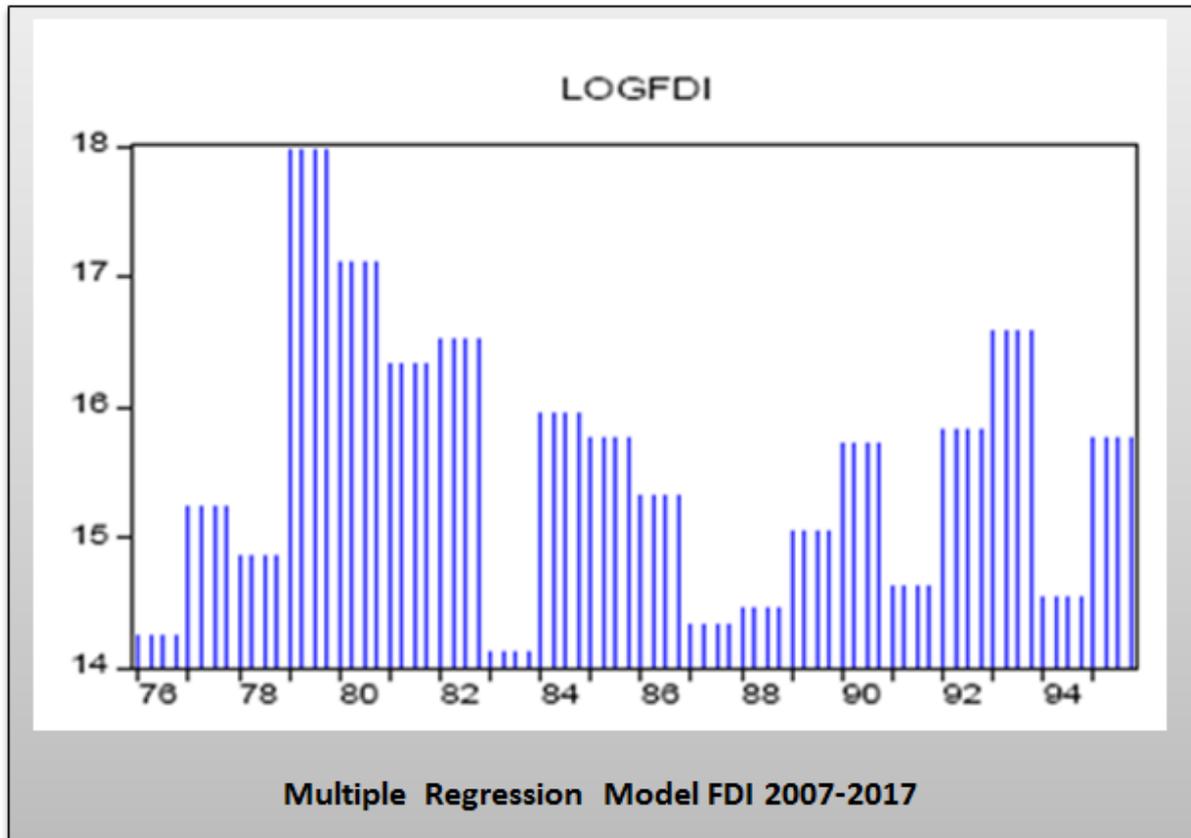
**Figure: 2 India's LOGGDP (2007-2017)**



### Measures the Independent Variable (FDI)

We used FDI as an independent growth in Multiple Regression Model. Quarterly data cover the period from 1976\_1995 obtained from WBI. FDI measured in Millions of US\$. The finding showed that India real FDI inflow recorded 15.52 Millions US\$. The Minimum value was 14.12 Million US\$, while Maximum value recorded 17.96 Million US\$ (Figure 3).

**Figure:3 Multiple Regression Model FDI 2007-2017**



Source: Researcher Design

### Augmented Dickey-Fuller (ADF) unit root test

The unit root test has been applied to check whether the variables are stationary or not. The test carried out through Augmented Ducky Fuller (ADF) method as suggested by Engel and Granger (1987). The (ADF) analysis carried at both level and difference. The null hypothesis in ADF test is that there is presence of unit root. The result of (ADF) test is indicating in the following

**Table 3. Augmented Dickey-Fullers (ADF)**

| <b>Variables</b> | <b>Levels Data</b> | <b>First Differences</b> | <b>Status</b> |
|------------------|--------------------|--------------------------|---------------|
| LOGGDP           | 0.452219           | -2.819407                | I(1)          |
| LOGFDI           | -3.056340          | -6.627344                | I(0)          |
| LOGGFCF          | -1.209058          | -6.592187                | I(1)          |

Source: Researcher Calculations

1% Critical Value -3.525619

5% Critical Value -2.902953

10% Critical Value -2.588902

### **Interpretation of unit root test result**

The result of Unit Root Test indicated that all the variables included in the model were not stationary at level except FDI. That can be seen through comparing the critical value with the ADF value, when the critical value is greater that ADF value meaning that the variable is not stationary. However, when the critical value of the variables is less than the ADF value the variable is stationary.

### **The granger causality test**

To explain the granger causality test, we often asked questions such as “is GDP that causes FDI or is FDI that causes GDP?” We test for the absence of Granger causality by estimating the following VAR model:

$$GDP = \sum \alpha_j FDI_{t-3} + \sum \beta_j GDP_{t-3} + U1_t \quad (3)$$

$$FDI = \sum \lambda FDI_{t-3} + \sum \delta_i GDP_{t-3} + U2_t \quad (4)$$

$\alpha$ ,  $\beta$ ,  $\lambda$  and  $\delta$  are parameters to be estimated, and  $U1_t$  and  $U2_t$  are the error term.

Granger causality test was applied in order to determine the presence of the relationship among variables and its direction (Granger, 1969) is carried out using E-views 6. The findings of Granger Causality Test between FDI and GDP indicated in the following

**Table 4: Granger Causality Test**

| <b>Null Hypothesis:</b>              | <b>Obs</b> | <b>F-Statistic</b> | <b>Prob.</b> |
|--------------------------------------|------------|--------------------|--------------|
| LOGFDI does not Granger Cause LOGGDP | 78         | 0.11689            | 0.8898       |
| LOGGDP does not Granger Cause LOGFDI |            | 0.35370            | 0.7033       |

Source: Researcher Calculations

The result in **Table 4** shows that we cannot reject the null hypothesis, which means that GDP does not Grange cause FDI and vice-versa. Therefore, there was no causality between FDI and GDP of India since all P-value is greater than 5%.

### **Ordinary Least Square (OLS)**

OLS method has applied in this study. The summary of the test indicated that the model of the study is well fitted. All the variables in the model are statistically significant. The coefficient of the constant variable recorded 3.84 which indicate a positive relationship between the constant parameter and the Gross Domestic Product. Although, the constant parameter has no significant effect on the model rather than reflecting the value of GDP when other independent variables are help constant. The summary of OLS result showed in the following

**Table: 4 Summary of OLS Results GDP, FDI and GFCF**

| <b>Country</b> | <b>Variables</b> | <b>Coefficients</b> | <b>P-value</b> | <b>F-statistic</b> | <b>R-square</b> |
|----------------|------------------|---------------------|----------------|--------------------|-----------------|
| India          | FDI              | 0.085614            | 0.0040         | 226.8974           | 0.854935        |
|                | GFCF             | 0.960185            | 0.0000         |                    |                 |

Source: Researcher Calculations

### **Interpretation of OLS result**

The empirical results are presented by the above table. The slope coefficients of the both inputs (FDI) and (GFCF) in Multiple Regression Analyses have positive impact on GDP. If one percent change in FDI occurs, it will bring about 0.085% change in GDP and 1 percent change in GFCF will bring 0.96% change in GDP by holding other variables constant. Estimates (FDI and GFCF) are highly significant. As the value of F is too high i.e., 226.8974

and the value of P is so small i.e., 0.000 we can deduce that model is overall very much significant and the results are not by chance. The r-square of this model is 0.85 that means only 15% variation in the model is unexplained by FDI and GFCF whereas remaining variation (85%) is explained by FDI and GDP.

### **Conclusion and Recommendation**

The main objective of this study is to investigate the impact of Foreign Direct Investment (FDI) on the economic growth of India for the period 2007-2017. In an economy, direct investment is suggestive of a positive trend of investment which ultimately translates in increase in GDP and economic growth of the country. This can also be proved from the findings of this research that increasing trend of FDI also increases the GDP of the country. The Granger Causality test indicates no causality between GDP and FDI in the period under investigation. The significance of FDI in generating the target growth rate in India may be restricted by the level of infrastructure, environmental business, Economic reform, and political stability. Results of this study suggested some policy implications. The government in order to gain confidence of investors should focus on the following areas:

#### **Improvement of infrastructure**

In any economy infrastructure plays a very crucial role to develop and encourage the growth of the state. These states that have a strong physical infrastructure are considered as the best nations for attracting FDI. Thus, India government should give full consideration to improve and develop the infrastructure across the country.

#### **Create friendly environmental business**

Pleasant business environment is among the properties to attract FDI. Indian in order to benefit from FDI should focus on improving human capital, and technology jobs. World Bank report 2013 released that India doing business index is 164 out of 185 which is not conducive to doing business. These factors are including, lack of world class ports, airports, road. Other problems are that of norms of registering property, protection of investors, excessive bureaucracy, lack of rationale tax structure, competition rules and time taken in enforcing contracts.

## **Economics reform**

Economic reformation refers to the transformation of property from less productive to more productive sectors of the economy. Real growth of production is directly correlated with the effective process of economy restructuring from the less productive to the more productive sectors of the economy. FDI may be involved in the transfer of resources from less productive to more productive sectors of the economy.

## **Ensuring political stability**

The successful and energetic market economy requires political stability for its best achievable outcomes. Political instability generates economic insecurity because of turn down in investment. India such as other African country is suffered from the political conflict. From 1976 to 2008 India has witnessed series of military coups which were enough to drag down the democratic process and create severe polarization inside political classes. This political instability has reduced the confidence of investors in the country.

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