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RELATIONSHIP AND EFFECT OF FOREIGN INVESTMENTS IN THE INDIAN STOCK MARKET - WITH REFERENCE TO MOVEMENTS IN NIFTY

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ABSTRACT

India after 1990s reforms, witnessed an acceleration of economic growth and the root cause of this is the flow of foreign investment to the country .The constraint –free globalization resulted in competition and enhanced innovations. Thus, foreign investments became not only a benchmark for the economic growth but also of the capital market. They have become the means of international assimilation and growth incentive. This is seen in the stock market, as high investments reflect high confidence and a healthy investor sentiment for our markets. The current paper makes an attempt to study the relationship and impact of FDI&FII on Indian stock market with reference to National Stock Exchange index, NIFTY by the methods of multiple regression & correlation.

Index terms---FII, FDI, NIFTY

I. INTRODUCTION

Foreign investments are investments made crossways countries in their financial assets and fabrication processes. They occupy an important role in the economic development of developed as well as developing countries. Foreign investment comes in two forms: Foreign Direct Investment (FDI) and foreign institutional investment (FII). FDI is a controlling ownership in business enterprise in one country by an entity based in another country. It is a passive investment in the securities of another country such as public stocks and bonds, by the element of control. FII are the institutional investors which invest in the assets belonging to a different country other than that where the organisation are build.

(Lakshmy, 2014) India opted for market oriented reform measures in response to the Balance of Payment (BoP) crisis it faced in the early 1990s. The crisis was evident in significant worsening in external sector indicators. Thus, there was a cognisant move to build forex reserves to meet future contingencies as a part of the structural reform measures in the post-crisis period. In the beginning, only pension funds, mutual funds, investment trusts, asset management companies, nominee companies, and institutional portfolio managers were permitted to invest directly in the Indian stock markets. Gradually, since1996–1997, the investment basket diversified to include registered university funds, endowment funds, foundations and charitable trusts. It is since 1996–1997 that foreign Flows have come to form a substantial part of the foreign portfolio investments in the Indian markets. The impact of the various reform measures was seen in the growing number and volume of operations of the FDIs and FIIs The movement of the Indian stock market, in the years 2003–2004 and 2004–2005, showed a remarkable rise and was evidently driven by the robust actions of foreign flows especially FIIs. The FII flows during 2007 made a net investment of about US$ 17 billion in Indian stock markets. This investment was nearly 10 times higher than the domestic mutual funds' net investment. In 2008, due to the worldwide financial crisis the foreign investors withdrew over US$ 3.2 billion from Indian equities alone in the first three months of 2008. Till the end of 2009–2010, foreign flows remained negative. These contrasting figures over the years show the importance of foreign investments in the overall investment structure of Indian stock market.

The current paper makes an attempt to study the relationship and impact of FDI and FII on the stock market index of the National Stock Exchange using simple statistical tools like Correlation coefficient and Multiple Regression analysis using the last 24 monthly data from 2 financial years starting from 2013 and ending in 2015.

II. REVIEW OF LITERATURE

(CS, 2011) According to this paper Foreign Direct Investment is considered to be the lifebloodofeconomicdevelopment especially for thedeveloping and underdeveloped countries. In India, it is considered as a developmentaltool, which can help in achieving self-reliance in various sectors of the economy. The paper also cites that the volume of FDI in India is relatively low compared with that in most other developing countries.

(P & M, 2013)From their study, it is inferred that the FII inflows to India are essentially determined by exchange rate, domestic inflation, domestic equity market returns, returns and risk associated with US equity market. The Indian equity market returns has negative short-run and positive long-run effects on FII inflows to India and the US equity market returns has positive and significant influence on FII flows in the long-run but positive and insignificant influence on FII flows in the short-run

(Barua & Varma, 1994) In this paper they present a review of research done in the field of Indian capital markets during the fifteen years from 1977 to 1992. They feels that the Indian capital market is grossly underresearched because of lack of availability of databases and computing resources. They end on an optimistic note saying, the current interest of foreign investors in the Indian capital market, if it is sustained, would help give a fillip to research.

(N & SS, 2009)This paper is on FII and their role in the Indian capital market. According to their studies, FII's importance has been growing overtime and their net investment is on the rise in the recent past. This portfolio flows by FII's bring with them great advantage as they are engines of growth while lowering the cost of capital in the emerging market.

(SINGH, CHADHA, & SHARMA, 2012)Foreign Direct Investment is one and only major instrument of attracting International Economic Integration in any economy. It serves as a link between investment and saving. Foreign investment helps in reducing the defect of BOP. Thus their study suggest that inflow of foreign investment should be welcomed in such way that it should be convenient and favourable for Indian economy and enable us to achieve our cherished goal like rapid economic development, removal of poverty, internal personal disparity in the development and making our Balance of Payment favourable.

(Dhiman & Sharma, 2013) They observed a triangular causal relationship: i.e., FDI stimulates economic growth, economic growth promotes stock market development; and implication that FDI promote stock market development. Thus, the inflow of capital in terms of foreign direct investment (FDI) has definitely impacted the economy as well as the capital markets.

(KAPOOR & SACHAN, 2015)Based on their study, as far as FDI is concerned, it is not directly related with stock markets but provides opportunities to industries for technological up-gradation, gaining access to global managerial skills and practices, optimizing utilization of human and natural resources and global competitive advantage with greater efficiency. On the other hand FII is directly concerned with stock markets and helpful in the development & growth of stock markets.

(JUNEJA, 2013)From their study it can be cited that FIIs are capable of causing severe capital out flight abruptly, tumbling share prices in no time and making stock markets unstable and unpredictable.

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(Lakshmy, 2014)The paper quotes that the FII funds form a part of forex reserves of India, a sudden outflow can lead to a major decline in reserves leading to exchange rate fluctuations and vulnerability. Thus, the focus of the policy makers should be on preserving strong macroeconomic benchmarks, relatively higher returns, lesser volatility, and overall stability of markets through appropriate institutional reforms.

(Acharya, Anshuman, & Kumar, 2014)According to this research paper foreign fund flows in and out of Indian stock markets are now a sizeable portion of the market activity. Cumulative net investment flows from foreign institutional investors (FIIs) have exceeded USD 100 billion in the last decade, and FII order flow accounts for a significant portion of the daily turnover in Indian exchanges

(Mukherjee & Pai, 2007)The author cites that the markets have started to integrate and Indian market is no exception especially after 2002-03.

(Banerji, 2013)In this paper he studies the effects of Foreign Direct Investment (FDI) with respect to India and its economy. He tries to analyze the merits and demerits of FDI upon implementation in the Indian domestic market.

(Malhotra, 2014)For the author, the Indian economy which has tremendous potential, FDI has had a positive impact. FDI inflow supplements domestic capital, as well as technology and skills of existing companies. It also helps to establish new companies. All of these contribute to economic growth of the Indian Economy.

(Baskaran & Dr. L. J., 2011)According to study, economic reforms have benefitted a lot in terms of attracting FDI which has reached a historic high in recent years which in turn have significantly contributed to the growth of economy in general and exports in particular.

(ISMR, 2015)The policy liberalization has taken the form of (i) the relaxation of investment limits for FIIs; (ii) the relaxation of the eligibility conditions; and (iii) the liberalization of the investment instruments accessible to FIIs.

(Kumar & Devi)&(Sultana & Pardhasaradhi, 2012)Both the paper cites that the flow of FDI & FII accelerated the Indian economy and also gave opportunities to Indian industry for technological up-gradation, gaining access to global managerial skills and practices, optimizing utilization of human and natural resources and global competitive advantage with greater efficiency.

(SINHA & SHOMALI, 2007)This paper analyses the Indian FDI data at the relevant micro state level for the period 1992-2005 and compare it with the Chinese data for period of 1978-2005 at the relevant economic zone level. The study shows that the Indian FDI attraction is due to its human capital, size of the market, rate of growth of the market, and political stability and for China, congenial business climate factors comprising of making structural changes, creating strategic infrastructure at SEZs, and taking strategic policy initiatives of providing economic freedom, opening up its economy, attracting diaspora, and creating flexible labour laws were identified as drivers for attracting FDI.

(Hoffmann, 2010)And (Nathans & Oswald, 2012)Last two papers cites on the methodology used for research i.e. regression. The first paper summarises that the goals of a regression analysis are to predict or explain differences in values of the dependent variable with information about the values of the independent variables. The latter paper presents a guidebook of variable importance measures that inform Multiple Linear Regression results, linking measures to a theoretical framework that demonstrates the complementary roles they play when interpreting regression findings.

III. OBJECTIVE

To study the relationship and impact of FDI & FII on Indian stock market with special reference to National Stock Exchange index: CNX Nifty.

IV. SCOPE AND NEED FOR STUDY

In reality, the scope of study is broader as it covers the Indian capital market, stock indices and foreign investments. But, this study is confined only on the net values of FDI, FII and stock index. The study gives an overall idea on the impact of foreign investments in the stock indices. It would be beneficial for further research works and studies, since, Indian capital market is a vast area which is least explored upon.

V. RESEARCH METHODOLOGY

1. Data Collection and Period of Study

This study is based on secondary data. The data related to FDI & FII have been collected from the Bulletins of Reserve Bank of India. The CNX Nifty data is downloaded from the website of National stock exchange. Monthly Adjusted closing index values of CNX Nifty is taken into consideration for the study. The present study considers 2 financial years' monthly data starting from 2013-14 to 2014-15. Since the CNX Nifty index values are cumulative values, they are converted into net increase/decrease in the index (Net Nifty values) during the month to make it comparable with net FDI and FII.

2. Tools & Techniques

To analyze the data, the statistical tools such as correlation and regression analysis are used.

Correlation coefficient is a statistical measure that determines the degree to which two variable's movements are associated. Correlation coefficient value ranges from -1to 1. Negative value of correlation indicates: if one variable increases in its values, the other variable decreases in its value and positive value indicates: if one variable increases in its values the other variable also increases in its value. This paper attempts to study multiple correlation between FDI, FII and Nifty

The regression analysis is a statistical technique used to evaluate the effects of an independent variable on another dependent variable. In this study multiple regression is used. Multiple regression is an extension of simple linear regression. It is used when we want to predict the value of a variable based on the value of two or more other variables. Multiple regression also allows us to determine the overall fit of the model and the relative contribution of each of the predictors to the total variance explained. In the current paper attempt is made to study the impact of FDI& FII on Nifty. So FDI & FII are considered as independent variables and Nifty as the dependent variable for the model.

3. Model Building

To study the impact of Foreign Direct Investment & Foreign Institutional Investment on Indian stock market, model is framed and fitted; it depicts Nifty as dependent variable; whereas independent variables are FDI & FII.

The equation will be as follows:

$$Y \text{ (Nifty)} = a + b1\ X1 \text{ (FDI)} + b2\ X2 \text{ (FII)} \qquad (1)$$

4. Hypothesis

The null hypothesis for the above models is

H_0: FDI& FII has no significant impact on Nifty movements.

H_1: FDI or FII has significant impact on Nifty movements.

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VI. DATA ANALYSIS

TABLE I. DATA FOR ANALYSIS

MONTH YR	CNX NIFTY	NIFTY (NET VALUE)	FDI (US$MILLION)	FII (US $ MISSION)
Apr-13	5930.200195	247.650195	3949	1542
May-13	5985.950195	55.75	8703	6704
Jun-13	5842.200195	-143.75	-6531	-8726
Jul-13	5742	-100.200195	218	-4703
Aug-13	5471.799805	-270.200195	1616	-2018
Sep-13	5735.299805	263.5	3177	157
Oct-13	6299.149902	563.850097	2048	-366
Nov-13	6176.100098	-123.049804	1821	-35
Dec-13	6304	127.899902	2133	2934
Jan-14	6089.5	-214.5	848	2616
Feb-14	6276.950195	187.450195	-83	1509
Mar-14	6704.200195	427.25	2908	5397
Apr-14	6696.399902	-7.800293	2203	-69
May-14	7229.950195	533.550293	4772	7709
Jun-14	7611.350098	381.399903	2390	4824
Jul-14	7721.299805	109.949707	3377	5417
Aug-14	7954.350098	233.050293	2135	2091
Sep-14	7964.799805	10.449707	3577	2364
Oct-14	8322.200195	357.40039	2801	1722
Nov-14	8588.25	266.049805	1907	4832
Dec-14	8282.700195	-305.549805	3459	-404
Jan-15	8808.900391	526.200196	5502	6634
Feb-15	8844.599609	35.699218	3089	3769
Mar-15	8491	-353.599609	2706	2032

SPSS Statistics generated quite a few tables of output for correlation and multiple regression analysis. We focus on the four main tables to understand correlation and multiple regression results, assuming that the data has already met the eight assumptions required for multiple regression to give a valid result:

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TABLE II. CORRELATIONS

		NIFTY NET VALUE	FDI (US$MILLION)	FII (US $ MISSION)
NIFTY NET VALUE	Pearson Correlation	1	.305	.508*
	Sig. (2-tailed)		.147	.011
	N	24	24	24
FDI (US$MILLION)	Pearson Correlation	.305	1	.777**
	Sig. (2-tailed)	.147		.000
	N	24	24	24
FII (US $ MISSION)	Pearson Correlation	.508*	.777**	1
	Sig. (2-tailed)	.011	.000	
	N	24	24	24

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

Nifty value and FDI doesn't have significant relationship between them, since the corresponding p value is 0.147 which is greater than 0.05. But Nifty and FII has significant relationship since, its p value is 0.011 < 0.05.
There is high degree of correlation between FII and FDI since the p value is 0.000. This causes a high degree of multicollinearity making the model immaterial. FII has significant relationship between both FDI and Nifty.

Regression

The first table of interest in regression analysis is the Model Summary (Table III). This table provides the *R*, R^2, adjusted R^2, and the standard error of the estimate, which can be used to determine how well a regression model fits the data:

TABLE III. MODEL SUMMARY[B]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.528[a]	.278	.210	242.689325392	1.991

a. Predictors: (Constant), FII (US $ MISSION), FDI (US$MILLION)
b. Dependent Variable: NIFTY NET VALUE

The "R" column represents the value of *R*, the *multiple correlation coefficient*. *R* can be considered to be one measure of the quality of the prediction of the dependent variable; in this case, net Nifty value. A value of 0.528 indicates a moderate level of prediction. The "R Square" column represents the R^2 value which is the proportion of variance in the dependent variable that can be explained by the independent variables (technically, it is the proportion of variation accounted for by the regression model above and beyond the mean model). From the table 3 we can see that, R square = 0.278 which means, the independent variables (FDI and FII) explain only 27.8% of the variability of dependent variable (NIFTY), which is below par. This may be attributed to less number of observations.

TABLE IV. ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	476983.791	2	238491.896	4.049	.033[b]
	Residual	1236860.282	21	58898.109		
	Total	1713844.073	23			

a. Dependent Variable: NIFTY NET VALUE

b. Predictors: (Constant), FII (US $ MISSION), FDI (US$MILLION)

The *F*-ratio in the ANOVA table (Table IV) tests whether the overall regression model is a good fit for the data. The table shows that the independent variables statistically significantly predict the dependent variable, $F(2, 21) = 4.049$, and the *p* value of F statistic is $0.033 > 0.05$ (i.e., the regression model is a good fit of the data). Thus, we reject null hypothesis and infer that FDI and FII has a combined significant impact on NIFTY at 5% significant level.

The general form of the equation to predict Nifty from FDI and FII is:

Predicted Niftyvalue = 79.139 – (0.024 × FDI) + (0.054 × FII) (2)

This is obtained from the Coefficients table, shown in Table V.

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TABLE V. COEFFICIENTS

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	79.139	70.706		1.119	.276
	FDI (US$MILLION)	-.024	.031	-.227	-.770	.450
	FII (US $ MISSION)	.050	.022	.684	2.322	.030

a. Dependent Variable: NIFTY NET VALUE

Unstandardized coefficients indicate how much the dependent variable varies with an independent variable when all other independent variables are held constant.The unstandardized coefficient, B_1, for FDI is equal to -0.024 . This means that for each one unit increase in FDI, there is a decrease in Nifty value of 0.024 units. Similarily, the unstandardized coefficient,B_2, for FII is equal to 0.05 implies that one unit increase in FII leads to 0.05 units increase in Net Nifty value. We now test for the statistical significance of each of the independent variables. This tests whether the unstandardized (or standardized) coefficients are equal to 0 (zero) in the population. If $p < 0.05$, we can conclude that the coefficients are statistically significantly different to 0 (zero). The *t*-value and corresponding *p*-value are located in the "t" and "Sig." columns, respectively, in Table. We can infer from the "Sig." column that only independent variable FII coefficient is statistically significant. Thus we conclude that the FDI alone doesn’t have significant impact on Nifty value (p value = 0.450 > 0.05), on the other hand, the p value for FII is 0.030 < 0.05, which means it has significant impact on Nifty value. But according to F test, when both (FDI and FII) put together it surely has significant impact on Nifty Value.

VII. FINDINGS

1. From the study it can be inferred that, FDI and FII has a combined significant impact on Nifty value.
2. FII has a more significant impact on Nifty in comparison to FDI on Nifty value.
3. FDI has least significant impact on Nifty.
4. Considering correlation results, FII has a significant relationship positive between both FDI and Nifty.

VIII. LIMITATIONS

Limitations hamper the scope of the study and may affect the results of the research adversely. In the present study one of the major of the limiting factor is the short period of time is taken into consideration due to time constraint. FDI is a medium to long-term investment which is a major source of production whereas FII is a short-term investment, mostly directed towards financial markets. Thus this study could convey only the significance of short term independent variable (FII) on the dependent variable (Nifty). Since the sample size is small, the results can be different from actual facts and may not give a proper judgement. Also the data relied only upon the secondary resources. Moreover, the existence of high degree of multicollinearity between the independent variables statistically affected their combined significance on the dependent variable.

IX. CONCLUSION

From the study it can be inferred that FDI and FII has a combined significant impact on the Nifty Movements. In comparison to FDI, Foreign Institutional Investment (FII) has a very profound relationship and impact on the Stock market index (Nifty). This may be attributed to the Short term characteristics of FII. To be specific, the volatility of FII is greater when compared to its counterpart FDI. As far as FDI is concerned, it is not directly related with stock markets but provides for technological up-gradation, innovation, efficiency and healthy competition. FII's on the other hand are closely linked with stock market. They are capable of causing severe capital out flight unexpectedly, plummeting share prices in no time and making stock markets unstable and impulsive.

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