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IMPACT OF FOREIGN INSTITUTIONAL INVESTORS ON THE SECTORIAL MARKET INDICES OF BOMBAY STOCK EXCHANGE

PRATEEK KUMAR BANSAL
Research Scholar,
Jiwaji University,
Gwalior,

DR. P.V.RAO
Professor, Department of commerce and management
Maharani Laxmi Bai Government College of Excellence
Gwalior (M.P.) India

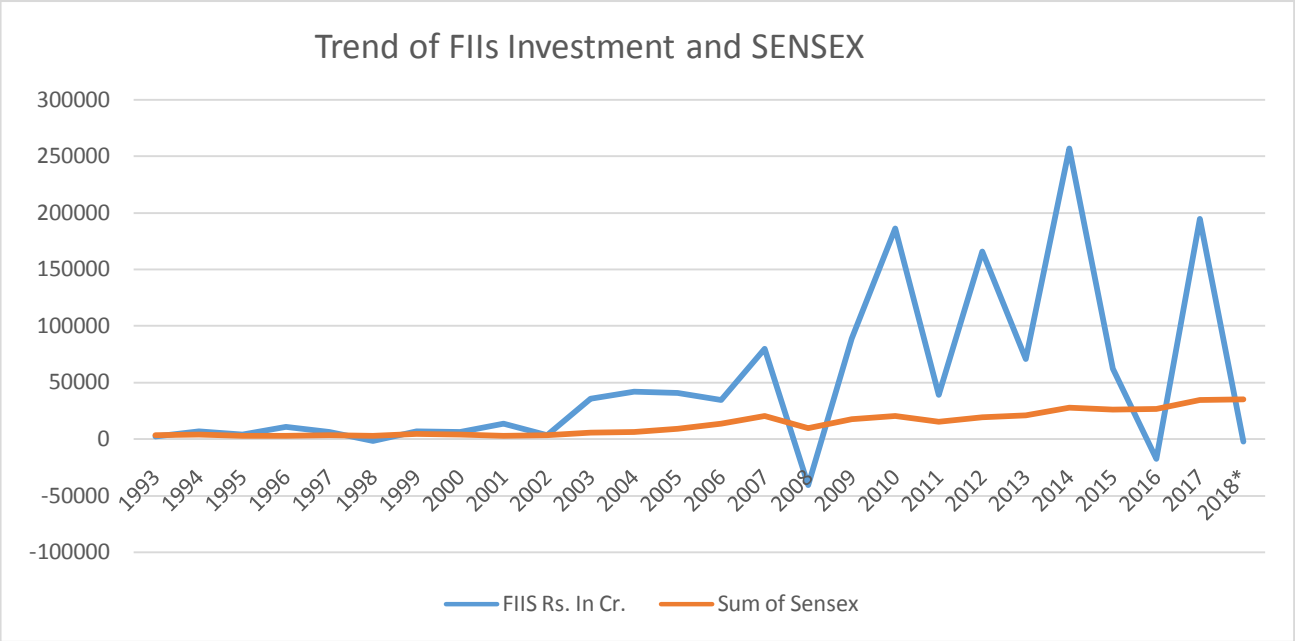
ABSTRACT
For the economic growth various factors are consider for contribution, in this contribution one of the major factor is Foreign Investment in the country. As India is an emerging economies countries shows the grown in the economy have attract foreign investors. In India Investment by Foreigners can be done by mainly two ways called Foreign Direct investment (FDI) and Foreign Institutional Investors (FIIs). Foreign capital allows domestic market to grow, provides reserves, enhanced product and Various complimentary services etc. In this present study an attempt makes to find out the FIIs impact on the Sectorial Indices of BSE. For this purpose, secondary data has been used and using different statistical tools like Correlation and Granger Causality test has been applied on the monthly data from September 2005 to April 2018.After applying test, it was found that some of the Indices are significantly impact FIIs and the casual relationship exists between the FIIs and Indices.

KEYWORDS: FIIs, BSE, Granger Causality test, Correlation

INTRODUCTION
Foreign Investment deals with the investment made across the other countries by the way of its financial assets or in the production process. There are many advantages and disadvantages of foreign investment it attracts more technology. Create competition etc. Foreign investment can be done by various way when we talk about the Indian context than Foreign People or the eligible person can invest in two ways: one of which is called Foreign Direct investment (FDI) and another is Foreign Institutional Investors (FIIs). FIIs is called a short-term investment, this is directly related to the Financial market.

Before the 1990 there was no discussion about the FIIs in India, as there is the crisis of balance of payment (BOP) which was faced during 1990. Then in 1991, LPG Policy have to be used by the Govt. so that economic reform can be done, In this process in September 1992, Securities Exchange Board of India (SEBI) open the door for the foreign investors to invest in the securities market of India. To regulate and control this process SEBI (FIIs) Regulation 1995 announced. After 1993 FIIs in India shows positive response because of the emerging economies and the policy which was prepare for the FIIs.

Graph1: Shows the trend of Net FIIs and the closing SENSEX



Source: Compiled from data of Net FIIs and closing SENSEX

Data of year 2018 taken upto April 2018

The movement of FIIs of stock price in the year 2002-03 and 2008-09 and 2016-17 shows some decline due to global financial crisis and fall in 2016. Except these years in overall FIIs flows show a positive flow as the time line shows in graph 1. Total investment done by FIIs in year 2009 88826 (`in cr.) is just double in 2012 and thrice in year 2014 and in 2017 also shows positive growth which shows the potentially in the market.An attempt to find out the relation of these and impact of FIIs flows on the performance of the stock Indices has been consider in this present paper. For this simple correlation analysis used to find the significant impact and Granger causality test used to find out the uni- directional and bi-directional relationship among them.

LITERATURE REVIEW

Gordon and Gupta (2002) studied the impact of happing in home country on the flow of FIIs. And they found the strong relationship between them. To find the result they have used regression model and unit root test on secondary monthly data from September 1992 to October 2001. They also concluded that Indian market as compared to the other emerging market is less volatile.

Khan et al. (2005) applied GARCH and Granger Causality test to check the directional relationship between the firm level and FIIs flows. To compile the result, they have collected data of 36 companies from August 2002 to August 2004. They find that there is bi-directional relationship between the stock market and the FIIs Flows.

Siddiqui and Azad (2012) studied the flows and relationship of FIIs. In this researcher paper they have collected ten years' data from 2000 to 2010 and uses correlation to find the impact and way forward. For this purpose, they have collected data of BSE indices of Auto, Bankex, Capital Goods, Consumer Durables, FMCG, Healthcare, IT, Metal, Oil and Gas, Power and Realty Index. After applying test, they find that IT, Metal and Auto sectorial indices are having positive and significant relationship.

Lakshmy S. (2014) examined the impact of the flows of FIIs on the indices. To find the relationship they have used simple correlation and granger causality test. For the analysis they have used monthly data of 14 years from 2001 to 2014. And concluded and suggested that there all the indices are having positive relationship and Market indices movement are according to the flows of FIIs.

Patel Monika (2017) examine the impact of FIIs on NSE by using the regression equation model and Granger causality test. To complete the objective of this study monthly data from January 2012 to June 2014 used and researcher collected all the eleven indices of National Stock Exchange (NSE) and FIIs data. She concluded that all the indices are having positive correlation but the degree of relationship were not high and also suggested that there are other factors are affecting the flows.

METHODOLOGY

The main objective of this current paper is to find out the relationship and the impact of Foreign Institutional Investors on the sectorial indices of BSE by using the SPSS and EVIEWS software and Pearson's coefficient of correlation and Granger Causality test as statistical tools according to Trivedi, P., & Nair, A. (2006);Dhingra at el. (2016); Vyas and Shah (2016);Alam at el. (2018). Secondary data has been used for this purpose and Monthly data has been used for the analysis purpose from September 2005[1]to April 2018 data was taken for the study purpose. Closing Data of SENSEX Index has been consider and Data of Indices collected from the official website of Bombay Stock Exchange www.bseindia.com and Data of FIIs collected from SEBI website www.sebi.org.in and their depository NSDL and CSDL website https://www.fpi.nsdl.co.in

In this study of FIIs impact net FIIs has been consider means total net effect of FIIs on the investment in Equity as well as the debt market. So to find out the net amount following formula has been applied:
Net_FIIs = Total Purchase of Equity and Debt - Total Purchase of Equity and Debt
In this present study sectorial indices are taken:

- AUTO
- BANKEX
- BAISC MATERIAL
- CAPITAL GOODS
- CONSUMER DISCRETIONARY GOODS &SERVICES
- CONSUMER DURABLES
- ENERGY
- FAST MOVING CONSUMER GOODS
- FINANCE
- HEALTHCARE
- INDUSTRIALS
- INFORMATION TECHNOLOGY
- METAL
- OIL & GAS
- POWER
- PSU
- REALTY
- TECK
- TELECOM
- UTILITIES

After collecting data Natural log value has been calculated by using MS-Excel.

DATA ANALYSIS

Firstly, the descriptive analysis of data is initiated to understand the basic descriptive statistics for shown in table 2.

After getting the Descriptive analysis, correlation is applied to determine the significance level of relationship between the available variable as Sectorial Indices, SENSEX and FIIs Net. The result of Correlation shown in Table 3.

	Mean	Median	Maximum	Minimum	Std. Dev.	Skewness	Kurtosis	Jarque-Bera
FIIS_NET	7432.357	5993.25	59875.81	-40902.5	14833.03	0.052077	4.038194	6.895073
SENSEX	9.844118	9.835802	10.4903	8.973645	0.354271	-0.31109	2.502446	4.019597
UTILITIES	7.409719	7.403572	8.045697	6.793702	0.241508	-0.12706	2.498248	2.003433
TELECOM	7.202615	7.164716	7.906625	6.739053	0.224982	0.812708	3.740142	20.20196
TECK	8.279197	8.212763	8.86748	7.45961	0.336991	-0.167066	2.243666	4.33
REALTY	7.801895	7.603073	9.451514	6.957573	0.595617	0.941443	2.883985	21.94545
PSU	8.884099	8.91056	9.256092	8.424834	0.196904	-0.36357	2.272513	6.700482
POWER	7.688603	7.649473	8.42263	7.096978	0.244321	0.526002	3.229049	7.341457
OIL___GAS	9.110711	9.143951	9.714286	8.222975	0.293015	-0.603775	3.752333	12.81983
MONTH	734486.5	734486.5	736784	732189	1339.973	7.42E-05	1.79994	9.120907
METAL	9.272643	9.272016	9.904498	8.385575	0.313054	-0.348031	2.785372	3.360259
INFORMATION_TECHNOLOGY	8.747276	8.68364	9.515447	7.647867	0.451594	-0.214265	2.172526	5.499558

INDUSTRIALS	7.685831	7.709799	8.282741	6.797505	0.340847	-0.486942	2.770126	6.341504
HEALTHCARE	8.870939	8.780729	9.801811	7.862112	0.602842	0.076372	1.584468	12.83805
FINANCE	7.788379	7.773234	8.725476	6.762533	0.50388	-0.137393	2.261194	3.93516
FAST_MOVING_CONSUMER_GOODS (FMCG)	8.353741	8.325989	9.333065	7.235158	0.613302	-0.088486	1.516657	14.13364
ENERGY	7.769956	7.811295	8.376868	6.860559	0.293633	-0.674526	3.923735	16.93045
CONSUMER_DURABLES	8.734964	8.742394	10.02966	7.34127	0.613717	0.053361	2.492893	1.700798
CONSUMER_DISCRETIONARY_GOODS AND SERVICES (CDGS)	7.451539	7.326811	8.409147	6.389267	0.443167	0.212162	2.828238	1.327165
CAPITAL_GOODS	9.389859	9.477654	9.921503	8.422661	0.324953	-0.635576	2.803129	10.47905
BANKEX	9.39275	9.387839	10.34129	8.352342	0.522573	-0.171042	2.155565	5.256346
BAISC_MATERIAL	7.45846	7.44698	8.175424	6.473721	0.328765	-0.323663	3.679113	5.574768
AUTO	9.154043	9.159298	10.19433	7.753864	0.639367	-0.128272	1.984069	6.953567

At last the Granger causality test has been applied to find out the relationship between the variable. So basic condition of this test has been applied i.e. data must be stationarity. So to check whether the data is stationary or not Augmented Dickey-Fuller test (ADF) test and Phillips-Perron (PP) unit root test has been applied. To show the Probability the result is shown in Table 4.

To apply this test one of the most important aspect is to take the lag value. So to apply this test lag value was taken as 4. To take the lag value researcher consider the Akaike information criterion (AIC), the lesser this value shows the best fir of the model and the lag value. So before apply Granger Causality test the value of AIC was calculated by using unrestricted VAR model. And it was found that the selection of lag value 4 gives minimum value. So for the further calculation this value was considered.

The result of this test is shown in Table 5.

Table 2: Shows Descriptive Analysis
Source: Compiled from the analysis by author

Table 3: Correlation Between the Variables

	Correlation Coefficient	*Sig.*	*Relation*
SENSEX	.198*	.015	Positive
AUTO	.189*	.020	Positive
BANKEX	.207*	.011	Positive
BAISC MATERIAL	.221**	.006	Positive
CAPITAL GOODS	.211**	.009	Positive
CONSUMER DISCRETIONARY GOODS & SERVICES	.142	.081	Positive
CONSUMER DURABLES	.145	.074	Positive
ENERGY	.167*	.040	Positive
FAST MOVING CONSUMER GOODS	.157	.054	Positive
FINANCE	.200*	.014	Positive
HEALTHCARE	.133	.103	Positive
INDUSTRIALS	.208*	.010	Positive
INFORMATION TECHNOLOGY	.158	.052	Positive
METAL	.240**	.003	Positive
OIL & GAS	.180*	.027	Positive
POWER	.167*	.040	Positive
PSU	.326**	.000	Positive
REALTY	-.003	.970	Negative
TECK	.145	.076	Positive
TELECOM	-.016	.844	Negative
UTILITIES	.212**	.009	Positive

Source: Compiled from the analysis by author
Correlation is significant at the 0.01 level (2-tailed).
Correlation is significant at the 0.05 level (2-tailed).

Table 4: Shows the results of unit root test

	ADF		PP	
FIIS NET	-7.984179	0	-8.01252	0
AUTO	-0.653491	0.8538	-0.8028	0.8152
BANKEX	-1.044507	0.7364	-1.08569	0.7207
BAISC MATERIAL	-2.327586	0.1647	-2.12148	0.2366
CAPITAL GOODS	-3.260517	0.0185	-2.83853	0.0553
CONSUMER DISCRETIONARY GOODS & SERVICES	-0.49484	0.8878	-0.81988	0.8103
CONSUMER DURABLES	-0.407251	0.9038	-0.6488	0.8549
ENERGY	-2.410328	0.1406	-2.43956	0.1327
FAST MOVING CONSUMER GOODS	-0.62054	0.8614	-0.54857	0.877
FINANCE	-1.017335	0.7463	-1.08592	0.7206
HEALTHCARE	-0.881762	0.7918	-0.88049	0.7922
INDUSTRIALS	-2.722083	0.0726	-2.39096	0.146
INFORMATION TECHNOLOGY	-0.854003	0.8003	-1.02506	0.7435
METAL	-3.142026	0.0256	-2.96894	0.0402
OIL & GAS	-2.498791	0.1178	-2.54222	0.1076
POWER	-2.695797	0.0771	-2.88071	0.05
PSU	-2.888109	0.0491	-2.95083	0.042
REALTY	-1.680255	0.4392	-1.97736	0.2966
TECK	-1.231259	0.6601	-1.36952	0.5959
TELECOM	-2.690824	0.078	-2.73146	0.0711
UTILITIES	-2.590188	0.0972	-2.77417	0.0644
SENSEX	-1.535047	0.5133	-1.631506	0.4640

Source: Compiled from the analysis by author

Table 5: Result of Pairwise Granger Causality Tests

Null Hypothesis:	F-Statistic	Prob.
L_SENSEX does not Granger Cause FIIS_NET	1.51356	0.2016
FIIS_NET does not Granger Cause L_SENSEX	1.03992	0.3890
L_AUTO does not Granger Cause FIIS_NET	1.51158	0.2021
FIIS_NET does not Granger Cause L_AUTO	1.36800	0.2482
L_BASIC_MATERIAL does not Granger Cause FIIS_NET	1.06989	0.3739
FIIS_NET does not Granger Cause L_BASIC_MATERIAL	0.52523	0.7174
L_BANKEX does not Granger Cause FIIS_NET	1.75094	0.1423
FIIS_NET does not Granger Cause L_BANKEX	1.11280	0.3531
L_CAPITAL_GOODS does not Granger Cause FIIS_NET	2.02559	**0.0942**
FIIS_NET does not Granger Cause L_CAPITAL_GOODS	0.74348	0.5639
L_ENERGY does not Granger Cause FIIS_NET	1.63529	0.1688
FIIS_NET does not Granger Cause L_ENERGY	0.35668	0.839
L_FINANCE does not Granger Cause FIIS_NET	1.67097	0.1602
FIIS_NET does not Granger Cause L_FINANCE	1.10037	0.359
L_INDUSTRIAL does not Granger Cause FIIS_NET	2.07719	**0.0871**
FIIS_NET does not Granger Cause L_INDUSTRIAL	0.66261	0.619
METAL does not Granger Cause FIIS_NET	0.26692	0.8988
FIIS_NET does not Granger Cause METAL	0.28507	0.8873
L_OIL_GAS does not Granger Cause FIIS_NET	1.50731	0.2034
FIIS_NET does not Granger Cause L_OIL_GAS	0.50003	0.7357
L_POWER does not Granger Cause FIIS_NET	2.07713	**0.0871**
FIIS_NET does not Granger Cause L_POWER	0.62638	0.6445
PSU does not Granger Cause FIIS_NET	0.72794	0.5743
FIIS_NET does not Granger Cause PSU	0.26354	0.9009
UTILITIES does not Granger Cause FIIS_NET	1.39305	0.2395
FIIS_NET does not Granger Cause UTILITIES	0.16941	0.9537

Source: Compiled from the analysis by author

FINDINGS AND CONCLUSION

Based on the above results it can be concluded that mostly Indices are having positive correlation. BSE Indices Basic Material, Capital Goods, Metal, PSU and Utilities are significant at 5% level. Sensex Index, Auto, BANKEX, Energy, Finance, Industrials, Oil and Gas and power are significant at level of 10%. Other than positive correlation Realty and Telecom indices showing the negative relationship. Granger Causality test shows the unidirectional relationship with Capital Goods, Industrials and Power at the level of 10% significance. Other are not show the relationship with FIIs.

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