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A STUDY ON INFLUENCE OF FIIs ON BSE SENSEX

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Abstract:

Indian stock market has grown steadily over the years and the major part of investments in India can be attributed to FIIs. The flow of FIIs would help the capital abundant countries to be on progressive path by helping to bridge the gap between the places where there is surplus of capital and places where there is deficit of capital. The present study has examined the relationship between Net FII flows and stock market volatility. For the study, yearly net FII flows have been considered and the data for the study cover a period of last 19 years from 2000 to 2018. Yearly closing sensex points have been compared with yearly net FII flows concerned. The study purely focuses on the context of Indian market conditions and analytical in nature. Karl Pearson's co-efficient of correlation has been used to know the degree of relationship which exists between FII flows and stock market volatility and the significance of co-efficient of correlation has been tested using t-test. The data for the study have been extracted from the secondary sources like moneycontrol and bseindia for verification.

Keywords:

FIIs (Foreign Institutional Investments),

Capital abundant,

Closing sensex points,

Analytical,

Degree of relationship.

INTRODUCTION

Foreign institutional investment has got significant importance in the modern era. Indian stock market has grown steadily over the years and the major part of investments in India can be attributed to FIIs. During the pre-liberalization period India suffered current account deficit which was due to large debt flows but the introduction of liberalization has led the Indian economy to have revival after the serious financial crunch. The flow of FII would help the capital abundant countries to be on progressive path as it helps to bridge the gap between the places where there is surplus of capital and places where there is deficit of capital. A foreign Institutional Investor is any type of investor or entity registered or incorporated outside India which proposes to make investment in India. FIIs have been registered in accordance with the Section 2(f) of the SEBI (FII) Regulation 1995. FIIs could invest in the listed or to-be listed entities and only through stock exchanges. In India FIIs are very active in the OTC(Over The Counter) markets and in the IPO.

The regulations for the FIIs have been put forward by the Reserve Bank of India (RBI) in the sections 6 and 47 of the Foreign Exchange Management Act (FEMA), 1999. In line with the said regulations, since 2003, the Securities and Exchange Board of India (SEBI) has been registering FIIs and monitoring investments made by them through the portfolio investment route under the SEBI regulations 1995. SEBI acts as the nodal point in the registration of FIIs. Subsequent to SEBI (FPI) regulations, 2014depositories register and monitor the activities of the FIIs and SEBI continues to be the regulator.

Entities covered by the term 'FII' include, " Pension Funds, Mutual Funds, Investment Trusts, Banks, Insurance Companies, Foreign Central Banks, Foreign Governmental Agencies, Sovereign Wealth Funds, International/ Multilateral organization/ Agency, University Funds(Serving public interests), Endowments(Serving public interests), Foundations (Serving Public Interests), Charitable Trusts and Charitable Institutions(Serving public interests)."

FIIs have been considered as one of the forms of Foreign Portfolio Investment (FPI). FPI consists of Foreign Institutional Investors (FIIs), Qualified Foreign Investors(QFIs) and Sub-accounts. To simplify the operations of the Foreign Portfolio Investments, SEBI has introduced Foreign Portfolio Investor's regulation 2014 and merged these three forms under one roof called Foreign Portfolio Investments.

The growth of any economy cannot be seen unless it is integrated with the rest of the world. Since the Economic Reforms in India in the year 1992, the Indian economy has achieved so much in terms of development. FIIs stand as the major reason for all this development over the years. FIIs have huge impact on the activities of the stock market. Most of the researches have put forwarded the view that economic development has positive relationship with the flow of FIIs. This paper focuses on the relationship which exists between stock market and flow of FIIs using various statistical techniques.

OBJECTIVES OF THE STUDY

1. To study the influence of FIIs on stock market.
2. To study the trends of FIIs flow on stock market returns.

LITERATURE REVIEW

Various studies have been examined which have studied about the impact of FIIs on stock market movements. Most of the studies reflect that the FIIs have positive relationship with the stock market. While some studies say that only FIIs can influence the stock market, other studies put forward the view that there exists bi-directional relationship between stock market and FIIs.

Bohra and Dutt (2011) tried to study the relationship between stock market and FII flows in India. The study indicated a positive correlation between stock market and FIIs in a relation that Sensex follows the investment behaviour of FIIs. It was also observed that positive or negative movements in the FII flows lead to a major shift in the sentiments of investors in the market.

Mukherjee et al. (2002) found that investment flow in an economy is caused by return from investment in equity market and other way round does not exist for Indian capital market.

Jain et al. (2012) observed the volatility of Sensex due to FII. The study period was from 2001 to 2010. The study has brought out the positive correlation between FIIs and stock market return. The analysis indicated that the Sensex increased with positive FII inflows and decreased with negative FII inflows. So, FIIs proved to be the causing factor for the fluctuations in the stock market.

Noor and Shabbir (2014) observed the FIIs movement and also examined the relationship between FIIs and performance of Indian Capital market. The study found positive correlation between the FII Investment and BSE Sensex which shows that FII flows are Important factor for the

Indian stock market performance. The study confirmed the conceptual notion that FII drives the stock market performance. The study also suggested that host country has to follow stable macro- economic policies to attract FII Investment and retain the confidence of the investors

Duhan (2014) examined the impact of FII investment on BSE Sensex. The study established that the FIIs are the reason for the movement in stock market as the study emphasized that SENSEX goes up with the positive FII investment and goes down with the negative FII investment. The study also found high degree of positive correlation between the FII investment and Sensex. It shows that both variables moves in the same direction.

Siddiqui and Azad (2012) examined the impact of FIIs on sectoral indices of Indian stock market indices. The study found that FIIs have positive relationship with all selected sectoral indices of BSE during the study. But this relationship is found significant only for IT, metal and auto indices while the other indices does not found to have significant relationship with FIIs.

Ramanaiah (2011) studied the growth of FII investment and its impact on stock market. The study indicated high degree of volatility in stock market due to FII investment. The study also established FIIs as one of the significant contributing factors to the stock market development. The study recommended that in order to minimize the volatility impacts of FIIs, the policies and regulations should be carefully upgraded.

LIMITATIONS OF THE STUDY

The major limitations of the study are,

1. In our study we have considered that only FIIs net flow affects the BSE SENSEX but in reality there are many factors which affect the BSE SENSEX. So there is a chance of being biased in the study.
2. In our study we have considered yearly closing SENSEX points which again may not represent the holistic view of entire data of that particular year.

RESEARCH GAP

This paper focuses on the relationship between the FII flows and stock market volatility. Yearly data of FII flows till recent period 2018 have been considered. Most of the studies have not considered the data pertaining to more than 15 years. So the present study using the data of more number of years would give better general perception and this paper would help in filling this gap.

RESEARCH METHODOLOGY

This shows the methodology which has been used to examine the research problem. For the purpose of solving the research problem various studies have been taken into consideration and literatures concerned have been reviewed. Firstly research problem has been defined and in the subsequent sections the other aspects of the study are recognized i.e. data sources, variables used in the study, study period and analytical used in the study.

SCOPE OF THE STUDY

The present study has examined the relationship between FII flows and stock market volatility. For the study yearly net FII flows have been considered and the data for the study cover a period of last 19 years from the 2000 to 2018. Yearly closing sensex points have been considered for every yearly net FII flow concerned. The study purely focuses on the context of Indian market conditions and analytical in nature. Pearson's co-efficient of correlation has been used to know the degree of relationship which exists between FII flows and stock market volatility.

RESEARCH DESIGN

Research design lays down a path on which researcher has to walk during the study. Our Research design consists of objectives of the study, data source, study period, various analytical tools used in the study and hypothesis of the study.

DATA BASE AND SOURCES

To analyze the impact of FII on stock market returns the study has used the secondary data collected from various sources. The main variables studied are as follows:

VARIABLE	VARIABLE DESCRIPTION	DATA SOURCES
FII	Yearly net investment by FIIs	www.moneycontrol.com
BSE SENSEX	Yearly closing points of BSE SENSEX indicating stock prices of 30 companies in Index.	www.bseindia.com

STUDY PERIOD

The period of study consists the data of last 19 years. The period which has been chosen for the study ranges from January 2000 to December 2018.

HYPOTHESIS OF THE STUDY

Null hypothesis:

There is no correlation between the FII flows and stock market volatility. The null hypothesis says that there exists no correlation between FII inflows and stock market return. It brings out the meaning that FII inflows do not influence the returns of stock market.

Alternative hypothesis:

There is correlation between FII flows and stock market volatility. This hypothesis brings out the meaning that FII flows would be one of the reasons for the stock market volatility. We would expect this hypothesis to be true.

YEARLY DATA OF FII FLOWS

FII year wise net flow of last one decade has been taken to compare it with the sensex points to know the correlation between two variables. Here net flow if FII is considered as Independent variable.

YEARS	EQUITY (Rs.crore)	DEBT (Rs.crore)	NET FLOW (Rs.crore)
2000	**6,370.50**	**22.80**	6,393.30
2001	**13,294.70**	**119.00**	13,413.70
2002	**3,627.23**	**64.86**	3,692.09
2003	**29,953.20**	**4,939.74**	34,892.94
2004	**38,688.40**	**3,113.20**	41,801.60
2005	**45,825.60**	**-5,105.40**	40,720.20
2006	**31,281.08**	**3,629.18**	34,910.26
2007	**70,940.05**	**9,149.13**	80,089.18
2008	**-53,051.70**	**12,340.40**	40,711.30
2009	**85,367.60**	**3,458.40**	88,826.00
2010	**140,497.20**	**54,442.80**	194,940.00
2011	**-3,642.40**	**42,597.80**	38,955.40
2012	**130,146.80**	**35,902.30**	166,049.10
2013	**112,381.60**	**-41,732.60**	70,649.00
2014	**98,177.90**	**158,889.59**	257,067.49
2015	**13,055.57**	**49,252.85**	62,308.42
2016	**15,102.50**	**-32,411.35**	-17,308.85
2017	**49,880.89**	**144,749.87**	194,630.76
2018	**-25,000.76**	**-50,489.09**	-75,489.85

Note: *The above data have been taken from moneycontrol website.*

SENSEX YEARLY CLOSING POINTS

Sensex yearly closing points for the period ranging from 2009 to 2018 have been taken from moneycontrol website. Sensex closing points are considered as dependent variable and sensex is expected to represent the entire picture of stock market.

Sensex yearly closing points are as follows

YEARS	BSE sensex (closing points)	YEARS	BSE sensex (closing points)
2000	3,972.12	2010	20,509.09
2001	3,262.33	2011	15,454.92
2002	3,377.28	2012	19,426.71
2003	5,838.96	2013	21,170.68
2004	6,602.69	2014	27,499.42
2005	9,397.93	2015	26,117.54
2006	13,786.91	2016	26,626.46
2007	20,286.99	2017	34,056.83
2008	9,647.31	2018	36,068.33
2009	17,464.81	-	-

Note: *The above data has been taken from BSE INDIA website.*

CORRELATION BETWEEN NET FII INFLOW AND BSE SENSEX POINTS

BSE SENSEX includes the stocks of 30 representative companies which belong to various sectors of the economy. Sensex includes the stocks of various representative companies with the help of which holistic picture of the economy could be seen. Below an attempt has been made to figure out the correlation between net FII inflow and BSE sensex points by taking the data of last one decade. The results may help us to analyze to what extent net FII inflows would influence the stock market indices.

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YEARS	NET FLOW (Rs. crore)	BSE sensex (closing points)	YEARS	NET FLOW (Rs. crore)	BSE sensex (closing points)
2000	6393.30	3972.12	2010	194940.00	20509.09
2001	13413.70	3262.33	2011	38955.40	15454.92
2002	3692.09	3377.28	2012	166049.10	19426.71
2003	34892.94	5838.96	2013	70649.00	21170.68
2004	41801.60	6602.69	2014	257067.49	27499.42
2005	40720.20	9397.93	2015	62308.42	26117.54
2006	34910.26	13786.91	2016	-17308.85	26626.46
2007	80089.18	20286.99	2017	194630.76	34056.83
2008	40711.30	9647.31	2018	-75489.85	36068.33
2009	88826.00	17464.81	-	-	-

Formula for calculating pearson's co-efficient of correlation

$$r = \frac{n\sum_{i=1}^{n} x_i y_i - \sum_{i=1}^{n} x_i \sum_{i=1}^{n} y_i}{\sqrt{(n\sum_{i=1}^{n} x_i^2 - (\sum_{i=1}^{n} x_i)^2)(n\sum_{i=1}^{n} y_i^2 - (\sum_{i=1}^{n} y_i)^2)}}$$

Result Details & Calculation

X Values

$\sum = 1277252.04$

Mean = 67223.792

$\sum(X - M_x)^2 = SS_x = 122104396871.165$

Y Values

$\sum = 320567.31$

Mean = 16871.964

$\sum(Y - M_y)^2 = SS_y = 1888144173.118$

X and **Y Combined**

N = 19

$\sum(X - M_x)(Y - M_y) = 4907417573.489$

R Calculation

$r = \sum((X - M_y)(Y - M_x)) / \sqrt{((SS_x)(SS_y))}$

r = 4907417573.489 /

$\sqrt{((122104396871.165)(1888144173.118))}$

= 0.3232

Meta Numerics (cross-check)

r = 0.3232

Key

X: X Values

Y: Y Values

M_x: Mean of X Values

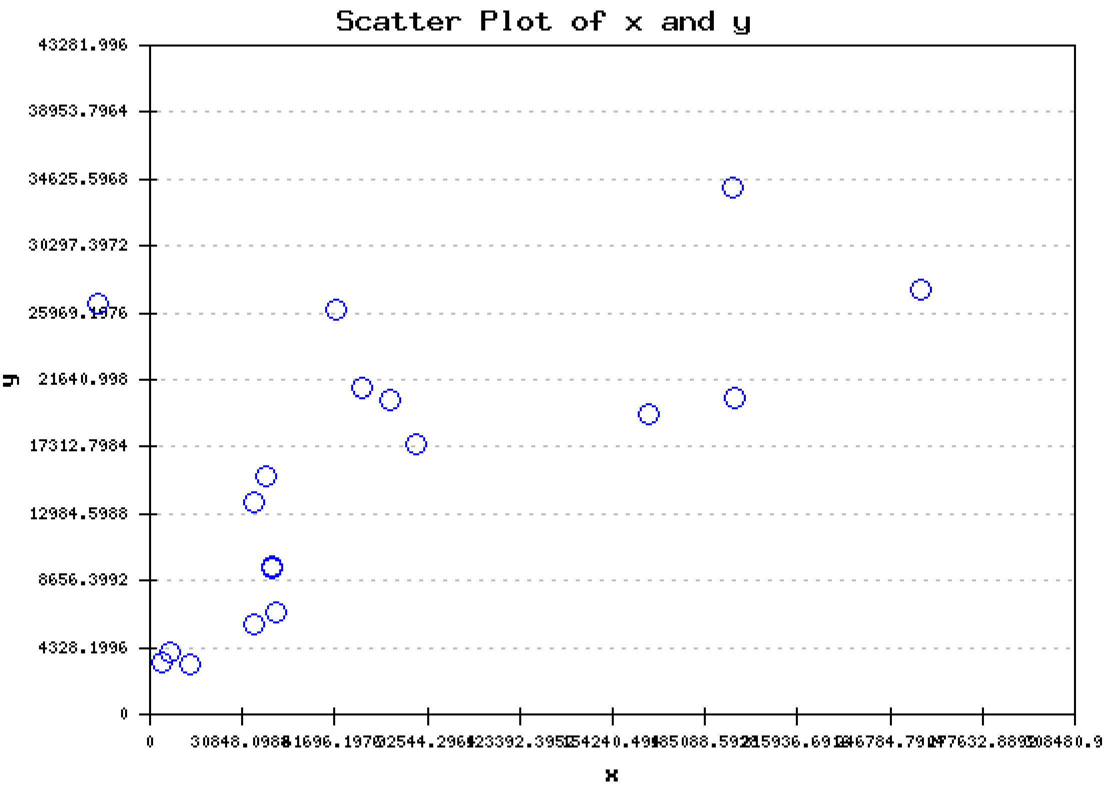
M_y: Mean of Y Values

X - M_x & Y - M_y: Deviation scores

$(X - M_x)^2$ & $(Y - M_y)^2$: Deviation Squared

$(X - M_x)(Y - M_y)$: Product of Deviation Scores

The value of **R** is **0.3232.**



It has been founded out by the study that there is positive relationship between the FII net flows and BSE sensex. The value of r is 0.3232.

The following needs to be tested:

H0: $\rho=0$

$H1: \rho\neq 0$

where ρ corresponds to the population correlation.

The sample size is n = 19, so then the number of degrees of freedom is

$df=n-2=19-2=17$

Given

- r, the Pearson product-moment correlation coefficient for a sample of paired XY values randomly drawn from a certain population; and
- N, the number of XY pairs.

  If the true correlation between X and Y within the population is zero, and if $N\geq 6$, then the quantity

  $t = r/\sqrt{[(1-r^2)/(N-2)]}$

is distributed approximately as the sampling distribution of Student's t with N−2 df. Application of this formula to any particular observed sample value of r will accordingly test the null hypothesis that the observed value comes from a population in which the true correlation of X and Y is zero.

t=1.408

P value for two-tailed test= 0.177108

We reject H0 when, $|t| > t_{\alpha/2, n-2}$

since t value is more than the table value we reject the null hypothesis.

FINDINGS BASED ON THE STUDY

Foreign Institutional investors have an important place in India capital market. They influence bull and bear circumstances of Indian stock market, so the main objective of the research study applied and conducted is to measure the significant role of FIIs investment. The study confers a very apparent depiction of the Impact of Foreign Institutional investors on Indian stock market, with reference to BSE Sensex. The various findings of the study are,

1. Firstly it has been found out that there exists positive correlation between flow of FIIs and BSE SENSEX. The positive relationship means both the variables move in the same direction during a given period of time. Though the correlation coefficient r 0.3232 which shows low positive correlation, FIIs impact is more on stock market.
2. FIIs investment provides liquidity to Indian stock market. Whenever there is more amount of inflow of FIIs into the Indian capital market it would result in increasing the stock market activity and as a result liquidity would be more in the economy.
3. The flow of FIIs create volatility in the stock market. It would be rarely possible to analyze future by taking into consideration the historical data. A minor change in an economy make bring out huge impact on stock market and as a result may play with the sentiments of the investors.
4. It has been found in the results that there exists positive correlation between the flow of FIIs and BSE SENSEX, sometimes FIIs have affected the market in both the directions.
5. India had faced a huge financial crises in the year 2008. During the year FIIs outflow was Rs.39377.88 crore and as a result the BSE SENSEX closing points had gone down by 10639.68 points. This reflects the view that the outflow of FIIs is also one of the reasons for the falling down of BSE SENSEX closing points

SUGGESTONS BASED ON THE STUDY

The flow of FIIs into the Indian capital market would undoubtedly stand in favor of the economy. The various suggestions which have been put below may help the Indian economy to keep up the momentum pace over the years.

1. Government should be liberal towards foreign investors and treat them at par with domestic investors.
2. Though liberty must be given to the Foreign Institutional Investors, it should be made sure that government would hold some rights to interfere. This would help to avoid the obstacles which would affect the Indian economy in a negative way.
3. In order to attract the Foreign Institutional Investors, the Government should make the procedures easy so that FIIs can purchase the securities in the Indian capital market with ease.
4. Capital gain tax must be not too high. The high capital gain tax may insist the Foreign Institutional Investors to step back from investing in India.
5. The capital market infrastructure should be developed and there should be transparency in the information provided to the Foreign Institutional Investors. The settlement system should be T+1.
6. Laws should be such that it protects domestic investors and also promote trade in country through FIIs.

CONCLUSION

There is no doubt, the inflow of FIIs would always be favorable to Indian economy. Since the economic reforms in India the Indian stock market has grown so much and FIIs can be attributed as one of the reasons for such a growth. The study took a period of 19 years from 2000 to 2018 and the Net FIIs flows have been compared with the yearly closing BSE SENSEX points. It has been found out in the results that there exists positive correlation between the Net flow of FIIs and BSE SENSEX. The significance of correlation coefficient has been tested in the study. More inflow of FIIs into the Indian capital market would help to increase the stock market activities and help the country to be on the progressive path.

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