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ABSTRACT

India being a capital scarce country, has taken a lot of measures to attract foreign investment and it opened up the economy for foreign capital after experiencing the foreign exchange crisis in 1990s. The continuous boom of the Indian markets had allured the domestic investment community and also increased the foreign investment. The major portion of investment in Indian markets is always attributed to the institutional players amongst whom the foreign investors are of primary significance. On September 14, 1992 India opened its doors to FIIs for investment in equity and debt securities. Since then, there have been large-scale investments by FIIs. However, their investment pattern has been characterized by wide fluctuations and has largely been unpredictable. This often created volatility in the market with unexpected results.

In the present study, we are trying to analyze the trend and pattern of FII investments in the Indian securities market. For this, annual data of Foreign Institutional Investments in equity and debt market have been reviewed and analyzed.

Keywords: Foreign Institutional Investors, Securities Market, Equity, Debt

INTRODUCTION

Many developing countries opened their economies to foreign portfolio investment in late 1980s and early 1990s. Each of them took these steps in response to unique challenges faced by their economies. India under the shadow of its balance of payment and foreign exchange crisis allowed foreign institutional investors to invest in domestic financial markets in September 1992 under the foreign portfolio investment (FPI) scheme. The gross fiscal deficit of government-center and state rose from 9.0 percent of GDP in 1980-81 to 10.4 percent in 1985-86 and to 12.7 percent in 1990-91. Since these deficits had to be met by borrowings, the internal debt of the government accumulated rapidly, rising from 35 percent of GDP at the end of 1980-81 to 53 percent of GDP at the end of 1990-91. With India's foreign exchange reserves at USD 1.2 billion in January 1991 and depleted by half by June, barely enough to last for roughly 3 weeks of essential imports, India was only weeks away from defaulting on its external balance of payment obligations. Aimed at primarily creating capital inflow at a time of extreme balance of payment crisis and at developing and

disciplining country's nascent capital market, foreign investment funds were welcomed to the country.

FII Inflow to India grew many times in a year's time from USD 0.2 million (net, monthly) in January 1993 to USD 389.5 million by January 1994. This figure stood at USD 76.8698 billion as on 30 October 2009. Nature and quantum of such flows called for special regulatory attention and legislation relating with such foreign capital inflows to ensure a steady growth of foreign portfolio capital inflow in the Indian securities market. In November 1995, the securities and Exchange Board of India enforced the Securities and Exchange Board of India (Foreign Institutional Investors) Regulations, 1995 to regulate matters relating to FII investment.

The on-off nature of flow of funds to emerging markets, exhibited during the 1990s, is now regarded as a key characteristic of the international financial markets. Portfolio flows-often referred to as "Hot Money"-are notoriously volatile as compared to other forms of capital flows. Investors are known to pull back their money at the slightest hint of trouble in the host

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country often leading to the disastrous consequences to its economy. They have been blamed for exacerbating small economic problems in a country by making large and concerted withdrawals at the first sign of economic weakness.

International capital flows and capital controls have emerged as important issues in Indian context as well. The danger of abrupt and sudden outflows inherent with FII flows and their destabilizing impact on equity and foreign exchange markets have been stressed. While these concerns are well-placed, comparatively less attention has been paid so far to analyzing FII flows data and understanding their key features. A proper understanding of these flows is essential for a meaningful debate about their effects and predicting chances of such reversals.

It has been noted that FII flows are perceived to be major drivers of stock markets in India (as well as in other developing countries) and, more importantly, that a sudden reversal of such flows may harm the stability of the domestic capital market. As the link of the Indian markets with their global counterparts has become more synchronized in recent years, there seems to have arisen a need for having a close vigil since such synchronization always enhances the chance of a contagion.

LITERATURE REVIEW

There are many studies on foreign investment and stock market related topics. This section deals with the review of such studies. Rao et al. (1999) in their study of foreign institutional investments and Indian stock market found that the net FII investments influence the stock prices in India. In the similar line Chakrabarti (2001) concluded in his study that in the pre-Asian crisis period any change in FII was found to have a positive impact on the equity returns, whereas in the post-Asian crisis the reverse relationship was noticed.

Vijay (2006) studied movement of indices in Indian markets depends on the trade done in limited number of stocks only. Thus, when FII's frequently buy and sell stocks in the indices it leads to volatility of the market. To examine the volume of foreign investment and profit booking in Indian market, Trivedi and Nair (2006) in their study suggested that, given the huge volume of investments, foreign investors can play the

role of market makers and book their profits. They can buy financial assets when the prices are declining and sell when the asset prices are increasing. Hence there is a possibility of a bi-directional relationship between FII and equity returns.

The study conducted by Gordon and Gupta (2002) on portfolio flows into India and the influence of domestic fundamental factors, found that there is a strong impact of domestic fundamentals on the portfolio flows into India.

Agarwal (1997) studied the impact of foreign portfolio investment (FPI) on the national economy of six developing economies of Asian countries (including India) show through regression results that inflation rate, real exchange rate, index of economic activity and the share of domestic capital market in the world stock market capitalization are the four statistically significant determinants of foreign portfolio investment flow.

Batra, A. (2004) has analyzed the trading behaviour of FIIs and the impact of their trading biases upon stock market stability. Author found that there is strong evidence that FIIs have been positive feedback investors and trend chasers at the aggregate level on a daily basis. But there is no evidence of positive feedback trading on a monthly basis. The results also indicate that foreign investors have a tendency to herd together in their trading activity in India.

The trading behaviour and biases of the FIIs do not appear to have a destabilizing impact on the equity market. Mohan, T.T. (2005) concludes that the crossover funds in the emerging markets are only a small component of global portfolios and hence they are less vulnerable to fluctuations to returns arising from changes in economic conditions in emerging markets. He also found that, in India, over the past decade FIIs have displaced domestic mutual funds in importance in the equity market. Their shareholding in the sensex companies is large enough for them to be able to move the market. The volatility in portfolio inflows to India has been modest compared to other emerging markets.

The real problem caused by variations in FII inflows from year to year is not stock market volatility but difficulties posed in management of money supply and the exchange rate. (RajKumar & Gupta, 2010) said

that the driving forces of FII inflows are concerned, return at Nifty, risk at S&P 500 and interest rate are highly correlated to the FII inflows. Return at Nifty has significant influence on the FII inflows followed by risk at S&P 500. In order to study the relationship of FII flow on firm level stock returns in Indian market, Khan et al. (2005) concluded that the role of FIIs becomes important in manipulating equity returns at the firm level, especially in the government owned companies by using a granger causality test to check the direction of causality at the firm level and GARCH (1,1) for volatility and spillover effect, their research findings they stated that there existed a bi-directional causality between stock returns and FII flows and vice-versa in 13 firms and unidirectional causality running from stock returns to FII flows in other 21 firms..

David and Steil (2004) viewed that the macroeconomic factors like current account surplus, accretion in foreign exchange reserves, appreciating domestic currency and higher interest rates have been responsible for an increase in FII inflows to an emerging country.

Many researchers debate on the topic, which type of foreign investment flows destabilize the market and have a greater impact on the stock indices. Sandhya et al. (2005) attempted to relate the kind of foreign capital flow and stock market volatility. In their research they tested the existence of price pressure and feedback trading hypothesis to study the correlation between returns and contemporaneous flows of fund and the evidence of market efficiency. Their major finding was that the unexpected flows have a greater impact than the expected flows on the stock indices. They did not detect any evidence regarding momentum or contrarian strategies being employed by FIIs.

Dash and Singh (2008) made a research on Indian stock market volatility and economic reform. They applied E-GARCH model on monthly return series of BSE Sensex and IFCG global index. In their study they found that the Indian market is more volatile in the reform period and foreign investors occupy a major role in it.

Kumar (2002) on the role of institutional investors (including the FIIs) in Indian stock market, found that FIIs and Indian mutual funds combined together are the most powerful force in driving the Indian market. They used the Granger causality test and found that

the mutual funds in fact led the rise or fall in market and FIIs followed suit.

Ray (2009) identified a causal relationship between net investment made by FII's and the equity return in the Indian Stock Market. Also analyzed the relationship between foreign institutional investment and stock returns in India (BSE) with the aid of daily data from January 2006 to June 2008. The Stationary condition for the time series data considered for analysis has been tested using Augmented Dickey Fuller Test (ADF) and Phillips-Perron (PP) Test. The Granger causality test suggested that the equity returns granger cause FII investments, but not the reverse.

OBJECTIVE OF THE STUDY

- To understand the dynamics of FII investment in Indian context. Though, there have been efforts at understanding FII investment behavior, most of the studies have concentrated on impact of FII investment on stock market volatility or stock market returns and its influence on FII investments.
- The present paper tries to find out whether some sort of correlation exists between FII investment in equity segment and Nifty, the benchmark index of leading Indian stock exchange NSE.

METHODOLOGY AND HYPOTHESIS

From the above research reviews, it can be concluded that research findings support the existence of bidirectional relationship between the FII investments and Stock market returns. Though few research papers have used the Granger-causality test to confirm the direction of causality between FIIs and mutual funds or firm levels, it has not yet been established whether the FII investments can be attributed to causing the market condition or it is the reverse. Hence, in this paper an attempt has been made to analyze the causal relationship between the net FII investment and NIFTY returns.

The study has been conducted using the Augmented Dickey Fuller Test (ADF), Phillips-Perron (PP) Test and the Granger-Causality test.

For the study two hypotheses have been formulated. The prime intention is to test the causality between

net FII investment and NIFTY returns. Accordingly the first hypothesis is “Net FII investment does not Granger cause NIFTY returns” and the second one being, “NIFTY return does not Granger-cause Net FII Investment.

DATA

The Indian capital market has come a long way since 1992 with the establishment of independent market regulator SEBI (Securities and Exchange Board of India). Subsequent developments like screen based trading, trading cycles, derivative trading etc have brought it further in line with global capital markets. Currently only two stock exchanges in India, the NSE (National Stock Exchange, Mumbai) and the BSE (Bombay Stock Exchange, Mumbai) provide trading services in derivatives. We have used the most popular index of NSE, called S & PCNX NIFTY (Nifty) to study relationship between FII investment and benchmark index. The Nifty, a market capitalization weighted index is a basket of 50 securities representing 23 sectors. Although the BSE, the oldest stock exchange in India and also in Asia, has been in existence for over 100 years, the reason for choosing Nifty has been its increasing popularity. Although BSE started in 1875 and NSE started its capital market (equities) segment in late 1994, the market capitalization of this segment in October 2009 was Rs 50248.30 billion as against the BSE’s Rs 53745.59 billion. The average daily turnover during October 2009 was around Rs. 181.48 billion in the NSE as against Rs. 57 billion in the BSE.

Our sample consists of 1190 data points consisting of Nifty values from 3rd January 2005 to 30th October 2009. Nifty values used in this paper are end-of-day (EOD) figures. Historical Nifty values and turnover at NSE both were obtained from National Stock

Exchange. We collected daily FII investment data from Securities and Exchange Board of India.

Augmented Dickey Fuller Test (ADF) and Phillips-Perron (PP) Test

The Granger-Causality Test is a time series data analysis. For any timeseries data analysis, all data series must be stationary. The test of stationarity also known as unit root test. A time series data can be said stationary if its mean and variance are constant over time and the value of covariances between two time periods depends only on the distance or lag between the two time periods and not on the actual time at which the covariance is computed. To study the stationarity of data series we carried out unit root test which shows that the data series is stationary or not using Augmented Dickey Fuller (ADF) and Philp Perron (PP) tests. (Gujrati, 1995, 2004).

The equation for stationary time series is as follows:

$$\Delta Y_t = \alpha Y_{t-1} + U_t$$

In the above equation α is assumed to be a parameter and U_t is assumed to be white noise. Y_t is stationary series if $-1 < \alpha < +1$. If Y_t is nonstationary series; then variance of Y_t increases steadily with time and goes to infinity. If the absolute value of α is greater than 1, the series is explosive. Therefore the hypothesis of a stationary series can be evaluated by testing whether the absolute value of α is strictly less than 1 or not.

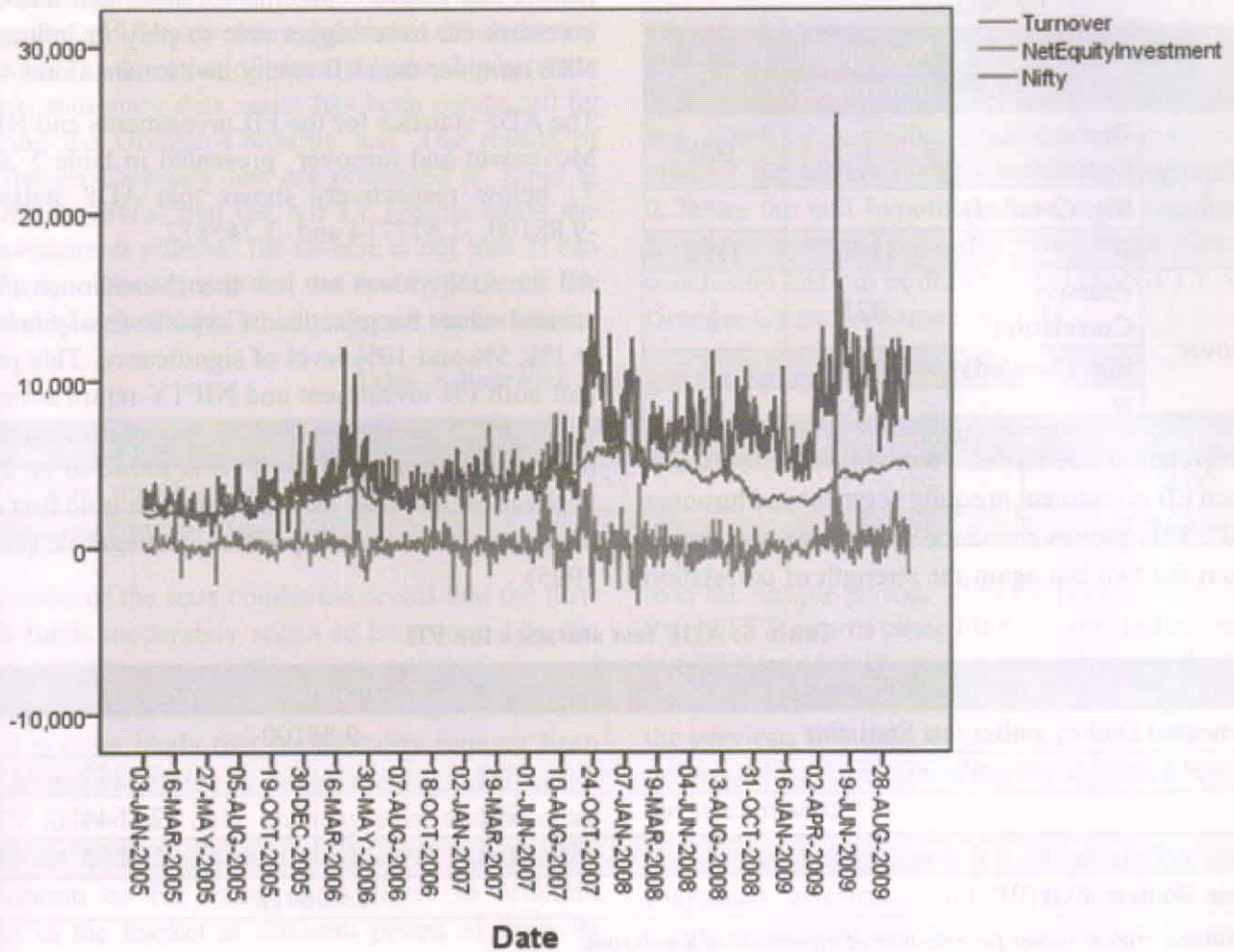
RESULTS AND INTERPRETATIONS

The following chart shows the movements of turnover at NSE, equity investment by FIIs and Nifty during 3rd January 2005 to 30th October 2009 for the period under consideration.

Table 1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
NetEquityInvestment	1190	-3393.4	5837.1	143.196	788.0454
Nifty	1190	1902.50	6287.85	3674.1013	1068.22078
Turnover	1190	113.99	26002.26	5448.2445	2837.72240
Valid N (listwise)	1190				

Exhibit 2: Movement of NSE Turnover, FII Equity Investment and Nifty During Study Period



We ran correlation analysis on a dataset comprising 1190 data points to find out the relationship between FII equity investment and its impact on Nifty movement and NSE turnover. Our dataset contained 1190 days of FII equity investment on daily basis, end-of-day Nifty values and NSE turnover. Using SPSS 16.0 we conducted correlation tests and the findings are presented below:

Table 3: Correlation Between FII Equity Investment and Nifty

Correlations			
		Net Equity Investment	Nifty
Net Equity Investment	Pearson Correlation	1	.054
	Sig. (2-tailed)		.064
	N	1190	1190
Nifty	Pearson Correlation	.054	1
	Sig. (2-tailed)	.064	
	N	1190	1190

A correlation coefficient of 0.054 was found between FII investment in equity and Nifty movement. This figure shows that though there exists a positive correlation between the two, the degree of strength is very low. We, therefore, can conclude that there are possibly other variables like domestic institutional investors, retail investors, market structure etc that influence Nifty movement more and there is no strong influence of FII investment on Nifty movement.

Table 4: FII Equity Investment and NSE Turnover

Correlations			
		Net Equity Investment	Turnover
Net Equity Investment	Pearson Correlation	1	.021
	Sig. (2-tailed)		.475
	N	1190	1190
Turnover	Pearson Correlation	.021	1
	Sig. (2-tailed)	.475	
	N	1190	1190

The correlation coefficient worked out to be 0.021 between FII investment in equity segment and turnover at NSE. This proves existence of positive correlation between the two but again the strength of correlation

is quite low. It can, therefore be concluded that other factors like macro-economic variables and individual investors etc have bigger role to play in influencing NSE turnover than FII equity investment alone.

The ADF statistics for the FII investments and NIFTY Movement and turnover presented in table 5 ,6 and 7 below respectively shows that ADF statistics is -9.88100, -1.527714 and -3.245872.

All the ADF values are less than MacKinnon (1996) critical values for rejection of hypothesis of a unit root at 1%, 5% and 10% level of significance. This proves that both FII investment and NIFTY return series are stationary. The Durbin Watson stat (d) is also closer to 2, As a rule of thumb ,if d is found to be 2 in a application ,one may assume that there is no first order auto correlation either positive or negative (Gujrati 1995).

Table 5: ADF test statistics for FII

		t- statistics	
Augmented Dickey Fuller test Statistics		-9.88100	
		1%*	-3.4387
		5%	-2.8644
		10%	-2.5683
Durbin Watson Stat (d)		2.006412	

*MacKinnon critical values for rejection of hypothesis of a unit root.

Table 6: NIFTY Movement ADF test

		t- statistics	
Augmented Dickey Fuller test Statistics		-1.527714	
		1%*	-3.4387
		5%	-2.8644
		10%	-2.5683
Durbin Watson Stat (d)		2.006412	

*MacKinnon critical values for rejection of hypothesis of a unit root.

Table 7 : NIFTY turnover ADF test

		t- statistics	
Augmented Dickey Fuller test Statistics		-3.245872	
		1%*	-3.4387
		5%	-2.8644
		10%	-2.5683
Durbin Watson Stat (d)		2.033740	

*MacKinnon critical values for rejection of hypothesis of a unit root.

FII investments and NIFTY return series are stationary in nature. The above two tests confirm that the FII investment and Sensex return data series are stationary in nature. The detection of causal relationship between the two stationary data series has been conducted by applying the Granger-Causality test. The results of the Granger-Causality test are presented in Table 8. The results reveal that the NIFTY returns cause the FII investments whereas the reverse is not true. It can be clearly observed that for the first hypothesis, the probability is 0.59268, which suggests that when the

null hypothesis is rejected the probability of committing type 1 error is very high, hence there is no evidence to reject the hypothesis. So the null hypothesis is accepted i.e. it proves that FII investments do not affect NIFTY returns. But for the second hypothesis, the probability is 0 which suggests that when the null hypothesis is rejected the probability of committing type 1 error is 0, hence the null hypothesis is rejected i.e. it proves that Sensex returns cause FII investments. Hence the conclusion that can be drawn is that the NIFTY returns Granger-Cause investment by FIIs.

Table 8: Pairwise Granger Causality Tests

Null Hypothesis:	Obs	F-Statistic	Probability
NIFTY does not Granger Cause FII	1175	22.5029	0.00000
FII does not Granger Cause NIFTY		0.87501	0.59268

The results of the tests conducted reveal that the flow of FII funds moderately seems to be attracted by the Indian NIFTY returns. This apparent unidirectional relationship is confirmed by the Granger- Causality test. It is quite likely that the causality running from FII's to equity returns is being averaged out on the NIFTY index level only, but may exist and be more prominent at the individual stock level. Also as the information on FII trades is available to different parties in the market at different points of time, its impact even if weak, is spread over to couple of days. There may be a scope for further study of more detailed disaggregated analysis at individual stock level which may statistically validate the bi-directional relationship

over the sample period. Thus the present study shows that NIFTY returns cause FII flows into Indian markets but FII flows do not cause equity returns in the Indian stock market. FII investments may be inclined by the previous few days of trading returns and are also influenced by the next trading day expected returns of the stock market.

It was found that there is a positive relation between FII equity investment and Nifty movement and FII equity investment and turnover at NSE but the strength is below. We, therefore conclude that there are other economic and structural factors which have a major bearing on movement of Nifty and turnover at NSE and FIIs alone are not the sole influencer of the market.

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