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Impact of FDI and FII on the Indian Stock Market during Recent Recession Period: An Empirical Study

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Abstract: The era 90's saw very significant policy changes introduced in the sphere of financial sector, foreign trade, public sector and social sector. The year 1991 witnessed the process of liberalization and globalization that hit the Indian economy and pushed our country to break open the ―Inward Looking‖ policy when the emphasis was accorded to protectionism and import substitution. Since 1991, India has proved to be a key player in the world. Ours country interaction has increased with many economies ties, political harmony, tourism trade and services more significantly in the area of investment. The present study was conducted by me with the aim to understand the impact of FDI and FII on Indian Stock Market (BSE and Nifty) during the recession period. It was found from the study that FDI had a significant influence on the Indian Stock market during recession while FII negatively influenced the Indian Stock Market.

Key Words: Multiple Regression, Sensex, Nifty, FDI and FII

1. Introduction:

Foreign Direct Investment has been increasingly dramatically across the world. Almost all the countries in the world are realizing the importance of foreign capital's role in the rapid industrial and economic development. It contributes a lot to the economic growth and industrial development across the world. It even acts as a catalyst in the process of domestic industrial development. Further it helps in speeding up economic activity and brings with it other scarce productive factors such as technical know-how and managerial experience, which are essential for economic development.

FDI plays an important role in the development process of a country. It has potential for making contribution to the development through the transfer of financial resources, technology and innovative and improved management techniques along with raising productivity. Developing countries like India need substantial foreign inflows to achieve the required investment to accelerate economic growth and development.

1.1 Meaning of FDI and FII

FDI is generally defined as ―A form of long term international capital movement made for the purpose of productivity activity and accompanied by the intention of managerial control or participation in the management of the foreign firm,‖

According to the International monetary fund, FDI can be defined as ―An Investment that is made to acquire a lasting interest in a enterprise operating in an economy other than that of the investor. The investor's purpose is to have an effective voice in the management of the enterprise.‖

The World Investment Report of the United Nations Conference on trade and development (UNCTAD) defines FDI as ―International Investment that reflects the objective of a resident entity in one economy (Foreign Direct Investor or Parent Enterprise) obtaining ―Lasting Interest‖ in and control of an enterprise resident in an economy other than that of foreign direct investor.‖ Lasting interest implies the existence of a long-term relationship between a direct investor and the enterprise and a significant degree of influence on the management of the enterprise.

FDI should not be confused with portfolio investment, which doesn't seek management control, but it is motivated by profit. Portfolio investment occurs when an individual investor invest, mostly through stock brokers in the stocks of the foreign countries in search of profit opportunities.

FII (Foreign Institutional Investor) is defined as an investor or investment fund that is from or registered in a country outside of the one in which it is currently investing. Institutional investors include hedge funds, insurance companies, pension funds and mutual funds. FII must register with SEBI (Security Exchange Board of India) to participate in Stock Markets in India. (**Source: Investopedia**)

1.2 Recession:

The NBER (National Bureau of Economic research) defines an economic recession as ―a significant decline in the economic activity spread across the country, lasting more than a few months, normally visible in real decline in the GDP growth, real stagnation in personal income, rising unemployment level (Non-Firm Payroll) decrease in industrial production and considerable deterioration in the whole sale - retail sale. (**Source**: Business Cycle Expansion and Contraction — NBER) .NBER has defined the recent global financial crisis as staring from December, 2007 and ending on June 2009.

Impact of Recession on India:
The impact of the global crisis on India can broadly be divided into three different aspects:
(1) the immediate direct impact on its financial sector;
(2) an indirect impact on economic activities and
(3) potential long term geopolitical implications. Fortunately, India, like most of the emerging economies, was lucky to avoid the first round of adverse effects because its banks were not overly exposed to subprime lending. However, the indirect impact of the crisis has affected India quite badly. The liquidity squeeze in the global market following Lehman Brothers collapse had serious implications for India, as it not only led to massive outflows of Foreign Institutional Investment (FII) but also compelled Indian banks and companies to shift their credit demand from external sources to the domestic banking sector. The present paper tries to investigate the Impact of FDI and FII on Indian Stock Market during the recent recession period by using statistical tools.

2. Review of Literature:
It is proposed to some studies in brief referred by me while conducting the present study:

Jatinder Loomba (2012), in his research paper ―Do FIIs impact volatility of Indian Stock Market?‖ in International Journal of Marketing, Financial Services & Management Research have tried to investigate into the trading behavior of FII and BSE Sensex. The study concludes that there is a significant positive correlation between FII activity and its effect on Indian Capital Market.

J.S. Pasricha (2009), in his research paper ―Foreign Institutional Investor‘s Impact on stock prices in India‖ have investigated into impact of market openings to FII on Indian stock market behavior. It was concluded from the study while there is no significant changes in Indian Stock market average returns volatility is significantly reduced after India opened its stock market to foreign investors due to ongoing globalization, liberalization and privatization process.

Liesbeth Colen, Miet Maertens, Jo Swinnen (2008) has worked on ―FDI as an Engine for Economic Growth and Human Development. The objective of the study was to analyze the importance of FDI on developing countries with a view to highlight the trend of the FDI flows. The study further tries to evaluate the effect of FDI on economic growth as well as poverty reduction.

Ikara (2003) emphasizes that FDI is the key element in generating growth and thus is a very important ingredient for poverty reduction by raising total Factor productivity and efficiency of resource use.

3. Motivation and Objective of the Study:
Recent Recession/ Global financial crisis had adversely affected everybody‘s life one way or the other. My main motivation and objective of undertaking the present study is to understand the impact of FDI and FII on Indian Stock Market during recession period. Stock Market is considered to be the barometer of health of an Economy. FDI and FII are both important and significant source of Foreign Inflow in Economy. With India opening its gate for foreign investment in this era of globalization and liberalization era both the source play a very important role in development of the economy. Whether actually FDI or FII or both impacted the stock market in recession period is a matter of curiosity which actually motivated me to pursue my research in this area.

4. Research Methodology:
The present study undertaken by me tries to study the impact of FDI and FII in terms of equity on Indian Stock Market. The data related to the study has been collected from BSE website (for Sensex Data), NSE website (Nifty), Website of DIPP (Department of Industrial Promotion and Policy) (FDI Data) and SEBI Website (FII Data). A period of 18 months (January 2008 to June, 2009) is taken for the study period during the period of recession. The statistical tool of correlation and multiple regression analysis was used to derive at a conclusion. For determining the BSE and NSE average it is calculated on basis of average of closing Sensex and Nifty for the number of trading days for each month from January, 2008 to June, 2009.

5. Analysis:

A. FDI vs. FII

The **Table 1** below represents FDI and FII inflows in crores rupees. The inflow of FDI and FII are shown in terms of equity inflows only. The months taken into consideration is from January 2008 to June, 2009 (18 months) the period representing the recent global financial crisis and substantiated by NBER. The table also represents the BSE Sensex and Nifty during the aforesaid period

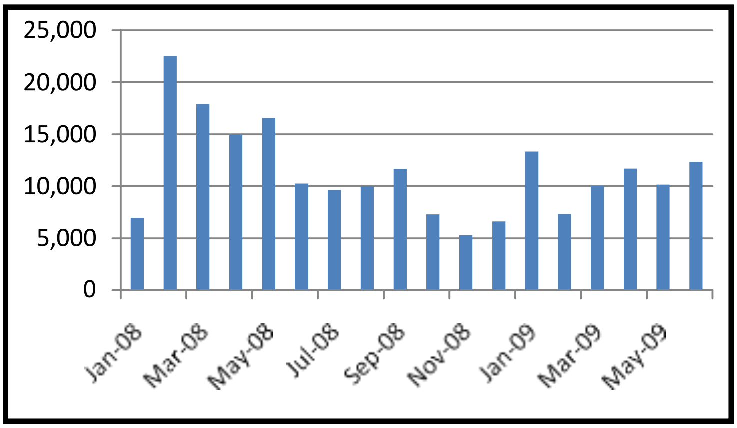
Table 1.

			NIFTY	SENSEX	Trading Days
	FDI Inflows(Equity)	FII (Equity)	Average	Average	
Jan-08	6,960	-13,035.70	5756.354348	19325.65	23
Feb-08	22,529	1,733.30	5201.564286	17727.54	21
Mar-08	17,932	-130.4	4769.497222	15838.38	18
Apr-08	15005	1,074.80	4901.905	16290.99	20
May-08	16563	-5,011.50	5028.6625	16945.65	20
Jun-08	10244	-10,095.00	4463.788095	14997.28	21
Jul-08	9627	-1,836.80	4124.604348	13716.18	23
Aug-08	9995	-1,211.70	4417.1175	14722.13	20
Sep-08	11676	-8,278.10	4206.685714	13942.81	21
Oct-08	7,284	-15,347.30	3210.2225	10549.65	20
Nov-08	5305	-2,598.30	2834.786111	9453.957	18
Dec-08	6626	1,750.10	2895.797619	9513.584	21
Jan-09	13,346	-4,245.30	2854.3625	9350.417	20
Feb-09	7,329	-2,436.60	2819.205263	9188.033	19
Mar-09	10,023	530.3	2802.2725	8995.451	20
Apr-09	11,708	6,508.20	3359.829412	10911.2	17
May-09	10,168	20,117.20	3957.9625	13046.14	20
Jun-09	12,335	3,830.00	4436.370455	14782.47	22

Source: SEBI Website for FII data, DIPP (Department of Industrial Promotion and Policy) for FDI data, BSE Website for Sensex data ,NSE Website for Nifty data

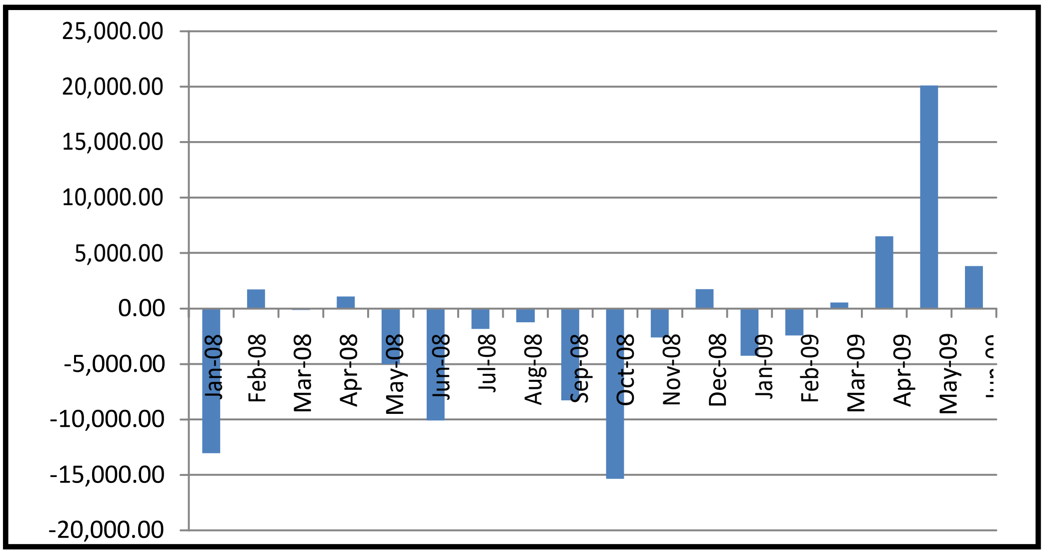
In the above table, FDI and FII are represented in crores of rupees. Nifty and Sensex average is calculated on basis of average of closing Nifty and Sensex for the number of trading days mentioned in the days column for each and every month.(Eg 23 trading days in Jan 2008 , 21 trading days in Feb 2008 etc).

If we observe the graphical representation (**Graph 1**)below of FDI inflow for the period of recession then a downward trend is observed with the lowest being in November, 2008 and slowly picking from April, 2009 indicating a hope of end of recession period. The graph 1 is produced as below:



If we observe the graphical representation (**Graph 2**) below of FII inflow for the period of recession then a flux of negative FII are observed during different months reflecting a panic in FII who were withdrawing funds from the stock market and thus having an adverse effect on both the Sensex and Nifty and slowly picking from May, 2009 indicating a hope of end of recession period.

Graph 2:



B. Impact of FDI and FII on BSE SENSEX (**during recession period**)

To study the impact of FDI and FII on BSE Sensex during the recession period, FDI and FII are taken as independent variables and BSE Sensex as dependent variable. SPSS 16 has been used for Multiple linear regression analysis purpose. It is observed from the model Summary (Table 2) below the R square is .342 showing the relationship between Sensex (Dependent Variable) and FDI and FII (as Independent Variables). It indicates that 34.2% of the variation in Sensex is explained by the model. Though it is not very high but as it is above .25 we can proceed with the model.

The result of **Table 2** (Regression Analysis) is produced below:

Table 2:

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.585[a]	.342	.255	2854.161

a. Predictors: (Constant), foriegn institutional investor, foriegn direct investment

Table 3

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	8186.511	1965.716		4.165	.001		
	foriegn direct investment	.435	.159	.583	2.727	.016	.959	1.043
	foriegn institutional investor	-.102	.090	-.245	-1.144	.271	.959	1.043

a. Dependent Variable: Sensex

From the above Table 3 it can be observed from the co linearity statistics that VIF (Variance Inflation Factor) is below 2 for both the FDI and FII , therefore multicollinearity problem doesn‘t exist hence the regression analysis can be proceeded.

To test the significance of FDI it can be observed from the above table that t value of Foreign Direct Investment (FDI) is 2.727 which is beyond the range of -2 and + 2 . Also it can be observed that p value is .016. Since p value is less than .05, hence it can be concluded that FDI is a significant factor influencing the BSE Sensex.

To test the significance of FII it can be observed from the above table that t value of Foreign Institutional Investors (FII) is -1.144 which is within the range of -2 and +2 .Also it can be observed that p value is .271. Since p value > .05, hence it can concluded that FII is an insignificant factor influencing the BSE Sensex.

C. Impact of FDI and FII on NIFTY (**during recession period**)

To study the impact of FDI and FII on Nifty during the recession period, FDI and FII are taken as independent variables and Nifty as dependent variable. SPSS 16 has been used for linear regression analysis purpose. It is observed from the model Summary (**Table 4**) below the R square is .334 showing the relationship between Nifty (Dependent Variable) and FDI and FII (as Independent Variables). It indicates that 33.4% of the variation in Nifty is explained by the model. Though it is not very high but as it is above .25 we can proceed with the model.

Table 4

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.578[a]	.334	.245	826.400

a. Predictors: (Constant), foriegn institutional investor, foriegn direct investment

Table 5 :

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1	(Constant)	2547.855	569.158		4.477	.000		
	foriegn direct investment	.124	.046	.578	2.685	.017	.959	1.043
	foriegn institutional investor	-.028	.026	-.236	-1.095	.291	.959	1.043

a. Dependent Variable: Nifty

From the above Table 5 it can be observed from the co linearity statistics that VIF (Variance Inflation Factor) is below 2 for both the FDI and FII, therefore multi collinearity problem doesn't exist hence the regression analysis can be proceeded.

To test the significance of FDI it can be observed from the above table that t value of Foreign Direct Investment (FDI) is 2.685 which is beyond the range of -2 and + 2 . Also it can be observed that p value is .017. Since p value is less than .05, hence it can be concluded that FDI is a significant factor influencing the Nifty.

To test the significance of FII it can be observed from the above table that t value of Foreign Institutional Investors (FII) is -1.095 which is within the range of -2 and +2 .Also it can be observed that p value is .291. Since p value > .05, hence it can concluded that FII is an insignificant factor influencing the Nifty.

D. Correlation between FDI, FII, Sensex and Nifty (during Recession Period)

Correlation is basically used to study the statistical relationship between FDI, FII, Sensex and Nifty.

Correlation Matrix[a]
(TABLE 6)

		foriegn direct investment	Sensex	foriegn institutional investor	Nifty
Correlation	foriegn direct investment	1.000	.534	.202	.530
	Sensex	.534	1.000	-.127	.999
	foriegn institutional investor	.202	-.127	1.000	-.119
	Nifty	.530	.999	-.119	1.000

It can be observed from the above table that there is an existence of moderate positive correlation between Sensex and FDI (.534) and Nifty and FDI (.530) during the recession period. But there is a negative correlation between Sensex and FII (-.127) and Nifty and FII(-.119) during the recession. If we observe the correlation between the Sensex and Nifty it reflects a high positive correlation during the recession.

5.1 Testing of Hypothesis

We can observe from the above empirical study that FDI has been a significant factor influencing both Sensex and Nifty during the recession period but FII had been insignificant factor influencing both Sensex and Nifty during recession period. If we summarize the results of the paper and draw certain hypothesis and test such hypothesis.

The null hypothesis and alternative hypothesis of **Sensex and FDI** are as follows:

H_o=FDI Inflows in India and Sensex are independent during recession period.
$H_{1=}$FDI Inflows in India and Sensex are dependent during recession period.

The p value in Table 3 related to FDI Inflow is .016 which is less .05 so null hypothesis is not accepted and hence alternative hypothesis is accepted. Hence H_1 is accepted, thus **FDI Inflows in India and Sensex are dependent during recession period.**

The null hypothesis and alternative hypothesis of Nifty and FII are as follows:

H_o=FII Inflows in India and Nifty are independent during recession period.
$H_{1=}$FII Inflows in India and Nifty are dependent during recession period.

The p value in Table 3 related to FII Inflow is .271 which is greater than .05 so null hypotheses is accepted. Hence $H_{0\ is}$ accepted, thus **FII Inflows in India and Sensex are independent during recession period.**

The null hypothesis and alternative hypothesis of **Nifty and FDI** are as follows:

H_o=FDI Inflows in India and Nifty are independent during recession period.
$H_{1=}$FDI Inflows in India and Nifty are dependent during recession period.

The p value in Table 5 related to FDI Inflow is .017 which is less .05 so null hypothesis is not accepted and hence alternative hypothesis is accepted. Hence H_1 is accepted, thus **FDI Inflows in India and Nifty are dependent during recession period.**

The null hypothesis and alternative hypothesis of Nifty and FII are as follows:

H_o=FII Inflows in India and Nifty are independent during recession period.
$H_{1=}$FII Inflows in India and Nifty are dependent during recession period.

The p value in Table 5 related to FII Inflow is .291 which is greater than .05 so null hypothesis is accepted. Hence $H_{0\ is}$ accepted, thus **FII Inflows in India and Nifty are independent during recession period.**

Summary:

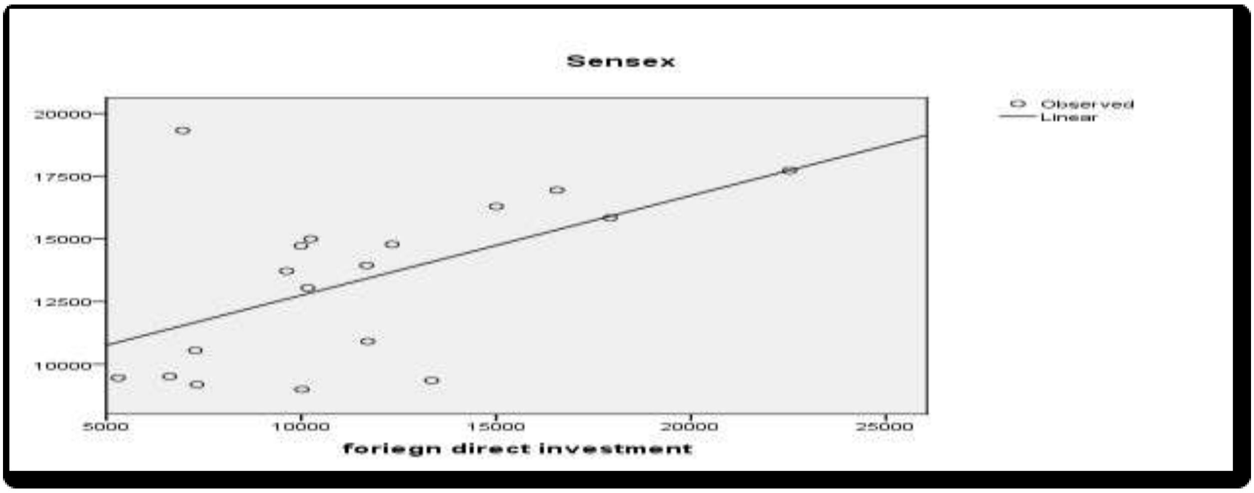
- **FDI Inflows (Equity) in India and Sensex are dependent during recession period.**
- **FII Inflows (Equity)in India and Sensex are independent during recession period.**
- **FDI Inflows(Equity) in India and Nifty are dependent during recession period.**
- **FII Inflows (Equity) in India and Nifty are independent during recession period.**

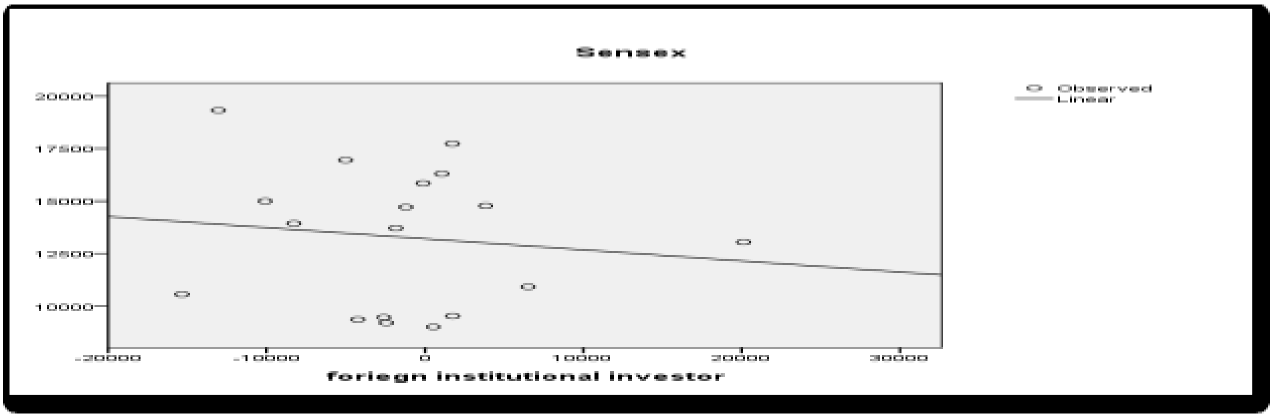
Table 9.
Investigating into the Beta Values:

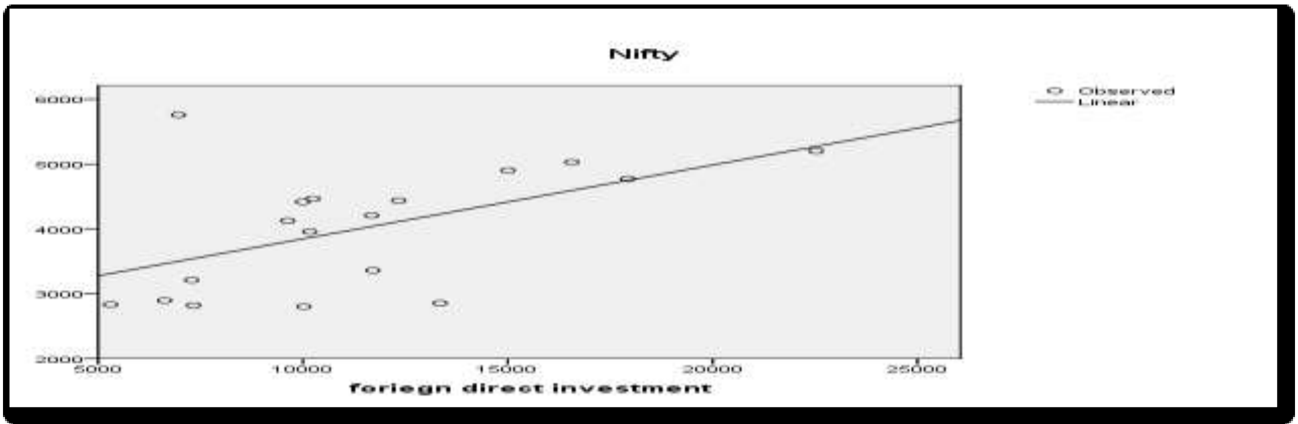
	Sensex (Beta Values)	Nifty(Beta Values)
FDI	.583	.578
FII	-.245	-.236

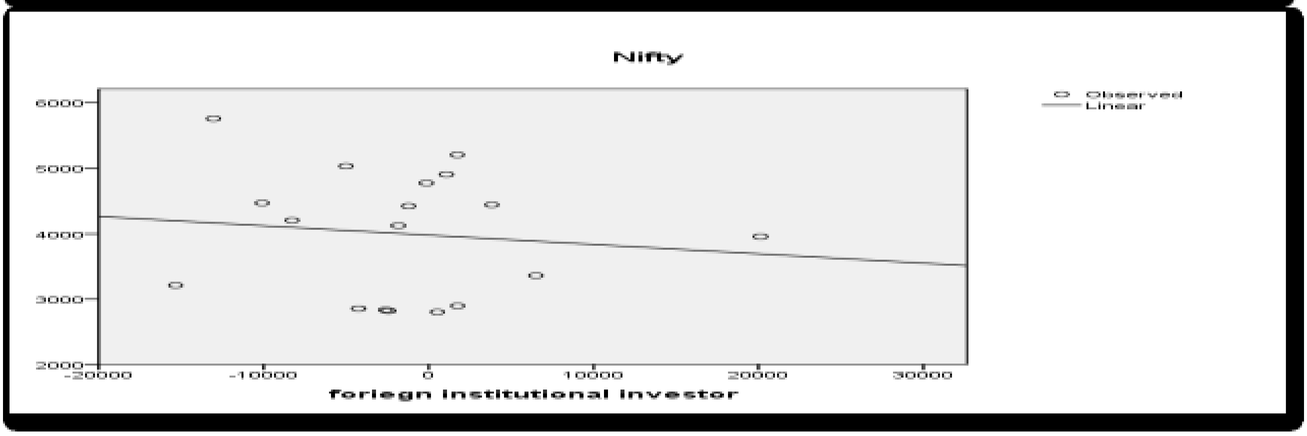
From the above table(Table 9), when we investigate into the beta values we find that FDI is positively influencing Sensex and Nifty while FII is negatively influencing both Sensex and Nifty during recession period.

The curve estimation also states the beta relationship between the Sensex and FDI, Sensex and FII, Nifty and FDI and Nifty and FII.


Sensex
Observed
Linear
foriegn direct investment


Sensex
Observed
Linear
foriegn institutional investor


Nifty
Observed
Linear
foriegn direct investment


Nifty
Observed
Linear
foriegn institutional investor

0 = the observed
----------= linear

If we look into the FII Inflow (in INR crores) during the financial years it can be observed from the following table:

Year	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13*
FII (Equity)	44122.7	48800.5	25236	53403.8	-47706	110220.6	110120.8	43737.6	130284

It can be observed that the FII Inflows in 2008-09 (recession period) is -47706 crores.

6. Conclusions

FDI is often preferred over FII as a major source of foreign investment. It is also seen from the study that during recession period FDI significantly influenced the stock market in India while FII was insignificant factor having impact on Indian Stock Market. Also because of the panic caused in the stock market due to recession FIIs took out huge amount of investment from Indian Stock Market. India has to pave the path and strategies accordingly so as to increase the FDI and FII Inflow in India. The gates for liberalization opened in the year 1991 when India opened up to outside world. A number of factors have resulted in red tapism and delay in FDI Inflow in the country. Among the various factors corruption is one of the major factors. The gap between what amount of FDI is approved and what actually flows in should be reduced to the maximum extent. This can be done by having control over issues like procedural delay, inflation and corruption among other factors.

But today the condition is looking much brighter. India has come out of recession and the crisis in European debt market also seems to be over. FDI Inflow may have been affected by such factors in India but as the scenario is much better, India should try to capitalize and try to attract FDI in India by liberalizing the policy. At the ―Focus India Show‖ in Chicago Indian Commerce and Industry Minister Mr. Kamal Nath told the US investors that India has emerged as the ―Best Destination‖ for FDI and joint ventures. He also described India economy as ―India: The Fastest Growing Free Market Democracy‖.

India has to fully unravel its FDI potential. Being a country whose capital market is one of the strongest which is booming coupled with strong foreign exchange reserve and having positive annual growth, Indian economy is witnessing a high trajectory growth
These reasons may be ample for attracting strong FDI and FIIInflow in India and Indian government should take all possible measures so as to attract FDI and FII Inflow .

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