What Drives FDI & FPI for Nurturing Indian Economy?: An Analysis

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ABSTRACT

India decided on globalization and opened its gates for FDI earlier and FPI in the '90s but the dawn of the new century brought as many troubles to as many economies that economists thought it unwise to open the flood gates. But many countries that were in crises went into the quicksand due to their so called non-selectivity of FDI over FPI. A lot of reasons have been attributed to the two crises that rocked the world economies and eclipsed major stock exchanges. However, the presence of substantial argument in favor of FDI had made it an interesting area of research. There have been studies on the dependence of FDI on foreign reserves, gross domestic product (GDP), profitability index (PI), market indices, inflation rates (WPI) etc. However, none of the researchers have probed the presence of FPI over the FDI and its impact. The present study shall go into the relationship of the FPI and FDI with macroeconomic factors (inflation, forex reserve, exchange rate, balance of payment, Gross Domestic Product etc.) thereby comparing the two relationships over a period of time. It shall enable understanding the validity of the claim by some thinkers on the subject.

Keywords: FDI, FPI, BOP, CPI, GDP$_{fc}$, FOREX.

1.   Introduction

Foreign Direct Investment (FDI) is not merely plotting of funds by any multinational company (MNC) in a country other than that of its operations. It derives its definition from the forces which create an urge to invest money abroad. Generally, when domestic country ceases to generate income beyond a particular level, the owner gears up to expand into other international markets. The theoretical reason behind such a movement as given by eminent economists lies within difference of costs of production and thus price level. Technically, FDI may occur to re-invest profit, to beat competition, to technologically upgrade oneself or to take advantage of economies of scale.

Outflow of FDI may be high when: favorable investment conditions are prevalent, exchange rate is high, trade balance is positive. Inflow of FDI may happen due to: large GDP & market potential, advanced know-how, skilled workforce & low labor cost, low taxation, low environmental protection, high tariff protection, favorable laws & public incentives. In macroeconomic terms, net inflow of FDI often occurs when country has a trade deficit.

FDI's probable impact could be: change in BOP because of increase in official reserves of foreign currency, can re-evaluate currency exchange rate, productivity, innovation, competitors, political variable-prompting a fast development of economy.

FDI may also be affected by currency fluctuations, monetary policy, trade cycle (boom/recession), expectations about economy, changes in business regulations, taxes, wages, and incentives.

The post liberalization era since 1991 brought hope to Indian economy for growth and revolution. The reforms initiated during late 20th century related to deregulated interest rates, reduction in import tariffs, reduction of taxes and opening gates for foreign direct investment by individuals as well as by institutions. The system reverted with a high economic growth and thus positively signaled pool of opportunities in India for foreign nationals. This phenomenon continued to have a stronger impact during the start-up stage. However, the

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same set of reforms could not create magic for too long as the Gross Domestic Product had not been responsive as expected by the Government of India. China has been growing at a faster pace of 10% as compared to India which is hardly touching 8% (ET Aug, 2016). Inflation has been on the rise, fiscal deficit has been uncontrollable and balance of payments (BOP) has not been favorable. The foremost reason may be the issues which are sensitive and still need attention like political issues, reduced agricultural subsidies, labor laws complexity etc.

The question now arises that is India as a country still an attraction for foreign investors. There may not be a direct answer to this debate but certainly the growing interest of individuals and institutions in a developing nation like ours reflects optimistic signals. Many industries have been inviting overseas investment like retail, information technology, electronics, media, financial services etc. Now, the Government has flooded opportunities in Airlines, arms and ammunitions too which were earlier restricted for FDI (Foreign Direct Investment) and FPI (Foreign Portfolio Investment). It may be expected that this scenario continues to apprehend progressive effect for currency, reserves, BOP etc.

There may be an association of FDI and FPI with the macro economic variables like BOP, GDP, inflation, currency exchange rate etc. The present study is an attempt to go into this relationship. It shall also explain areas which require attention to promote welfare and well-being of the Indian economy.

The rest of the paper has been organized into further four parts. *Section 2* discusses the literary work done by eminent scholars in the field of FDI and FPI. *Section 3* narrates the research methodology. *Section 4* elucidates empirical findings and analysis. *Section 5* shall conclude the paper.

2.   Literature Review

Daniele and Marani (2007) have investigated institutional variables which may affect FDI inflows for MENA countries (top ten in European Union 2004). The institutional quality has been analyzed with variables like index of economic freedom, Fraser index, institutional profiles, World Bank governance indicators etc. for the period 1995-2004. A regression analysis on 129 countries had been carried which reflected significant results for FDI due to institutional variables leaving political instability. It was concluded that institutional efficiency plays a pre-dominant role in determining FDI in MENA countries.

Singh et al. (2013) studied the effect of GDP growth rate, consumer price index, exchange rate and inflation on FDI from 2000-11. Mean, standard deviation, variance, skewness and kurtosis had been used to test normalcy of data. Correlation and regression had also been run to find out relationship between economic indicators and FDI. A strong positive correlation was depicted between FDI and GDP growth rate on one hand and between CPI and inflation on the other. The results reflected negative correlation between exchange rate and FDI which meant FDI will increase if currency value for host country will fall. Thus, the study concluded that these indicators strongly affected FDI during the time period of study.

Keshava (2008) compared FDI flows between India and China in addition to analyze the impact of FDI in development of Indian economy. The study also focused on finding effect of FDI on India's exports, foreign exchange reserves, gross domestic income etc. These variables were studied from 1981-2004 using regression and it was found that China was way ahead than India in terms of economic development during this period. China was observed as a better destination for FDI than India in terms of its effect on macro economic variables.

Hansen and Rand (2005) have studied causal relationships between FDI-GDP and GDP to FDI-GDP ratio for 31 years in 31 developing countries. An autoregressive model with slight modification in neo classical growth model has been applied to test dependence of FDI on

growth and development. It has been found with granger causality test that FDI affects GDP of sample countries in long run. It has also been concluded that FDI has the same impact on GDP as that of domestic investments. Thus, a higher ratio of FDI in gross capital formation has a positive impact in growth of developing countries.

Wei (2005) has compared FDI performances between India and China from 1980-2002 from OECD countries. The data reported by OECD counties has been used in order to include round tripping and statistical compatibility. Random effect model has been applied to analyze factors like GDP, country risk ratings, real wages etc. for their contribution in FDI. The model was found appropriate and reflected that China's FDI performance was better than India due to larger domestic market. India however had FDI flowing due to its cheap labor market and large domestic market. The decomposition results revealed that China's performance was better due to its international trade ties and larger domestic market.

Obwona (2001) has conducted both primary and secondary survey to find out FDI performance and approach in Uganda. The study incorporated time series data from 1975-1991 and applied regression with FDI and growth model. 61 respondents were taken during the study which included both local and foreign investors in order to study their perception and attitude towards foreign investment. It was found that Uganda may be a difficult destination for investors due to infrastructure and loan problems. The growth model reflected that GDP growth rate, foreign capital inflows positively contributed towards FDI. However, a negative correlation was found between FDI and trade balance of accounts.

Gupta and Garg (2015) have established relationship between FDI and GDP from 2001-13 for Indian economy. It has been found in the study using regression analysis that FDI may not produce immediate fruits for the Indian economy but there is a lag between capital inflows and profit generation. The model has shown that between 0-6 years FDI starts showing its effect but this has been found maximum in a time gap of 3 years. Thus, the multiplier effect is created if FDI flows in but with a time a lag.

3.   Research Methodology

Research design and sample selection is an integral part of any empirical study. The nature of the present research problem called for secondary data to be used from an authentic source. With following objectives in mind data has been collected from the financial year 2000 to 2013 from the website of Reserve Bank of India:

- To determine the forces which boost foreign direct investment and foreign portfolio investment in the Indian economy?
- To analyze the impact of the determinants put together on FDI & FPI.

In order to examine the dependence of FDI & FPI vis-à-vis macro economic factors the former have been treated as dependent variables. On the other end, Balance of Payments (BOP), Consumer Price Index (CPI), Gross Domestic Product at factor cost (GDP$_{fc}$), Foreign Exchange Reserve (FOREX) have been taken as independent variables.

Graphical analysis of the data collected has been shown in the next segment of the paper. Primarily, correlation was run on the data using MS-Excel between FDI & FPI with other determinants incorporating the following formula:

$$r = \frac{n(\Sigma xy) - (\Sigma x)(\Sigma y)}{\sqrt{[\, n\Sigma x^2 - (\Sigma x)^2 \,][\, n\Sigma y^2 - (\Sigma y)^2 \,]}}$$

Where r= Correlation Co-efficient

n= Number of years

x= Independent Variable (BOP, CPI, GDP$_{fc}$, FOREX)

y= Dependent Variable (FDI; FPI)

Thereby, results provided a hint for relationship between different determinants and FDI+FPI.

In the second phase of statistical exploration, multiple regression had been run using SPSS version 20 to collectively assess forces that may influence FDI and FPI. The results could also display the proportion and intensity of impact from variables over investments. The following formula can be depicted for regressing input data:

$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4$

Where Y= Variable explained (FDI;FPI)

a= Alpha which is a constant intercept

b_1= Slope (Beta co-efficient) for X_1

X_1= First Independent Variable explaining Y (BOP)

b_2= Slope (Beta co-efficient) for X_2

X_2= Second Independent Variable explaining Y (CPI)

b_3= Slope (Beta co-efficient) for X_3

X_3= Third Independent Variable explaining Y (GDP_{fc})

b_4= Slope (Beta co-efficient) for X_4

X_4= Fourth Independent Variable explaining Y (FOREX)

The calculated R^2 refers to the proportion of variance in the values of dependent variable explained by all independent variables in the equation together. Sometimes, it may be reported as adjusted R^2 when a correction has been made to reflect the number of variables in the equation.

Anova has also been applied with SPSS which provided F value depicting reliability of the whole equation to determine FDI & FPI.

## 4.   Data Analysis, Empirical Results& Interpretation

This segment shall discuss data analysis, empirical results and their interpretation in detail.

Data Analysis

The data taken from Handbook of Statistics on Indian economy issued by Reserve Bank of India every year included Foreign Direct Investment, Foreign Portfolio Investment, Balance of Payments, Consumer Price Index (assumed as indicator of inflation for Indian economy), Gross Domestic Product at Factor Cost thus ignoring indirect taxes and subsidies and Foreign Exchange Reserve.

The trend of direct investment in India from foreign players can be shown graphically as below:

Figure 1
Amount of FDI in million rupees from 2000-2013
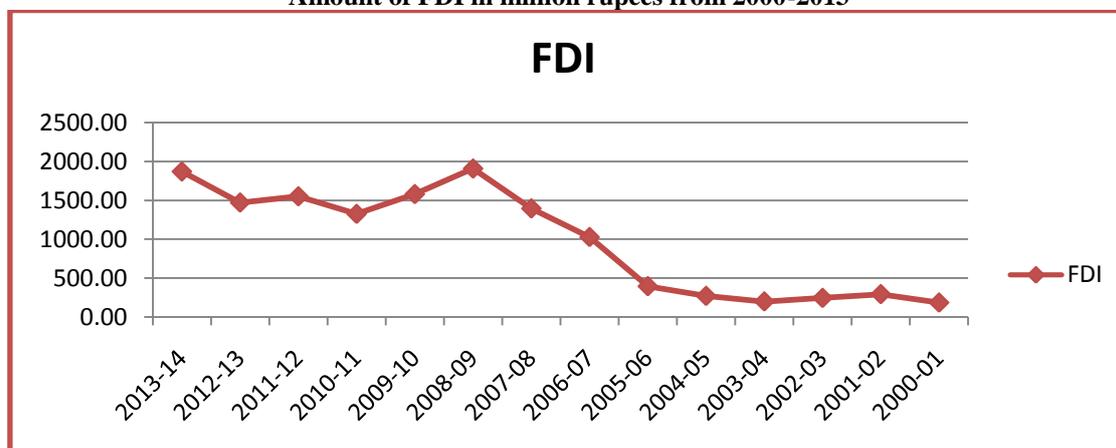
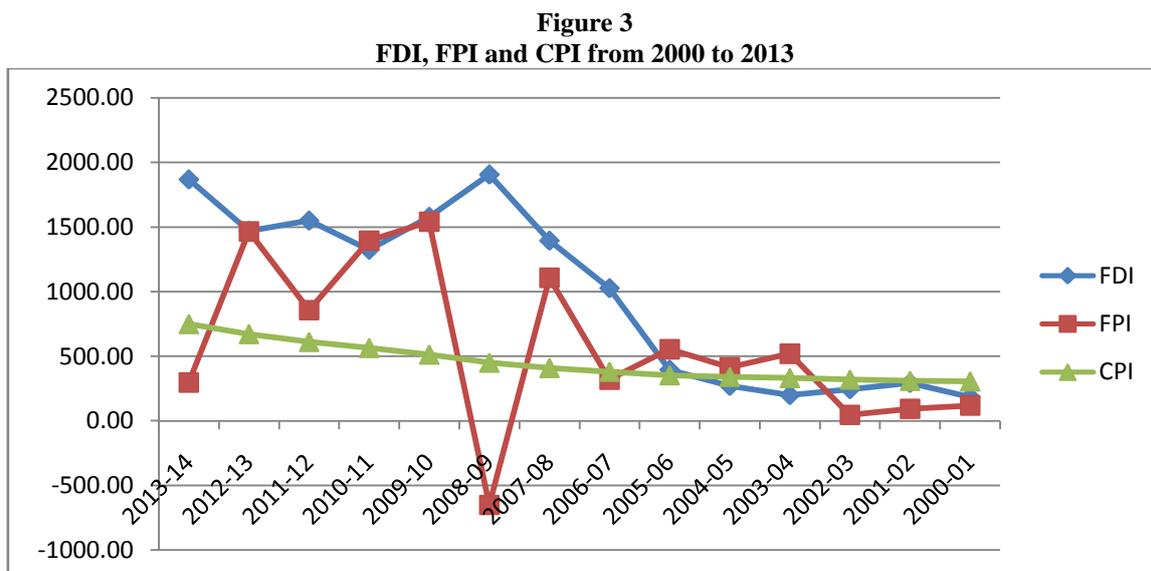**Source**: Handbook of Statistics on Indian Economy by RBI (Annual issue)

The above graph shows changes in FDI over the period taken under consideration. It has been observed that FDI remained on same track from 2000 to 2005. Thereafter, it picked up heights till 2008 (the year of global recession). Beyond 2008 there has been a step fall in FDI in India which rolled back from the year 2010 due to relaxation in regulations and liberalized approach of the Government which opened newer gates for foreign investment.

A comparative analysis of FDI and FPI with BOP can be shown in Graph 2 below:

Figure 2
Comparative Study of FDI, FPI and BOP
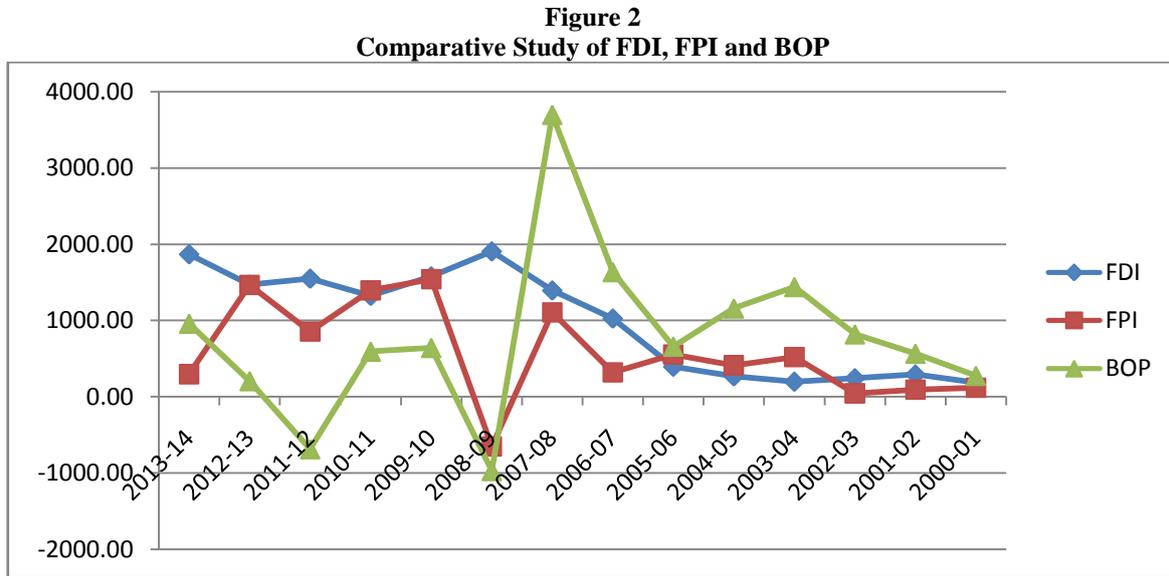
Source: Handbook of Statistics on Indian Economy by RBI (Annual issue)

From the above graph it has been observed that as compared to FDI, trends in FPI have been quite different. It has been almost on the same scale from the year 2000 to 2003. Thereafter, trying to revive a little till 2007 there has been huge portfolio investment in India. However, during the year of recession viz. 2008 there was a negative figure that turned up for FPI. It could be due to loss of confidence of investors in the Indian economy due to overall fall in markets. But then again, beyond recovery of this phase FPI has been rising till 2010. After the year 2010, a mixed trend has been observed in FPI. The following graph shows relationship between FDI and FPI with CPI over the period of study:

Figure 3
FDI, FPI and CPI from 2000 to 2013

Source: Handbook of Statistics on Indian Economy by RBI (Annual issue)

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The above graph shows that CPI (assumed as indicator of inflation) has been rising since the year 2000 to 2013. Beyond the year 2008 the rise has been even higher. However, with increasing prices it may be possible that FDI has also been getting a boost due to attractive opportunity and growth expectation.

The graph below shows analysis of FDI and FPI with GDP$_{fc}$ during the period of study:

Figure 4
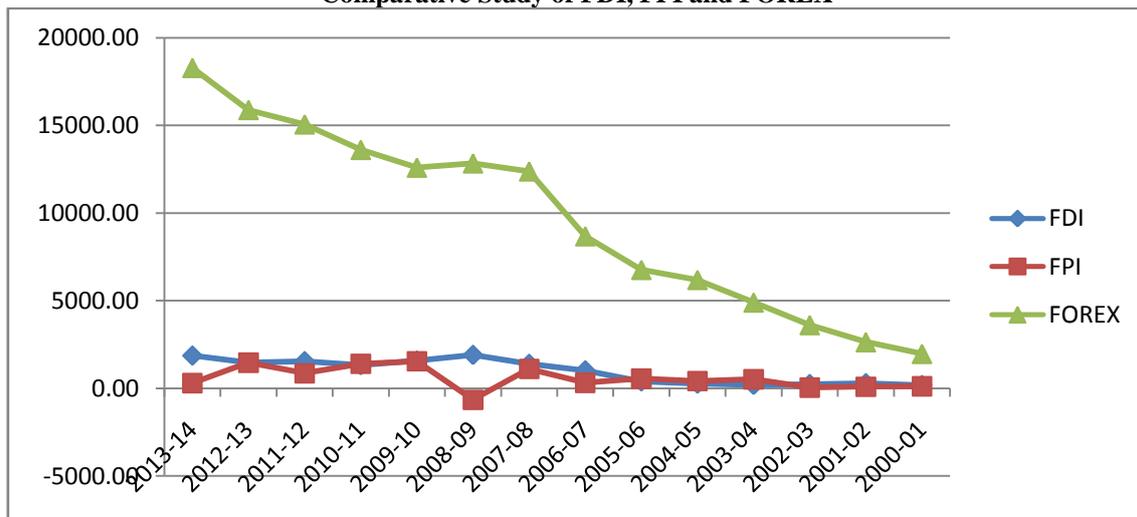**Analysis of FDI, FPI and GDP**
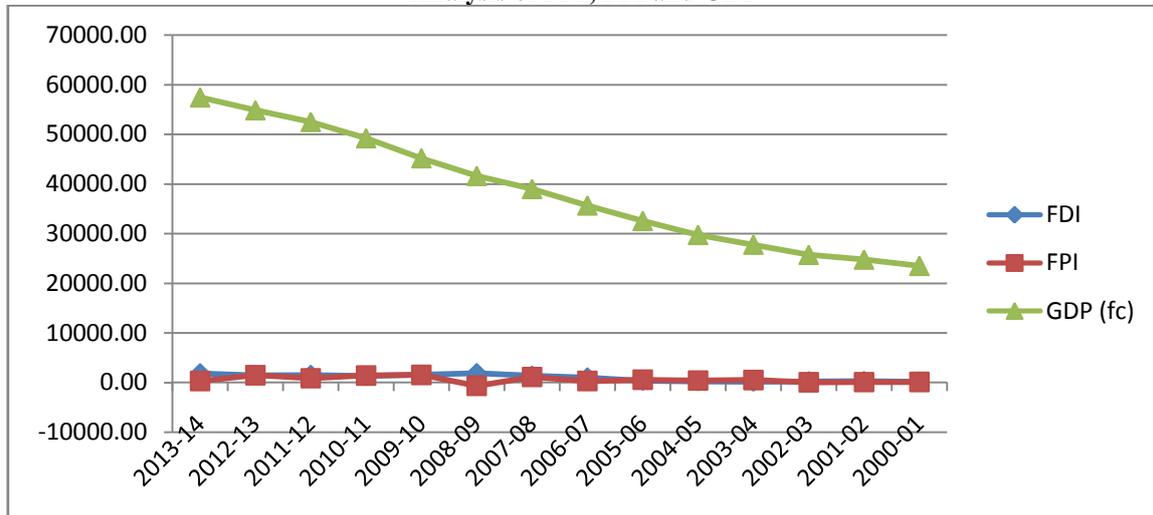
Source: Handbook of Statistics on Indian Economy by RBI (Annual issue)

The above graph represents growth in GDP$_{fc}$ since the year 2000. It may be observed that it has been continuously increasing during the period of study. Thus, this variable could be one of the positive parameter for investors to choose an economy for investment. Its rising state could motivate investors to plug funds in India with positive expectations for returns.

The following graph shows comparative figures between FDI and FPI with FOREX for the period under consideration:

Figure 5
Comparative Study of FDI, FPI and FOREX

Source: Handbook of Statistics on Indian Economy by RBI (Annual issue)

The above graph reflects growth story of FOREX in the Indian economy with FDI and FPI for the period of study. The rise in foreign exchange currency reserves could be one of the positive aspects for investors to look at an economy for investment choice. The higher

reserves represent a cushion for losses or any slowdown in case of recessionary trends across the globe. FOREX had been rising since 2000 to 2006 at an almost constant rate. However, beyond 2006 it may be observed that the growth has been at a higher rate till 2008. Afterwards, it had been stable for the next three financial years probably due to post effects of recession. After 2010 again FOREX have been sharply increasing.

Empirical Results & Interpretation

The empirical results and interpretation may be divided into three parts; correlation, multiple regression and anova. The results from three statistical tests have been shown and interpreted one by one in the following segment.

<u>*Correlation*</u>

The correlation results between FDI and other four determinants have been shown with the help of following table:

Table 1
Correlation coefficient between FDI with BOP, CPI, GDP$_{fc}$ and FOREX

FDI & BOP	FDI & CPI	FDI & GDP$_{fc}$	FDI & FOREX
-0.1723	0.8166	0.8898	0.9369

Source: Primary Data

The above table shows a negative correlation between FDI and BOP depicting that the two variables move in opposite direction. The relationship of FDI with CPI has been observed positive with a high value of .81 portraying high dependence of FDI with inflationary trends. The correlation coefficient between FDI and GDP$_{fc}$ has also been observed to be positive figuring similar movements in FDI with that in GDP$_{fc}$. The correlation between FDI and FOREX has also been seen with a very high value of .93 which means there may be extremely similar trend between FDI and FOREX.

The correlation results between FPI and other four determinants have been shown with the help of following table:

Table 2
Showing correlation coefficient between FPI with BOP, CPI, GDPfc and FOREX

FPI & BOP	FPI & CPI	FPI & GDP$_{fc}$	FPI & FOREX
0.2704	0.4475	0.4979	0.4452

Source: Primary Data

Table 2 above shows positive correlation for all four factors that may affect the amount of investment attracted in the form of portfolio from countries abroad. The relationship of FPI with BOP has been observed to be positive indicating that the hike in BOP may lead to more FPI. Similarly, relationship with CPI, GDP$_{fc}$ and FOREX has been found to be positively correlated. It may be interpreted from correlation statistics that all four variables have been observed to be positively correlated with FPI. Further, their significance may be checked with regression results.

<u>*Multiple Regression*</u>

The regression had been run using SPSS which provided following results for FDI with independent variables (BOP, CPI, GDP$_{fc}$ and FOREX):

Table 3
Showing Regression results for FDI with other factors

R	R Square	Adjusted R Square	Std. Error of the Estimate
.964[a]	.930	.899	215.2507588

Source: Primary Data

The table above shows regression coefficient for FDI with BOP, CPI, GDP_{fc} and FOREX. The value of R represents simple correlation between variables (0.964) which is very high. The value of R^2 (0.930) represents that 93% dependent variable (FDI) may be explained by BOP, CPI, GDP_{fc} and FOREX which is very large proportion.

Further, the same model has been applied on FPI using SPSS and the following statistics were obtained:

Table 4
Showing Regression results of FPI with other factors

R	R Square	Adjusted R Square	Std. Error of the Estimate
.885[a]	.784	.688	351.5813646

Source: Primary Data

The table above elaborates regression results for FPI with other determinants. The first column shows the value of correlation (0.885) which is positive and quite high. The value of R^2 shown in the second column (0.784) shows that 78.4% of the variation in FPI could be explained by BOP, CPI, GDP_{fc} and FOREX.

Anova

Anova had been run using SPSS on FDI and other predictors which provided following values:

Table 5
Showing Anova results for FDI and other determinants

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	5550734.490	4	1387683.623	29.950	.000[b]
1	Residual	416996.002	9	46332.889		
	Total	5967730.492	13			

Source: Primary Data

The table above shows the validity of regression model used for predicting FDI with BOP, CPI, GDPfc and FOREX. It may be shown in the regression row that the p value; .000 (in Sig. column) is <.05 describing that the equation has been found significant.

The same test had also been run to check FPI equation of prediction with regression.

Its output from SPSS has been shown below:

Table 6
Showing Anova statistics for FPI with other variables

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	4037516.220	4	1009379.055	8.166	.005[b]
1	Residual	1112485.104	9	123609.456		
	Total	5150001.324	13			

Source: Primary Data

Table 6 above shows results of anova for FPI and other factors in the regression equation. The p value in the regression row in Sig. column has been observed as .005 which is lesser than .05. It portrays that the regression model has been found significant in forecasting FPI with BOP, CPI, GDP_{fc} and FOREX.

5.   Conclusion

There may be several factors which affect quantum of FDI & FPI inflowing into a particular economy. However, in reference to the present study and data it has been found that there is correlation between FDI & FDP with BOP, CPI, GDP_{fc} and FOREX. Though, with all the parameters it may not be very strong due to other variables also prevailing in the domestic economy and international boundaries. It may be said that FDI & FPI are influenced by

dynamic environmental reasons. Hence, the scope for study in this regard may be still considered open taking other factors as well.

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