Journal of IMS Group
Vol. 14, No. 1, January-June 2017, pp. 26-39

Institutional Investors – Foreign and Domestic and its Impact on the Stock Market Volatility in India

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ABSTRACT

Foreign Institutional Investors have been instrumental in increasing the volume of trading in the Indian stock market since its beginning in the 1990's. Prior to that there was no or very less movement in the stock markets because of lack of funds and activity. It was the introduction of foreign institutional investors that brought the much needed liquidity to the stock market of the country. On the other hand there is another form of institutional investor that is domestic in its origin and it is the domestic institutional investor. The present paper tries to examine the role of FIIs and DIIs in the volatility of the Indian stock market proxied by Bombay Stock Exchange. Daily data for the period 2007-2016 has been taken to analyze the impact of foreign investors and domestic investors on the stock market. To check the non-stationarity of the time series the Augmented Dickey-Fuller (ADF) unit root test has been used and further statistical tools like mean, variance, standard deviation, skewness are used to examine the impact of institutional investors on Indian stock market volatility. Further Granger Causality and GARCH Modelling has been used to further strengthen the results. The study also tries to find out whether the movement of the two types of investors is in the same direction or in the opposite direction thereby reducing the volatility which would have been otherwise there in the absence of two opposite institutional investors.

Keywords: *Causality, Domestic Institutional Investors, Foreign Institutional Investors, GARCH, Volatility.*

INTRODUCTION

Investment made by institutions like banks, mutual funds, insurance companies or other institutions is termed as institutional investment and when it is made in the assets of the country in which such institution is established it is termed as domestic institutional investment and if the investment is made in the securities of some other country it is termed as foreign institutional investment. Various researches have been done in the past to analyze the impact of the foreign institutional investment on the stock markets movement and its volatility. Some are of the view that it is the

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market returns that attract huge inflow of foreign funds while the others hold that the inward movement by foreign institutional investors takes the market to a new high, however such studies lose a very important linking point and that is the presence of domestic institutional investors.

Domestic institutional investor (DII) in India is a summation of mutual fund companies, life insurance companies and banks. FIIs also known as hot money makes the market volatile as they are mainly concerned about the profits and any news about the country brings a change in their investment. DIIs on the other hand are more stable as they are only churn their investments and do not exit the market because of any unfavourable development. As on 9th January 2017, Domestic institutional investors (DIIs), which mainly comprise insurance companies, banks and mutual funds, own about 20 per cent of the free float.

Various studies have been done both in the Indian Economy and abroad that try to identify the impact that foreign institutional investors have on the stock returns as it is assumed that the huge funds that these investors deal in have the capacity to bring significant changes in the stock returns that can drive the whole market up or down. Many researchers have used various tools to find out how much impact the foreign institutional investors have on the market returns and also whether it is the investment or disinvestment by the investors that drive the market or the other way round. However an important point that has not been dealt with is that there are also various domestic institutional investors that are also making investments in the stock markets and there have been various instances that have shown that when foreign institutional investors were taking out money from the markets, it was the investment by the domestic institutional investors that prevented the drastic fall which would have been there if no such domestic institutional investors were present. Hence these type of investors have an important part that they play in the stock market stability. The present study is thus an attempt to find out the impact that these two important type of investors namely foreign institutional and domestic institutional investors have on the stock market movements. The broad objectives of the study are defined under the hypothesis testing.

LEGAL FRAMEWORK OF THE STUDY

In 1993, the institutional investors from foreign countries were permitted to invest in Indian capital market. The credit of permission goes to the Narshimham Committee. Soon SEBI was formed to regulate the behaviour of FIIs and identify a code of conduct for such investments. SEBI defined the foreign Institutional investor as an institution[1] established or incorporated outside India and that wants to invest in securities in India either on its own or on behalf of a sub-account[2]. Such an institution can include Pension Fund or Mutual Fund or Investment Trust, Asset Management Company or Nominee Company or Bank or Institutional Portfolio Manager investing on behalf of broad based funds, Trustee or a Power of Attorney holder investing on behalf of broad based funds, University fund, endowments, foundations or charitable trusts or charitable societies.

This definition was revised in 2006 through second Amendment of the Regulation to include Pension Funds, Mutual Funds, Investment Trusts, Insurance companies, Reinsurance companies, International or Multilateral Agencies, Foreign Government Agencies and Foreign Central banks, Asset Management Company, Investment Manager or Advisor, Nominee Company, Bank or institutional portfolio manager, Trustee or Power of Attorney Holder, University fund, Endowments, Foundations or Charitable Trusts or Charitable Societies established or incorporated outside India and proposing to make investments in India on behalf of broad-based funds and its proprietary funds as FIIs.

On 17th January 2014, a new class of investors was introduced. This class came to be known as FPI, Foreign Portfolio Investor. As per SEBI, the FPI was formed by merging the Foreign

Institutional Investors ("FIIs"), Qualified Foreign Investors ("QFIs") and sub- accounts of the FIIs. The Regulation 5 of FPI spelt out its three categories based on the risk as category I, category II and category III. The Category I included foreign investors relating to government such as central banks, government agencies or sovereign foreign funds. Category II included, regulated entities, broad-based funds which may be regulated or non-regulated entities. While the regulated entities included banks, asset management companies, investment managers, the broad based funds included MFs, investment trusts. Category III included the investors that were part of earlier definitions under the different regulations like Foreign Institutional Investors Regulations, 1995, SEBI circulars dated August 09, 2011 for QFIs and SEBI circulars dated January 13, 2012 for sub-accounts of FIIs were included.

FPI Regulation 21 provided for the type of instruments in which FPIs can invest. The instruments were listed or to be listed shares, government securities, units of mutual funds or collective investment schemes, treasury bills, corporate debt and Indian depository receipts. The foreign corporates and foreign individuals could now invest up to 10% of a company's total issued capital. And the investment in equity shares was reduced to below 10% of a company's total issued capital. FPI Regulations prohibited the future investments in unlisted equity shares of a company.

REVIEW OF LITERATURE

Arora, Jasneek and Kumar, Santosh (2015) The study has tested the impact that foreign institutional investors have on the Indian Capital market. Monthly data on FII's net investment and NIFTY returns for the period January 2012 to November 2014 has been considered. On the basis of unit root testing and GARCH modeling the study concluded that foreign investors have brought no significant changes in the movement of the Indian stock market and as far as volatility is concerned it has greatly reduced because of liquidity that these types of investors have brought with them.

Singh, H., Vashisht, A., and Tripathi, T (2014) Study used quarterly data from 2008 to 2014 to find out the relation (if any) between institutional investment and stock market returns in India along with checking the impact on volatility of Indian stock market because of investment by foreign institutional investors. Researchers have used on the whole 36 companies from NSE and using regression technique found that it is the huge inflow of funds by foreign institutional investors that impact the volatility of stock market and other institutional investors do not play much role in the stock market movements because of small amount of funds that they invest.

Rastogi, S.K and Husain, Nazaquat (2014) The objective of the study was to analyze the impact of foreign institutional investors investment on Indian stock market using data from 1986 to 2014. for testing the voalitily the whole time period has been divided into pre FII that is before they were allowed in India (1986-1992) and Post FII (1992-2014) to find out if there has been significant change in the volaitility. The analysis based on monthly data showed that GARCH term is significantly associated with the stock market volatility implying that historical volatility leads future volatility.

Goel, Shweta and Kaur, Harmanpreet (2013) The study made use monthly data of foreign institutional investors and NSE NIFTY stock returns from 2001 to 2013 to find out the impact of their investment on the stock market returns. The methodology involved regression techniques to find out to what extent the returns are being impacted by FII movement. Results as shown by F test, ANOVA, Regression coefficients reveled that FII's infact impart liquidity to the stock markets that reduces the volatility thereby strengthening the stock market.

Chakraborty, Sandip and Kakani, Ram Kumar (2012) The study has tested the effect of institutional investments on the stock markets

of India, Korea, Taiwan and Vietnam using GARCH modeling. The study has made use of the daily data from 2000 to 2012. Results revealed that there is conditional correlation between volume dispersion and it is the returns' dispersion that triggers and plays an important role in the stabilization of equity markets.

Loomba, Jatinder (2012) attempted to find out the impact of the foreign institutional investors on the stock market volatility in India by using the daily data of FII activity and BSE Sensex for a period from 1st Jan 2001 to 31st Dec 2011. The study found significant positive correlation between stock market and FIIs where the FIIs have been able to impact the movement in the stock markets to a great extent. The study also revealed that the net selling by the FIIs had bought 25 major crashes earlier in the Indian Stock Market.

Saxena, Swami P. and Bhadauriya, Sonam (2010) The paper has tried to identify the causality that is whther it is the movement of foreign institutional investors that affects stock market volatility or is it the other way round. For this it used Granger Causality in a bivariate VAR framework using the daily data series on FIIs inflows and S&P CNX NIFTY for seven financial years from April 2003 to March 2010. Results revealed that the returns from the stock market affect the foreign institutional investors' movement and not the other way round as is mostly expected.

Prasanna, Krishna and Bansal, Bharat (2009) The study had attempted to find out the impact of foreign institutional investment on the stock market liquidity using daily data from 2002 to 2009. Using OLS regression and Granger causality testing it revealed that it is the investment by FII's that have granger caused stock market liquidity and volatility and as commonly believed FII's increase volatility and reduce liquidity.

Anshuman, V. Ravi ; Chakrabarti, Rajesh and Kumar, Kiran (2006) The study tried to analyze whether the trading activities of foreign institutional investors have any negative impact on the stock market volatility in India and also whether it is the foreign investors or domestic institutional investors that impact the volatility of Indian stock market. It made use of tick-by-tick data for 50 stocks that are part of NIFTY during a 3 month period from April to Jun 2006. Results revealed that the trading amongst FIIs do not affect volatility of the Indian stock market but selling by FIIs to domestic investors have an impact on the volatility of the Indian stock market.

Ahmad K., Ashraf S. and Ahmed S. (2005) examined the relationship between Foreign Institutional Investment and stock returns in India using data from S&P CNX Nifty and daily FII flows between the period from August 2002 to August 2004. The study used Granger-causality, Cross-correlation method and GARCH to analyze both the static and dynamic relationship between the two variables. They found that the (FIIs) were positive feedback traders both for the past and the future equity returns.

Bose S. and Condoo D. (2004) examined the effect of the reforms of FII policy on their flows in Indian stock market between the period from January 1999 to January 2004, using the technique of multivariate GARCH regression model. The study also used the time series intervention analyses to assess each individual policy intervention in the model. The return series was formed by picking the indices from stock markets of BSE. The study found that the liberalization policies have the expansionary effect. They have either increased the mean levels of FII flows or increased the sensitivity of these flows to a change in return. The otherwise situation is not the opposite that is the restrictive measures to control FII flows do not show any significant negative effect on the net inflows.

Gordon, J. and Gupta, P. (2003) attempted to analyze the determinants of FII flows in Indian capital market. The econometric tests indicated that not one factor but a combination of regional, domestic and global variables determines equity flows. However, the increase in the interest rates abroad did affect the returns and had positive effect on the FII flows into India. Further, the lagged domestic stock market returns, credit rating downgrade

and exchange rate depreciation affected FII flows negatively. Further, the macro economic factors did not follow a pure bottom-up approach to investing and that their interest in larger companies was not imperious to such factors.

Batra, Amita (2003) attempted to understand the dynamics of the trading behavior of FIIs and returns in the Indian Equity market. Both the daily and monthly data was taken for different time periods. While daily data was used from January 2000 to December 2002, monthly data was used from January 1994 to December 2002. Model approach was followed. Median and first-order autocorrelation were applied on daily net equity FII purchases and daily returns up to five lag periods. The trends of positive feedback trading were assessed using the Granger Causality test, Augmented Dickey Fuller (ADF) and Philips – Perron (PP) test. A VAR system was also used to assess the impact of innovations in trading imbalances. The destabilizing effect was examined using event study methodology. They found that there is a strong evidence of daily FIIs chasing trends and adopting positive feedback trading strategies at the aggregate level. Further the monthly basis did not provide the evidence of positive feedback trading. And significant evidences were not found to assert that equity market instability resulted into trading imbalance of FIIs.

Rai and Bhaumurthy (2002) examined the determinants of Foreign Institutional Investments in India using monthly data from January 1994 to November 2002. The study tried to examine whether the return and risk plus the real factors as inflation and exchange rate do impact on Foreign Institutional Investment inflow in the country. FIIs were modeled by regressing FII on BSE return, return on composite S&P 500 and inflation in India and US. The application of Breusch-Godfrey Serial Correlation LM test showed the presence of autocorrelation in the model. Since the diagnostic tests indicated the need to include more lags in the re-estimation model, GARCH (1,1) was used. Further, asymmetric Threshold ARCH was estimated at 1% level of significance. The TARCH showed the positive relationship between FII and return on BSE and inflation in US. The negative association was found among inflation in India, return on S& P 500, ex-ante risk on BSE and ex-ante risk on S & P 500. No causation was found between FII and return on BSE. It was further found that the bad news affected the FII inflow more than the good news. i.e. the withdrawal was faster than the investments based on the type of news.

Mukherjee P., Bose S. and Coondoo D. (2002) examined the relationship of daily foreign institutional investment (FII) flows to the Indian equity market with its possible covariates for the period from January 1999 to May 2002. The daily data of FIIN (Foreign Institutional Investment net) as a proportion of MCAP (market capitalization) was used to examine the nature of Foreign Institutional Investment flows to India in terms of three variables. That is, Foreign Institutional Investment sale, Foreign Institutional Investment purchase and net Foreign Institutional Investment (denoted as FIIN). They found that FII flows to and from the Indian market tend to be caused by returns in the domestic equity market. Secondly, the returns in the Indian equity market were found to be significant factor in influencing FII inflows. While the FII sales and FII net inflows were significantly affected by performance on Indian equity market, FII purchases did not respond the market performance. The returns from exchange rate variations did not seem to be strong. The daily flows were highly auto-correlated and thus could not be accounted for.

Karolyi G.A. (2002) examined whether the shift in aggregate foreign portfolio investment activity in Japan exacerbated the effect of the crisis on markets, or whether it simply reflected positive feedback trading behavior. The data draws from weekly reports to the Tokyo Stock Exchange of aggregate purchases and sales of Japanese equities by foreigners and local institutional and individual investors from January 1995 to March 2001. They have employed a tri-variate VAR model of weekly

stock and currency returns and net purchases or flows. There found the evidence of consistent positive-feedback trading before, during and after the Asian crisis among foreign investors, while Japanese banks, financial institutions, investment trusts and companies themselves were aggressive contrarian investors. There was no evidence that this trading activity by foreigners destabilized the markets during the crisis.

Bekaert, Harvey and Lumsdaine (2002) examined various aspects such as, firstly, the impact of the world interest rate on the ratio of net capital flows by market capitalization, returns and dividend yields, secondly, the impact of net capital flows on returns and dividends and finally, the effect of returns and dividend yields in the past on net capital flows. The data consisted of net capital flows, interest rates, dividend yields and returns. They categorized the data according to noise reduction, as per geographical region and as per characteristics of capital flows. They found that stock bond flows reacted positively on shocking news. However, the unexpected shocks to equity market had contemporaneous effect. They found that such shocks were followed by increased short-term equity capital flows, indicating a momentum effect.

Chakrabarti R. (2001) examined the nature and determinants of the daily FII flows to Indian capital market between a period from January 1993 and December 1999. They used the preceding month's BSE market capitalization and BSE 30 Indices. The tools that were used were Jarque-Bera test, Granger's Causality test and coefficient of correlation. They found that the net FII flows were effect than the cause to the return. Further the FIIs did not seem to have an informational disadvantage compared to the local investors. The Asian crisis came out to be sole driver of these flows in the Indian equity market.

Kim and Wei (1999) analysed the behavior of foreign portfolio investors and domestic individual investors in Korean stock market. Their study period involved the time from the pre-crisis period to the crisis periods that is from December 1996 to June 1998. They found that the non-resident institutional investors act positively to the news in the emerging market as compared to residents. The domestic investors tend to follow the FIIs during the crisis.

Clark and Berko (1996) examined whether the foreign inflows cause emerging equity prices to rise. The study used the monthly purchases from Mexican equity market for a period fromfrom January 1989 to March 1996. They used the hypothesis that, greater risk sharing and improved liquidity that results from foreign inflows produces permanent price rise. The study found that the inflows were having no relationship with prices. However, the surprise inflows did produce some statistically significant price effects.

RESEARCH OBJECTIVES

- To find out the relationship between Foreign Institutional Investment and Domestic Institutional Investment
- To find out the impact of Foreign Institutional Investment on the stock market volatility.
- To find out the impact of Domestic institutional investment on the stock market volatility.
- To check the short term causality between Foreign Institutional Investment, Domestic Institutional Investment and stock market movements.

RESEARCH METHODOLOGY

Study is based on secondary data collected from RBI, SEBI, Moneycontrol.com. Data includes daily data from 1st January 2007 to 31st December 2016 on Foreign Institutional Investment, Domestic Institutional Investment and BSE Sensex values. The data prior to 2007 is not available for domestic institutional investors and hence the above time frame has been selected. Eviews 8 has been used for analysis. As time series data deals with stationary time series so the first step is to check for stationarity using Augmented Dickey

Fuller Test. A series is said to be stationary if the mean and auto covariance of the series is integrated and has a unit root. After converting the series to stationary we can proceed for checking the causality between the variables using Granger Causality and impact of the variables on the volatility using GARCH modeling. The GARCH model can be specified with GARCH (p,q) where p is the order of GARCH terms and q is the order of ARCH terms as shown below:

$$\delta_t^2 = \alpha_0 + \alpha_1\epsilon_{t-1}^2 + \cdots + \alpha_q\epsilon_{t-q}^2 + \beta_1\delta_{t-1}^2 + \cdots + \beta_p\delta_{t-p}^2$$

$$= \alpha_0 + \sum_{i-1}^{q} \alpha\, i\, \epsilon_{t-i}^2 + \sum_{i-0}^{p} \beta\, i\, \delta_{t-i}^2$$

"We start to model the conditional volatility as being a GARCH (1, 1). A GARCH (1, 1) specification should be enough to interpret the conditional variance that fits the high frequency time series data. In the model, α measures the coefficient of the constant variable or the random variations, α1 is the coefficient of the square of the residuals or the error coefficients and β is the coefficient of the GARCH lag. The size of α and β determine the dynamics of the volatility in the stock prices. If the GARCH (α) error coefficient is high then it means that there exist intensive reactions of the volatility in the market. if the GARCH lag (β) coefficients are high then it means that there is slow reaction of volatility in the market long time to react in the market. If the GARCH error coefficients (α) are high and the GARCH lag (β) coefficients are low then it means that the volatility tend to be spikier."

Table No. 1: Net Investment by FII and DII

Years	Foreign Institutional Investors	Domestic Institutional Investors
2007	(351.16)	24,354.37
2008	(1,01,802.57)	72,966.78
2009	24,820.09	26,106.16
2010	61,513.13	(19,227.39)
2011	(26,598.26)	29,205.77
2012	1,01,166.11	(55,800.09)
2013	87,105.06	(73,051.69)
2014	67,423.40	(28,557.03)
2015	(20,373.69)	67,586.82
2016	(19,239.35)	44,503.50

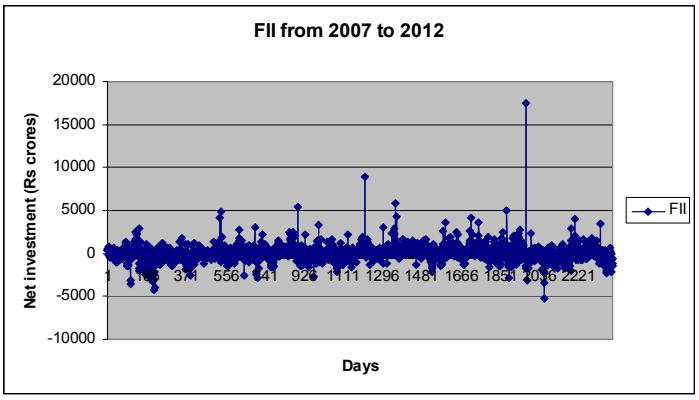

Figure 1: FIIs Investment in India

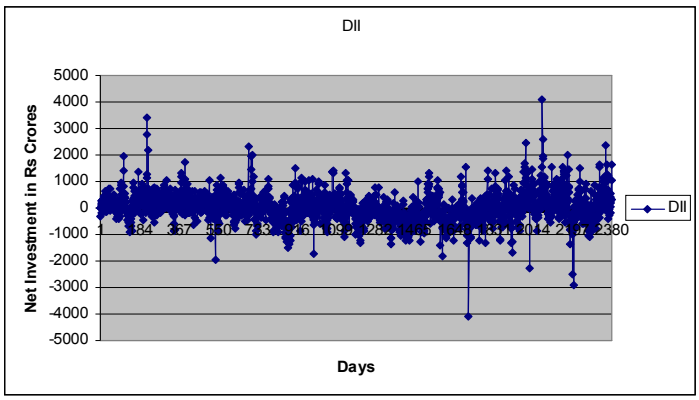

Figure 2: DIIs Investment in India

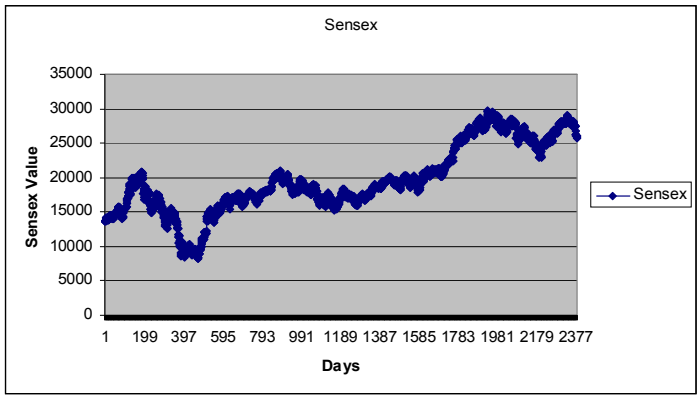

Figure 3: Sensex Values from 2007 to 2016

Table No. 2: Descriptive Statistics of the FIIs, DIIs & Sensex Returns

	FII	DII	Sensex
Mean	77.06	33.15	19640.46
Median	82.31	17.64	18625.34
Maximum	17,488.73	4,097.83	29,681.77
Minimum	(5,275.40)	(4,076.60)	8,160.40
Std. Deviation	929.67	539.31	5003.60
Skewness	3.35	0.34	0.20
Kurtosis	60.99	8.13	2.44
JB Probability	0.00	0.00	0.00

TESTING STATIONARITY

The first step in the analysis of financial time series is to check for stationarity as results would give biased results in the presence of unit root. Augmented Dickey Fuller test has been used in the presence of trend, trend and intercept and constant and following results are obtained. Unit root test follows a (stochastic) process as under:

$$Y_t = \rho Y_{t-1} + u_t \qquad -1 \leq r \leq 1 \qquad (4)$$

where,

u_t = a white noise or error term.

The non-stationary stochastic process of Y_t, occurs when Y_t is regressed on its (one-period) lagged value Y_{t-1} and estimated r is tested to find whether or not it is statistically equal to 1. This is called a random walk model without drift.

Table 3: Testing of Stationarity

FII

	Level (probability Values)
With Intercept	0.0000
Trend and Intercept	0.0000
None	0.0000

DII

	Level (probability Values)
With Intercept	0.0000
Trend and Intercept	0.0000
None	0.0000

Sensex

	Level (probability Values)	Log Sensex	1st difference of Log
With Intercept	0.6404	0.5322	0.0001
Trend and Intercept	0.3435	0.3184	0.0000
None	0.8460	0.8815	0.0000

Investment by foreign and domestic institutional investors are stationary at the level itself as these series are already derived by deducting sales from the purchases giving net investment. Sensex series on the other hand is non stationary at the level and even after converting to log series. The series however becomes stationary on taking the first difference that is converting to log returns.

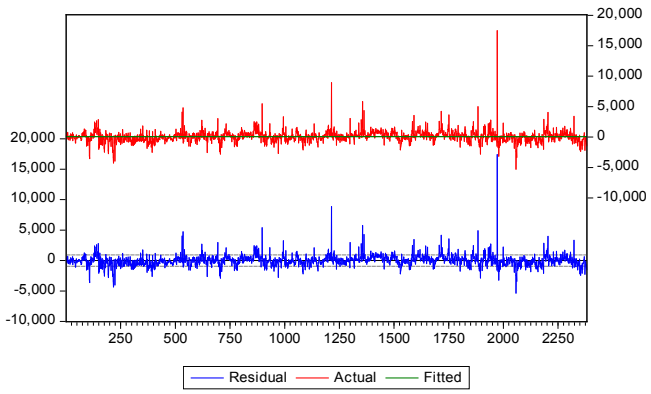

Figure 4: Residuals of FIIs

Residuals of FII

To check for the volatility effects, we take the residuals of the stationary series to see if ARCH model can be applied to the residuals or not which is dependent on the fact that whether there is volatility clustering. It is shown below:

Table 5: GARCH Estimation of FIIs

GARCH = C(2) + C(3)*RESID(-1)^2 + C(4)*GARCH(-1)				
Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	68.54273	12.62749	5.428058	0.0000
Variance Equation				
C	235291.2	8942.393	26.31189	0.0000
RESID(-1)^2	0.639858	0.016057	39.84962	0.0000
GARCH(-1)	0.287353	0.011893	24.16077	0.0000

In this example, the sum of the ARCH and GARCH coefficients is very close to one, indicating that volatility shocks are quite persistent. This result is often observed in high frequency financial data.

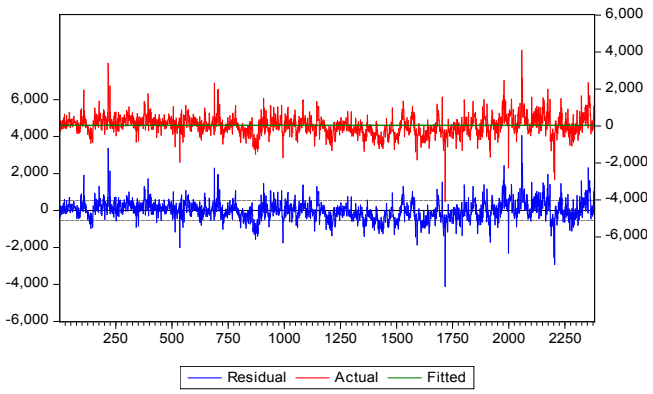

Figure 5: Residuals of DIIs

Table 6: GARCH Estimation of DIIs

GARCH = C(2) + C(3)*RESID(-1)^2 + C(4)*GARCH(-1)				
Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	46.85975	8.248960	5.680686	0.0000
Variance Equation				
C	76967.84	5161.170	14.91287	0.0000
RESID(-1)^2	0.491986	0.027602	17.82433	0.0000
GARCH(-1)	0.300435	0.027729	10.83467	0.0000

The sum of the ARCH and GARCH coefficients is closer to one, indicating that there are lesser chances of volatility.

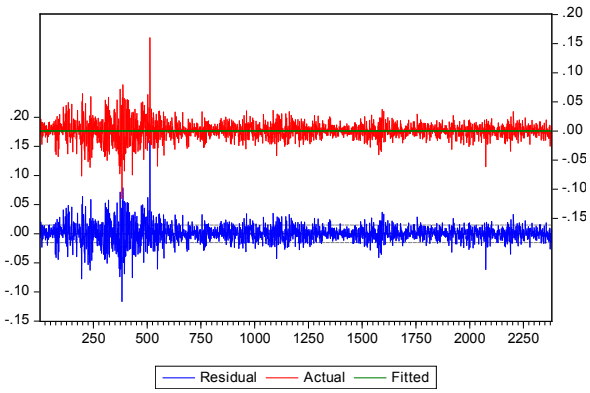

Figure 6: Residuals of Sensex Returns

In this example, the sum of the ARCH and GARCH coefficients is very close to one, indicating that volatility shocks are quite persistent.

Table 7: GARCH Estimation of Sensex Returns

GARCH = C(2) + C(3)*RESID(-1)^2 + C(4)*GARCH(-1)				
Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	0.000519	0.000218	2.383198	0.0172
Variance Equation				
C	1.76E-06	3.45E-07	5.101489	0.0000
RESID(-1)^2	0.070941	0.007333	9.674210	0.0000
GARCH(-1)	0.921132	0.007800	118.0985	0.0000

Granger's Causality Test

The Granger causality test involves estimating the following pair of regressions:

$$Y_t = \sum_{i=1}^{n} \alpha_i X_{t-i} + \sum_{i=1}^{n} \beta_i Y_{t-i} + \mu_{1t} \quad (1)$$

$$X_t = \sum_{i=1}^{n} \alpha_i X_{t-i} + \sum_{i=1}^{n} \beta_i Y_{t-i} + \mu_{2t} \quad (2)$$

where,

i = 1,2,……,n

X_{t-i} = Equity Return in time period t-i

Y_{t-i} = Foreign Institutional Investment flows in the time period t-i

αi = parameter over the time period from 1 to n

αi = parameter over the time period from 1 to n

μ_{1t}, μ_{2t} = disturbance terms

Equation (1) postulates that current Y (net FII) is related to past values of itself as well as that of X (Equity return) and equation (2) postulates a similar behaviour for X (Equity return). This is the case of bilateral causality where the coefficients of X and Y are statistically significantly different from zero. Similar equations can be obtained for domestic Institutional Investment and stock returns and domestic institutional investment and foreign Institutional Investment.. The estimated coefficients of models (1) and (2) have not been presented explicitly.

Table 8: Causality between the FIIs, DIIs & Sensex Returns

Lags (in days)	Causation Between FII and DII	Causation Between FII and Sensex	Causation Between DII and Sensex
1	FII → DII DII → FII	No Cause and Effect	No Cause and Effect
2	FII → DII DII → FII	No Cause and Effect	No Cause and Effect
3	FII → DII DII → FII	No Cause and Effect	No Cause and Effect
4	FII → DII DII → FII	No Cause and Effect	No Cause and Effect
5	FII → DII DII → FII	No Cause and Effect	No Cause and Effect
7	FII → DII DII → FII	No Cause and Effect	No Cause and Effect
8	FII → DII DII → FII	No Cause and Effect	No Cause and Effect
9	FII → DII DII → FII	No Cause and Effect	Stock Returns → DII
10	FII → DII DII → FII	No Cause and Effect	Stock Returns → DII
15	FII → DII DII → FII	No Cause and Effect	Stock Returns → DII
20	FII → DII DII → FII	No Cause and Effect	Stock Returns → DII
25	FII → DII DII → FII	Stock Returns → FII	Stock Returns → DII
30	FII → DII DII → FII	Stock Returns → FII	Stock Returns → DII

FINDINGS AND CONCLUSIONS

The Indian stock market has come a long way from the period prior to 1990's where the stock market lacked liquidity and volatility because of the absence of number of investors. Since the government allowed Foreign Institutional Investment in the country there has been a drastic change in the stock market in terms of increased liquidity that also increased the investment made by the domestic investors. Although FII's brought in the much needed liquidity in the capital markets they are also often being accused of huge volatility because of which the domestic retail investors are scared to make investment in the stock markets directly. Here comes to there rescue the domestic institutional investors like mutual funds and insurance companies that make investment in the stock markets on their behalf after proper research. It is often seen that when the markets crash because of huge outflow by FII's it is the DII's that act as the cushion and prevent the huge fall. The study that made use of daily data from 2007 to 2016 showed that the investment by FII's and DII's are causing each other at all the lags that is both the institutional investors take into consideration the investment by the other. However it is the stock returns that cause the investment by domestic institutional Investors starting from a lag of 9 days and stock returns cause the investment by foreign institutional Investors starting from a lag of only 25 days. Thus showing that FII's take longer response time to make investment decision may be because

of the regulations involved as compared to DII's. As far as volatility is concerned sensex movement, FII movements exhibit higher volatility whereas DII's show lesser volatility.

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Endnotes

1. Artificial juridical person;

2. Foreign corporates or foreign individuals