An Empirical Assessment of Impact of FDI on Indian Stock Market: with special reference to BSE-SENSEX

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Abstract: Foreign direct Investment plays a very dynamic role in the economic development of both developing as well as developed nations. Enormous number of the countries are united and pursuing their international operations due to foreign direct investment. Rapid growing economies such as China, Korea and Singapore etc have recorded implausible growth at the onset of FDI. As we know that FDI offers admittance to the foreign capital but on the other side FDI also helps to make available the most streamline technology, various tools of innovations and other balancing skills. Now the government plays an important part in drafting and implementing various policies concerning the inflow of FDI. The FDI policies mounted on the part of the government will act as a motivation so that various overseas countries may be fascinated to ensure their investment in India. No doubt that amount of the inflow of FDI will account to our growth in GDP but at the same time the Indian stock market will also be affected due to the inflow of FDI. This research paper will attempt to study the impact of foreign direct investment on the Indian stock market with reference to BSE-Sensex. Various statistical tools such as are coefficient of correlation, regression analysis were applied in order to analyze the study. In order to study the impact, Sensex and nifty are used as they are representing the Indian stock market. Data of 17 years 2001-2017 suggests that amount of FDI has a direct impact on both Sensex and Nifty. The study concludes that flow of FDI in India determines the trend of Indian Stock Market.

Keywords: Foreign Direct Investment, Stock Market, BSE-Sensex

1. Introduction

Liberalizing foreign direct investment regulations was important part of India's reforms, driven by the belief that this will increase the total volume of investment in the economy, improve production technology, and increase access to world markets. The policy now allows 100 percent foreign ownership in a large number of industries and majority ownership in all except banks, insurance companies, telecommunications and airlines. Procedures for obtaining permission were greatly simplified by listing industries that are eligible for automatic approval up to specified levels of foreign equity (100 percent, 74 percent and 51 percent). Potential foreign investors investing within these limits only need to register with the Reserve Bank of India, for investments in other industries, or for a higher share of equity than is automatically permitted in listed industries, applications are considered by a Foreign Investment Promotion Board that has established a track record of speedy decisions. In 1993, foreign institutional investors were allowed to purchase shares of listed Indian companies in the stock market, opening a window for portfolio investment in existing companies.

With the inception of New Industrial Policy (Liberalization, Privatization and Globalization policy) in India in 1991, Indian markets were opened for foreign capital to take the advantage of new technology and to meet out the Balance of Payment problem. Earlier many restrictions were imposed upon the foreign capital in India but after year 1991, the doors of Indian economy were opened for foreign capital and know-how. Foreign capital can enter into Indian market through two ways namely FDI and FII. FDI i.e. Foreign Direct Investment is related to set up the industries in India with the help of foreign capital. The Foreign Direct Investment is used for installing new production facilities. The technical know-how and new technology is also transferred from one nation to other nation with the help of FDI. In case of the Foreign Institutional Investment i.e. FII, the foreign investors invest in shares of an already established/new company through the stock market operations. No additional production facilities are created in case of investment through FII whereas FDI is directly related to creation of production facilities. Hence, FDI is more beneficial than FII for a particular nation. The FII has an easy exit route and can be withdrawn by selling the securities in stock markets at any time but FDI doesn‟t has such type of feature. It is difficult to exit without incurring heavy losses in case of investment has been made through FDI. The current study is undertaken to find the relationship between FDI, FII and stock markets. Two major indices namely S&P BSE SENSEX popularly known as SENSEX and CNX Nifty known as Nifty are taken to represent the stock market fluctuations.

1.1 Meaning of FDI

According to the International Monetary Fund, FDI can be defined as *"An Investment that is made to acquire a lasting interest in an enterprise operating in an economy other than that of the investor. The investor's purpose is to have an effective voice in the management of the enterprise."*

In simple terms, Foreign Direct Investment (FDI) refers to the long-term direct investment made by a foreign entity, in the production and management of an entity in another country either by buying a company in the that country or by expanding the operations of existing business in that country, with the objective of establishing a lasting interest in the management of the latter entity. Along with the inflow of funds, it also involves participation in the management, joint venture, transfer of technology and expertise.

1.2 Regulatory Framework for Foreign Investment in India

Foreign Investment in India is governed by the FDI policy announced by the Government of India and the provision of the Foreign Exchange Management Act (FEMA) 1999. The Reserve Bank of India ('RBI') in this regard had issued a notification, which contains the Foreign Exchange Management (Transfer or issue of security by a person resident outside India) Regulations, 2000. This notification has been amended from time to time. The Ministry of Commerce and Industry, Government of India is the nodal agency for monitoring and reviewing the FDI policy on continued basis and changes in sectoral policy/ sectoral equity cap. The FDI policy is notified through Press Notes by the Secretariat for Industrial Assistance (SIA), Department of Industrial Policy and Promotion (DIPP). The foreign investors are free to invest in India, except few sectors/activities, where prior approval from the RBI or Foreign Investment Promotion Board ('FIPB') would be required.

Review of Literature

Chopta has analyzed the impact of economics reforms on FDI in India. He carried our his research from 1980-2000. In his research the result depicted that GDP was the first measure which attract the FDI in any country. In John Andreas's research the result showed that FDI has positive impact on economy and capital inflow for a country. He took 90 samples of different countries and reached at result that FDI inflows increases the economical and infrastructural development in developing countries, but at the same time he also emphasized on that the FDI was not as much effective in developed countries as compared to developing countries. Jayachandran and Sielan researched on the relationship between trade, FDI and economic growth of India over the period 1970-2007. The results showed that there is a casual relationship among the trade, FDI and economics growth of India.

2. Objectives

- To study the trends and patterns of foreign capital flows in India in the form of FDI and FII
- To study the impact of Foreign Direct Investment(FDI) on Indian Stock market (S&P BSE SENSEX)

3. Hypothesis

H_{01} - There is no significant effect of inflow of Foreign Direct Investment (FDI) in India on Indian stock market (measured in terms of S&P BSE SENSEX)

4. Research Methodology

4.1 Period of the Study

The present study covers the time period of 17 years from 2001 to 2017.

4.2 Type of Data and Data Sources

The nature of the study is empirical which is based on secondary data relating to FDI, and BSE (Bombay Stock Exchange) SENSEX. The data related to FDI inflows has been collected from various sources like Bulletins of Reserve Bank of India and Fact sheets of the Department of Industrial Policy & Promotion, Ministry of Commerce and Industry, Government of India. The BSE SENSEX data have been collected from the website of www.bseindia.com respectively and then the daily closing index value is averaged to get the index value for each year. The various evidences and facts has been derived from the different sources e.g. journals, research papers, articles, etc.

4.3 Statistical Tools & Techniques Applied

The Simple Linear Regression (step-wise method), Karl Pearson's coefficient of correlation, Analysis of Variance, Normal P-P plot, Scatter plot, Histogram, descriptive statistics (Mean & Standard Deviation), etc. are the tools for the analysis of data using the statistical package for social sciences (SPSS).

5. Testing of Hypothesis

There is no significant effect of inflow of Foreign Direct Investment (FDI) in India on Indian stock market (measured in terms of S&P BSE SENSEX)

For testing the hull hypothesis H_{o1} [There is no significant effect of inflow of Foreign Direct Investment (FDI) in India on Indian stock market (measured in terms of S&P BSE SENSEX)]

The researcher analyzed the data using the Foreign Direct Investment (FDI) inflow in India and S&P BSE SENSEX.

At significance level of 0.05 the correlation is used for correlation measurement and t-test is used for finding the significance of correlation.

The regression analysis is used analyze the data and for model development and to find out the nature and strength of relationship between Foreign Direct Investment (FDI) and S&P BSE SENSEX.

For hypothesis H_{01} the dependent variable is S&P BSE SENSEX and independent variable is Foreign Direct Investment (FDI). The observed data were taken from year 2001 to 2017. The following are the presentation of data of Foreign Direct Investment (FDI) and S&P BSE SENSEX.

Table 1 - Foreign Direct Investment (FDI) and S&P BSE SENSEX.

YEAR	S&P BSE SENSEX	FDI(USD MILLION)
2001	3262.33	4029
2002	3377.28	6130
2003	5838.96	5035
2004	6602.69	4322
2005	9397.93	6051
2006	13786.91	8961
2007	20286.99	22826
2008	9647.31	34835
2009	17464.81	41874
2010	20509.09	37745
2011	15454.92	32901
2012	19426.71	22420
2013	21170.68	28000

2014	27499.42	35000
2015	26117.54	63000
2016	26626.46	46000
2017	29910.22	87400

Figure 1 - Showing Foreign Direct Investment (FDI) in India From the year 2001 to 2017

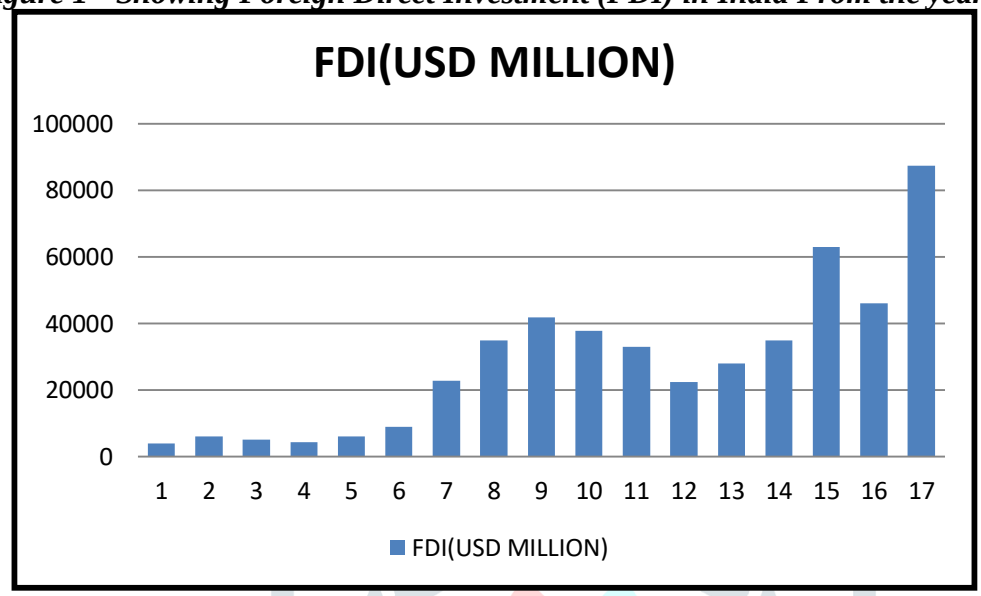
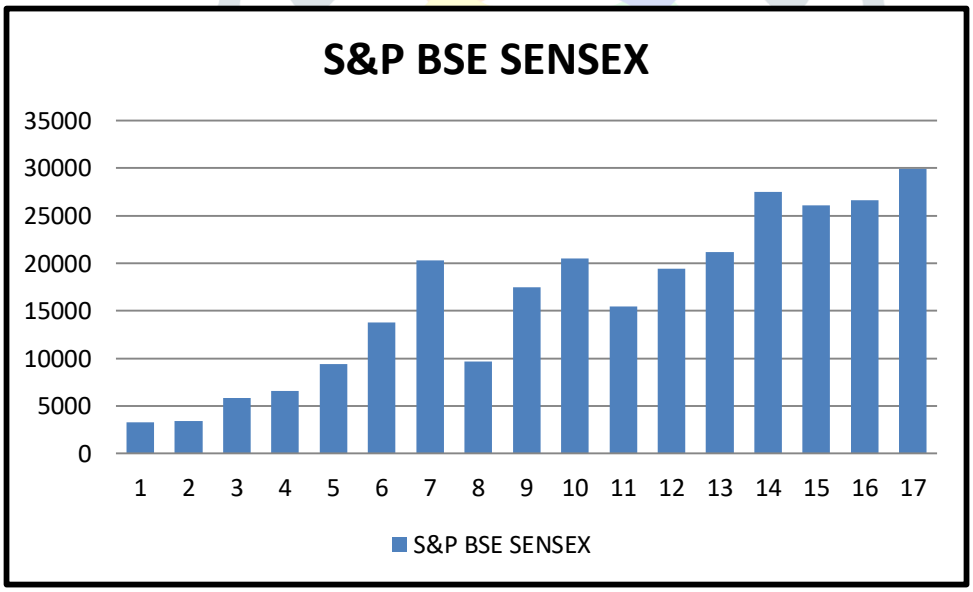


Figure 2 - Showing S&P BSE SENSEX of India from the year 2001 to 2017



5.1 Correlation Analysis of H_{01}

Table 2 - Correlations between Foreign Direct Investment (FDI) and BSE SENSEX

		FDI	BSE_SENSEX
FDI	Pearson Correlation	1	.822**
	Sig. (2-tailed)		.000
	N	17	17
BSE_SENSEX	Pearson Correlation	.822**	1
	Sig. (2-tailed)	.000	
	N	17	17

**. Correlation is significant at the 0.01 level (2-tailed).

T-test

Fisher's t test can be ascertained as follows:

$$t = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}}$$

This follows t- distribution with (n-2) degrees of freedom

Here

r= correlation

n=number of pairs of observation

$$t = \frac{0.822\sqrt{17-2}}{\sqrt{1-0.822^2}}$$

t=5.59

Since t (calculated value) =5.59 is greater than t (tabular value) =1.753 at 5% level of significance, the null hypothesis is rejected i.e. it is concluded that **there is a significant effect of inflow of Foreign Direct Investment (FDI) in India on the Indian Stock market (measured in terms of S&P BSE SENSEX).**

5.2 Regression Analysis

To know about the effect of and the development of model for effect of Foreign Direct Investment (FDI) on S&P BSE SENSEX the simple regression using the following fit model was run:

$$\boldsymbol{Y = \alpha + \beta_1 X_1}$$

Y= BSE SENSEX

α= constant

X_1= Foreign Direct Investment (FDI)

The following table shows result revealed from the regression analysis

Table 3 - simple regression Model(2) Summary of hypothesis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.822[a]	.675	.653	5144.53686

a. Predictors: (Constant), FDI

Table 4 - ANOVA[b] for hypothesis

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.245E8	1	8.245E8	31.153	.000[a]
	Residual	3.970E8	15	2.647E7		
	Total	1.221E9	16			

a. Predictors: (Constant), FDI

b. Dependent Variable: BSE_SENSEX

Table 5- Coefficients[a] for hypothesis

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7355.242	2025.050		3.632	.002
	FDI	.311	.056	.822	5.581	.000

a. Dependent Variable: BSE_SENSEX

The result of simple regression indicates a moderate R^2 of 0.675. The value of F is 31.135 which stand significant at 0.000 level. The relatively moderate measure of R^2 (0.675) indicates that Foreign Direct Investment (FDI) performed well in explaining the variance BSE SENSEX. The highly significant F ratio indicates that the results of the equation could hardly have occurred by chance. Foreign Direct Investment (FDI) was found to be highly significant ($p<0.01$).The results of the regression analysis shows that coefficient carried positive sign, as expected.

The relative effect of Foreign Direct Investment (FDI) was than examined by comparing the magnitude of regression coefficients. The Foreign Direct Investment (FDI) on BSE SENSEX β was 0.311. The regression coefficient indicates that a one unit change in Foreign Direct Investment (FDI) would lead to specific change in the BSE SENSEX.

The above model can be summarized as follows:

$$\boldsymbol{Y = \alpha + \beta_1 X_1}$$

MODEL (for hypothesis H_{01})
BSE SENSEX = 7355.242+0.311(FDI)

The regression findings indicate that there is a significant positive effect of Foreign Direct Investment (FDI) on BSE SENSEX.

These findings lead to reject the null hypothesis H_{01} and conclude that **there is a significant and positive effect of inflow of Foreign Direct Investment (FDI) in India on Indian Stock Market (measured in terms of S&P BSE SENSEX)**

6. Conclusion

The findings of the study revealed that there has been a high degree of positive correlation (r=0.82) and direct linear relationship between FDI & BSE Sensex. The results of the regression residual analysis revealed that FDI has been significant predictors to measure the bull and market trends in Indian stock market. Since the coefficient of determination is not equal to zero which indicated that FDI is one of the predictive variables for volatility in Indian stock market but there may be many other factors which drives the stock market. So, it can be concluded that the behavior of foreign direct investors has influenced the performance of stock market indices in India. Keeping in view the findings of the study, it has been suggested that the government of India along with its implementing and regulatory bodies should make further effort to attract more and more FDI for the smooth and rapid development of the stock market and the economy as a whole.

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