

# An Analysis of FDI Flows in Automobile, Chemical and Computer and Software Sectors in India Using Linear Curve Fit Methodology

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**Abstract-** This paper attempts to analyze Foreign Direct Investment flows in three selected sectors such as Automobile, Chemical and Computer and Software industry. An analytical research is attempted to investigate the Minimum, Maximum, Mean and Standard deviation of FDI flows in the years 2010 -2015. A linear fit has also been done for the FDI flows. Suitable suggestions are given based on flows in selected sectors.

**Indexed Terms-** Foreign Direct Investment, Linear Fit, Automobile, Chemical, Computer and Software Industry.

## I. INTRODUCTION

A resident of one country who has interest in business of another country, then the investment is known as foreign direct investment. When the investment is for a longer period of time, there is a long-term relationship between investor and company, and the investor can influence the management of that company to certain degree. Foreign Portfolio Investment includes a variety of instruments which are traded in organized and other financial markets: equities, bonds, and money market instruments. The IMF includes secondary instruments or derivatives, such as options, in the category of FPI.

Reports on capital flows in the aftermath of the Asian financial crisis show that FDI flows are the more resilient as compared with bank lending and portfolio investment. FDI investments are less volatile than portfolio investments. Portfolio investments are mediated through financial markets and are highly sensitive in the direction of investment environment, which may come from factors internal or external to the recipient economies. FPI aims at short term

benefits while FDI imparts long lasting interest in the country. It offers easier escape routes compared to FDI, where an investor can easily withdraw from a foreign portfolio when targets are realized or when there's an unexpected occurrence affecting the economic standing of that country which may adversely affect investment from foreign companies. Foreigners prefer direct investment to other forms of external finance because it is the source of non-debt creating, non-volatile and their returns depending on the performance of these projects financed by the investors. FDI also facilitates spreading the skills and worldwide trade, knowledge and technology across various countries. It is described as a source of economic development, modernization and employment generation, whereby the overall benefit triggers technology spill overs, assists human capital formation, contributes to international trade integration and particularly exports. It helps to create a more competitive business environment, enhances enterprise development, increase productivity and effective use of resources.

## II. OBJECTIVES OF THE STUDY

- To examine the sector wise composition of FDI in Automobile, Chemical and Computer and Software sectors in India.
- To conduct a linear curve fit analysis of FDI flows in Automobile, Chemical and Computer and Software sectors in India.
- To give suggestions to improve the FDI flows in Automobile, Chemical and Computer and Software sectors in India.

III. RESEARCH DESIGN

The design adopted for the study is Analytical Research Design, as the study is concerned with analysis of FDI in India during the particular period.

IV. PERIOD OF STUDY

The study analyzed 10 years data from 2005-2015 in India using the FDI Fact Sheet.

1.1 FDI INFLOWS IN AUTOMOBILE INDUSTRY

Table No: 1.1 - The Table showing the Mean and Standard Deviation of FDI Inflows in Automobile Industry

(US\$ mn)

Industry	N	Minimum	Maximum	Mean	Std. Deviation
Automobile Industry	10	983	15794	5917.10	4382.151

The above table shows the foreign direct investment inflow from Automobile industry. The mean and standard deviation used to measure the ten years inflow foreign direct investment in India and year wise FDI is varying from average value. Thus, the calculated mean value is 5917.10 and the value of standard deviation is 4382.151 Hence the average foreign direct investment shows a low standard deviation.

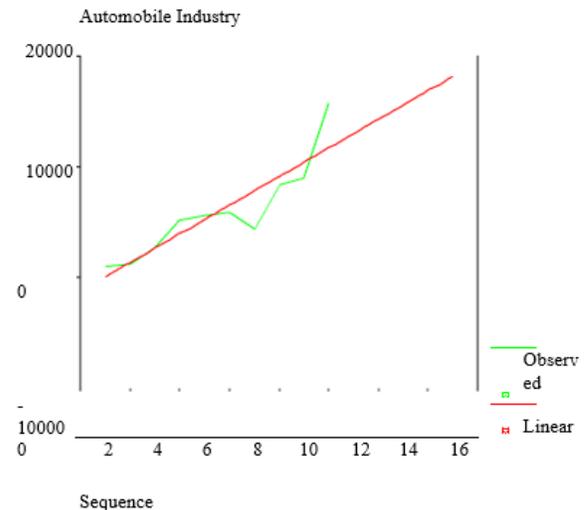
Table No: 1.2 -The Table showing the Curve Fit-Linear of FDI Inflows in Automobile Industry

Dependent	Methodology	R sq	D.F	F value	Sign p	B0	B1
Automobile Industry	Linear	80.2	8	32.3	0	-1209.7	1295.79

H<sub>0</sub>: There is no significant difference between time and FDI inflows.

H<sub>1</sub>: There is significant difference between time and FDI inflows.

The above table shows the values for the linear curve fit of FDI Inflows from Automobile industry, for the past ten years in between 2005 to 2015, since the calculated P Value= .000 is less than significant value of .05, the Null hypothesis is rejected. There is significant difference between period of FDI and FDI inflows in India from Automobile industry.



1.1 Chart showing the Curve Fit- Linear of FDI Inflows in Automobile Industry

1.2 FDI INFLOWS IN CHEMICAL INDUSTRY

Table No: 1.3 - The Table showing the Mean and Standard Deviation of FDI Inflows in Chemical Industry

(US\$ mn)

Industry	N	Minimum	Maximum	Mean	Std. Deviation
Chemical Industry	10	679	18422	4704.80	5662.703

The above table shows the foreign direct investment inflow from Chemical industry. The mean and standard deviation used to measure the ten years inflow foreign direct investment in India and year wise FDI is varying from average value. Thus, the calculated mean value is 4704.80 and the value of standard deviation is 5662.703. Hence the average foreign direct investment shows a high standard deviation.

Table No: 1.4 – The Table showing the Curve Fit-Linear of FDI Inflows in Chemical Industry

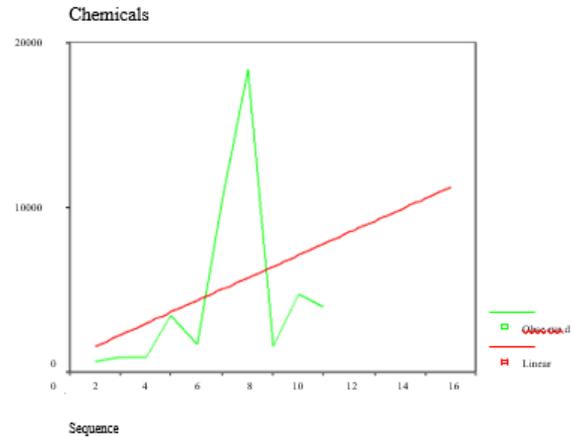
Dependent	Methodology	Rsq	D.F	F value	Sig P	B0	B1
Chemical Industry	Linear	.136	8	1.26	.2947	905.86	690.715

H<sub>0</sub>: There is no significant difference between period of time and FDI inflows.

H<sub>1</sub>: There is significant difference between period of time and FDI inflows.

The above table shows the values for the linear curve fit of FDI Inflows from Chemical industry, for the past ten years in between 2005 to 2015. Since the calculated P Value= .294 is greater than significant

value of .05, the Null hypothesis is accepted. There is no significant difference between period of FDI and FDI inflows in India from Chemical industry.



1.2 Chart showing the Curve Fit- Linear of FDI Inflows in Chemical Industry

1.3 FDI INFLOWS IN COMPUTER SOFTWARE INDUSTRY

Table No: 1.5 - The Table showing the Mean and Standard Deviation of FDI Inflows in Computer Software Industry

(US\$ mn)

Industry	N	Minimum	Maximum	Mean	Std. Deviation
Computer Software Industry	10	489	13504	5996.80	4050.532

The above table shows the foreign direct investment inflow from Computer Software industry. The mean and standard deviation used to measure the ten years inflow foreign direct investment in India and year wise FDI is varying from average value. Thus, the calculated mean value is 5996.80 and the value of standard deviation is 4050.532. Hence the average foreign direct investment shows a low standard deviation.

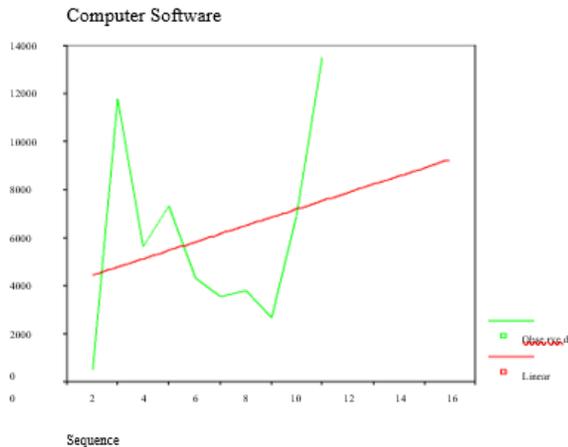
Table No: 1.6 - The Table showing the Curve Fit-Linear of FDI Inflows in Computer Software Industry

Dependent	Methodology	Rsq	D.F	F value	Sig P	B0	B1
Computer Software Industry	Linear	.066	8	.57	.4747	4106.23	343.73

H<sub>0</sub>: There is no significant difference between time and FDI inflows.

H<sub>1</sub>: There is significant difference between time and FDI inflows.

The above table shows the values for the linear curve fit of FDI Inflows from Computer Software, for the past ten years in between 2005 to 2015. Since the calculated P Value= .474 is greater than significant value of .05, the Null hypothesis is accepted. There is no significant difference between period of FDI and FDI inflows in India from Computer Software industry.



1.3 Chart showing The Curve Fit- Linear of FDI Inflows in Computer Software Industry

V. FINDINGS

1. The mean value of Foreign Direct Investment from Automobile Industry during the period 2005 to 2015 is 5917.10 and the standard deviation is 4382.151 which is lower than the mean.
2. The mean value of Foreign Direct Investment from Chemical Industry during the period 2005 to 2015 is 4704.80 and the standard deviation is 5662.703 which is higher than the mean.
3. The mean value of Foreign Direct Investment from Computer Software Industry during the period 2005 to 2015 is 5996.80 and the standard deviation is 4050.532 which is lower than the mean.
4. The linear curve fit of FDI Inflows from Automobile industry, for the past ten years in between 2005 to 2015. Since the calculated P Value=.000 is lesser than significant value of .05.
5. The linear curve fit of FDI Inflows from Chemical industry, for the past ten years in between 2005 to 2015. Since the calculated P Value= .294 is greater than significant value of .05.
6. The linear curve fit of FDI Inflows from Computer Software industry, for the past ten years in between 2005 to 2015. Since the calculated P Value= .474 is greater than significant value of .05

VI. SUGGESTIONS

1. The Curve Fit Linear results of FDI inflow in Automobile Industry shows low significant value. Hence, the Automobile industry has to attract more FDI to stabilize its business in global market and also the government has to formulate a favorable policy to attract foreign investors to invest in the Indian Automobile industry.
2. The Curve Fit Linear results of FDI inflow in Chemical and Computer Software Industry shows high significant value. Hence, Chemical and Computer Software industry has to make remarkable changes to sustain their share in the global market.

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