

FII's in Indian Derivative Markets

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Abstract—since 1990-91, Government of India started liberalization and economic reforms with a view of bringing about substantial economic growth and move towards The globalization. As a part of this liberalization process, the Government under its New Industrial Policy liberalized its foreign investment policy recognizing the growing importance of FDI as an instrument of foreign capital flow and technological development. Government, for the first time, permitted foreign institutional investors to invest in Indian capital market through portfolio investments. From September 14, 1992 with suitable restrictions, FIIs were permitted to invest in all the securities traded on the primary and secondary markets, including shares, debentures and warrants issued by companies which were listed or were to be listed on the Stock Exchanges in India.

Since then FIIs are investing in the different sections of Indian capital Market. FIIs invest huge amount in different sections of Indian capital market and there trades make a significant impact in the movement of stock market as well as in the growth of the economy.

The study of the impact of FIIs trades in Indian Capital market is of vital importance for investors as well as economists

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I. INTRODUCTION

Derivatives: A derivative is a financial contract whose value is derived from the value of underlying, such as a stock price, a commodity price, an exchange rate, an interest rate, or even an index of prices.

Development of Derivatives in India

• In 1993, the government created the NSE in collaboration with state-owned financial institutions. NSE improved the efficiency and transparency of the stock markets by offering a fully automated screen-based trading system and real-time price dissemination.

• In 1996, the NSE sent a proposal to SEBI for listing exchange-traded derivatives.

• The report of the L. C. Gupta Committee, set up by SEBI, recommended a phased introduction of derivative products, and bi-level regulation (i.e., self-regulation by exchanges with SEBI providing a supervisory and advisory role).

• In 1999, the Securities Contracts (Regulation) Act of 1956, or SC(R)A, was amended so that derivatives could be declared "securities." This allowed the regulatory framework for trading securities to be extended to derivatives.

• The Act considers derivatives to be legal and valid, but only if they are traded on exchanges.

• The economic liberalization of the early nineties facilitated the introduction of derivatives based on interest rates and foreign exchange.

• A system of market-determined exchange rates was adopted by India in March 1993. In August 1994, the rupee was made fully convertible on current account.

• These reforms allowed increased integration between domestic and international markets, and created a need to manage currency risk.

FIIs: "Foreign Institutional Investors means an institution established or incorporated outside India which proposes to make investment in India in securities. Entities eligible to invest under the FII route are as follows:

I) **As FII:** It includes overseas pension funds, mutual funds, investment trust, asset management company, nominee company, bank, institutional portfolio manager, university funds, endowments, foundations, charitable trusts, charitable societies, a trustee or power of attorney holder incorporated or established outside India proposing to make proprietary investments or with no single investor holding more than 10 per cent of the shares or units of the fund.

(II) **As Sub-accounts:** The sub account is generally the underlying fund on whose behalf the FII invests. The following entities are eligible to be registered as sub-accounts, viz. partnership firms, private company, public company, pension fund, investment trust, and individuals.

The policy framework for permitting FII investment was provided under the Government of India. The guidelines formulated in this regard were as follows:

1. FIIs would be welcome to invest in all the securities traded on the Primary and Secondary markets, including the equity and other securities/instruments of companies.
2. FIIs would be required to obtain an initial registration with Securities and Exchange Board of India (SEBI), the nodal regulatory agency for securities markets.
3. All secondary market operations would be only through the recognized intermediaries on the Indian Stock Exchange, including OTC Exchange of India.

A. Equations

For this research we have collected data related to FIIs trades in Indian Derivatives market through different secondary sources of information i.e. internet websites, newspapers, journals etc. To find out the coefficient of correlation we used Karl Pearson's coefficient of correlation formula

$$r = \frac{\sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^n (x_i - \bar{x})^2 \sum_{i=1}^n (y_i - \bar{y})^2}}$$

Data Analysis

We have collected data of FIIs trades in different segments of Indian derivatives market for the period Jan 2010 to April 2011 and also record the movement of BSE SENSEX and CNX NIFTY the data was as follows:

Months	Product	Buy Turnover	Sell Turnover	Net Turnover(Cr.)
Jan-10	Index Future	45505.97	52755.51	-7249.54
	Index Option	67888.52	62975.61	4912.91
	Stock Future	50664.37	52981.56	-2317.19
	Stock Option	488.13	387.22	100.91
	Index Future	42673	40104.81	2568.19
Feb-10	Index Option	67282.02	64745.66	2536.36
	Stock Future	44622.52	42045.66	2576.86
	Stock Option	670	370.84	299.16
Mar-10	Index Future	41388.35	38054.52	3333.83
	Index Option	67923.94	55469.08	12454.86
	Stock Future	46421.63	48818.64	-2397.01
	Stock Option	1615.93	1514.95	100.98
Apr-10	Index Future	40173.65	45525.38	-5351.73
	Index Option	67279.85	56238.44	11041.41
	Stock Future	54375.86	54675.23	-299.37
	Stock Option	4624.26	4453.48	170.78
May-10	Index Future	72380.17	75324.62	-2944.45
	Index Option	126218.2	110749.1	15469.1
	Stock Future	62080.33	56576.86	5503.47
	Stock Option	4629.11	5175.33	-546.22

Months	Product	Buy Turnover	Sell Turnover	Net Turnover(Cr.)
Jun-10	Index	56534.67	55359.47	1175.2

Jul-10	Future			
	Index Option	124811	108679.3	16131.7
	Stock Future	51269.71	52069.4	-799.69
	Stock Option	5353.72	5281.65	72.07
	Index Future	46154.61	45891.4	263.21
Aug-10	Index Option	114463.5	97710.31	16753.19
	Stock Future	57107.31	57463.52	-356.21
	Stock Option	2768.37	3114.68	-346.31
	Index Future	47829.86	51071.3	-3241.44
	Index Option	122721.4	91863.84	30857.56
Sep-10	Stock Future	58981.91	60322.8	-1340.89
	Stock Option	6197.42	6515.39	-317.97
	Index Future	62604.45	63079.72	-475.27
	Index Option	135049.3	134128.3	921
	Stock Future	59775.79	63706.48	-3930.69
Oct-10	Stock Option	12908.58	13134.13	-225.55
	Index Future	57957.19	58579.94	-622.75
	Index Option	130270.3	121407.4	8862.9
	Stock Future	73867.96	86757.99	-12890.03
Stock Option	8755.42	9258.82	-503.4	

Months	Product	Buy Turnover	Sell Turnover	Net Turnover(Cr.)
Nov-10	Index Future	58798.1	63836.33	-5038.23
	Index Option	199551.8	187022.7	12529.1
	Stock Future	69908.44	68378.54	1529.9
	Stock Option	11510.98	11895.8	-384.82
	Index Future	49756.42	44458.08	5298.34
Dec-10	Index Option	124543.4	122258.8	2284.6
	Stock Future	62692.78	60741.66	1951.12

	Stock Option	7894.15	8040.8	-146.65
Jan-11	Index Future	52661.76	58057.95	-5396.19
	Index Option	174329.8	154986.1	19343.7
	Stock Future	64207.69	61844.59	2363.1
	Stock Option	8217.05	8459.56	-242.51
	Index Future	65618.11	65234.21	383.9
Feb-11	Index Option	169018.1	165792	3226.1
	Stock Future	65225.1	61624.29	3600.81
	Stock Option	9939.31	9947.45	-8.14
	Index Future	64385.33	56860.43	7524.9
Mar-11	Index Option	170534	161749.3	8784.7
	Stock Future	51645.14	52925.16	-1280.02
	Stock Option	6083.8	6078.78	5.02
	Index Future	55446.93	57600.22	-2153.29
Apr-11	Index Option	132080.7	120026	12054.7
	Stock Future	57048.69	64286.49	-7237.8
	Stock Option	4465.6	4632.57	-166.97
	Index Future	55446.93	57600.22	-2153.29

Movement of Sensex and Nifty during Jan 2010-March 2011

Month	BSE SENSEX	CNX NIFTY
10-Jan	16357.96	4882.05
10-Feb	16429.55	4922.3
10-Mar	17527.77	5249.1
10-Apr	17558.71	5278
10-May	16944.63	5086.3
10-Jun	17700.9	5312.5
10-Jul	17868.29	5367.6
10-Aug	17971.12	5402.4
10-Sep	20069.12	6029.95
10-Oct	20032.34	6017.7
10-Nov	19521.25	5862.7
10-Dec	20509.09	6134.5
11-Jan	18327.76	5505.9

11-Feb	17823.4	5333.25
11-Mar	19445.22	5833.75
11-Apr	19135.96	5749.5

II. FINDING AND CONCLUSION

By analyzing data and calculating coefficient of correlation we found following results:

FII's were involved more in selling of index future than buying. Coefficients of correlation indicating that buy turnover and sell turnover of FII in Index futures are highly correlated but the correlation of buy turnover, sell turnover and net turnover with sensex and nifty is very low which means FII's are not much concern with index movements while investing in index futures.

FII trades in index options are also not very much affected by Sensex and nifty movement during the period.

FII's trades in stock future are not much affected by sensex and nifty movements. Coefficients of Correlation between net turnover and Sensex, Nifty are 0.19, 0.31 respectively.

There is moderate degree of negative correlation of net turnover with sensex and nifty which indicates FII's net investment in stock options was in the opposite direction of sensex and nifty movement. Coefficients of correlation of FII's net turnover in Stock option with sensex and nifty are -0.43 and -0.44 respectively.

There is low degree of negative correlation among net turnover in Derivatives and sensex, nifty which indicates that FII's trades in derivatives were in opposite direction of sensex and nifty movements during Jan 2010 to March 2011. Coefficient of correlation between FII's net turnover in derivatives and sensex, nifty are -0.239 and -0.231 respectively.

FII's trades in derivatives contributes a significant proportion in total trades in derivatives in India .During Jan 2010 to April 2011 FII's trade in derivatives ranges between 19%-24% of total trade in derivatives in India .FII's trades in derivatives is moving along with the total trades in derivatives market. FII's total trades in derivatives are increasing continuously during Jan 2010-April 2011. This clearly indicates that FII's holds a significant proportion in derivatives market in India.

FII's have invested most in index options approximately Rs 38 Lakh Crore and least in stock option approximately Rs 1.9 lakh Crore during Jan 2010-April 2011.

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