Journal of Positive School Psychology http://journalppw.com
2022, Vol. 6, No. 2, 4605 – 4613

An Empirical Analysis of Stock Price Indices and Foreign Investment in India

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Abstract

Foreign investment is a vital ingredient of the globalization of the world economy as it would have larger impact on the domestic financial markets in the short run and real impact in the long- run. Under these circumstances, it may be useful to study the impact of Foreign Investments on the stock market. The stock market is influenced by many factors. Both institutional and individual investors have a critical role to play in the stock market. The volatility in the market is the result of buying and selling pressure on the stocks. The purpose of this paper to study the impact of foreign investment in developing stock market in India during a period of 2000-2022(Dec2021) and to analyze the causal relationship between foreign investment and stock market in India. The present study is aimed at studying growth of foreign capital inflows in India in the form of foreign direct investment and foreign institutional investment and the influence of foreign investment of India. This study applies correlation and multiple regression analysis methods to evaluate the relationship between foreign investment and stock market in India.

Keywords: FDI, FII, BSE, NSE, SENSEX, NIFTY.

INTRODUCTION

Foreign investment was introduced by Prime Minister Manmohan Singh when he was finance minister (1991) by the government of India as FEMA (Foreign Exchange Management Act). A recent meta-analysis of the effects of foreign direct investment on local firms in developing and transition countries suggests that foreign investment robustly increases local productivity growth. A foreign direct investment has become a striking measure of economic development in both developed and developing countries. FDI and FII thus have become instruments of international economic integration and stimulation. Fast growing economies like Singapore, China, Korea etc have registered incredible growth at onset of FDI. Though US captures most of the FDI inflows, developing countries still account for significant growth of FDI and rise in FII. Foreign direct investment may be politically controversial or difficult because it partly reverses previous policies intended to protect the growth of local investment or of infant industries. Foreign investment refers to investments made by the residents of a country in the financial assets and production processes of another country. The effect of foreign investment, however, varies from country to country. It can affect the factor productivity of the recipient country and can also affect the balance of payments. Foreign investment provides a channel through which countries can gain access to foreign capital. It can come in two forms: Foreign direct investment (FDI) and foreign institutional investment (FII). Foreign direct investment involves in direct production activities and is also of a medium- to long-term nature. But foreign institutional investment is a short-term investment, mostly in the financial markets. FII, given its short-term nature, can have bidirectional causation with the returns of other domestic financial markets such as money

markets, stock markets, and foreign exchange markets. Hence, understanding the determinants of FII is very important for any emerging economy as FII exerts a larger impact on the domestic financial markets in the short run and a real impact in the long run. India, being a capital scarce country, has taken many measures to attract foreign investment since the beginning of reforms in 1991. India is the second largest country in the world, with a population of over 1 billion people. As a developing country, India's economy is characterized by wage rates that are significantly lower than those in most developed countries. These two traits combine to make India a natural destination for FDI and foreign institutional investment (FII). Until recently, however, India has attracted only a small share of global FDI and FII primarily due to government restrictions on foreign involvement in the economy. But beginning in 1991 and accelerating rapidly since 2000, India has liberalized its investment regulations and actively encouraged new foreign investment, a sharp reversal from decades of discouraging economic integration with the global economy. The world is increasingly becoming interdependent. Goods and services followed by the financial transaction are moving across the borders. In fact, the world has become a borderless world. With the globalization of the various markets, international financial flows have so far been in excess for the goods and services among the trading countries of the world. Of the different types of financial inflows, the FDI and foreign institutional investment (FII) has played an important role in the process of development of many economies. Further many developing countries consider FDI and FII as an important element in their development strategy among the various forms of foreign assistance. The FDI and FII flows are usually preferred over the other form of external finance, because they are not debt creating, nonvolatile in nature and their returns depend upon the projects financed by the investor. The FDI and FII would also facilitate international trade and transfer of knowledge, skills and technology.

The government of India (GOI) has also recognized the key role of the FDI and FII in its process of economic development, not only as an addition to its own domestic capital but also as an important source of technology and other global trade practices.

REVIEW OF LITERATURE

A lot of studies have been conducted on the relationship between the stock market return and foreign investment. These studies find out the impact of investment on the stock exchange.

Verma and Prakash (2011) have examined the interest rate sensitivity of FII flows and found it to stock market behavior. They empirically analyzed the change of market return and volatility after the entry of FIIs to Indian capital market and found that there be statistically nonsignificant and concluded that the BSE Sensex is a major pull factor for these flows into the domestic financial markets. Bansal and Pasricha (2010) studied the after impact of opening market to FIIs on Indian is no significant change in the Indian stock market average returns. The volatility got significantly reduced after India unlocked its stock market to foreign investors. Nazir et al. (2010) tried to find the relationship between stock market development and FDI through economic growth for the period from 1985 to 2008 and showed significant positive relationship between FDI and growth of economy. Prasanna (2008) has examined the contribution of foreign institutional investment particularly among companies included in sensitivity index (Sensex) of Bombay Stock Exchange. He also studied is the relationship between foreign institutional investment and firm specific characteristics in terms of ownership structure, financial performance and stock performance. It was observed that foreign investors invested more in companies with a higher volume of shares owned by the general public. The promoters holdings and the foreign investments are inversely related. Roy (2007) explored the basic motives behind foreign portfolio capital flows into India. He found that they are primarily driven by capital gains, and in the Indian case, by the change in stock prices. The study further revealed that stock prices are causing net foreign portfolio inflows and not vice- versa. Further, he found bi-directional causality between the exchange rate and net foreign portfolio inflows. Singh (2004) highlighted that the securities market in India has come a long way in terms of infrastructure, adoption of best international practices and introduction of competition. Today, there is a need to review stock exchanges and improve the liquidity position of various scrips listed on

them. A study conducted by the World Bank (1997) reports that stock market liquidity improved in those emerging economies that received higher foreign investments. Kumar (2002) investigated the effects ofFII inflows on the Indian stock market represented by the Sensex using monthly data from January 1993 to December 1997 and inferred that FII investments are more driven by Fundamentals and do not respond to short-term changes or technical position of the market. In testing whether Net FII Investment (NFI) has any impact on Sensex, a regression ofNFI was estimated on lagged values of the first difference of NFI, first difference of Sensex and one lagged value of the error correction term (the residual obtained by estimating the regression between NFI and Sensex). Similarly, regression with Sensex as dependent variable showed that one month lag of NFI is significant, meaning that there is causality from FII to Sensex Hence, there are contradictory findings by various researchers regarding the causal relationship between foreign investment and Indian stock market capitalization. Therefore, there is a need to investigate whether foreign investments are the cause of stock market fluctuations in India. There is voluminous literature available on FIs impact on stock market across the globe. During the past few years, several empirical studies have been conducted on the developments and determinants of international capital flows and on the behaviour of FII in particular. Mishra (2009) examined the performance of the Indian capital market by empirically studying the impact of net equity investment by FIIs on stock returns. The study provides the evidence of positive correlation between FIIs net flows into India and stock market return. Moreover, the analysis finds that the movements in the Indian capital market are fairly explained by the FIIs net inflows. Reddy (2008) analyzed a performance of the Sensex vs. FIIs in Indian stock market and some of the most talked about movements of Sensex starting with the secondary market summary of each year. FIIs investments in BSE Sensex reveal that the liquidity as well as volatility were highly influenced by FIIs flows. FIIs are significant factor determining the liquidity and volatility in the stock market prices. After going through all the analysis regarding the stock market in last 2 years, the study found out that stock market touched its peak at 21000 but then crashed badly. However, the Sensex is a barometer and after seeing such fluctuations, one could be afraid of investing. So, even after such downturns, we can be hopeful for a positive market. Ahmad et al. (2005) examined the relationship between foreign institutional investment and stock returns in India during 2002-04. The Foreign Institutional Investment as a percentage of market capitalization and floating stock has been improving over the years. Using NSE Nifty and FII capital flows to the equity market, the foreign institutional investors seem to be positive feedback traders, as there is a strong positive relationship with lagged daily returns, and the results show a significant relationship with future equity returns. Mazumdar (2004) analyzed two consequences of liquidity (positive) and volatility (negative) capital flows on the Indian stock market. She finds that FII flows have enhanced the liquidity of Indian stock market and the liquidity is definitely higher post-liberalization. There is not much evidence to support the hypothesis that FII flow have led to volatility in the Indian stock market. The study uses Eagle Granger test of co-integration to examine the impact of FII inflows on the Indian stock market. Dey and Mishra (2004) examined the causal relationship between the net FIIs inflows and Indian stock market. The study explores the extent of correlation between net FIIs inflows and stock market returns. The results showed significant impact of net FIIs on market capitalization by reduced trading volume and share prices. Jo et al. (2002) have shown empirically tested instances where foreign investment induces greater volatility in markets compared to domestic investments and stock mainly traded by foreign investments experience higher volatility than those in which such (domestic) investor do not have significant impact in increasing volatility of stock returns. From this evidence, it is clear that the volatility of domestic stock market but the degree of impact of portfolio investment varies from country to country. Kumar (2002) revealed what happened to Indian stock market volatility after foreign investment. It also establishes the association between FIIs and stock market activity. The result shows that it was negatively correlated with portfolio investment as FIIs follow a contrarian's strategy and are net buyer when the market falls and net sellers when the market rises or perks. Fitz-Gerald (1999) shows that securities, which are narrow and shallow, are quiet controversial. It is alleged that foreign

investor use 'quick exit' in order to contain downside risk. They make frequent marginal adjustments to their portfolios, often due to change in their perceptions of country solvency rather than due to variations in the underlying asset value. Brennan et al. (1997) studied the impact of political uncertainties upon investments made by foreign investors. Volatility of the market have been observed during political elections and the transition periods. It found a significant impact of political risks on recession and market volatility.

OBJECTIVES OF THE STUDY

The main objective of the study is to establish the association between the India Stock Index and the FI.

1. To study the trends and growth of foreign capital flow in to India in the form of FDI & FII

2. To study the impact of FDI and FII on Indian stock market (Sensex and Nifty).

SCOPE OF THE STUDY

The present study takes 21 years data into consideration. To study the impact of FDI & FII on Indian stock market, SENSEX &NIFTY, as it is the most popular stock market indices and widely used by market participants for benchmarking.

RESEARCH METHODOLOGY

The main intention of the study is to know the criteria of foreign investment inflows in Indian capital market and their impact on BSE and NSE volatility. In order to make the study feasible and to carry out the study systematically and scientifically statistical tools are developed. This study is based on secondary data. The required data related to FDI and FII have been collected from various sources i.e. Bulletins of Reserve Bank of India, publications from Ministry of Commerce, Govt. of India. The BSE Sensex and CNX Nifty data is down loaded from the websites of BSE India and NSE India respectively. Daily closing index value are taken and averaged to get the index value for each year, which is considered as more representative figure of index for the entire year rather any one day's/month's closing figure of the index. The present study considers 21 years data starting from 2001 to 2022(Dec2021). Coefficient of correlation is used for statistical analysis and multiple regression analysis is a statistical technique used to evaluate the effects of two or more independent variables on a single dependent variable. In order to know the association international investments and the trend of BSE Sensex and NSE nifty.

DATA ANALYSIS

TABLE-1: *ANALYSIS OF FDI FLOWS IN INDIA FROM APRIL 2000 TO DECEMBER 2021*

Financial Year	Total FDI Inflows	% Growth Over Previous Year
2000-01	4029	---
2001-02	6130	52.15
2002-03	5035	-17.86
2003-04	4322	-14.16
2004-05	6051	40.00
2005-06	8961	48.09
2006-07	22,826	154.73
2007-08	34,835	52.61
2008-09	41,873	20.20
2009-10	37,745	-9.86
2010-11	34,847	-7.68
2011-12	46,556	33.60
2012-13	34,298	-26.33
2013-14	36,046	5.10
2014-15	45,148	25.25
2015-16	55,559	23.06
2016-17	60,220	8.39
2017-18	60,974	1.25
2018-19	62,001	1.68
2019-20	74,390	19.98
2020-21	81,722	9.86
2021-22(Dec2021)	60339	-26.16

The following table 1 presents the amount of flow of FDI in India in terms of US$ million. The flow of FDIs has shown an increasing trend during the considered period except during the years i.e. 2002 to 2004, 2009-11and the year 2012-14.

Table 2: *ANALYSIS OF FII FLOWS IN INDIA FROM APRIL 2000 TO DECEMBER 2021*

(AMOUNT US$ IN MILLIONS)

Financial Year	**Total FII Inflows**	**% Growth Over Previous Year**
2000-01	1847	
2001-02	1,505	-18.5
2002-03	377	-75.0
2003-04	10,918	2796.0
2004-05	8,686	-20.4
2005-06	9,926	14.3
2006-07	3,225	-67.5
2007-08	20,328	530.3
2008-09	-15,017	-173.9
2009-10	29,048	-293.4
2010-11	29,422	1.3
2011-12	16813	-42.8
2012-13	9135	-45.6
2013-14	5009	-45.1
2014-15	40,923	717.0
2015-16	(-)4,016	-109.8
2016-17	7735	292.6
2017-18	22165	186.6
2018-19	(-)2,225	-110.0
2019-20	552	124.8
2020-21	38,097	6801.6
2021-22(Dec2021)	-737	-101.9345355

The following table 2 presents the amount of flow of FII in India in terms of US$ million. The flow of FII has shown an increasing trend during the considered period except during the years i.e. 2002-03, 2006-07, 2008-09, 2015-16 and the year 2018-19. The growing realization by the foreign institutional investors regarding what are shallow markets encourages speculative investment aimed at pushing the market up and choosing an appropriate moment to exit.

Table3: *ANALYSIS OF SENSEX FROM APRIL 2000 TO DECEMBER 2021*

Financial Year	BSE Sensex	% Growth Over Previous Year
2000-01	4269.68	3.695382
2001-02	3331.94	-21.96
2002-03	3206.28	-3.77
2003-04	4493.53	40.15
2004-05	5740.98	27.76
2005-06	8280.08	44.23
2006-07	12277.32	48.28
2007-08	16568.88	34.96
2008-09	12365.55	-25.37

2009-10	15585.21	26.04
2010-11	18605.17	19.38
2011-12	17453.88	6.19
2012-13	18015.79	3.20
2013-14	27499.42	52.64
2014-15	26117.54	-5.03
2015-16	26626.46	1.95
2016-17	34056.83	27.91
2017-18	36068.33	5.91
2018-19	41253.74	14.38
2019-20	47751.33	15.75
2020-21	40980	-0.1418
2021-22(Dec2021)	55230	0.34773

The following table 3 presents the amount of flow of Sensex. The flow of BSE Sensex has shown an increasing trend during the considered period. This is evident from the table 3 that Sensex in the year 1997 to 2004 in the range of 3760-5550 basic points but after the year 2004 and up to 2022 Sensex in their bullish trend and cross 60000 mark.

Table4: *ANALYSIS OF NIFTY FROM APRIL 2000 TO DECEMBER 2021*

Financial Year	CNX Nifty	% Growth Over Previous Year
2000-01	1334.76	
2001-02	1077.02	-19.3098
2002-03	1037.22	-3.69538
2003-04	1427.5	37.6275
2004-05	1805.26	26.46305
2005-06	2513.44	39.2287
2006-07	3572.44	42.13349
2007-08	4896.59	37.0657
2008-09	3731.02	-23.8037
2009-10	4657.76	24.83878
2010-11	5583.54	19.87608
2011-12	5248.341	-6.00334
2012-13	5455.734	3.951592
2013-14	6009.508	10.15031
2014-15	7967.344	32.57897
2015-16	7983.794	0.206468
2016-17	8421.186	5.478498
2017-18	10030.13	19.10591
2018-19	10859.51	8.268886
2019-20	11487.96	5.787094
2020-21	12006	4.50941682
2021-22(Dec2021)	16461.34	37.1092787

The following table 4 presents the amount of flow of Nifty in terms of US$ million. The flow of Nifty has shown an increasing trend during the considered period.

TABLE5: *Flow of FDI, FII, BSE, NSE*

Financial Year	FDI (US$ million)	FII (US$ million)	BSE Sensex	CNX Nifty
2000-01	4029	1847	4269.68	1334.76
2001-02	6130	1,505	3331.94	1077.02
2002-03	5035	377	3206.28	1037.22
2003-04	4322	10,918	4493.53	1427.5
2004-05	6051	8,686	5740.98	1805.26
2005-06	8961	9,926	8280.08	2513.44
2006-07	22,826	3,225	12277.32	3572.44
2007-08	34,835	20,328	16568.88	4896.59
2008-09	41,873	-15,017	12365.55	3731.02
2009-10	37,745	29,048	15585.21	4657.76
2010-11	34,847	29,422	18605.17	5583.54
2011-12	46,553	16813	17453.88	5248.341
2012-13	21,805	9135	18015.79	5455.734
2013-14	36,046	5009	27499.42	6009.508
2014-15	45,148	40,923	26117.54	7967.344
2015-16	55,559	(-)4,016	26626.46	7983.794
2016-17	60,220	7735	34056.83	8421.186
2017-18	60,974	22165	36068.33	10030.13
2018-19	62,001	(-)2,225	41253.74	10859.51
2019-20	74,390	552	47751.33	11487.96
2020-21	81,722	38,097	40980	12006
2021-22(Dec2021)	60339	-737	55230	16461.34

According to table-5 the flow of FDIs has shown an increasing trend during the considered period except during the years i.e. 2001 to 2004 and the year 2010-11. The flow of FII has shown an increasing trend during the considered period except during the years i.e. 2002-03, 2006-07 and the year 2008-09. Sensex has shown their bullish trend and cross 60000 marks. The flow of Nifty has shown an increasing trend during the considered period.

TABLE6: *CORRELATION BETWEEN FDI &FII AND SENSEX & NIFTY*

Correlations					
		FDI	FII	SENSEX	NIFTY
FDI	Pearson Correlation	1	.631	.903	.923
FII	Pearson Correlation	.631	1	.493	.398
**. Correlation is significant at the 0.01 level (2-tailed).					

Correlation is applied to study the statistical relationship of the variables FDI, FII, BSE Sensex and CNX Nifty. The following table 6 presents the output, when correlation is run to the 21 years data considered. Based on the results it can be concluded that there is a very strong positive correlation between FDI & Sensex and FDI & Nifty, and the correlation is found to be significant at 1 percent level of significance. The above result shows that there is a correlation between BSE Sensex and FDI. If the Sensex is moving upward direction then more and more investors attract toward the country. When it comes to FII it was found that there is a moderate positive correlation between FII & Sensex and FII & Nifty but the correlation is not significant at 1 percent level of significance.

TABLE7: *IMPACT OF FLOW OF FDI &FII ON SENSEX*

Independent variable: FDI AND FII

Dependent Variable: BSE SENSEX

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	**.928**	**.862**	**847**	**6076.032**

According to table 7 shows the relationship between FDI, FII and SENSEX. R Square, the coefficient of determination, is the squared value of the multiple correlation coefficients. The value of R2 is 0.862; it shows that the model explains 86.2% of the variation. In other words the Independent variables FDI and FII are able to explain around 86% the variation of the dependent variable (SENSEX).

TABLE8: *IMPACT OF FLOW OF FDI &FII ON NIFTY*

Independent variable:FDI AND FII

Dependent Variable: NIFTY

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	**.957**	**.916**	**.906**	**1087.80**

According to table 8 shows the relationship between FDI, FII and NIFTY. R Square, the coefficient of determination, is the squared value of the multiple correlation coefficients. The value of R2 is 0.916; it shows that the model explains 91.6% of the variation. In other words the independent variables FDI and FII are able to explain around 92% the variation of the dependent variable (NIFTY).

CONCLUSION

According to this study there is a strong positive correlation between FDI &SENSEX and FDI & NIFTY and moderate positive correlation between FII & SENSEX and FII & NIFTY. For the purpose of the study, the casual relationship can be evaluated using implied volatility so the policy makers for the domestic market segment can anticipate the future market trend. Hence it can be concluded that the impact of flow of FDI & FII on Indian stock market is significant.

Reference

[1] Bansal A, & Pasricha J. S., Foreign Institutional Investors Impact on Stock Prices in India. Journal of Academics Research in Economics, 1(2), 181-189. 2009.

[2] Bhole L.M., 1995, Financial Institutions and Market Structure, Growth and Innovations, Tata McGraw Hill Publication, New Delhi.

[3] Brennan, M. and H. Cao, 1997, International Portfolio investment flows, Journal of Finance, 52: 1851-80.

[4] Chittedi Krishana Reddy, 2008, Volatility of Indian Stock Market and FIIs, The India Economy Review, 5(31).

[5] Dey, Subarna, Bishnupriya Mishra, 2004, Causal Relationship between Foreign Institutional Investment and Indian Stock Market, The ICFAI Journal of Applied Finance, 61-79.

[6] Dhade Aruna, Kulshreshth Risha, 2007, Impact of Foreign Institutional Investments on Domestic Stock Market: An Evidence From Indian Stock Market, Paradigm, 11(1): 57-66.

[7] Fisher, Donald E., Jorden, Ronald J., 1995, Security Analysis and Portfolio Management, Prentice Hall of India Pvt. Ltd., New Delhi.

[8] Fitz-Gerald, 1999, Security Sector Reforms (SSR) in Sierra Leone, Global Facilitation Network for SSR, Cranfield University.http://finance.yahoo.com

[9] Jo, Gab-Je, 2002, Foreign Equity Investment in Korea, paper presented at the Association of Korean Economic Studies.

[10] Kumar, A.K., 2002, Foreign Institutional Investments: Stablizing or Destabilizing, Abhigyan, 23-26.

[11] Khan A. M, Shahi A.d, Shahid A, 2005, Foreign Institutional Investment Flows and Equity Returns in India, The ICFAI Journal of Applied Finance, 11: 16-30.

[12] Kumar, S.S. "Indian stock market in international diversification: An FIIs perspective" Indian Journal of Economics, Vol, lxxxii, No-327, April, pages 85-102. 2002.

[13] Mazumdar, Tanushree, 2004, FIIs inflow to India: Their effects stock market liquidity and Volatility, The ICFAI Journal of Applied Finance, 5-20.

[14] Mishra P.K., 2009, Role of FIIs in Indian Capital Market, Institute of Technical Education and Research (ITER).

[15] Rai. K. and Bhanumurthy,R.K., N.R."Determinents of Foreign Institutional Investments in India: The Role of Return, Risk and Inflation". 2003

[16] Sultana, S.T, Pardhasaradhi,S. Impact of Flow of FDI & FII on Indian Stock Market Finance Research Vol no 3 July 2012 s ISSN: 2165-8226

[17] Zhang, J. (2008): "Foreign Direct Investment, Governance, and the Environment in China: Regional Dimensions", www.nottingham.ac.uk/chinese/documents 16/jing-zhang.pdf

[18] www.bseindia.com www.bseindia.com

[19] www.equitymaster.com www.equitymaster.com

[20] www.nseindia.com