Does Foreign Institutional Investors and Domestic Institutional Investors Co-integrate National Stock Exchange?

Dr. Prateek Kumar Bansal[1]
Dr. Om Prakash Agrawal[2]

[1,2]Assistant professor, Institute of Business Management, GLA University, Mathura, UP, India E-Mail
[1]prateek.bansal@gla.ac.in, [2]omprakash.agrawal@gla.ac.in[1]Contact No. 9457266001, [2]Contact No. 9457028796

Abstract:
Institutional investors are bone of stock market due to their money power. Institutional investors can be divided into foreign institutional investors (FIIs) and domestic institutional investors (DIIs). They are the movers and shaker of market. Investors always tends to make money by investment which is riskier venture. Emerging market like Indian stock market offers high return and became one of the favorite market in world. This research aims to study trend and pattern of FIIs & DIIs. To check the causality between FIIs, DIIs and stocks of National Stock Exchange (NSE), time series data has been collected for the period of twelve years from 1st April 2007 to 31st march 2019 and statistical tools have been applied with the help of Eviews 9.0. This study indicates that there is strong relationship between FIIs, DIIs and stock of NSE.

Keywords: DIIs, FIIs, NSE, VAR, Granger causality test

I INTRODUCTION

Indian market was opened for foreign investment in 1991, when the policy regarding globalization, liberalization and privatization implemented. From September 1992, foreign investors started their investment in Indian stock market. Institutional investors are the large size fund, which are invested in various securities, pension fund, real estate, mutual fund etc. FIIs and DIIs are the major institutional investors in Indian capital market and gradually got importance. The movement in NIFTY has been driven by the force and behavior of these investors. Institutional investors are very sophisticated and well informed about the stock and company (Han &Wang, 2004). The volatility in the stock market became the interesting topic. In the previous studies it has been observed that domestic investors reduce the stock market volatility because they have better source of information and strategy (Holmes and

Wong, 2001; CAI Et Al., 2010; Bohl and Brzeszczynski, 2006). Foreign institutional investor also reduces the stock market volatility and work as a stabilizer (Han et al. 2015). FIIs may face difficulty in getting information due to political, legal, and imperfect market conditions and sub-optimal information disclosures (Liu. et.al 2014). Due to foreign exchange exposure FIIs has to follow the guidelines of Foreign Exchange regulation Act (FERA). DIIs invest their money in banks, mutual funds pension funds and insurance companies within India or from India (Bennett et. al 2003). The participation of institutional investors is increasing day by day and their increasing interest in the Indian stock market increases the volatility due to regular buying and selling of mutual funds however, their activities are different (Mukherjee & Roy, 2011). Tesar and Werner (1995) found that holding of institutional investor may increase liquidity in stock market.

Controlling of foreign direct invest may induces less liquidity in the stock of firm (Kyle, 1985).

Review of Literature: although it is critical to decide the role of institutional investor in stock market. V. Ravi Anshuman (2011) found that FIIs has adverse effect on volatility of stock market whereas, DIIs has positive impact. Mukherjee and Roy (2016) found that role of domestic and foreign investors are very important in emerging economy. Foreign investors are interested to invest their money in those companies whose stock are hold by general public in large volume (Krishna Prasanna 2008). Study conducted by (Bhatnagar, 2011) indicated that FIIs have less impact over the stocks of Indian Market then other factors. Kaur & Kaur (2014) concluded that FIIs will show the negative trend in Indian stock market in upcoming years while, study conducted by (Gopinathan & Rau, 2009) indicated that FIIs will show the positive trend in Indian stock market. Various researchers through their research proved that FIIs may lead the price volatility in stock market (Shleifer and Vishny, 2003) and showed the relationship between stock market volatility and foreign investors (Bae et al., 2004). Chiang et al. (2011) found positive relationship between DIIs and share prices in his study. Other study conducted by (Kim and Cheong, 2015) indicated that volatility in stock market decreases significantly with the flow of DIIs. Bose (2012) proved negative relationship between institutional investment flow and stock market volatility.

II RESEARCH METHODOLOGY

The study uses daily transaction data of Foreign Institutional Investors (FIIs), Domestic Institutional Investors (DIIs) and National stock exchange Index (Nifty 50). To explore this study daily Gross Purchase, Gross Sales data and Net effect of sale and purchase has been collected. Data collected through moneycontrol.com and nseindia.com from April 2007 to 2019. Data before this data is not available, so the study is restricted to this time span.

Methodology

Flow (inflow and outflow) of investment by the FIIs and DIIs is representing by trend graph using Microsoft office excel. Closing price of NSE index is converted into return using $r = ln\left(\frac{p_t}{p_{t-1}}\right)$, here r represent the compound return value of indices and p_t represent the price of current day and p_{t-1} represent the price of previous day. Secondary data requires to be stationary before applying the statistical tools. So, to check the stationarity of the data Augmented Dickey–Fuller test (ADF) test and Phillips-Perron (PP) Unit Root Tests are applied.

ADF test equation

$$\Delta Y_t = \beta_1 + \beta_2 t + \delta Y_{t-1} + \Sigma_{i=1}^{k}\Psi\Delta Y_{t-1} + u_t$$
(1)

In the above equation, ΔY_t represent as first difference operator, β_1 represent as intercept and $\beta_2 t$ represent as linear trend, i represent as number of lagged terms and u represent as the white noise term having constant mean and variance. $\Psi\Delta Y_{t-1}$ represent as Augmentation of Dickey Fuller's equation

PP test equation

$$\Delta Y_t = \beta_1 + \beta_2 t + \delta Y_{t-1} + u_t$$

The test of PP test is less restrictive than the ADF test so, it's not assume any residuals to be serially uncorrelated.

Correlation

It is very useful statistical tool to judge the relationship among the various variables. It establishes the positive and negative relation among the variable.

Granger causality test

To test the directional relationship between the different variables Granger causality test has been used. This test examines the lag and lead relationship among the variables.

If $X \rightarrow Y$ or $Y \rightarrow$
X *then it is an exmple of univariate*

If $X \leftrightarrow Y$ or $Y \leftrightarrow$

X *then it is an evidence of bivariate causality.*

VAR (Vector auto regression)

To better understand the relationship among the variables univariate VAR model has been used. This model also helps to determine the past lag effect on the prediction of the future results. As all the variables are endogenous.

$$Y_{1t} = \alpha_{10} + \alpha_{11}Y_{1t-1} + \cdots + \alpha_{1k}Y_{1t-k} + \beta_{11}Y_{2t-1} + \cdots\cdots\cdots + \beta_{1k}Y_{2t-k} + \varepsilon_{1t} \qquad (3)$$

$$Y_{2t} = \alpha_{20} + \alpha_{21}Y_{2t-1} + \cdots + \alpha_{2k}Y_{2t-k} + \beta_{21}Y_{1t-1} + \cdots\cdots\cdots + \beta_{2k}Y_{1t-k} + \varepsilon_{2t} \qquad (4)$$

This is univariates VAR Model. Here the endogenous variables are Y_{1t} and Y_{2t} and these variables are dependent on their another variable and its own lags. The white noise error terms are . ε_{1t} *and* ε_{2t}.

Data Analysis and Interpretation
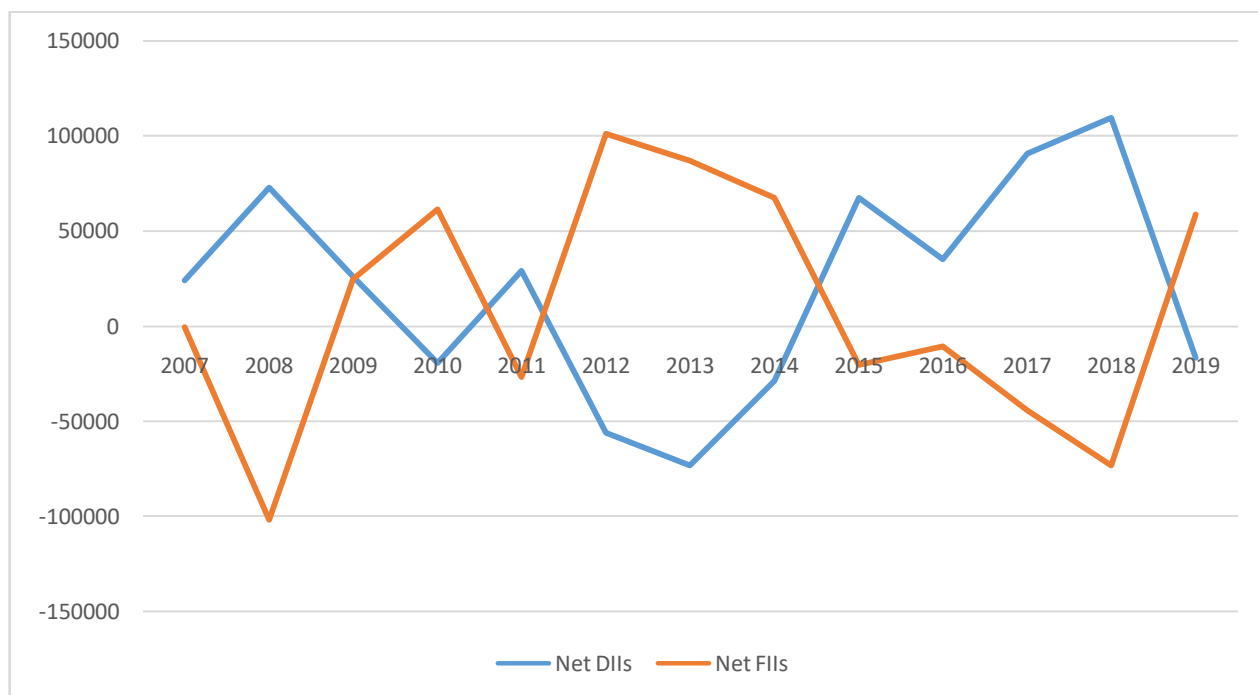
Graph.1. Trend Chart of Net FIIs and DIIs Investment

Source: Author Computation

Graph 01 shows that the relationship among the net investment of FIIs and DIIs. Graph shown that the inverse relationship between them as the FIIs increases the DIIs decreases or Vice Versa.

Table 2

show the Pearson Correlation test result between the different variables

Variable ↓→	NIFTY RETURN	GROSS FIIs SALES	GROSS DIIs SALES	GROSS FIIs PURCHASE	GROSS DIIs PURCHASE	FIIs NET
GROSS FIIs SALES	0.028824932	-	-	-	-	-
GROSS DIIs SALES	-0.08040575	0.636290278	-	-	-	-
GROSS FIIs PURCHASE	-0.03799857	0.840961132	0.731523	-	-	-

GROSS DIIs PURCHASE	0.069042544	0.713129982	0.86717	0.625775	-	-
FIIs NET	0.289357458	0.181680352	-0.21209	-0.17199	0.302762	-
DIIs NET	-0.117977732	-0.143770879	0.267775	0.414568	-0.05486	-0.6201

Source: Author Computation

Table 02 shows the correlation results with different variables and this tables shows that Nifty return have less relation with the variables and having a negative relationship with the Gross DIIs Sales, Gross FIIs Purchase and Net DIIs investment.

Table 3
show the Descriptive Analysis of different variables

	NET DIIS	NET FIIS	GROSS DIIs PURCHASE	GROSS FIIs PURCHASE	GROSS DIIs SALES	GROSS FIIs SALES	NIFTY RETURN
Mean	89.52291	42.105	3650.878	1811.829	3608.773	1722.327	0.000356
Median	52.89	35.265	3304.855	1403.07	3222.97	1420.225	0.000569
Maximum	5196.6	17488.73	24676.01	9521.63	23071.11	10615.61	0.1599
Minimum	-5631.99	-9690.84	5.03	12.47	1.05	3.38	-0.116044
Std. Dev.	634.9768	1003.944	1970.191	1161.192	1921.509	1067.8	0.013967
Skewness	0.018148	2.37652	2.696569	1.79904	2.337656	2.156671	0.194189
Kurtosis	11.47724	44.27872	19.16741	7.389348	15.72427	10.79509	14.03635
Probability	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Source: Author Computation

Table shows the descriptive statistics of the variables and shows the basic properties of quantitative data. Table shows the Jarque Bera p value is<.05 that means the data is not normal and the value of skewness is more than zero and the value of kurtosis is more than 3 which represent that the data is not normal and all the data are positively skewed.

Table 4
show the Unit Root test results

Test Name →	ADF		PP Test	
Variables ↓	t-Statistic	Prob.	t-Statistic	Prob.
NSE Nifty Return	-49.8613	0.0001	-49.6941	0.0001
Net DIIs	-13.2187	0.0000	-46.4126	0.0001
Net FIIs	-13.2933	0.0000	-51.2895	0.0001
GROSS DIIs PURCHASE	-7.71988	0.0000	-56.6709	0.0001
GROSS FIIs PURCHASE	-22.6261	0.0000	-27.8062	0.0000
GROSS DIIs SALES	-4.44523	0.0002	-52.9851	0.0001

GROSS FIIs SALES	-20.9252	0.0000	-37.8997	0.0000
5% level of significance				

Source: Author Computation

Secondary data has been collected for the long period of time to complete this study. To apply statistical test on the data, the first condition is to check the stationarity of the data. Data checked by ADF and PP unit root test. Test probability shows that the series have no unit root means the data set are stationary.

VAR Lag Length Selection

VAR model helps to determine that the past return will effects the pricing of future. To decide the past trend VAR model first step is to decide the leg length, so to estimate the lag length in VAR Model Akaike information criterion (AIC), Bayesian information criterion (BIC) and Hannan–Quinn criterion (HQC) system is used i.e. the minimum value is the best value of lag selection. VAR model applied six times with the Nifty return to find out the impact of every variable. Lag length of Net FIIs, Gross DIIs Purchase, Gross FIIs Purchase, DIIs Sales, Gross FIIs Sales is 8 and Net DIIs is 7 with the Nifty return variable.

Table 5
show the VAR Residual Serial Correlation LM Tests results

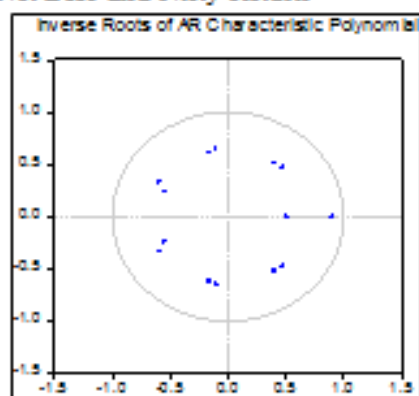| Lags	Net DIIs and Nifty Return		Net FIIs and Nifty Return		Gross DIIs Purchase and Nifty Return	
	LM-Stat.	p-value	LM-Stat.	p-value	LM-Stat.	p-value
1	3.3680	0.4982	8.8930	0.0638	25.6600	0.0000
2	6.5490	0.1617	7.1590	0.1277	27.4230	0.0000
3	11.5780	0.0208	10.5430	0.0322	41.1160	0.0000
4	13.4270	0.0094	9.9550	0.0412	37.5470	0.0000
5	10.3950	0.0343	10.0490	0.0396	43.1290	0.0000
6	6.0260	0.1972	10.9940	0.0266	45.1880	0.0000
7	8.9220	0.0631	14.5820	0.0057	48.4590	0.0000
8	2.1370	0.7106	11.2810	0.0236	48.6680	0.0000
9	-	-	4.1210	0.3899	6.2870	0.1787

Lags	Gross FIIs Purchase and Nifty Return		Gross DIIs Sales and Nifty Return		Gross FIIs Sales and Nifty Return	
	LM-Stat.	p-value	LM-Stat.	p-value	LM-Stat.	p-value
1	32.7590	0.0000	31.7800	0.0000	12.8090	0.0122
2	31.4060	0.0000	30.6920	0.0000	14.9480	0.0048
3	36.4640	0.0000	46.1960	0.0000	16.8630	0.0021
4	59.7320	0.0000	37.8140	0.0000	36.3380	0.0000
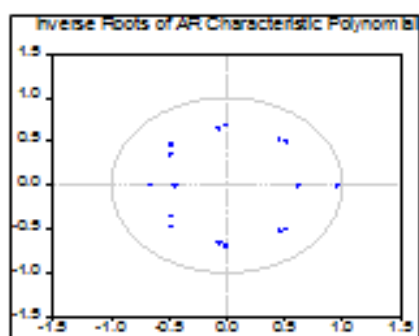
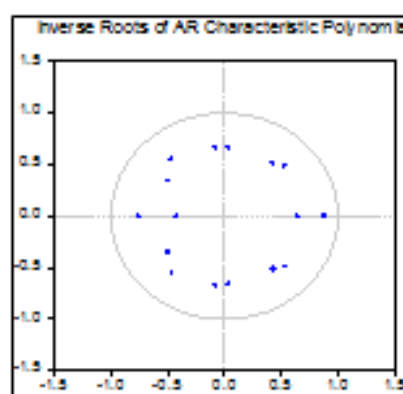| 5		49.1240	0.0000	49.0830	0.0000	33.3590	0.0000
6		54.0860	0.0000	55.5160	0.0000	37.6210	0.0000
7		73.1660	0.0000	51.8330	0.0000	43.0990	0.0000
8		56.4090	0.0000	55.2470	0.0000	41.3950	0.0000
9		16.7820	0.0021	9.3220	0.0535	2.8270	0.5871

Source: Author Computation

Next step to check the serial autocorrelation between the variable so table shows that there is no serial correlation exists between the variables.
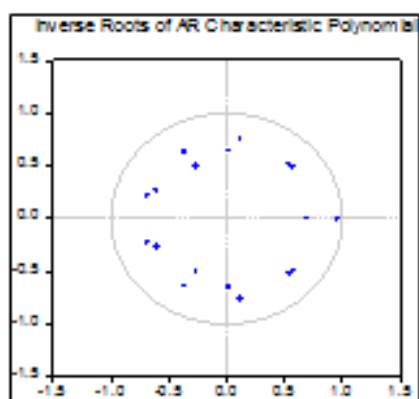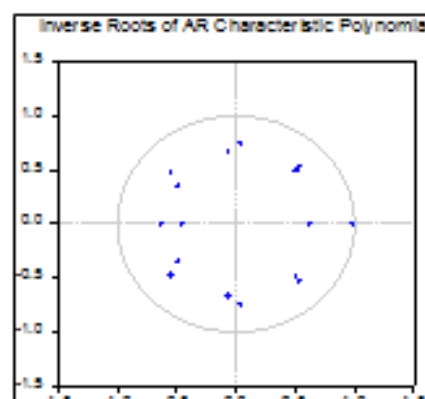

Graph.2. Show the VAR stability condition

Above graphs shows the stability of VAR Model. As all the variables are inside the circle that shows that all the eigenvalues of Model are smaller than the modules value or the roots of all the equations are larger than the value 1.

Table 6
show the VAR estimation equation of Nifty Return and Net DIIs

	NIFTY RETURN		DIIS NET	
	Coef.	t-Stat.	Coef.	t-Stat.
C	0.000364	[1.37315]	31.31539	[3.22272]
DIIS_NET (-1)	-3.65E-07	[-0.71590]	0.250409	[13.3788]
DIIS NET (-2)	3.86E-07	[0.73339]	0.146224	[7.57370]
DIIS NET (-3)	-3.43E-07	[-0.63810]	0.107994	[5.47151]
DIIS NET (-4)	2.20E-07	[0.40795]	0.060351	[3.04881]
DIIS NET (-5)	-5.14E-07	[-0.95704]	0.057386	[2.91566]
DIIS NET (-6)	3.38E-07	[0.63905]	0.029166	[1.50431]
DIIS NET (-7)	-4.39E-08	[-0.08681]	0.063424	[3.41625]
NIFTY RETURN(-1)	0.07935	[4.23750]	-6517.607	[-9.49088]
NIFTY RETURN(-2)	-0.027088	[-1.42318]	-4150.919	[-5.94681]
NIFTY RETURN(-3)	-0.022866	[-1.19475]	-3618.791	[-5.15596]
NIFTY RETURN(-4)	-0.041488	[-2.16146]	-1481.642	[-2.10485]
NIFTY RETURN(-5)	-0.036448	[-1.89865]	-1259.604	[-1.78920]
NIFTY RETURN(-6)	-0.031348	[-1.64150]	692.4931	[0.98878]
NIFTY RETURN(-7)	0.040566	[2.14472]	-1104.619	[-1.59246]

Source: Author Computation

Above table shows that the positive coefficient value will affect the value of Nifty Indices. Above Model specifies that the previous value of NSE indices of 1, 4 and 7 days effect the value of Nifty and the past value of Nifty 1, 2,3 and 4 days' and previous DIIs investment of 1,2,3,4,5,7 days effect the value of DIIs investment.

Table 7
show the VAR estimation equation of Nifty Return and Net FIIs

	NIFTY RETURN		FIIS NET	
	Coef.	t-Stat.	Coef.	t-Stat.
C	0.000337	[1.30815]	8.562721	[0.52931]
FIIS NET (-1)	5.26E-07	[1.70331]	0.171788	[8.84440]
FIIS NET (-2)	4.40E-07	[1.40478]	0.119479	[6.06967]
FIIS NET (-3)	5.26E-07	[1.66931]	0.125215	[6.32629]
FIIS NET (-4)	-2.80E-07	[-0.88569]	0.064442	[3.23837]
FIIS NET (-5)	-3.08E-09	[-0.00974]	0.044724	[2.24933]
FIIS NET (-6)	-3.07E-07	[-0.97925]	0.074517	[3.77718]
FIIS NET (-7)	-2.51E-07	[-0.80489]	-0.020287	[-1.03523]

FIIS NET (-8)	-1.20E-07	[-0.39826]	0.060987	[3.22828]
NIFTY RETURN(-1)	0.069029	[3.54721]	14100.16	[11.5286]
NIFTY RETURN(-2)	-0.043468	[-2.18541]	850.3776	[0.68025]
NIFTY RETURN(-3)	-0.041741	[-2.09883]	2047.55	[1.63813]
NIFTY RETURN(-4)	-0.048684	[-2.44851]	-1120.405	[-0.89657]
NIFTY RETURN(-5)	-0.037355	[-1.88490]	1512.997	[1.21471]
NIFTY RETURN(-6)	-0.029972	[-1.51556]	-2184.392	[-1.75744]
NIFTY RETURN(-7)	0.04373	[2.22102]	3095.84	[2.50175]
NIFTY RETURN(-8)	0.024457	[1.24999]	952.3652	[0.77448]

Source: Author Computation

Above Model specifies that the previous value of NSE indices of 1,2,3, 4 and 7 days effect the value of Nifty and the past value of Nifty 1 and7days' and previous FIIs net investment of 1,2,3,4,5,7 days effect the value of FIIs net investment.

Table 8

show the VAR estimation equation of Nifty Return and gross purchase DIIs

	NIFTY RETURN		GROSS PURCHASE DII	
	Coef.	t-Stat.	Coef.	t-Stat.
C	0.00091	[1.26416]	659.2969	[8.03085]
GROSS PURCHASE DII(-1)	2.45E-07	[1.50238]	0.2265	[12.1907]
GROSS PURCHASE DII(-2)	-8.50E-08	[-0.50939]	0.11473	[6.02712]
GROSS PURCHASE DII(-3)	1.60E-07	[0.95444]	0.099535	[5.19406]
GROSS PURCHASE DII(-4)	-1.90E-07	[-1.12930]	0.134861	[7.02601]
GROSS PURCHASE DII(-5)	-7.26E-08	[-0.43083]	0.076489	[3.98216]
GROSS PURCHASE DII(-6)	1.65E-08	[0.09801]	0.057639	[3.00445]
GROSS PURCHASE DII(-7)	-1.20E-07	[-0.71747]	0.042452	[2.22220]
GROSS PURCHASE DII(-8)	-1.10E-07	[-0.67615]	0.06727	[3.61298]
NIFTY RETURN(-1)	0.0787	[4.23026]	8635.511	[4.06990]
NIFTY RETURN(-2)	-0.027668	[-1.48086]	1092.954	[0.51290]
NIFTY RETURN(-3)	-0.023622	[-1.26426]	314.9783	[0.14781]
NIFTY RETURN(-4)	-0.039417	[-2.11147]	173.3349	[0.08141]
NIFTY RETURN(-5)	-0.032231	[-1.72914]	-79.5372	[-0.03741]
NIFTY RETURN(-6)	-0.028139	[-1.50953]	1209.5	[0.56890]
NIFTY RETURN(-7)	0.039615	[2.12786]	1574.585	[0.74156]
NIFTY RETURN(-8)	0.024538	[1.32228]	-1085.805	[-0.51302]

Source: Author Computation

Above Model specifies that the previous value of NSE indices of 1, 4 and 7 days effect the value of Nifty and the past value of Nifty 1 and 7 days' and all the previous DIIs Purchase behavior effect the pattern of DIIs Purchase.

Table 9

Show the VAR estimation equation of Nifty Return and gross purchase FIIs

	NIFTY RETURN		GROSS PURCHASE FII	
	Coef.	t-Stat.	Coef.	t-Stat.
C	0.000354	[0.67513]	105.4525	[4.52301]
GROSS PURCHASE FII(-1)	6.01E-07	[1.44651]	0.399513	[21.6147]
GROSS PURCHASE FII(-2)	-2.73E-07	[-0.61020]	0.137684	[6.91591]
GROSS PURCHASE FII(-3)	1.73E-07	[0.38419]	0.064511	[3.21443]
GROSS PURCHASE FII(-4)	-8.08E-08	[-0.18008]	0.070621	[3.53426]
GROSS PURCHASE FII(-5)	-6.23E-07	[-1.38804]	0.125583	[6.28500]
GROSS PURCHASE FII(-6)	1.04E-07	[0.23080]	-0.015887	[-0.79119]
GROSS PURCHASE FII(-7)	1.64E-07	[0.36659]	0.058088	[2.91596]
GROSS PURCHASE FII(-8)	-7.46E-08	[-0.17951]	0.103607	[5.60007]
NIFTY RETURN(-1)	0.083242	[4.48046]	-2201.476	[-2.66144]
NIFTY RETURN(-2)	-0.024236	[-1.30004]	-790.2109	[-0.95206]
NIFTY RETURN(-3)	-0.020232	[-1.08520]	-1120.155	[-1.34949]
NIFTY RETURN(-4)	-0.037095	[-1.99014]	206.8608	[0.24927]
NIFTY RETURN(-5)	-0.034677	[-1.86040]	870.1315	[1.04852]
NIFTY RETURN(-6)	-0.029424	[-1.57816]	1130.067	[1.36139]
NIFTY RETURN(-7)	0.038448	[2.06174]	-297.136	[-0.35788]
NIFTY RETURN(-8)	0.022203	[1.19755]	738.8673	[0.89508]

Source: Author Computation

Above Model specifies that the previous value of NSE indices of 1, 4 and 7 days effect the value of Nifty and the past value of Nifty 1 and 7 days' and all the previous FIIs Purchase behavior effect the pattern of FIIs Purchase.

Table 10

show the VAR estimation equation of Nifty Return and gross sales DIIs

	NIFTY RETURN		GROSS SALES DII	
	Coef.	t-Stat.	Coef.	t-Stat.
C	0.001121	[1.59955]	542.9551	[7.34033]
GROSS SALES DII(-1)	1.39E-07	[0.79118]	0.259324	[13.9563]
GROSS SALES DII(-2)	-2.19E-07	[-1.20296]	0.132379	[6.89853]
GROSS SALES DII(-3)	2.81E-08	[0.15358]	0.114206	[5.91404]
GROSS SALES DII(-4)	-1.15E-07	[-0.62885]	0.096609	[4.98858]
GROSS SALES DII(-5)	-6.70E-08	[-0.36474]	0.083976	[4.33606]
GROSS SALES DII(-6)	1.35E-07	[0.73899]	0.056674	[2.93401]
GROSS SALES DII(-7)	-3.98E-08	[-0.21862]	0.042577	[2.21709]
GROSS SALES DII(-8)	-7.81E-08	[-0.44388]	0.064469	[3.47236]
NIFTY RETURN(-1)	0.082346	[4.42835]	-3952.858	[-2.01485]

NIFTY RETURN(-2)	-0.026966	[-1.44571]	1621.234	[0.82385]
NIFTY RETURN(-3)	-0.02275	[-1.21973]	-1370.721	[-0.69656]
NIFTY RETURN(-4)	-0.039772	[-2.13333]	2788.436	[1.41766]
NIFTY RETURN(-5)	-0.035706	[-1.91454]	342.5633	[0.17410]
NIFTY RETURN(-6)	-0.027615	[-1.48052]	4453.663	[2.26321]
NIFTY RETURN(-7)	0.038118	[2.04204]	135.6092	[0.06886]
NIFTY RETURN(-8)	0.022049	[1.18548]	-114.0738	[-0.05813]

Source: Author Computation

Above Model specifies that the previous value of NSE indices of 1, 4 and 7 days effect the value of Nifty and the past value of Nifty 1 and 6 days' and all the previous DIIs sales behavior effect the pattern of DIIs Sales.

Table 11

show the VAR estimation equation of Nifty Return and gross sales FIIs

	NIFTY RETURN		GROSS SALES FII	
	Coef.	t-Stat.	Coef.	t-Stat.
C	0.000306	[0.55717]	119.1118	[4.78700]
GROSS SALES FII(-1)	8.10E-07	[1.99164]	0.2735	[14.8538]
GROSS SALES FII(-2)	-3.85E-07	[-0.91124]	0.145138	[7.59418]
GROSS SALES FII(-3)	3.57E-07	[0.82653]	0.110909	[5.67502]
GROSS SALES FII(-4)	-3.01E-07	[-0.69615]	0.11419	[5.83432]
GROSS SALES FII(-5)	-3.12E-07	[-0.72043]	0.099524	[5.08135]
GROSS SALES FII(-6)	-1.75E-07	[-0.40482]	0.037374	[1.90985]
GROSS SALES FII(-7)	1.67E-07	[0.39115]	0.025533	[1.31824]
GROSS SALES FII(-8)	-1.43E-07	[-0.34640]	0.124739	[6.68555]
NIFTY RETURN(-1)	0.08004	[4.31512]	3772.753	[4.49213]
NIFTY RETURN(-2)	-0.028452	[-1.52567]	2759.127	[3.26758]
NIFTY RETURN(-3)	-0.023724	[-1.26994]	2008.629	[2.37466]
NIFTY RETURN(-4)	-0.041507	[-2.22168]	1214.973	[1.43626]
NIFTY RETURN(-5)	-0.033863	[-1.81351]	1250.069	[1.47856]
NIFTY RETURN(-6)	-0.028817	[-1.54305]	-82.78394	[-0.09790]
NIFTY RETURN(-7)	0.040053	[2.15029]	394.1824	[0.46738]
NIFTY RETURN(-8)	0.022598	[1.21794]	-344.4893	[-0.41006]

Source: Author Computation

Above Model specifies that the previous value of NSE indices of 1, 4 and 7 days and the sale of previous day FIIs Sales also effect the value of Nifty and the past value of Nifty 1,2 and 3 days' and the previous FIIs sales behavior effect the pattern of FIIs Sales.

Table 11

show the Granger Causality result

Null Hypothesis : NIFTY Return Does Not Granger Cause	F-Statistic	p-value
Gross Sales FIIs	7.36857	0.0006*
Net DIIs	46.7114	0.0000*
Net FIIs	51.8503	0.0000*
Gross Purchase DIIs	4.15859	0.0157*

Source: Author Computation

Table shows that the hypothesis cannot be rejected that Nifty Return does not cause the Gross FIIs Sale, DIIs NET, FIIs NET and GROSS PURCHASE DIIs. Causality test shows that there is one-way relationship between the variables.

III CONCLUSION

In this study, we have examined the co-integration among NSE Indices, FIIs and DIIs purchase and Sale behavior. We found positive long term integration and impact of FIIs and DIIs flows over NSE stock prices. All variables are positively correlated   to each other, their past behavior regarding returns effect present behavior of stock return. Investment pattern of DIIs and FIIs also influenced by the same. By applying Granger Causality test we found unidirectional relationship among the variables. Our results are supported by Mukherjee & Roy, 2011; V. Ravi Anshuman, 2011 ; Shleifer and Vishny, 2003; Liu. et.al 2014 and Kaur & Kaur, 2014.

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