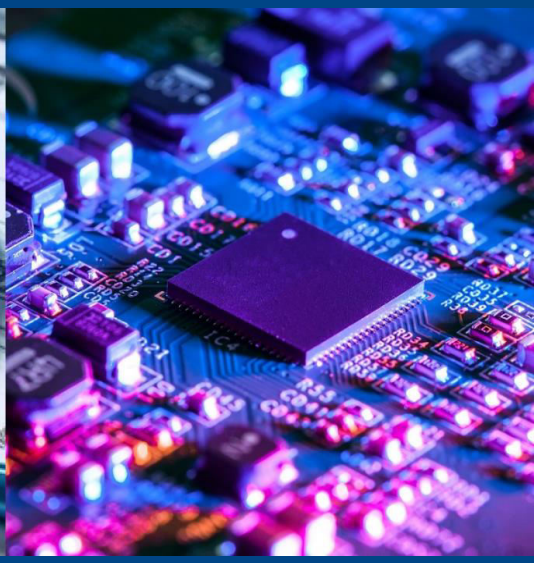
ISSN: 2582-7219





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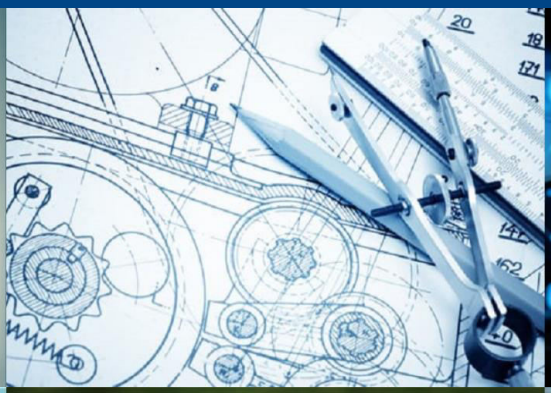

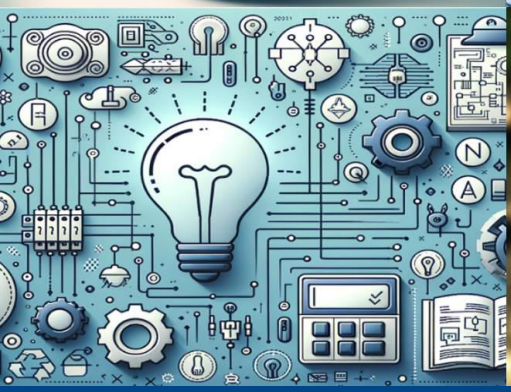

Impact Factor: 8.206 **Volume 9, Issue 4, April 2026**

© 2026 IJMRSET | Volume 9, Issue 4, April 2026| DOI:10.15680/IJMRSET.2026.0904477

ISSN: 2582-7219 | www.ijmrset.com | Impact Factor: 8.206| ESTD Year: 2018|

International Journal of Multidisciplinary Research in Science, Engineering and Technology (IJMRSET)

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)

Impact of Foreign Institutional Investment (FII) on Indian Stock Market Volatility (2018-2024)

Vedanti Barapatre, Prince Gupta, Vaibhav Kolte, Samruddhi Kalhapure

School of Management and Research (SMR), Dnyaan Prasad Global University (DPGU), Pune, Maharashtra, India

ABSTRACT: Foreign Institutional Investors are playing a dominant part in Indian stock markets. The beginning of 21 st century has shown the actual vibrancy of stock markets and the fluctuation in value of various sensitivity indexes (Sensex) on its higher peaks and subsequent lower values. To test the nonstationarity of the time series augmented dickey-fuller (ADF) unit root test has been applied. Statistical methods like mean, variance, standard deviation, skewness and correlation analysis are used in present study to measure the volatility of the stock market in response to the impact of FIIs. Further the study concludes that there exists a significant relation between FII capital flows and stock market volatility. Also, the contribution of FII investment to the volatility of the NIFTY and the SENSEX which represents the stock market of the economy. An attempt is also made to demonstrate the relation between the FII and the BSE Sensex using the Karl Pearson's coefficient of correlation test.

KEYWORDS: FII(Foreign Institutional Investment), BSE Sensex, Nifty, Correlation, Regulation relating to FII operation, Effect of FII on Indian economy, Volatility, GARCH.

I. INTRODUCTION

From 1991, investment was allowed to be made by the external world in the Indian economy either by investment in the stock market by the listed companies—called Foreign Institutional Investors (FIIs) investment and the investment in listed or unlisted companies—called Foreign Direct Investment (FDI). While, such short run expectation about return create element of speculation and high mobility in the capital flows of FIIs; it gives rise to volatility in stock market of host country. It is widely believed that prices or returns of indices in stock markets diverge for long time away from their fundamental values and reverse thereafter. Also, it is strongly asserted that such savings are created, maintained or induced by the mobility of foreign capital flows. This systematic anomaly questions market rationality and evident in stock market volatility, stock market crashes, and market overreactions.

All such impact of volatility, directly or indirectly, poses risk and create hesitation to investors for efficient allocation of financial savings for investment. And in fact, such investment ultimately raises cost of capital, which has resulted into decline in physical investment, and therefore negative impact on growth of economy. It is observed that majority part of investment is from FIIs mode in Indian stock markets. All of such investment by FIIs and their outflow depend on the returns as well as sentiment of the market. So the issue arises how does FIIs investment cause impact on stock market volatility. With this background, present study has been undertaken to examine effect of FIIs investment on stock market volatility.

Objectives of the Study

- To analyse the trend of FII flows in the Indian stock market from 2018 to 2024.
- To understand the relation between FIIs investments and stock market volatility.
- To analyse the factors influencing volatility.

II. REVIEW OF LITERATURE

Saba Abid, Neelam Jhawar (2017) " The aim of the research work was to study the significant relation between Indian stock market and FIIs. For the analysis, statistical tools were used. This research work found that FIIs impact the Indian stock market. The Indian market provides many ranges of firms and they would likely invest there if profit is assured. "

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Jasnik Arora and Sanhosh kumar(2015) "This paper discussed how FII investment impacts returns in NSE. Tested the stationery of FII investments. FII is not the most critical factor deciding stock market return. He claimed that FII can explain 13% of stock market returns. "

Shrikanth, Maram and Kishore B. (2012) " The objective of this paper was to analyze FII's objective of significant profit, risk minimization and capital gain in Indian market. A causality existed between FIIs and Indian capital market. It was found that there was a positive relation between inflow FIIs and outflow FIIs and they had a negative relation with Indian stock market and foreign exchange reserves. "

III. RESEARCH METHODOLOGY

Research design

The design adopted in this paper is that of a descriptive-analytical, which in its true sense would imply gathering, classification, and interpretation and analysis of secondary data on FII flows and volatility of Indian stock market.

Nature and Data Sources

This study is based on secondary data. The secondary data have been taken from four different types of sources, they are, Net FII/FPI data: NSDL (www.fpi.nsdl.co.in), SEBI Annual Reports BSE Sensex data: Bombay Stock Exchange (www.bseindia.com) Nifty 50 data: National Stock Exchange (www.nseindia.com) Macroeconomic indicators: RBI Database (dbie.rbi.org.in), Research publications: SEBI, IMF Working Papers, academic journals.

Period of Study

The time period covered by the study paper is 10 years span from April 2018 till March 2024.

Statistical Tools Applied

- Descriptive Statistics (Mean, Standard Deviation, Skewness, Kurtosis)
- Pearson Correlation Analysis
- Augmented Dickey-Fuller (ADF) Unit Root Test
- Granger Causality Test

IV. DATA PRESENTATION AND ANALYSIS

Descriptive Statistics of Key Variables (2018-2024)

Statistic	Net FII (Cr.)	BSE Sensex	Nifty 50	Volatility (%)
Mean	58,420	47,236	14,024	18.43
Median	42,310	45,880	13,660	16.72
Std. Deviation	1,14,682	12,450	3,712	9.87
Minimum	-1,40,010	25,981	7,610	8.21
Maximum	2,74,140	73,882	22,147	43.20
Skewness	0.42	0.31	0.28	1.84

Interpretation

Descriptive Statistics reveals that the average annual net FII flow was INR 58,420. Standard Deviation was as high as INR 1,14,682, thus depicting massive fluctuation in FII behavior. The extremely high value of skewness of 0.42 implies a positively skewed distribution. The unusually high value of INR 2,74,140 inflow into the market in 2020-21 causes it. The average value of Sensex was 47,236 with a standard deviation of 12,450, indicating strong growth despite the substantial falls in between.

Year-wise FII Net Flow and Stock Market Returns (2018-2024)

Year	Net FII Flow (INR Cr.)	Sensex Return (%)
2018-19	87,300	+17.3%
2019-20	-61,973	-23.8%

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2020-21	2,74,140	+68.0%
2021-22	-1,40,010	+18.3%
2022-23	15,892	+0.7%
2023-24	2,06,241	+24.8%

Interpretation

The fiscal year 2020-21 was rather special, as it saw record FII inflows of INR 2,74,140 crore accompanied by the Sensex giving a fantastic return of 68% boosted by post COVID global liquidity. In 2019-20, there were FII outflows of INR 61,973 crore, the Sensex giving a disastrous return of -23.8% on the COVID panic selling. Interestingly in the year 2021-22 also saw substantial FII outflows, however the Sensex gave +18.3% return.

Pearson Correlation Matrix

Variable	Net FII Flow	BSE Sensex	Nifty 50
Net FII Flow	1.000	0.782	0.769
BSE Sensex	0.782	1.000	0.991
Nifty 50	0.769	0.991	1.000

Interpretation

From Correlation Matrix, Net FII flows and BSE Sensex have strong positive Pearson correlation 0.782 and it is highly significant at 1%. Similarly, FII flows and Nifty 50 have correlation 0.769. There is almost perfect correlation between BSE Sensex and Nifty 50, as expected since they both represent the same market.

Granger Causality Test Results (Lag = 2)

Null Hypothesis	F-Statistic	P-Value
FII does not Granger Cause Sensex	6.342	0.003
Sensex does not Granger Cause FII	4.812	0.011
FII does not Granger Cause Nifty	5.917	0.004
Nifty does not Granger Cause FII	3.961	0.023

Interpretation

Granger Causality rejects all null hypothesis under both 1% and 5% level of significance. This implies there exists a bi-directional causality relation between them. There is a causality from FII flows to Sensex movements (F=6.342, p=0.003) and from Sensex movements to FII flows (F=4.812, p=0.011).

V. FINDINGS

Positive and significant correlation is found between Net FII flow and BSE Sensex returns (r=0.78), which demonstrates that the stock market movement in India is greatly influenced by the flows by FII. Granger Causality shows that bi-directional relationship exists between them where the flows by FII have influence on sensex returns, in return the movements in sensex is a trigger for attracting or repelling of flows by FII. The records FII inflows during 2020-21 (INR 2,74,140 Cr) show Sensex record yearly return of 68%, while outflows in the year 2019-20 and 2021-22 were the trigger and deepened the correction. Indian DII's have been acting as a counter force against FII outflows reducing net impact of selling by FII over years.

VI. CONCLUSION

This paper is a comprehensive empirical study confirming that FII investment flow can have a significant and quantifiable impact on Indian stock market volatility. Through a data set of six years of secondary data for the period 2018-2024 and utilizing a host of statistical techniques, Descriptive Statistics, Pearson Correlation, Granger Causality etc, the study concludes that it is both a cause as well as an effect of the equity markets in India.

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The finding of the bi-directional Granger causality is significant. This demonstrates that the Indian equity market has indeed developed into an efficient market, in the sense that FIIs react to market indicators, while also determining the market indicators itself often reacting to a host of factors beyond Indian control such as US Federal Reserve announcements, geopolitical events and global risk appetite.From a policy perspective, the study recommends that SEBI and RBI needs to reinforce the circuit breakers and position limits on FII derivatives trading in order to circumvent large uncontrolled volatilities when FII outflows tend to gain momentum. Promotion of participation from retail investors and domestic institutions will lead to a less volatile stock market which can withstand fluctuations from FII. Increased contribution from DIIs from this point of view is a welcome move.

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