Effect of Mutual Funds

(Mfs) Investments and Foreign Institutional Investors (FIIs) Investments on the Indian Stock Market: An Empirical Analysis

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ABSTRACT

Exploring the interwoven relationships between investment flows of Foreign Institutional Investors (FIIs), Mutual Funds (MFs) and Indian Stock Market, based on 16 years' time period analysis, this study is aimed at understanding the effects of these institutional investors on the Sensex and vice versa. These groups of domestic and foreign investors play an important role in the development of any stock market. Investor groups are believed to invest in equity markets based on the past returns and in turn are understood to influence the market movements. Johansen's co-integration test and Granger Causality test are made use of for analyzing the long term relationship and the cause and effect relationship between the investor groups and the Sensex. The investigation of these variables in the present study suggests a unidirectional flow of impact from Sensex to investments by investment groups supporting the literature that institutional investors make positive feedback trading as their main investment strategy in the equity markets. However, the reverse effect from the investments by these investor groups to the stock market movements is found to be missing.

Keywords: *Sensex, MF Equity Inflows, MF Net Investments, FII Equity Inflows, FII Net Investments, Correlation, Granger Causality, Johansen's co-integration*

INTRODUCTION

An economy like India, offering relatively higher growth than the developed economies is an attractive investment destination for foreign institutional investors (FIIs). Bank of America Merrill Lynch recently conducted a poll in which 50 institutional investors participated and its results show India as the most favourite equity market for the global investors for the year 2015 at 43 per cent, followed by China at 26 per cent. A look at the latest shareholding pattern of Indian listed companies divulges the fact that FIIs command a very strong position in the Indian stock market. BSE 500 Companies are majorly held by the promoter groups only, to the tune of 51 percent but out of the remaining 49 percent free float, FIIs dominate the 40 percent thereby impacting the market movements with their fund flows in and out. Retail investors are left with only around one third of the holding of free float.

With a view to make India a more sought-after foreign investment destination, the Ministry of Finance is planning to introduce the residency permit policy, which will allow key executives of foreign companies who make investments in India worth more than US$ 2 billion, to avail rewarding facilities such as special package on upscale housing, residency permits to allow long stay in the country, and cheap rates for utilities. The Reserve Bank of India (RBI) has stated that it will take steps to ease doing business and contribute to the growth of start-ups by simplifying processes and creating a supporting framework for receiving foreign venture capital, in line with the Government of India's 'Start-up India' initiative.

Mutual Funds (MFs) and Foreign Institutional Investors (FIIs) are the two most important institutional investors for any growing market like Indian stock market. Inflow of the foreign capital brings foreign currency into the country thereby contributing to the development of the economy but another major portion of capital in stock markets comes from the domestic route, wherein MFs play a significant role. An efficient mutual fund industry can enhance stock market investments. Strong character characterized by less abrupt actions and reactions of these two categories of institutional investors can really back a stable stock market.

Foreign Institutional Investor (FII), as per SEBI's definition, is an entity established or incorporated outside India which proposes to make investment in India. They are registered as FIIs in accordance with Section 2 (f) of the SEBI (FII) Regulations 1995. FIIs are allowed to invest through subscribing to new securities as well as trade in already issued securities. As represented in Figure 1.1, FII is just one form of foreign investments in India.

Nonetheless, as a category, FII does not exist anymore as it was decided to create a new investor class, "Foreign Portfolio Investor" (FPI) by merging the existing three investor classes; FIIs, Sub Accounts and Qualified Foreign Investors. Accordingly, SEBI (Foreign Portfolio Investors) Regulations, 2014 were notified on January 07, 2014 followed by certain other enabling notifications by Ministry of Finance and RBI. With the aim of ensuring seamless transition from FII regime to FPI regime, it was decided to commence the FPI regime with effect from June 1, 2014 so that the requisite systems and procedures are in place before the new FPI regime comes into effect.

With the new FPI regime, which has commenced from June 1, 2014, it has now been decided to do away with the mandatory requirement of direct registration with SEBI and a risk based verification approach has been adopted to smoothen the entry of foreign investors into the Indian securities market. FPIs have been made equivalent to FIIs from the tax perspective, vide central government notification dated January 22, 2014.

Emerging markets have opened their markets to international investors causing a stupendous increase in inflow of funds to these countries. This brings with itself some big benefits as well as some challenging issues which need to be managed very closely. Debate on desirability and optimum level of the international investment flow and a financial architecture to ensure efficient allocation of international resources without causing destabilization of markets is running since long and it continues.

In view of the huge funds being funneled into markets by these institutions, it would be worthwhile to calculate and compare the extent of impact of FIIs, MFs and stock markets on each other. It is crucial for policy makers as well as investor groups to know the cause and effect relationship of these categories of investors. Many a number of studies have focused on these inter-relationships across the world. The results present enormous depth in these interwoven variables. The present study is an endeavor to examine the correlation and cause & effect relationships between Indian MFs, FIIs and BSE Sensex.

ITERATURE REVIEW

Studies based on India find that domestic stock returns drive institutional investment flows in the stock markets. They also find that though FII flows to and from India are significantly affected by domestic stock market returns; return is not significantly influenced by variation in these flows.

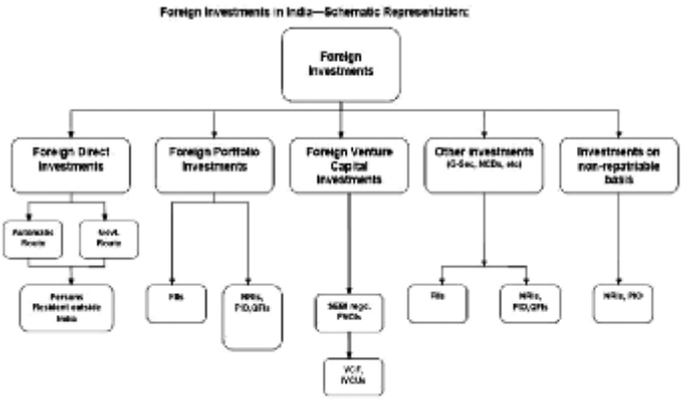


Figure 1.1: FOREIGN INVESTMENTS IN INDIA
Source: Master Circular on Foreign Investment in India (2014)

relation between aggregate stock market returns and cash flows (net purchases of equity) from a broad array of investor groups in the US over a long period of time from 1952 to 2004. They found strong evidence that quarterly flows are auto correlated for each of the different investor groups. Further, they documented a significant and positive contemporaneous relation between stock market returns and flows of Mutual Funds and Foreign Investors.

Sanjay Sehgal & Neeta Tripathi (2009) evaluated if FIIs adopt positive feedback and herding strategies in the Indian environment. They found that FIIs exhibit return chasing behaviour while working on monthly data. However, they do not seem to be working on the positive feedback strategy when they used daily files. This may be on account of the fact that they wait for the market information to crystallize and do not react to it in an instantaneous manner.

Suchismita Bose (2012) explored the dynamic interaction between investment flows of MFs and FIIs, based on post-crisis data from April 2008 to March 2012. Daily data on net investment flows of FIIs and MFs to Indian stock market, BSE Sensex, US index S&P 500, MSCI BRIC and MSCI Emerging Market indices have been used for the study. Using the correlation analysis, it was found that positive or large net inflows by FIIs on a given day tend to go along with positive or large net outflows by mutual funds and vice versa. Also, MF investments in stock markets show a moderately strong positive correlation with contemporaneous stock returns in consistency with the hypothesis that the investor group drives the market prices through non-informed trades or that the investor group has superior information and drives price changes through informed trading or is due to intra-day positive feedback trading, while the correlation with a day's lagged returns for the same were negative suggesting that MFs mostly follow contrarian or negative feedback trading strategies. FII investments in Indian markets showed a strong positive correlation with lagged stock market returns while the contemporaneous correlations for the same were also positive but much weaker. She also found a strong negative relationship between the net investments by these two classes of institutional investors. The study suggested that the effect of stock market returns in determining mutual fund flows can be outshined by the effect of FII investments.

Karan Walia, Dr. Rimpi Walia & Monika Jain (2012) studied the impact of FIIs investment on Indian stock market from 2000 to 2011. The Pearson correlation values indicated positive correlation between the foreign institutional investments and the movement of Sensex from 2000 to 2011. Using correlation analysis, the study revealed that the FIIs are making a huge influence on the movements of the Sensex.

Further, the results revealed that the Sensex rises when there are positive inflows of FIIs and there was a fall in Sensex when there were negative FII inflows.

Anubha Srivastav (2013) attempted to find out the determinants of FIIs in India, whether there is any relationship between FII investments and Indian stock market. The study, making use of Pearson correlation coefficients calculated for the time period from 2001 to 2010, found that FIIs have a positive impact on BSE Sensex and NSE Nifty, markets rise with increase in FII investments and fall because of FII withdrawals from the market.

Tanu Agarwal (2013) studied the relationship between FIIs, BSE Sensex and Mutual Fund investments. Studying the relationship through data of FIIs net investments, Sensex levels and Mutual funds net investment over thirteen years period from 2000 to 2013, the report notes that both Sensex and MFs have high degree of positive correlation with FIIs Investment.

Aswini A. and Mayank Kumar (2014) studied the relationship between FIIs and Indian stock market for the twenty years period from 1993 to 2014. The report concluded that there is a high correlation between FII flows and the rise in the index of Indian stock market in a long run but there is a very less impact in the short term.

Pramod Kumar Naik & Puja Padhi (2015) studied the relationship between institutional investment flow and stock returns using daily data over the period of January 2002 to July 2012. The analysis was conducted using two and three factors vector auto regression (VAR) frameworks, in which they included investment flow of two categories of institutional investors i.e. FIIs and DIIs, proxied by mutual funds, separately as well as jointly. The analysis for the institutional investor groups presented results that DIIs investment flows did have a major impact on market returns but not the FII flows. They also found that the fund flow from both the investor groups was significantly affected by their own lags and lagged stock returns, implying that they followed their own past strategy as well as the latest market behaviour, albeit their trading strategy differed. Considering these two institutional investor groups jointly, they found that the net flow of FIIs and DIIs significantly influenced the Indian stock market despite of controlling for market fundamentals. Also, they found a feedback relationship between the institutional investment flow and stock market returns.

RESEARCH OBJECTIVES AND HYPOTHESES

The objectives of the present study are:

• To investigate the long term relationships between investments by MFs & BSE Sensex and investments by FIIs & BSE Sensex

• To examine the cause and effect relationships between investments by MFs & BSE Sensex and investments by FIIs & BSE Sensex

The following hypotheses have been formulated for the study:
$H_o(1)$: There is no long term relationship between MF investments and BSE Sensex

$H_o(2)$: There is no long term relationship between FII investments and BSE Sensex

$H_o(3)$: There is no significant cause and effect relationship between MF investments and BSE Sensex

$H_o(4)$: There is no significant cause and effect relationship between FII investments and BSE Sensex

DATA

The primary source of data for this study is the monthly figures of equity inflows, equity net investments, and total (debt and equity) net investments by Indian MFs and FIIs for the time period April 1, 2000 to March 31, 2016, compiled on the basis of reports submitted to SEBI by custodians. The Indian stock market index observed for the purpose of the study is the BSE Sensex, comprising of the largest and most actively traded stocks representative of various industrial sectors of the Indian economy. The data of closing values of Sensex is taken from the official website of BSE. Data has been analyzed using E-Views 7 software.

ESEARCH METHODOLOGY

The present study has made use of Johansen Cointegration test to examine the level of cointegration first, between Sensex & MF investments and second, Sensex & FII investments. The first assumption that the time series under inspection are stationary is tested through Augmented Dickey-Fuller test. Before pursuing formal tests, plotting the time series gives an initial clue about the likely nature of the time series (Fig 1.2).

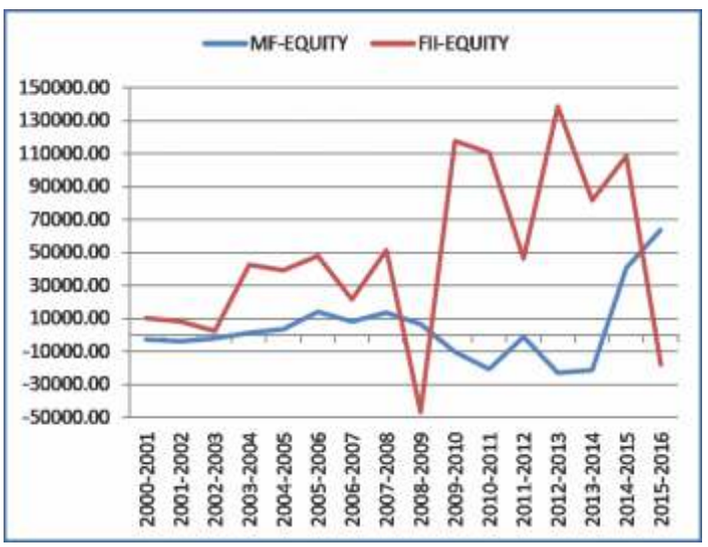


FIGURE 1.2: EQUITY MARKET INVESTMENTS BY MFs and FIIs (Rs. Crore)

Augmented Dickey- Fuller test: It consists of estimating the following regression:

$$\Delta Y_t = \beta_1 + \beta_2 t + \delta Y_{t-1} + {}^{m}_{i=1}\alpha_i \Delta Y_{t-1} + \varepsilon_t \qquad 1.1$$

Where εt is a pure white noise error term and

$$\Delta Y_{t-1} = (Y_{t-1} - Y_{t-2}), \Delta Y_{t-2} = (Y_{t-2} - Y_{t-3}), \text{etc.}$$

The number of lagged difference terms to include is often determined empirically, the idea being to include enough terms so that the error term in equation (1.1) is serially uncorrelated. We test whether $\delta = 0$. After determining the stationarity of the time series, a nonstationary time series is transformed into stationary series so as to avoid spurious regression resulting from regressing nonstationary time series. The solution here is to take the first differences of the time series because if a time series has a unit root, the first differences of such time series are stationary. The series under investigation have been tested using ADF test and the results are presented in Table 2B.

Johansen test for Co-integration:

Cointegration of two (or more) time series suggests that there is a long run, or equilibrium relationship between them. Johansen test for cointegration can be applied by one of the two types of methods, either with trace or with eigen value. The null hypothesis for the trace test is that the number of cointegration vectors is $r = r^* < k$, vs. the alternative that $r = k$. Testing proceeds sequentially for $r^* = 1, 2$, etc. and the first non-rejection of the null is taken as an estimate of r. The null hypothesis for the eigen value test is as for the trace test but the alternative is $r = r^* + 1$ and again, testing proceeds sequentially for $r^* = 1, 2$, etc. with first non-rejection used as the estimate for r. The selected lag length for the test is based on either Akaike Information Criterion or the Schwarz Information Criterion.

Granger Causality test:

A time series is said to Granger Cause another series if the past values of the former improve the forecast of the latter (Enders, 2008). Granger Causality test is used for testing the causal relationship between two stationary series because correlation does not imply causality. Distinguishing between these two is by no means an easy task. If a time series is stationary, the test is implemented using the level values of two or more variables. If the variables are non-stationary, the test is conducted by using first (or higher) differences. The number of lags to be included is usually chosen using an information criterion, such as the AIC or SIC.

To test the null hypothesis that x does not Granger cause y, one first finds the proper lagged values of y to include in a univariate autoregression of y:

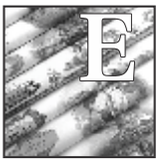
$$Y_t = a_0 + a_1 y_{t-1} + a_2 y_{t-2} + \ldots\ldots\ldots + a_m y_{t-m} + \text{error}_t$$

Next, the autoregression is augmented by including lagged values of x:

$$Y_t = a_0 + a_1 y_{t-1} + a_2 y_{t-2} + \ldots\ldots\ldots + a_m y_{t-m} + b_p x_{t-p} + \ldots\ldots\ldots + b_q x_{t-q} + \text{error}_t$$

p is the shortest and q is the longest lag length for which the lagged value of x is significant.

The null hypothesis that x does not Granger cause y is not rejected if and only if no lagged values of x are retained in the regression. Granger causality means only a correlation between the current value of one variable and the past values of other. The implication is not that the movements of one variable cause movements of another.



MPIRICAL ANALYSIS

Earlier studies have proposed a strong positive correlation between equity investments by MFs & FIIs and stock market returns. This draws us towards examining these variables closely and trying to put forward some possible relation between their behavior in the Indian stock market.

THE FII & MF INVESTMENT FLOWS AND SENSEX DATA

Table 1A presents the magnitude of net investments by MFs and FIIs in Indian stock market from April 2000 to March 2016. The year 2014-2015 observed maximum total investments so far by both MFs and FIIs in India. Mutual fund houses remained bullish on the equity markets in 2015 and purchased shares worth a staggering over Rs. 70,000 crore, largely due to the strong participation from retail investors. "As domestic investors continued to invest in equities through MFs, 2015 turned out to be a stellar year for the industry with impressive inflow in the segment," UTI Mutual Fund EVP and Fund Manager V Srivatsa said. Quantum AMC Managing Director and Chief Information Officer I V Subramaniam said, "Domestic mutual funds have been bullish on the stock market ever since the NarendraModi-led BJP government came to power at the Centre".

Main features of the data series analyzed over the time period of our study are presented in Table 1B. Positive skewness of all the series represents an asymmetry where data points are skewed to the right of the average of the data. By knowing which way the data is skewed, one can better estimate whether a given (or future) data point will be more or less than the mean. Kurtosis values represent a leptokurtic distribution in comparison with normal distribution; the tails are longer and fatter whereas the central peak is higher and sharper. Researchers have suggested that leptokurtosis arises from a specific form of volatility in the financial markets where periods of high volatility tend to be followed by periods of relative stability. Jarque-Bera is a test statistic for testing whether a particular series is normally distributed. Its small probability value leads to rejection of null hypothesis of a normal distribution. JB statistic values represent that the series differ from the normal distribution.

CORRELATION ANALYSIS

The correlation matrix in Table 1C brings out certain notable trends in the relationship between the variables considered in the study.

Sensex appears to be strongly positively correlated with Mutual Funds equity inflows into the market. FII equity inflows into the market show a much stronger positive correlation with the Sensex. These results are consistent with the hypothesis that the investor group moves market prices through non-informed trades, or that the investor group has superior information and drives price changes through informed trading decisions or it is due to intra-day positive feedback trading by the investor group. Similar positive correlation is hence evidenced in the correlation between Sensex and MF total net investments into the market.

ADF TEST RESULTS

While testing for the stationarity of series using ADF test, the hypothesis tested is:

TABLE 1A: INVESTMENTS BY MFs AND FIIs (2000-2016)

MFs(Rs.Crore)				FIIs(Rs.Crore)		
YEAR	EQUITY	DEBT	TOTAL	EQUITY	DEBT	TOTAL
2000-2001	-2650.45	0.00	-2650.45	10207.60	-391.00	9816.60
2001-2002	-3807.96	5388.64	1580.68	8273.88	659.99	8933.87
2002-2003	-2016.83	12585.77	10568.94	2533.95	366.17	2900.12
2003-2004	1304.21	22718.20	24022.41	42644.80	5690.64	48335.44
2004-2005	3536.53	17040.24	20576.77	39336.00	1878.90	41214.90
2005-2006	14162.28	36360.41	50522.69	48087.90	-6765.60	41322.30
2006-2007	8127.78	49041.39	57169.17	21518.93	5702.71	27221.64
2007-2008	13669.70	71101.40	84771.10	51595.30	11771.00	63366.30
2008-2009	6601.90	79926.00	86527.90	-46700.70	1860.80	-44839.90
2009-2010	-10234.50	186149.30	175914.80	117648.10	34389.20	152037.30
2010-2011 -	20574.40	251132.20	230557.80	110529.70	42145.10	152674.80
2011-2012	-1117.40	342167.70	341050.30	46493.10	50997.30	97490.40
2012-2013	-22865.00	477871.70	455006.70	138586.10	39951.70	178537.80
2013-2014	-21274.30	542969.70	521695.40	81728.90	-27892.20	53836.70
2014-2015	40714.00	594457.30	635171.30	108672.79	162821.87	271494.66
2015-2016	63888.70	383463.70	447352.40	-17739.06	12828.79	-4910.27

Source: SEBI

TABLE 1B: DESCRIPTIVE STATISTICS (April 2000 to March 2016)

SENSEX	MF_EQ_INF	MF_EQ_NI	MF_TOT_NI		FII_EQ_INF	FII_EQ_NI	FII_TOT_NI
Mean	13398.49	9992.219	351.3764	16353.32	44558.05	3976.132	5726.212
Median	14519.15	9743.575	-98.865	6475.095	47481.94	2448.5	3111.7
Maximum	29361.5	29865.2	10532.9	99023.5	127877.6	29195.8	40757.29
Minimum	2811.6	466.58	-10198.5	-26736.2	2629.2	-17326.3	-40902.5
Std. Dev.	7776.619	6991.445	2786.91	23099.42	31762.37	8094.742	11489.08
Skewness	0.186679	0.458305	0.71021	1.416141	0.345752	0.577829	0.444119
Kurtosis	1.908056	2.450621	5.896848	4.644086	2.277212	3.777842	4.689031
Jarque-Bera	10.6539	9.135943	83.27455	85.79875	8.004796	15.52468	29.13434
JB Prob.	0.004859	0.010379	0	0	0.018272	0.000425	0

TABLE 1C: CORRELATION OF SENSEX WITH MF AND FII INVESTMENTS

SENSEX	MF_EQ_INF	MF_EQ_NI	MF_TOT_NI		FII_EQ_INF	FII_EQ_NI	FII_TOT_NI
SENSEX			1				
MF_EQ_INF		0.852726		1			
MF_EQ_NI		0.237534	0.456242719		1		
MF_TOT_NI	0.663669	0.434306985		0.09757084		1	
FII_EQ_INF	0.927661	0.898053304	0.196406391	0.57410797		1	
FII_EQ_NI	0.253877	0.065416952	-0.529859269	0.280348065	0.329473761	1	
FII_TOT_NI	0.357851	0.194629394	-0.325245545	0.334109676	0.410209148	0.859845977	1

H_0: Series is non-stationary i.e. it has a unit root

H_1: Series is stationary i.e. it has no unit root

The critical values of the ADF at 1%, 5% and 10% levels are as represented in Table 2A.

TABLE 2A: CRITICAL VALUES

1%		5%	10%
Critical Values	-3.464827	-2.8766	-2.57487

The results of the t- statistic computed for all the series are represented in Table 2B.

TABLE 2B: RESULTS OF STATIONARITY

Series	t-statistic value	
Sensex	At first difference	-13.56040
MF_EQ_INF	At first difference	-19.34080
MF_EQ_NI	At level	-4.62973
MF_TO_NI	At first difference	-9.90467
FII_EQ_INF	At first difference	-19.01580
FII_EQ_NI	At level	-9.06569
FII_TOT_NI	At level	-5.68203

Since the calculated ADF test statistic values are less than the critical value, we reject the null hypotheses that the series are non-stationary. This implies that the series become stationary at level or at first difference. Now these stationary series are fit to be used for further analysis.

JOHANSEN'S CO-INTEGRATION TEST RESULTS

The test works on maximization of trace test and eigen value which determines the number of co-integrating equations. The hypotheses tested are:

H_0: There is no long term relationship between the series

H_1: There is a long term relationship between the series

The results of the test are as represented in Table 2C. The critical values at 0.05 level were 15.49471 and 3.841466 for none and at most one co-integrating equation respectively. In case of Mutual funds, the results suggest long-run relationship between the Sensex and total net investments by MFs. FIIs seem to have a long-run relationship with Sensex as can be seen by presence of co-integrating equations between the Sensex and FII equity inflows, FII equity net investments and FII total net investments.

IRECTION OF CAUSALITY RESULTS

Granger causality test is performed to investigate the short-run dynamic causal relationship between the series at hand. The results of the test are represented in Table 2D.Our results show that MF investments as well as FII investments do not seem to play a part in determining the movements in the Sensex. The causality test confirms that the direction of causation runs from Sensex to MF inflows, MF net investments and FII inflows but not vice versa.

Consistent with our correlation analysis, we find movements in the Sensex to be distinctively significant in determining MF inflows and net investments, and FII inflows into the Indian stock market. Hence our hypothesis "Ho(3): There is no significant cause and effect relationship between MF investments and BSE Sensex" gets rejected.

TABLE 2C: CO-INTEGRATION TEST RESULTS

Series 1	Series 2	NUMBER OF HYPOTHESISED EQUATIONS	MAXIMUM EIGEN VALUE	TRACE STATISTIC	P- VALUE
Sensex	MF_EQ_INF	NONE	0.036272	7.501144	0.5202
Sensex	MF_EQ_NI	NONE	0.059302	12.04032	0.155
Sensex	MF_TOT_NI	NONE	0.103715	20.82547	0.0071
Sensex	MF_TOT_NI	AT MOST 1	0.001868	0.349585	0.5543
Sensex	FII_EQ_INF	NONE	0.144798	29.58574	0.0002
Sensex	FII_EQ_INF	AT MOST 1	0.001793	0.33555	0.5624
Sensex	FII_EQ_NI	NONE	0.140777	29.21478	0.0002
Sensex	FII_EQ_NI	AT MOST 1	0.004491	0.841781	0.3589
Sensex	FII_TOT_NI	NONE	0.173169	36.42551	0
Sensex	FII_TOT_NI	AT MOST 1	0.004623	0.86659	0.3519

TABLE 2D: GRANGER CAUSALITY TEST RESULTS

Null Hypothesis	F-Statistic	Prob.	Acceptance/ Rejection
SENSEX does not Granger Cause MF_EQ_INF	24.1689	5.00E-10	Rejected
MF_EQ_INF does not Granger Cause SENSEX	0.14834	0.8622	Accepted
SENSEX does not Granger Cause MF_EQ_NI	3.20701	0.0427	Rejected
MF_EQ_NI does not Granger Cause SENSEX	1.22269	0.2968	Accepted
SENSEX does not Granger Cause MF_TOT_NI	17.3224	1.00E-07	Rejected
MF_TOT_NI does not Granger Cause SENSEX	0.68074	0.5075	Accepted
SENSEX does not Granger Cause FII_EQ_INF	20.9684	6.00E-09	Rejected
FII_EQ_INF does not Granger Cause SENSEX	0.11333	0.8929	Accepted
SENSEX does not Granger Cause FII_EQ_NI	0.63863	0.5292	Accepted
FII_EQ_NI does not Granger Cause SENSEX	0.81424	0.4446	Accepted
SENSEX does not Granger Cause FII_TOT_NI	1.48064	0.2302	Accepted
FII_TOT_NI does not Granger Cause SENSEX	1.09538	0.3366	Accepted

ONCLUSIONS AND COLLATING EVIDENCE

Several studies have examined the dynamic relationship between Sensex and institutional investor groups, such as MFs and FIIs. Here we compare our evidence on correlation, cointegration and causality with some of the earlier studies. Studies by some of the Indian researchers tend to show the predominance of Indian stock market as the major driver of FII inflows into India. Although FII flows into and out of India have been found to be significantly affected by movements in the domestic stock market but stock market movements are not seen to be influenced by variations in these flows. A study also found that the net investments by FIIs were positively related to the volatility of returns in the foreign market. A study between 2000 and 2003 found that lagged FII investment is not a predictor of index returns whereas between 2004 and 2009, lagged FII investment is found to be positively related to index return and there is evidence of net FII investments causing BSE returns in this period. In contrary, some recent studies, as well as the present study have mostly found only unidirectional causality flow from stock market movements to mutual fund investments. It is quite evident that both FIIs and MFs follow feedback trading as an investment strategy. Indian research studies present different findings than US institutional investors (Edelen& Warner, 2001), but somewhat similar to Japanese institutions (Kim &Nofsinger, 2005) and Korean markets (Kim &Wei, 2002).

This study has examined the dynamic interaction between institutional investment flows of two important categories of institutional investors in the Indian stock market, viz., MFs and FIIs and the Sensex. The study investigated the possible relationships between BSE Sensex and these investor groups for the 16 years' time period between 2000 and 2016.

Very interestingly, the study proposes that the stock market index, Sensex is not affected by the inflows and net investments made by domestic institutional investor group i.e. MFs and foreign institutional investor group i.e. FIIs. However, Sensex is found to be consistently significant as the causal variable for changes in MF flows as well as FII flows. The Granger Causality test results present a significant effect of Sensex on MF equity investments as well as on the total investments (debt and equity) by MFs. Also, Sensex is found to impact the equity inflows of FIIs. The findings justify the need to study FII and MF flows in determining their effect on the stock market. Mutual fund investments provide crucial liquidity to the Indian money market but equity mutual funds collectively do not seem to play a noteworthy role in providing depth to the Indian stock market. Retail investors account for a large share in equity mutual fund investments in India and

their individual risk perceptions determine the investment strategies they adopt while trading in the market. Superior returns performance by equity funds may attract more of fresh inflows or it could lead to profit booking and net withdrawals from these funds. A more diversified and large retail investor base attracted by policies promoting equity investments through mutual funds can go a long way in stabilizing the Indian equity mutual fund market. Policies should encourage long term holding of large equity mutual fund investments thereby enabling the fund managers to invest consistently in the stock market. An efficient and competent mutual fund industry in India can play the much needed dual role of enhancing the stock market investments and mitigating the adverse effects of sudden withdrawals by foreign investors in times of crisis etc. Indian mutual funds have been contributing significantly to the deepening and broadening of different segments of the money market and also government securities market (RBI, 2011). However, their role in the strengthening of Indian stock market is still limited by the volatile investment flows into equity mutual funds. The findings of the present study should attract interest of domestic financial institutions, portfolio managers, wealth managers and other investors as well as market regulators who wish to have better understanding of the relationship between Index and institutional investors in the Indian equity market.

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