

A STUDY INTO THE TRENDS IN FOREIGN INSTITUTIONAL INVESTMENTS (FIIs) AND ITS IMPACT ON INDIAN STOCK MARKET PRICES

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ABSTRACT

This study attempts to bring to light the impact of FII net investment in equity on the Indian stock market returns. Two major Indian stock market indices (BSE –Sensex and NSE- Nifty) and 12 other sectoral indices were chosen to analyse the impact of FII investment on the Indian capital market returns. Broad based indices like Sensex and Nifty were chosen to analyse the overall impact and sectoral indices were included to show the impact on stock market returns of specific industries. Karl Pearson's co-efficient of correlation was used to measure the relationship between FII net investment in equity and the stock market returns. The period of study for this study was chosen from the financial year 2000-01 to the financial year 2011-12 (12 years). The correlation co-efficient between the FII net investment in equity and returns of the chosen indices were calculated and tested at 5% and 1% significant levels. After the analysis of results, it was observed that there is significant positive correlation between the FII net investment in equity and returns of most of the Indian stock market indices. The results indicate significant impact of FII investment on Indian stock market returns even at sectoral level.

Keywords: Foreign Institutional Investment, Stock market returns, Correlation co-efficient, stock market indices, Sectoral Indices, P-value, Significance level.

INTRODUCTION

The term FIIs is most commonly used to refer the companies that are established or incorporated outside India and are investing in the financial markets of India by registering themselves with the Securities & Exchange Board of India (SEBI). FIIs include overseas pension funds, mutual funds, investment trusts, asset management companies, banks, institutional portfolio managers etc. Foreign Institutional Investment is basically short-term in nature and mostly made in the financial markets. Foreign Institutional Investors (FIIs) are allowed to invest in the primary and secondary capital markets in India through the Portfolio Investment Scheme (PIS) administered by the Reserve Bank of India (RBI). Under this scheme, FIIs can acquire shares/debentures of Indian companies through the stock exchanges in India (Mishra *et al.*, 2010 and Vikram and Richa Saxena, 2011). The ceiling for overall investment by FIIs is 24 per cent of the paid up capital of the Indian company (20 per cent in the case of public sector banks, including the State Bank of India). RBI monitors the ceilings on FII investments in Indian companies on a daily basis and publishes a list of companies allowed to attract investments from FIIs with their respective ceilings (Anand Bansal and Pasricha. 2009).

The FIIs have been playing a significant role in the process of capital formation and economic growth of the country. In the financial year 1992-93, Foreign institutional investment in India was only Rs.13.4 Crores and in the financial year 2010-11 it had grown to Rs. 1,43,435 Crores. There has been a dramatic increase in net FII flows to India over the period 2003-2007, and especially over the bull rally that climaxed in January 2008 when the Sensex reached a lifetime high of 21,206.77 points. FIIs

invested US\$17 billion in Indian stocks in 2007 alone. However, the onset of the recent global financial crisis saw FIIs pulling out a record \$13 billion in 2008, the largest outflows since India opened its doors to FIIs 15 years ago (Mamta Jain *et al.*, 2012).

Scope of the study: All the above mentioned studies were made either with general broad based indices like Sensex and Nifty or with macroeconomic data like GDP. All the studies were also based on FII's net investment in Indian market (both equity and debt). But no attempts were made to analyse the impact of FII net investment in equity and returns of sectoral indices (industry specific indices) in Indian stock market. This study makes an attempt to analyse the impact of FIIs investment in equity on stock market, in terms of overall changes in stock prices, measured as return on stock market indices being the changes in the index values.

Objectives:

1. To study the trend in FII investment in the Indian stock market
2. To test the impact of FIIs investment in equity on Indian stock market returns during the study period.
3. To test the impact of FIIs investment in equity on specific industries, measured as return on sectoral indices.

METHODOLOGY

A period of 12 years (2000-01 to 2011-12) had been chosen for the study. Two sub periods were identified to analyse the trend in the FIIs investment in India. The first six years (2000-01 to 2005-06) were considered as first sub-period and the next six years (2006-07 to 2011-12) were

considered as second sub-period. The study required the analysis of data relating to the inflow and outflow of FII investment in equity during the study period and also an analysis of general and broad based indices. Secondary data had been collected from the websites- bseindia.com, nseindia.com and sebi.gov.in. In case of FIIs investments, monthly net investment in equity data had been obtained. Monthly data were considered appropriate and hence considered for this study. Nifty and Sensex were considered more appropriate to test overall impact on the Indian stock market and the sectoral indices were considered appropriate for testing the impact on specific industries. The following sectoral (Industry specific) indices were chosen based on their importance and availability of data:

1. BSE-AUTO (Automobiles Industry)
2. BSE-CD (Consumer Durables Industry)
3. BSE- CG (Capital Goods Industry)
4. BSE-FMCG (Fast Moving Consumer Goods Industry)
5. BSE-HC (Health Care Industry)
6. BSE-IT (Information Technology Industry)
7. BSE-PSU (Public Sector Undertakings)
8. BSE-METAL (Metal Industry)
9. BSE-OIL (Oil Industry)
10. CNX-MNC (Multi-National Corporations)
11. CNX-BANK (Banking Industry)
12. CNX-PHARMA (Pharmaceutical industry)

Net investment in equity had been calculated as gross purchases minus gross sales for the different periods considered. Returns on indices have been calculated as follows:

- ❖ Return on Indices:

$$R_{xt} = \frac{(x_t - x_{t-1})}{x_{t-1}}$$

R_{xt} = Return of an index (x) for the time period (t)

X_t = Closing Index value for a particular month (t)

X_{t-1} = Closing Index value for the previous month (t-1)

The returns calculated were analysed for the entire study period and also for the two sub-periods.

- ❖ Tools Used:

For analysing the data Compounded Annual Growth Rate (CAGR) and Karl Pearson's Correlation Co-efficient were used in this study.

Trends in fii net investment in equity and stock market indices: Stock market movements depend on various factors such as government policies, capital flows into the market, demand and supply, market information and industry specific factors. Among all the factors mentioned above, FII has become the important factor which drives the stock prices in the market. Indian financial market has grown significantly since the foreign investors are

allowed to invest in to India. FIIs are the largest investor in equity in Indian financial market, with their cumulative investment in India up to 31st march 2012 amounted to Rs6,28,477.05Crores. Table 1 shows the net investment of FIIs in equity and the trends in major Indian stock market indices. The table 1 also portrays the compounded Annual growth rate of FII investments in equity, Number of FII investors and the major Indian stock market indices viz. Sensex and Nifty (Table 1). It can be observed from table 1, that the number of registered FIIs has increased in all the years except in the financial year 1998-99 and in 2001-02. During the recession of 2008-09, In spite of the global slowdown 316 new FIIs have registered in India. As far as the FII net investment in equity is concerned, it has increased from Rs.5, 126.50 Crores in the year 1993-94 to Rs. 1, 10,120.80Crores in 2010-11. In the financial years 1999-00 and 2003-04 FII investment in equity had increased 14 times over the previous year's level. The influence of FII investment on Indian stock market was not very significant in the initial years. It can be seen that in the year 1998-99 FII investment had reduced by 113% over the previous year, but Sensex and Nifty declined by just around 3% each. After 2003-04 India witnessed a steady growth in FII inflow and stock markets started showing impressive returns. In the year 2003-04 FII investment has increased by 14 times over the previous year and in the same year it can be seen that both Sensex and Nifty showed the highest rate of increase (Nifty 81%, Sensex 83%). The compounded Annual Growth Rate calculated for FII investment showed almost 12% growth annually and Nifty and Sensex showed annualised growth rate of 8% each. It is clear from the above table that the impact of FII on Indian stock market has increased in the recent years.

Fii investment and stock market returns: The flow of FII investment into India may influence many variables like growth in industries, improvement in infrastructure, GDP growth etc., But in this study, the impact of FII investment on the stock market returns was analysed. To study the relationship between the FII investment and the stock market returns, Karl Pearson's correlation co-efficient between FII's net investment in equity and returns on stock market indices were calculated for a period of 12 years (from April 2000 to march 2012). For this study returns on two broad based indices (Sensex and Nifty) and 12 sectoral (industry specific) indices were computed for 12 financial years chosen for this study. For calculating correlation monthly net investment by FII in equity and monthly closing values of indices were utilised. The results observed are presented in the table 2 and table 3. Table 2 shows that there had been positive correlation between FII net investment in equity and returns on BSE Sensex and BSE sectoral

indices. Among the BSE indices Sensex carries the highest level of positive correlation (0.5264) with the FII investment followed by the sectoral indices (ranging from 0.4644 to 0.2731). Correlation between sectoral indices and FII net investment can be interpreted as the impact of FII on those industry stock returns.

Stock market prices can be influenced by many factors. The FII investment in Indian equity is one of the important factors which influence the stock prices in India. It can be seen by observing the positive correlation between the FII investment and returns on stock market indices. As far as BSE sectoral indices are concerned BSE-Auto, BSE-CD, BSE-CG, BSE-HC and BSE-Metal had positive correlations of above 0.4. Other BSE sectoral indices had correlations of above 0.3. The highest positive correlation is observed with BSE-METAL index (0.4738). The least correlated index (with FII net investment) is BSE-IT (0.2731). Table 3 shows the correlations computed for NSE indices. Nifty carries the highest positive correlation (0.5293) with FII net investment among the NSE indices. All the NSE sectoral indices carry positive correlations of above 0.4. All the correlations computed in the above table 2 and table 3 are significant at 1% significant level (All the P-values are less than 0.01). From the above analysis it is clear that the FII net investment in equity positively influences the Indian stock market returns during the study period (from April 2000 to March 2012).

The analysis of the above tables only gives a picture of the total study period. In order to understand the trend in the FII investment in to India the study period is divided in to two sub-periods. The first sub-period is from April 2000 to March 2006 and the second sub-period is from April 2006 to March 2012. This classification of the study period is made to analyse the trend in the flow of FII investments in to India. Correlation co-efficient is calculated on the chosen stock market indices for the two sub-periods. The results found are presented in the tables 4-5.

Table 4 shows correlation co-efficient observed between FII net investment in equity and returns on BSE indices. It can be observed that all returns on BSE indices have positive correlation with FII net investment in equity. In both sub-periods, correlation between returns on Sensex and FII net investment is the highest (I sub-period – 0.4555 and II sub-period – 0.6168) among the selected BSE indices. During the first sub-period returns on all the sectoral indices recorded a positive correlation with FII net investment in equity. As far as the significance of correlation is concerned, except BSE CD (BSE Consumer Durables) and BSE IT (BSE Information Technology) correlation co-efficient on other indices are significant at 5% level. Among the

sectoral indices, BSE FMCG recorded the highest level of correlation (0.3462) and BSE IT observed the lowest level of correlation (0.1870) during the first sub-period. In the second sub-period returns on all the BSE indices carry positive correlations. Among the BSE sectoral indices, returns on BSE Auto recorded the highest correlation co-efficient (0.5970) and returns on BSE FMCG recorded the lowest correlation co-efficient (0.4142) during the second sub-period. It is worth noting that, returns on BSE FMCG which recorded the highest positive correlation in the first sub-period, recorded the lowest positive correlation during the second sub-period. The correlations on the returns for all the indices showed a notable increase in the magnitude of correlation during the second sub-period. During the second sub-period, all the correlations calculated for the returns of BSE indices are significant at 1% level (Ganeshamoorthy and Shankar, 2012).

Table 5 shows the correlation co-efficient observed between FII net investment in equity and returns on NSE indices. Returns on Nifty recorded the highest positive correlation in both sub-periods. As far as the sectoral indices of NSE are concerned, returns on CNX bank recorded the highest positive correlation (0.4677) during the first sub-period. Returns on CNX MNC recorded the highest positive correlation among the sectoral indices (0.5845) during the second sub-period. All the positive correlations observed in both sub-periods are significant at 1% level.

CONCLUSION:

FII investment in Indian market has been increasing in volume since its initiation. FII net investment in equity has a Compounded Annual Growth Rate of 11.94% during the study period (April 2000 to March 2012), while the Nifty and Sensex has a growth rate of 8.24% and 8.37% respectively. The analysis of the relationship between the FII net investment in equity and the returns of stock market indices showed a positive and significant correlation during the study period. When the study period is divided in to two sub-periods, the correlation co-efficient observed in the second sub-period is higher than the first sub-period. It is evident from the above discussion and results that, the FII investments in Indian equity market has had a profound influence on the Indian stock market returns. Even the returns on industry specific indices (sectoral indices) showed a positive and significant correlation during the study period. The correlations recorded for the second sub-period is greater than the first sub-period, meaning the influence of FII investment on Indian stock market returns is increasing over the years. From the above discussion it can be concluded that, during the study period (2000-01 to 2011-12) the FII investment in

Indian equity market has had a significant impact on the stock market returns in India.

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Table 1: Trends in FII investment in equity and major Indian Stock market indices

Year	FII net investment in equity (Rs. In Crores)	% change over previous year	No. of registered FIIs	Additions over the previous year	Nifty	% change over previous year	Sensex	% change over previous year
1993-94	5,126.50		158.00	-	1177.11		3778.99	
1994-95	4,796.30	-6.44	308.00	150.00	990.24	-15.88	3260.96	-13.71
1995-96	6,942.00	44.74	367.00	59.00	985.3	-0.50	3366.61	3.24
1996-97	8,545.60	23.10	439.00	72.00	968.3	-1.73	3360.89	-0.17
1997-98	5,267.00	-38.37	496.00	57.00	1116.9	15.35	3892.75	15.82
1998-99	-717.20	-113.62	450.00	-46.00	1078.05	-3.48	3739.96	-3.92
1999-00	9,669.50	1,448.23	506.00	56.00	1528.45	41.78	5001.28	33.73
2000-01	10,206.70	5.56	527.00	21.00	1148.2	-24.88	3604.38	-27.93
2001-02	8,072.20	-20.91	490.00	-37.00	1129.55	-1.62	3469.35	-3.75
2002-03	2,527.20	-68.69	502.00	12.00	978.2	-13.40	3048.72	-12.12
2003-04	39,959.70	1,481.18	540.00	38.00	1771.9	81.14	5590.6	83.38
2004-05	44,122.70	10.42	685.00	145.00	2035.65	14.89	6492.82	16.14
2005-06	48,800.50	10.60	882.00	197.00	3402.55	67.15	11279.96	73.73
2006-07	25,235.70	-48.29	997.00	115.00	3821.55	12.31	13072.1	15.89
2007-08	53,403.80	111.62	1,319.00	322.00	4734.5	23.89	15644.44	19.68
2008-09	-47,706.20	-189.33	1,635.00	316.00	3020.95	-36.19	9708.5	-37.94
2009-10	1,10,220.60	-331.04	1,713.00	78.00	5249.1	73.76	17527.77	80.54
2010-11	1,10,120.80	-0.09	1,722.00	9.00	5833.75	11.14	19445.22	10.94
2011-12	43,737.60	-60.28	1,767.00	45.00	5295.55	-9.23	17404.2	-10.50
CAGR %	11.94%		13.55%		8.24%		8.37%	

Source:www.rbi.org, www.bseindia.com, www.nseindia.com, www.sebi.gov.in

Table 2: Correlation between FII net investment in equity and returns on BSE indices

BSE Indices	Sensex	BSE-Auto	BSE-CD	BSE-CG	BSE-FMCG	BSE-HC	BSE-IT	BSE-PSU	BSE-Metal	BSE-Oil
Correlation co-efficient	0.5264	0.4644	0.4378	0.4533	0.3346	0.4285	0.2731	0.3981	0.4738	0.3581
Number of observation	144	144	144	144	144	144	144	144	144	144
P value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0009	0.0000	0.0000	0.0000

Table 3: Correlation between FII net investment in equity and returns on NSE indices

NSE Indices	Nifty	CNX-MNC	CNX-Bank	CNX-Pharma
Correlation co-efficient	0.5293	0.4822	0.4931	0.4259
Number of observations	144	144	144	132
P- value	0.0000	0.0000	0.0000	0.0000

* All the above correlations are significant at 1% significance level.

Table 4: Correlation between FII net investment in equity and Returns on BSE indices (During the two sub-periods)

FIRST SUB-PERIOD (April 2000 to march 2006)	Sensex	BSE-Auto	BSE-CD	BSE-CG	BSE-FMCG	BSE-HC	BSE-IT	BSE-PSU	BSE-Metal	BSE-Oil
Number of observations	72	72	72	72	72	72	72	72	72	72
Correlation co-efficient	0.4555**	0.3386*	0.2286	0.3321**	0.3462**	0.3344**	0.1870	0.2882*	0.3098**	0.2539*
P- value	0.0001	0.0036	0.0534	0.0044	0.0029	0.0041	0.1158	0.0141	0.0081	0.0314
SECOND SUB-PERIOD (April 2006 to march 2012)	Sensex	BSE-Auto	BSE-CD	BSE-CG	BSE-FMCG	BSE-HC	BSE-IT	BSE-PSU	BSE-Metal	BSE-Oil
Number of observations	72	72	72	72	72	72	72	72	72	72
Correlation co-efficient	0.6168**	0.5970*	0.5659**	0.5534**	0.4142**	0.5483**	0.4599**	0.5270**	0.5761**	0.4665**
P- value	0.0000	0.0000	0.0000	0.0000	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000

*Correlation significant at 5% level.

**Correlationsignificant at 1% level.

Table 5: Correlation between FII net investment in equity and Returns on NSE indices (During the two sub-periods)

FIRST SUB-PERIOD (April 2000 to march 2006)	Nifty	CNX-MNC	CNX-Bank	CNX-Pharma
Number of observations	72	72	72	60
Correlation co-efficient	0.4371**	0.3942**	0.4677**	0.3827**
P- value	0.0001	0.0006	0.0000	0.0025
SECOND SUB-PERIOD (April 2006 to march 2012)	Nifty	CNX-MNC	CNX-Bank	CNX-Pharma
Number of observations	72	72	72	72
Correlation co-efficient	0.6255**	0.5845**	0.5535**	0.5072**
P- value	0.0000	0.0000	0.0000	0.0000

*Correlation co-efficient significant at 5% level.

**Correlation co-efficient significant at 1% level.
