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STOCK MARKET BEHAVIOR AND FOREIGN INSTITUTIONAL INVESTORS- A STUDY OF INDIAN STOCK MARKET

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ABSTRACT

Indian stock market is growing dynamically and is becoming attraction to investors both domestic and foreign. With the growing economic instability world over, Indian stock market is not left unaffected. Many macroeconomic variables both national and international are acting and impacting stock markets worldwide in complicated fashion. The major portion of investments in Indian stock market is undertaken by institutional investors of which foreign institutional investors play the major role. This paper attempts to study relation between flow of foreign institutional investors with Indian stock market which was opened for world investors with the reforms of 1991. The study takes into consideration data for over past 13 years covering period from January 2001 to September 2013. Hypothesis testing has been undertaken to find whether there is a significant relation between foreign institutional investor flow and stock market performance. The data has been analyzed using regression model by regressing stock prices data over foreign institutional investor's data. The results showed there exist a positive relation between the variables in question and nearly one tenth variation in stock performance can be explained by foreign institutional investors flow.

KEYWORDS - Foreign institutional investors, FII, Indian stock market, NSE, Regression.

I. INTRODUCTION

Financial markets play a very important role in establishing the competitive edge for an economy at global level. Financial market is a term which is an amalgamation of various terms in financial dictionary. It's a sum total of various financial intermediaries, financial instruments, and regulatory aspects and so on. Stock market is often considered as the barometer of an economy's growth and health. There is a huge list of factors such as FII, IIP, gold price, oil price, growth rate, inflation , interest rate, money supply etc. that impact performance of stock market directly or indirectly. Most of the factors act jointly thereby complicating the study of stock market analysis.

Indian stock market has been very dynamic over past few decades, particularly last two decades. With the economic liberalization and globalization in 1991, radical reforms have been introduced in Indian capital market for both foreign and domestic investors. The economic instability at global and national level has bought volatility on the stock market movements. This volatility has been higher after the global financial crises of 2008 followed by the US Federal Reserve actions to bring back US economy in healthy condition. The quantitative easing by Federal and later on followed by tapering had significantly impacted the flow of foreign capital in Indian stock market thereby bringing volatility in stock market performance.

The relation of stock market with macroeconomic variables has always been an area of scrutiny and research by various researchers. Indian stock market is subject to be influenced by macro-economic variables very often. The stock market and its various indicators tend to reflect the growth prospects and health of Indian economy. Stock market movements are considered to be as reflection of investor's expectation about economy.

As the number of factors determining stock market performance are huge it is difficult to study all of them in one go. Among the major macroeconomic variables, one important variable being studied in this paper is Foreign Institutional Investors (FII). FII represents the flow of capital in Indian stock market from outside India. The amount of FII flow in stock market depends upon various monetary policy aspects as well as foreign investor's expectations about Indian markets doing well or poor in coming future. FII basically invests in stock market for the purpose of earning return in the form of interest and capital gain from investments. The larger the flow of FII in an economy implies positive expectation among foreign investors for that economy.

FII flows in India have been very volatile during recent years and till present. The factors to be contributed for such volatility is majorly US Federal reserve act of quantitative easing, which implied lower interest rate for US economy relative of India, thereby giving an opportunity to foreign investors to divert their funds towards Indian stock market. However with the tapering happening after quantitative easing rose the expectations of hike in interest rate in US which expected to divert funds flow back to US from India, thereby reducing capital flows in India and giving a negative impression about Indian stock market performance.

Thus the impact of foreign institutional investors on stock market performance has always been an issue of debate and scrutiny world over. India is also not an exception to this phenomenon and especially with the emergence of global financial crises in US; it has became all the most interesting area of research by economists, academicians and researchers.

This paper will make an attempt to study the impact of foreign institutional investor on movements in Indian stock market by analyzing the movements of BSE SENSEX over past decade.

II LITERATURE REVIEW

The literature provides us with plenty of studies conducted in this area to study the relationship between stock market and various macroeconomic variables for wide range of countries. This section will try and make an attempt to review the studies conducted in context of stock markets and FII.

Goudarzi and Ramanarayanan (2011), in their study found that BSE 500 and FII series are co- integrated and bilateral casualty exists between them. Gupta (2011) also found that foreign institutional investors do have a significant impact on stock prices. Chakrabarti (2001) conducted a study on data pertaining to period May 1993 to Dec 1999 by applying Granger Causality test and found that any change in FII during pre Asian crises had a positive impact on stock market while afterwards it showed a negative impact on stock market equity returns.

Rai and Bhanumurthy (2004) as well as Batra (2003) also supported the findings of Chakrabati. Mukherjee, Bose and Coondoo (2002) and Panda(2005) suggested the same relation between FII and Indian stock market return in post liberalization period. Prasanna (2008) examined the relation between FII and firm characteristics of ownership structure, financial structure and stock performance and found foreign investor's decidiond of investment are significantly influenced by share returns and earnings per share.

Kumar (2007) also found a casual relationship between foreign institutional investors and stock market returns by applying Granger causality test and found that movements in Indian stock market can be explained with the help of foreign institutional investor's direction as they have a positive correlation with stock returns in India.

Mishra (2009) has made an attempt to study the impact of FII on Indian capital market performance by using monthly data on SENSEX based stock returns and net FIIs over a period of 17 years spanning from Jan 1993 to May 2009 and found that the movements in FII and Indian capital market are both positively correlated and explained fairly.

Kim and singal (1993) have tried to analyze the behavior of stock prices following the opening of Indian stock markets to investment by foreign investors. They concluded there was no significant and systematic impact of liberalization on stock market volatility. Raj chaitanya (2003) studied in length about the FIIs and how the Indian economy gets affected by them by analyzing daily flow data. He found that the stock market performance has been the major driver of FII flows in India although this relation was reverse for pre Asian crises.

Reddy (2009), analyzed the performance of SENSEX and FII. It was found that FIIs are significant factor in leading to volatility and liquidity in stock prices in market. Pal.,P (2004) investigated that FIIs are the major players in Indian stock market performance. Khan et al. (2005) studied the relation between the FII and the equity returns in India and indicated that equity returns causes FII flows and there is a tremendously volatility clustering in FII investment NIFTY series but there is no as such great transmission impact or destabilization impact. Dash and Jeet (2009) examined that volatility has increased marginally after the arrival of FII but that was maybe not due to FII.

Banerjee and Sarkar (2006). Have tried to model and predict stock return volatility in the index returns of NSE. The data used extends from June 2000 to January 2004.it was found that there was volatility clustering in Indian stock market with proofs of leverage effect on volatility. It was also found that volume of trade has a positive correlation with market performance and FII participation does not result into significant impact on stock market returns.

Looking at the studies conducted priory mixed results have been obtained regarding the impact of FIIs flow on Indian stock market performance. Some suggest there is positive and significant correlation while few are of opinion that FIIs affect to very little or not at all on stock market returns. Moreover majority of the studies have been conducted on BSE data. This paper will make an attempt to find the relationship between FIIs and stock market return by analyzing data from an index of National Stock Exchange i.e. CNX NIFTY.

III. OBJECTIVE OF STUDY

The objective of this study is to examine the relation between the foreign institutional investors capital flows and Indian stock market performance over a period of 13 years. This paper will make an attempt to examine the present literature in context on applicability of NSE index of stock market CNX NIFTY which is the second most referred index of stock market performance after BSE SENSEX. The study will attempt to find the degree of correlation and to what extent movements in prices of CNX NIFTY has been explained by the Changes in flow of foreign institutional investors.

IV. METHODOLOGY

1).Data and software:-

The data used in this study are monthly data of CNX NIFTY stock index and foreign institutional investors for the period from January 2001 to September 2013. The data has been collected from websites of National Stock Exchange, Reserve

Bank of India database, Moneycontrol.com and Indexmundi. The data so collected has been analyzed using regression technique and other statistical tools to develop inferences about relationship between the two said variables. MS Excel has also been used to depict the trends in different variables used in study over a period of time.

2).Hypothesis Testing:-

Hypothesis testing has been done on the regression model to check the model fit i.e. whether the independent variable i.e. Foreign institutional investors have any significant impact on dependent variable i.e. stock market prices.

3). F- test:-

F – Statistics has been used to check if the model so formed has significant explanatory power. The null hypothesis here is that FII does not have any significant relation with the stock market prices. i.e. $R^2 = 0$.

4). Formulae used:-

$$F = \frac{Explained\ Variance}{Residual\ Variance} = \frac{\frac{ESS}{K-1}}{\frac{RSS}{n-k}}$$

$$R^2 = \frac{ESS}{TSS} = 1 - \frac{RSS}{TSS}$$

$$\beta = \frac{dX}{dY}$$

$$R = \frac{1}{n-1}\frac{\sum(x-\overline{x})(y-\overline{y})}{\sigma x \sigma y}$$

$$TSS = \sum_{i=0}^{n}(Y - \bar{Y})^2$$

The degree of freedom of TSS is n-1

$$RSS = \sum_{i=1}^{n}(Y - \hat{Y})^2$$

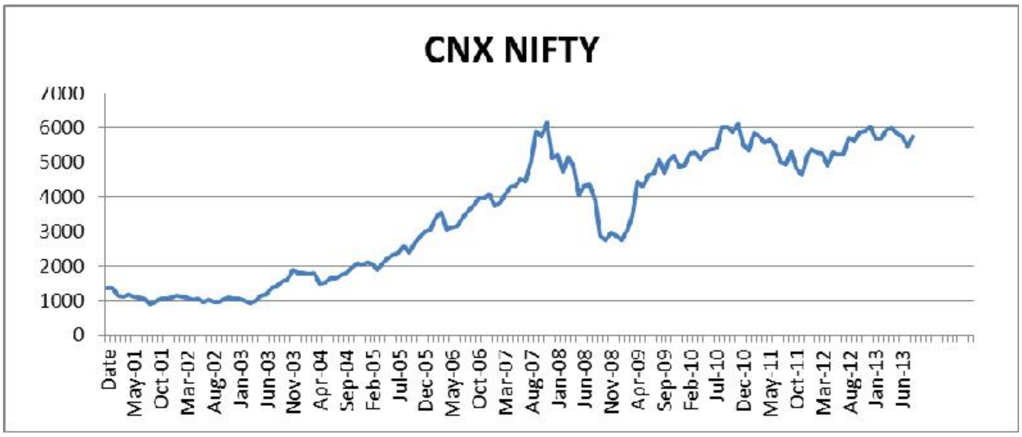
The degree of freedom of RSS is n-k.

$$ESS = \sum_{i=0}^{n}(\hat{Y} - \bar{Y})^2$$

The degree of freedom of RSS is k-1.

V. DATA ANALYSIS AND INTERPRETATION

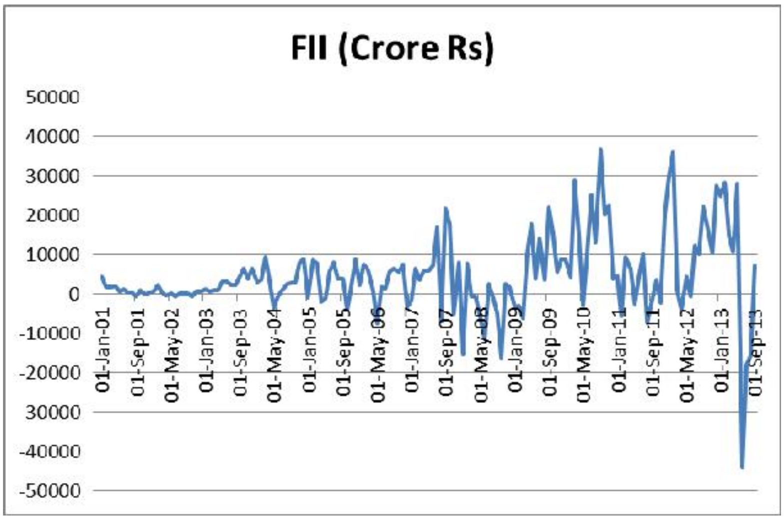
From the data obtained from NSE the following trends has been observed in NSE index.



Descriptive statistics	
Mean	3489.695425
Standard Deviation	1802.982578
Variance	3250746.178
Range	5224.75
Minimum	913.85
Maximum	6138.6
Count	153

There have been large fluctuations in NSE returns in Indian stock market as visible from chart above. In the beginning of 2—1 the market index was somewhat around 1371, it touched the highest during November 2007 and in 2013 the index has been in the range of 5500 to 6034. The large fluctuations are mainly on the grounds of heavy dependence on FII/FDI inflows, investors sentiments also significantly influenced by change in government policies and economic developments at global level. Because of the huge volatility it can be observed the is following a non stationary trend.

Trends in FII



Descriptive statistics	
Mean	4746.323529
Standard Deviation	10233.21779
Variance	104718746.3
Range	80983.1
Minimum	-44162
Maximum	36821.1
Count	153

There has been a steady FII inflow in India till 2008 because of increased economic growth during this period. However in 2008-09 FII inflows declined on account of financial crisis in US. It again picked but declined further in 2011-12 because of European crisis. In 2013 there has been a sharp fall in FII inflows despite some economic reforms being announced. The reason for this is recovery in US which is leadind to funds being taken away from developing nations like India.

MODEL SUMMARY	
Regression Statistics	
Multiple R	0.31704424
R Square	0.10051705
Adjusted R Square	0.094560209
Standard Error	9737.377455
Observations	153

ANOVA

	df	SS	MS	F	Significance F
Regression	1	1.6E+09	1.6E+09	16.87422	6.52511E-05
Residual	151	1.43E+10	94816520		
Total	152	1.59E+10			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-1533.220043	1719.469186	-0.89168	0.373982	-4930.545353	1864.10527	-4930.54535	1864.105267
X Variable 1	1.799453192	0.438055039	4.107824	6.53E-05	0.933944532	2.66496185	0.93394453	2.664961853

The value of F statistics is 16.87 which is much greater than the critical value of 4 from F-table. Also as per result shown above p- value or significance is less than .05 therefore the null hypothesis gets rejected implying that the model does have an explanatory power and there exist a significant relationship between stock market performance and FIIs.

The value of correlation between FIIs and stock prices is .31 which is positive. This shows that FII and Stock prices are positively correlated i.e. higher the FII, higher would be stock market prices and hence good performance of Indian stock market and vice- versa. Further the value of R^2 is .10 which implies 10% of change in stock prices is explained by FIIs.

Also the beta value obtained is 1.79 which implies that any change in FII will bring about 1.79 times of it change in stock market prices in the same direction. So the model suggests a direct relation between two variables.

With the given data and by applying model at 95% confidence level, the results show rejection of null hypothesis and this implies there exist a positive relationship between FIIs and stock market performance, with FIIs explaining nearly 10% change in stock market performance.

VI. LIMITATIONS OF THE STUDY

The study has attempted to explain one crucial factor in context of Indian stock market. However there are a number of other factors which are simultaneously acting at macro level and thereby impacting stock market performance in their own way at the same time. When all factors will be studied together the results obtained might differ from what this study has resulted into. Also during the analysis period the FIIs have been very volatile on account of US sub -prime crisis and high political instability in India. So data for that period includes the effects also, which could have affected the results.

VII. CONCLUSION

Based on the study it can be said that introduction of FIIs in Indian stock market can help to strengthened our market. FIIs help to introduce liquidity in local markets and reduce volatility. So it will be beneficial to encourage FIIs in India. FIIs can be enhanced by ensuring issue of better qualities of equities in Indian market. The limits on foreign investments have to increase so as to allow greater flow to Indian market.

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