IMPACT OF FDI FLOW ON INDIAN STOCK MARKET: A STUDY WITH SPECIAL REFERENCE TO S&P BSE SENSEX AND ITS SECTORAL INDICES

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ABSTRACT
Foreign Direct Investment (FDI) accelerates the economic development of a country by facilitating capital, technology and skills inflow. It bridges the economic gap amongst countries in exchange of resources where developing and emerging countries are a major beneficiary of this. India has been a major recipient of global capital inflows and became a hot investment destination in the world, pouring in lot of foreign capital which is boosting countries GDP, creating more employment opportunities and infrastructural development as FDI is a major contributor for this. Capital inflow into the primary and secondary market of the stock exchanges are a clear reflection on the quantum of positive impact FDI has made on the Indian capital market.

This paper attempts to study the impact of total FDI inflow and measures the performance of some key benchmark indices that can act as indicators to the economic development of the country. In particular, the S&P BSE SENSEX and its various indices like S&P BSE AUTO, REALITY, HEALTHCARE, INFORMATION TECHNOLOGY, OIL & GAS and FMCG are taken. The Study is based on fourteen years annual data from 2006 to 2019 obtained from secondary sources. The statistical tools used for the study are Karl Pearson's coefficient correlation, Simple Linear Regression analysis, Descriptive statistics (mean and standard deviation), trend percentage and compounded annual growth rate were analysed using statistical packages for social sciences (SPSS). Our study concludes that FDI has a significant impact on S&P BSE SENSEX and its indices. These findings can help our policy makers, regulators and exchanges to build better financial products for the capital market.

Keywords: FDI, Indian stock market, GDP, employment opportunities.

Introduction

Apart from being a critical driver of economic growth, foreign direct investment (FDI) is a major source of non-debt financial resource for the economic development of India. Foreign companies invest in India to take advantage of relatively lower wages, special investment privileges such as tax exemptions, etc. For a country where foreign investments are being made, it also means achieving technical know-how and generating employment.

The Indian government's favourable policy regime and robust business environment have ensured that foreign capital keeps flowing into the country. The government has taken many initiatives in recent years such as relaxing FDI norms across sectors such as defence, PSU oil refineries, telecom, power exchanges, and stock exchanges, among others.
According to Department for Promotion of Industry and Internal Trade (DPIIT), the total FDI investments in India April-December 2018 stood at US$ 33.49 billion, indicating that government's effort to improve ease of doing business and relaxation in FDI norms is yielding results.

Definition of FDI

According to International Monetary Fund (IMF), Foreign Direct Investment (FDI) is a type of cross-border investment which is associated with a resident in one country having control or a significant degree of influence on the management of an enterprise that is resident in another country.

Review of literature

(Babar & Khandare, 2012) emphasized on changing structure, trends and direction of FDI in India during globalization period. The benefits FDI is giving for economic growth of the nation was analysed. Sectorial analysis of FDI participation and country wise flow of foreign fund in India has been done over the period of April 2000 to October 2010 in which the largest recipient is service sector (Financial and non-financial services) having share of 21% in the total foreign direct investment. Private sector banking, NBFC'S, petroleum, housing and Real estate, Hotel and tourism, road and highways, advertising, films, transportation, power, drug and pharmaceuticals has been allowed with 100% investment.

(Umeora, 2013) investigated the effect of FDI on macro-economic variables of GDP, inflation and Exchange Rate. It used Ordinary Least Squares (OLS) to examine the relationship between the Dependent variable (FDI) and the independent variables –Inflation and Exchange Rate. The study indicates that GDP, inflation and Exchange Rate are affected to the extent of 46.5% by FDI. FDI does not make the GDP to grow, increases inflation and has negative effect on exchange rate.

(Priyanka & Ekta, 2014) evaluated the status of FDI in India pointing out the sector wise trends and country source. It aimed at identifying the problem and reasons that have reduced India's attractiveness as an FDI destination. It was found that weak infrastructure, complicated tax structure, restrictive labour loss, bureaucracy were the major deterrents to larger flow of FDI. Therefore, India should learn some lessons from other countries and launch second generation of reforms to attract large flow of FDI in the years to come.

(Vidya Sekhri, 2015) tried to find the impact of FDI and FII on Indian stock market. SENSEX and NIFTY are considered as representative of stock market. It was found that there exists a strong positive correlation between FDI & SENSEX and FDI & NIFTY. Moderate positive correlation exists between FII activity and effects on Indian Capital Market. The trend of Indian stock market is determined both FDI & FII.

(Prodan Palade, 2016) conducted an empirical study on 25 companies listed on Bucharest Stock exchange across Romania, Turkey and Moldova for the fiscal year 2014 to find whether financial performance ratios and fir accounting are emulated in the level of FDI and out of the two, which play the key role in pulling the foreign investors. By applying Multiple Linear Regression Model, a positive impact of financial performance ratios was found on the Foreign Direct Investment. The result also found that companies must enhance their accounting and financial performance to open wider gate for FDI.

(Gupta, 2017) analysed the influence of FDI inflow on BSE (Bombay Stock Exchange) SENSEX and NSE (National Stock Exchange) CNX Nifty from April 2006 to March 2016. The study found that FDI was corelated with both Sensex and Nifty and it also had a significant impact on both the market movements. FDI had relatively lesser impact on SENSEX as compared to NIFTY.

(Bayar & Gavriletea, 2018) used panel data analysis to gauge the interaction between Financial development, FDI inflow and foreign Portfolio inflow in central and eastern European Union countries from 1996 to 2015. Existence of no long-run relationship between financial development, FDI inflows, and foreign portfolio investment inflows was witnessed. The causality analysis revealed that there was unidirectional causality from financial development to FDI inflows, but no causality from FDI inflows to financial development. The foreign portfolio inflows had no significant impact on financial development.

Objectives

- To study the trends of FDI inflows in India.
- To analyse the impact of FDI inflows on the movement of BSE (Bombay Stock Exchange) SENSEX and its sectoral indices.

RESEARCH METHODOLOGY

Research Design

The study is quantitative in nature and an analytical approach has been adopted.

Period of the Study

The present study considers 14 years data starting from March 2006 to February 2019.

Type of Data and Data Sources

The study is based on secondary data. The required data relating 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 data related to S&P BSE SENSEX and its Sectoral indices have been collected from the website of www.bseindia.com. The various evidences and facts have been derived from the different sources e.g. journals, research papers, articles, etc.

Statistical Tools & Techniques Applied

The Simple Linear Regression, Karl Pearson's coefficient of correlation, descriptive statistics (Mean & Standard Deviation), Trend Percentage and compounded annual growth rate etc. are the tools for the analysis of data using the statistical package for social sciences (SPSS).

HYPOTHESIS

H_{01}: Total FDI inflow has insignificant impact on S&P BSE SENSEX.
H_{a1}: Total FDI inflow has significant impact on S&P BSE SENSEX.
H_{02}: Total FDI inflow has insignificant impact on S&P BSE Auto.
H_{a2}: Total FDI inflow has significant impact on S&P BSE Auto.
H_{03}: Total FDI inflow has insignificant impact on S&P BSE Reality.
H_{a3}: Total FDI inflow has significant impact on S&P BSE Reality.
H_{04}: Total FDI inflow has insignificant impact on S&P BSE Healthcare.
H_{a4}: Total FDI inflow has significant impact on S&P BSE Healthcare.
H_{05}: Total FDI inflow has insignificant impact on S&P BSE IT.
H_{a5}: Total FDI inflow has significant impact on S&P BSE IT.
H_{06}: Total FDI inflow has insignificant impact on S&P BSE Oil & Gas.
H_{a6}: Total FDI inflow has significant impact on S&P BSE Oil & Gas.
H_{07}: Total FDI inflow has insignificant impact on S&P BSE FMCG.
H_{a7}: Total FDI inflow has significant impact on S&P BSE FMCG.

Analysis and Discussion

Table 6.1: Total Foreign Direct Investment in India

S NO	FINANCIAL YEAR (APRIL - MARCH)	FOREIGN DIRECT INVESTMENT (FDI)					
		EQUITY		REINVESTED EARNINGS +	OTHER CAPITAL+	FDI FLOW TO INDIA	
		FIPB ROUTE/RBI'S AUTOMATIC ROUTE/AQUISITION ROUTE	EQUITY CAPITAL OF UNICORPORATED BODIES#			TOTAL FDI FLOWS	% GROWTH OVER PREVIOUS YEAR IN (TERMS OF US $)
1	2005-06	5540	435	2760	226	8961	
2	2006-07	15585	896	5828	517	22826	(+) 155%
3	2007-08	24573	2291	7679	300	34843	(+) 53%
4	2008-09	31364	702	9030	777	41873	(+) 20%
5	2009-10	25606	1540	8668	1931	37745	(-) 10%
6	2010-11	21376	874	11939	658	34847	(-) 8%
7	2011-12	34833	1022	8206	2495	46556	(+) 34%
8	2012-13	21825	1059	9880	1534	34298	(-) 26%
9	2013-14	24299	975	8978	1794	36046	(+) 5%
10	2014-15	30933	978	9988	3249	45148	(+) 25%
11	2015-16	40001	1111	10413	4034	55559	(+) 23%
12	2016-17	43478	1223	12343	3176	60220	(+) 8%
13	2017-18	44857	664	12542	2911	60974	(+) 1%
14	2018-19	33493	495	9973	2663	46624	(-) 23%
		412027	15267	136419	28374	592087	
	Mean				40465.71		
	S.D.				14058.72		

Chart no 1: Graphical Representation of Total FDI Flow and their growth

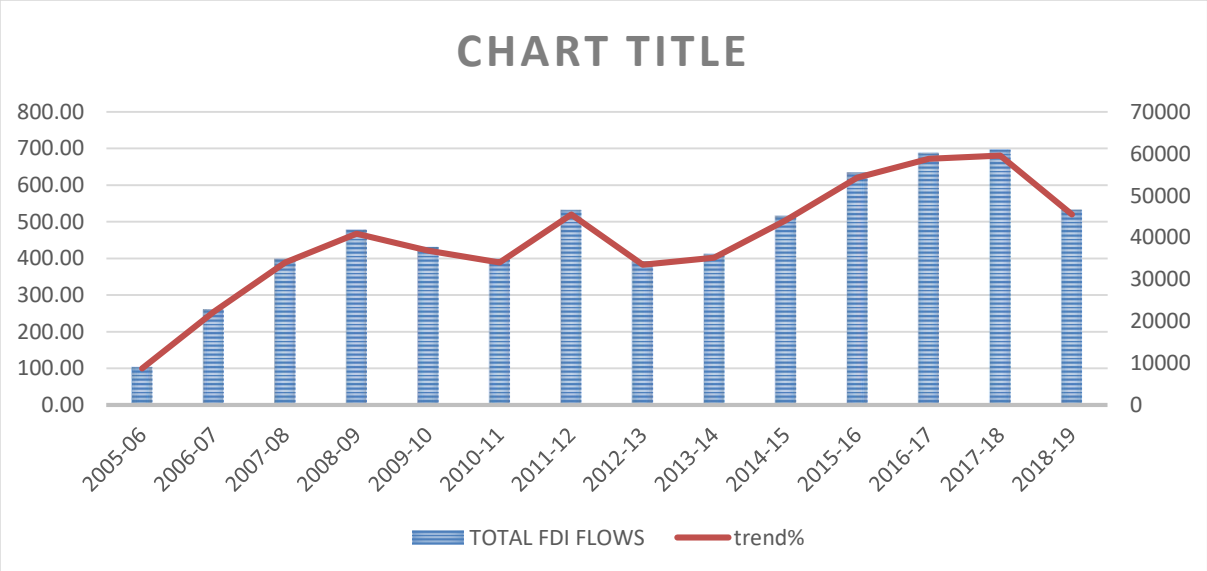

Table no.1 presents the total Foreign Direct Investment in India through various routes from April 2005 to March 2019. It can be seen that FDI has continuously grown till 2009, but due to the global economic recession (2008-09) and changes in FDI limits in various sectors, FDI inflow in India has reduced to USD 37745 million in 2010 and further drop to USD 34847 million by the end of year 2011. In 2012 FDI inflow

again rose to USD 46556 million, however in 2013 it again dropped by 26% thereafter 2014 onwards a slow growth rate has been seen till 2018. In 2018 & 2019 a decline of 23% was witnessed. Thus, total FDI flow in India during the study period indicated a fluctuating trend.

Table 6.2: Sectors Attracting Highest FDI Equity Inflow (Amount in RS Crore)

RANK	SECTOR	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
1	SERVICE SECTOR	13294	27369	45415	58214	43249	45770
2	COMPUTER SOFTWARE AND HARDWARE	6896	14162	38351	24605	39670	35309
3	TELECOMUNICATION	7987	17372	8637	37435	39748	15727
4	CONSTRUCTION AND DEVELOPMENT	7508	4652	727	703	3472	543
5	TRADING	8191	16755	25244	15721	28078	20945
6	AUTOMOBILE INDUSTRY	9027	16760	16437	10824	13461	14504
7	CHEMICAL (OTHER THAN FERTILIZERS)	4738	4658	9664	9397	8425	12528
8	DRUGS & PHARMACETICAL	7191	9052	4975	5723	6502	1502
9	CONSTRUCTION (INFRASTRUCTURE) ACTIVITIES	18654	23981	29842	12478	17571	12862
10	POWER	6519	4296	5662	7473	10473	6647

Chart no 2: Graphical Representation of the Sectors attracting Highest FDI Inflow

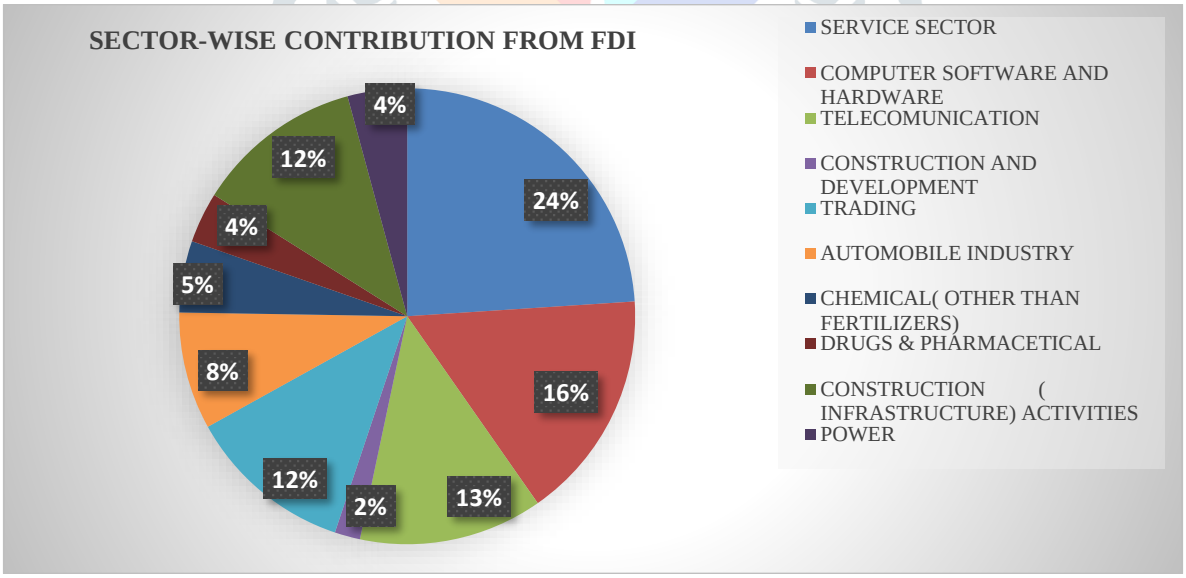

Table 6.2 presents the sectors attracting FDI equity inflow from 2014 to 2019. The chart clearly depicts 24% of total FDI investing in service sector. Service sector includes Financial, Banking, Insurance, Nonfinancial business, Outsourcing, R&D, Courier, Tech. Testing and Analysis. The second most important sector where FDI is investing Computer Hardware and Software (16%) followed by Telecommunication (13%), Trading (12%), Construction Activities (12%) and Automobile Industry (8%).

Table 6.3: Share of Top Investing Countries FDI Equity Inflow

RANK	COUNTRY	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
1	MAURITIUS	29360	55172	54706	105587	102492	42638
2	SINGAPORE	35625	41350	89510	58376	78542	89477
3	JAPAN	10550	12752	17275	31588	10516	15241
4	U. K	20426	8769	5938	9953	5473	7259
5	NETHERLAND	13920	20960	17275	22633	18048	20548
6	USA	4807	11150	27695	15957	13505	16728
7	GERMANY	6093	6904	6361	7175	7245	4156
8	CYPRUS	3401	3634	3317	4050	2680	2078
9	FRANCE	1842	3881	3937	4112	3297	2532
10	UAE	1562	2251	6528	4539	6767	2101

Chart no: 3 Graphical Representation of Share of Top Investing Countries in FDI Equity Inflow

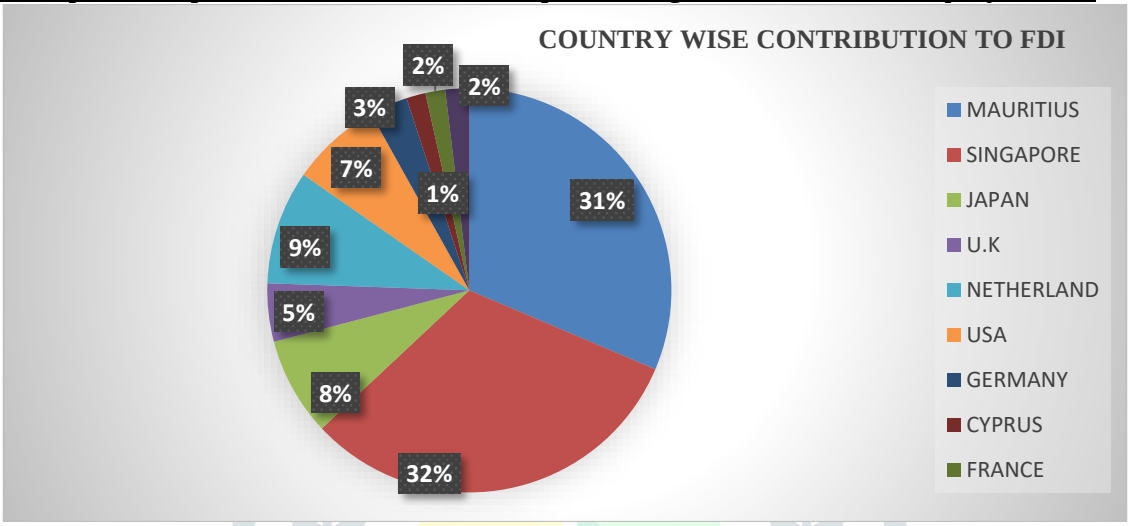

Table 6.3 shows share of top ten countries contributing in FDI equity inflow from 2014 to 2019. 32% of total FDI comes from Singapore, 31% from Mauritius, 9% from Netherlands, 8%from Japan, and 7% from USA.

Table 6.4 - Impact of FDI on S&P BSE SENSEX AND ITS INDICES

FY YEAR	TOTAL FDI FLOW US$ MILLION	SENSEX	AUTO	POWER	TELE-COM	REALITY	HEALTH CARE	IT	OIL & GAS	METAL	FAST MOVING CONSUMER GOODS
2006	8961	13786.91	5518.5	2048.43	1494.68	7435.65	3792.05	5272.56	6179.6	9039.63	1934.72
2007	22826	20286.99	5667.45	4548.85	2715.21	1727.42	4418.65	4529.59	13301.6	20020.22	2319.92
2008	34843	9647.31	2444.71	1829.31	1390.98	2274.13	2966.19	2227.96	6050.04	5214.35	1987.38
2009	41873	17464.81	7435.83	3188.55	1294.12	3855.78	5018.33	5186.35	10470.97	17399.22	2791.55
2010	37745	20509.09	10235.41	2988.56	1320.97	2856.22	6734.19	6824.82	10601.42	17595.86	3684.12
2011	34847	15454.92	8143.65	1795.95	1113.51	1375.65	5870.52	5751.93	7529.27	9293.17	4035.31
2012	46556	19426.71	11426.21	1990.91	1077.9	2110.8	8132.35	5684.08	8518.58	11070.63	5916.22
2013	34298	21170.68	12258.83	1700.75	1274.78	1433.41	9966.26	9081.78	8834.42	9964.29	6567.01
2014	36046	27499.42	1863.84	2092.51	1388.34	1555.07	14692.95	10583.98	9895.21	10752.69	7766.57
2015	45148	26117.54	18519.08	1957.68	1424.88	1344.33	16905.2	11061.31	9555.61	7397.96	7871.83
2016	55559	26626.46	20257.43	1987.58	1120.64	1263.94	14727.59	10176.05	12151.64	10109.34	8130.87
2017	60220	34056.83	26751.2	2381.69	1675.03	2608.25	14799.42	11277.81	16283.57	14939.28	10695.18
2018	60974	36068.3	20833.73	1999.18	988.38	1797.83	13923.37	14089.56	13748.57	11839.59	11829.07
2019	46624	36063.81	18925.93	1848.83	973.96	1796.11	13887.16	15359.68	13937.45	10935.23	11411.57

In order to study the impact of FDI on S&P BSE SENSEX and other sectoral indices during the the study period, FDI is taken as the independent variable and S&P BBSE SENSEX, AUTO, REALITY, HEALTHCARE, IT, OIL & GAS AND FMCG are taken as dependent variables. Using Simple Linear Regression , the model was developed.

Model : Y= a+bX

Where Y=Dependent variables, a= intercept, b= slope and X= Independent Variables.

The result of the Regression Analysis are represented in the below tables

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Table 6.4 showing R, R^2, Adjusted R^2, degrees of freedom of F, F-value and its p- value

Sl No	Model	R	R^2	Adjusted R^2	DF	F Value	Sig.
1	S&P BSE SENSEX	0.702	0.493	0.451	(1,12)	11.69	0.005
2	S&P BSE AUTO	0.782	0.612	0.58	(1,12)	18.919	0.001
3	S&P BSE REALITY	0.559	0.313	0.256	(1,12)	5.467	0.038
4	S&P BSE HEALTHCARE	0.695	0.483	0.44	(1,12)	11.205	0.006
5	S&P BSE IT	0.624	0.390	0.339	(1,12)	7.662	0.017
6	S&P BSE OIL & GAS	0.629	0.395	0.345	(1,12)	7.844	0.016
7	S&P BSE FMCG	0.780	0.609	0.576	(1,12)	18.658	0.001

Table 6.5 Coefficient Table

Model	Significant Independent Variables in the model	Unstandardized coefficients		Standardized coefficients	t	Sig.
		B	Std.Error	Beta		
S&P BSE SENSEX	CONSTANT	6455.2	5151.014		1.253	0.234
	TOTAL FDI FLOW	0.413	0.121	0.702	3.419	0.005
S&P BSE AUTO	CONSTANT	-5157	4199.23		-1.228	0.243
	TOTAL FDI FLOW	0.428	0.098	0.782	4.35	0.001
S&P BSE REALLITY	CONSTANT	4996.56	1176.406		4.247	0.001
	TOTAL FDI FLOW	-0.064	0.028	-0.559	-2.338	0.038
S&P BSE HEALTHCARE	CONSTANT	-213.86	3124		-0.068	0.947
	TOTAL FDI FLOW	0.245	0.073	0.695	3.347	0.006
S&P BSE IT	CONSTANT	1413.08	2648.455		0.534	0.603
	TOTAL FDI FLOW	0.172	0.062	0.624	2.768	0.017
S&P BSE OIL & GAS	CONSTANT	4968.12	2084.447		2.383	0.035
	TOTAL FDI FLOW	0.137	0.049	0.629	2.801	0.016
S&P BSE FMCG	CONSTANT	-1713.4	1934.433		-0.886	0.393
	TOTAL FDI FLOW	0.196	0.045	0.780	4.319	0.001

Table no 6.4 shows the model summary which shows the strength of the relationship between the model and the dependent variable i.e. R, the Karl Pearson's coefficient correlation. Correlation between Foreign Direct Investment (FDI) with S&P BSE SENSEX is 0.702; AUTO is 0.782; REALITY is 0.559; HEALTH CARE is 0.695; INFORMATION TECHNOLOGY IS 0.624; OIL & GAS IS 0.629 and FMCG is 0.780. It showed that the Variables have a positive relation with FDI at 5 percent level of significance. R^2, the coefficient of determination showed the percentage of variation in the dependent variables as explained by the model.

Hence it can be said that 49.3 percent variability in S&P BSE SENSEX is explained by FDI respectively. Similarly, 61.2 percent in AUTO, 31.3 percent in REALITY, 48.3 percent in HEALTH CARE, 39 percent in IT, 39.5 percent in OIL & GAS and 60.9 percent variation in FMCG is due to the movement of FDI.

The F Value is found to be significant since the p values are less than 0.05, hence the null hypothesis is rejected and the alternative hypothesis is accepted.

The estimated regression equations are represented in the below table.

Table 6.6 Regression Equation

1.	S&P BSE SENSEX = 6455.2 + 0.413 FDI
2.	S&P BSE AUTO = -5157 + 0.428 FDI
3.	S&P BSE REALLITY = 4996.56 + -0.064 FDI
4.	S&P BSE HEALTHCARE = -213.86 + 0.245 FDI
5.	S&P BSE IT = 1413.08 + 0.172 FDI
6.	S&P BSE OIL & GAS = 4968.12 + 0.137 FDI
7.	S&P BSE FMCG = -1713.4 + 0.196 FDI

Table 6.7 Hypothesis Testing

Sl no	Null Hypothesis	P value	Result
1.	H01: Total FDI inflow has insignificant impact on S&P BSE SENSEX.	0.005 < 0.050	Rejected
2.	H02: Total FDI inflow has insignificant impact on S&P BSE AUTO.	0.001 < 0.050	Rejected
3.	H03: Total FDI inflow has insignificant impact on S&P BSE REALITY.	0.038 < 0.050	Rejected
4.	H04: Total FDI inflow has insignificant impact on S&P BSE HEALTHCARE.	0.006 < 0.050	Rejected
5.	H05: Total FDI inflow has insignificant impact on S&P BSE IT.	0.017 < 0.050	Rejected
6.	H06: Total FDI inflow has insignificant impact on S&P BSE OIL & GAS.	0.016 < 0.050	Rejected
7.	H07: Total FDI inflow has insignificant impact on S&P BSE FMCG.	0.001 < 0.050	Rejected

From table 6.7 it can be seen that the null hypothesis is rejected in all the cases. Hence alternative hypothesis is accepted. So Total FDI had significant impact on S&P BSE SENSEX, AUTO, REALITY, HEALTHCARE, IT, OIL & GAS and FMCG.

Findings

- The flow of FDI has shown growth during the period of study. Except for the year 2009-10, 2010-11, 2012-13 and 2018-19.
- The service sector is able to attract 24% of total FDI inflow, there by becoming the leading sector where FDI invests. It is followed by Computer Software and Hardware attracting 16% of inflow.
- 32% of total FDI inflow in India is contributed by Singapore.
- There is moderate degree of positive correlation between FDI and S&P BSE REALITY, IT, AND OIL & GAS.
- There is high degree of positive correlation between FDI and S&P BSE SENSEX, AUTO, HEALTHCARE and FMCG.
- There has been a significant impact of total FDI inflow in India on the movement of Indian stock market i.e. S&P BSE SENSEX and its sectoral indices S&P BSE AUTO, REALITY, HEALTH CARE, IT, OIL AND GAS and FMCG.

Conclusion

FDI inflows into India continued to grow except for some minor downtrend in certain years. Services sector is the biggest attractor of the inflows. The inflow of money is well utilized by the already fund starving companies who took the opportunity to build manufacturing and service infrastructure to scale up their business. This translated to profits and thereby got reflected in the stock prices of the stocks. The stock market index acts as a mirror tracking the underlying companies. As empirically proved, FDI inflows have strong correlation to the performance of various indices.

BIBLIOGRAPHY

1. Babar, S., & Khandare, B. (2012). Structure of FDI in India during globalization period. *Indian Streams Research Journal, 2*(2), 1 - 9.
2. Bayar, Y., & Gavriletea, M. D. (2018, March). Foreign Direct Investment Inflows and Financial Development in Central and Eastern European Union Countries: A Panel Cointegration and Causality. *International Journal of Financial Studies, 6*(55), 1-13. doi:10.3390
3. Gupta, H. (2017). An Analysis of Impact of FDI on Indian Stock Market: with special reference to BSE-SENSEX and NSE-CNX NIFTY. *Advances in Economics and Business Management (AEBM), 4*(1), 13-17. Retrieved from https://www.researchgate.net/publication/326711510
4. Priyanka, B., & Ekta, K. (2014). Analysis of Inflows of Foreign Direct Investment in India-Problems and Challenges. *Global Journal of Finance and Management, 6*(7), 675 - 684. Retrieved from http://www.ripublication.com
5. Prodan Palade, D. (2016). Firm Characteristics and their Effects on Foreign Direct Investment: Evidence from Romania, Republic of Moldova and Republic of Turkey. *Acta Universitatis Danubius. Œconomica,, 12*(6), 119-133. Retrieved from http://journals.univ-danubius.ro/index.php/oeconomica/article/view/3441/3780
6. Umeora, C. (2013). Effects of Foreign Direct Investment (FDI) on Economic Growth in Nigeria. *Anambra State University - Department of Banking and Finance*, 1-13. doi:10.2139/ssrn.2285329
7. Vidya Sekhri. (2015, June). Impact of Foreign Investments on Indian Stock Market An Empirical Study. *Asian Journal of Research in Banking and Finance , 5*(6), 165-185. doi:10.5958/2249-7323.2015.00081.4
8. https://dipp.gov.in/publications/fdi-statistics
9. https://www.bseindia.com/
10. https://www.ibef.org/economy/foreign-direct-investment.aspx