

# A Comparative Study of FIIs and DIIs Investment in Indian Capital Market: An Empirical Analysis

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## ABSTRACT

The Indian stock market is visited by two major players- Foreign Institutional Investors (FIIs) and Domestic Institutional Investors (DIIs). This research paper lays down the analytical framework for comparing the nature, growth and function of the two actors. It utilizes a framework for empirically testing the impact of each participant on the stock market performance. This study examined the impact of institutional investment flow and stock returns using monthly data over the period of 2007 to 2018. Various econometric tools have been applied to prove the causal relationship between Foreign Institutional Investors and Domestic Institutional Investor flows on Sensex return. The Auto Regressive Distributed Lag (ARDL) model shows that DIIs and FIIs have positive statistically significant influence on Sensex return. Overall, it was found that the institutional investment collectively impacted the stock market return.

**Keywords:** FIIs, DIIs, Sensex return, ARDL

### Introduction

Capital market is the market relating to long term funds, unlike money market, which is a market for short term fund. Capital market is segregated in to two parts industrial securities market and Gilt edged securities. In industrial securities market has two segments. These segments are primary market and secondary market. Capital market is a market where financial assets are traded. Different types of financial instruments that are traded in the capital market are equity market instruments, credit market instruments, derivative instruments, insurance instruments etc. Money collected from capital market is generally used by companies or corporates to modernise the plant, machinery, building for extending business and for setting up new business units. The supply of funds in the capital market comes from institutions like foreign companies, commercial banks, financial institutions, mutual funds, pension funds etc. It is the movement of funds from saving to business house.

Capital market plays an extremely important role in promoting and sustaining the growth of an economy. It is an important and efficient conduit to channel and mobilize funds to enterprise, both private and government. It plays a crucial role in mobilizing saving for investment in productive assets with a view to enhancing a country's long term growth prospects and thus acts as a major catalyst in transforming the economy into more efficient, innovative and competitive market place with the global arena. It provide an efficient source of investment in the economy. The reforms process was initiated with the establishment of Securities and Exchange Broad of India (SEBI). The SEBI Act 1992, describes to protect the investors and regulate securities market. Various laws have been passed from time to time, to promote and healthy growth of securities market in India. SEBI was established on 12 April 1988 to promote orderly and healthy growth of capital market in India. A well-developed capital market reflect the economic conditions and development of an economy.

India has seen major financial sector reforms in 1991 and the result of which are the huge investments made by Foreign Institutional Investors in Indian stock market. But, more importantly the Domestic Institutional Investors who on the parallel side basically channelize the domestic savings into the financial market. Capital

market in India is controlled by institutional investors in India. Institutional investors are organizations (such as banks, insurance companies, mutual fund institutions and so on) which pool large sums of money and invest it in capital market. There are two types of institutional investors viz. FIIs and DIIs. FIIs refers to outside companies investing in the financial markets of India. Foreign Institutional Investors who is registered under SEBI regulation 1995. FIIs in India are regulate by SEBI. India has changed its foreign investors law to allow FIIs own up to 100 percent of Indian companies in certain industries. It act as a catalyst for overall development of stock market performance in India. This has become the main channel in of foreign investment in capital market. Domestic Institution Investors (DIIs) refers to Indian institutional investors who are investing in the financial market of India. DIIs is a term which refer to Indian mutual fund companies, life insurance companies and bank. Traditional Indian capital market was dependent by FIIs. FIIs have consistently dominated the Indian capital market and its raise and fall is directly related to the performance of Indian capital market. In order to attract the institutional investors, RBI and SEBI simplified the norms and regulations related to capital market investment in India.

### Review of Literature

FIIs have significant role in India capital market. First review part we discussed on the major contribution of FIIs in India capital market, understand the behavioural investment pattern of FIIs and to examine the volatility of indices due to FIIs. According to (Lalitha, 1992) attracting Foreign Capital appears to be the main reason for opening up of the stock markets for FIIs. Now FIIs have become the largest and dominant investor in Indian capital market. Shrikanth and Kishore (2012) examine the cause and effect relationship of FIIs investment and capital market development in India. The main finding of the study is that FIIs investment flows have positive impact on Indian capital market. These flows supplement and augment domestic saving and investment without increasing the foreign debt of the country. On the basis of regression analysis FIIs flows leads to increases stock price, lower cost of equity capital and encourage the investment by Indian firms. Bose and Coondoo (2004) examined the new policy framework related to FIIs investment on Indian stock market. Indian Government initiated new policy reforms of FIIs investment to attract foreign capital to the Indian economy. FIIs does not provide the investor with direct ownership of financial assets. The individual and aggregate investment limit for FPIs shall be below 10 % or 24 % respectively of total paid up capital. Prasanna (2008) discussed role of FIIs in Indian Capital market and examined the contribution of Foreign Institutional Investment particularly among companies included in sensitivity index (Sensex) of Bombay Stock Exchange. As FIIs purchase and sell the stocks there is a high degree of volatility in the sensitivity index. The increases in investment by FIIs leads to increase in stock price and encourage further investment. If FIIs investment sudden withdrawal leads to stock price decline and market crash.

Mukherjee (2002) examined the determinants of FIIs in an economy is determined by host country's macro-economic variable which include stock price, interest yield, economic growth, political stability etc. However the impact of these factors is not absolute. A lot of external events also have considerable influence on these investment flows. Mohanasundaram (2015) used Correlation and Autoregressive Distribution Lag revealed that FIIs flows are positive long run relationship with Exchange Rate, Producer Price Index of USA, Return on S&P 500, Return on Nifty and market capitalization of NSE. But FIIs have a negative relationship with wholesale price Index of India. The error correct term is significant and negatively signed that indicate there is a long run relationship between FIIs and macro-economic variables in India. Loomba (2012) attempted to examine the trend and volatility of FIIs investment on Indian capital market. There is a high degree of volatility in FIIs investment in Indian capital market. That leads to increase in stock price or stock index and encourage further investment.

Samal (1997) has examined that FIIs investment contribute for increase in forex reserves and that leads to stimulate growth and development of host economy. He reported that FIIs investment activity influence the

market movement during bear and bull market. In short when FIIs investment and stock return go hand in hand. Sivakumar (2003) has analysed the trend and growth of FIIs investment flows during the post liberalization period. He also analysed the various macro-economic variables affecting the performance of FIIs flows in India using regression analysis. He conclude that India was the most favourable equity market for global investors. Gordon and Gupta (2003) examined the impact of FIIs on BSE Sensex return. On the basis of statistical analysis they observed that FIIs have positive impact on stock market (BSE return). Ravi (2011) analysed that the movement in Indian stock market can be explained by FIIs in India. A change in government policy, a major event in the world economy, and similar disturbance have the potential to re-route the FIIs flows of an economy even when all macro-economic variables are satisfactory.

The second part of review discussed the role of Domestic Institutional Investors on Indian capital market. Ajay (2008) analysed the preferences of FIIs and DIIs in Indian stock market. FIIs are not only active players in Indian capital market. DIIs was very prominent role in capital market of India. He also examine the shareholding patterns of FIIs and DIIs in an emerging market economy like India. Kumar (2005) examined the role of Foreign Institutional investors and the Indian mutual funds investors on Indian stock market. Both players have significant impact on the performance of capital market of India. Bose (2012) analyse that the effect of stock market returns can be dominated by the effect of FIIs investments compared to mutual fund investment. He identified that there is no causal relationship between domestic mutual fund flows and stock market return.

### **Problem Formulation**

Two branches of institutional investment in Indian capital market came from two major players of Institutional Investors. One is Domestic Institutional Investors and other is Foreign Institutional Investors. Investment made by FIIs and DIIs have consider as the key factors in determining the return of Indian capital market. There are many studies on Foreign Institutional Investors but only few work concentrate the role of Domestic Institutional Investors on the impact of capital market in India. As the review of literature reveals that Indian capital market is more dependent on FIIs investment. Though DIIs are on a selling streak, the FIIs have to neutralize the market with continuous buying activities. This contribution helps to rising the performance of stock market indices. This empirical research work is made to understand the FIIs and DIIs impact on the Indian capital market. The research problem is that FIIs or DIIs are really drive the Indian capital market. This study also analyse the which institutional investor (FIIs or DIIs) act dominant position in Indian capital market. Therefore this study is to analyse the contribution of Foreign Institutional Investors (FIIs) and Domestic Institutional Investors (DIIs) on the capital market performance of India.

### **Significance of the Study**

Stock market is one of the most important sources for companies to raise money. FIIs and DIIs have a significant function in the movement of the Stock market. These institutional investor's buying and selling have deep influencing on domestic stock market movement. These capital flows have strong impact on the volatility of stock indices. There are number of factors which influence the investment by institutional investment in India. Among these equity return has the significant impact of FIIs and DIIs investment in India. Institutional investors can purchase the stocks, when the prices are decline and sell when the asset prices are increasing. This study mainly focused on which institutional investment is more benefited to the performance of indices in India.

### **Objective of the Study**

- To study the growth and trend of Foreign Institutional Investors and Domestic Institutional Investors on Indian capital market.

- To examine the impact of Foreign Institutional Investors and Domestic Institutional Investors on Indian capital market.

**Data Collection**

The study is mainly based on secondary data from 2007 to 2018. The capital flows regarding monthly investment by Foreign Institutional Investors (FIIs) and Domestic Institutional Investors (DIIs) in India have been collected from SEBI. Sensex return (BSE Return) can be collected from the official website of BSE.

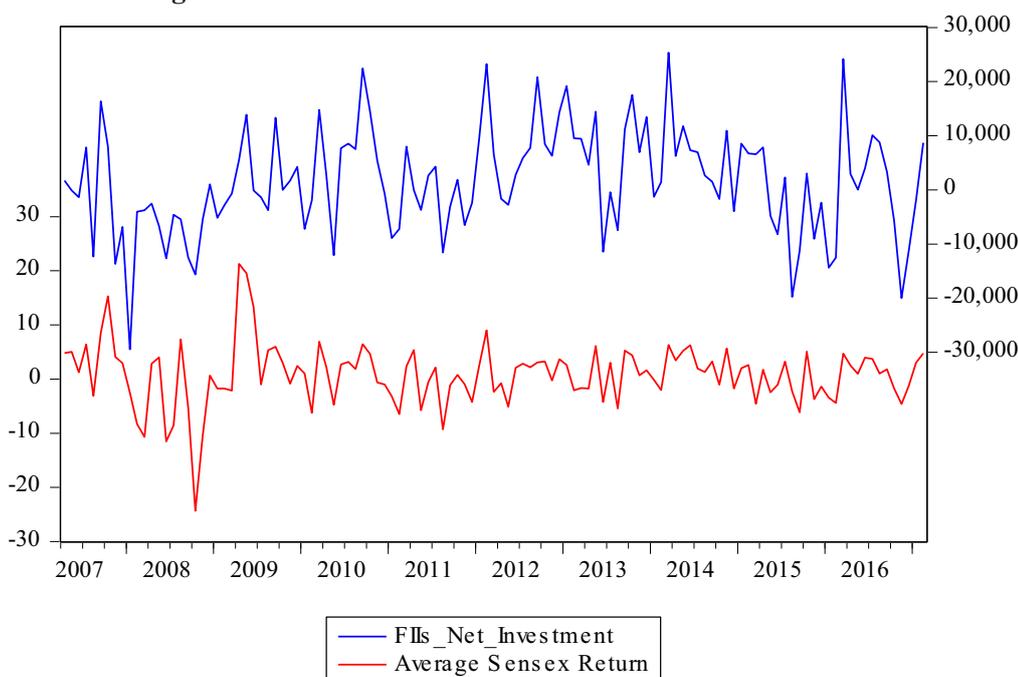
**Data Analysis**

Correlation analysis can be used for identifying the relationship of FIIs and DIIs investment on Sensex return. The exact Impact of FIIs and DIIs investment on capital market return can be analysed with the assistance of Auto Regressive Distributed Lag (ARDL) model for examine the short run and long run equilibrium. In ARDL model, where the dependent variable is a part of its own past lagged values as easily as current and past values of other explanatory variables. The purpose of this study is to analyse the contribution of Foreign Institutional Investors (FIIs) and Domestic Institutional Investors (DIIs) in the Indian stock market. Variance Decomposition has also been used to give more strength to the results.

**Foreign Institutional Investment in India**

Foreign Institutional Investors are funds or investment firms that are from outside the country in which they are investing. In the context of the stock market, the FIIs may include Foreign Mutual Funds, Pension Funds, Insurance Companies, Hedge Funds, etc. FIIs play an important role in the capital market because of their heavy investment capacity. They are generally cash rich and look for good avenues to put their money. They bring a lot of advantages in the capital market. FIIs pump in a huge money in a company share, thereby increasing the valuation of the company and increasing the demand for the company share. More the FIIs invest in a particular company share, a positive sentiment prevails in the market on the share, thereby increasing the demand. However, if there is a huge involvement from FIIs from any of the countries where the political environment or the economic environment is not stable or if there is a major shift, it will have a big chain effect on the share in which the FIIs has invested.

**Figure 1: Investment Behaviour of FIIs and Sensex Return**



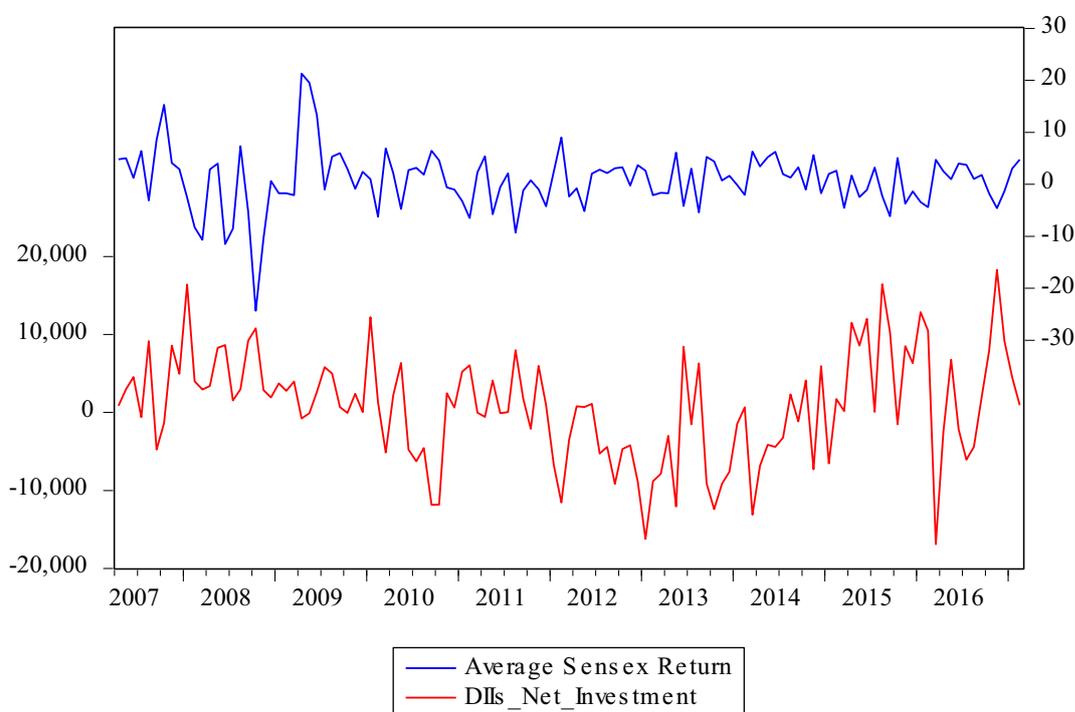
Source: Compiled from Handbook of Statistics of Indian Economy

The diversity of Foreign Investment has been increasing with the number of registered FIIs in India steadily rising over the long time. The monthly average flow of FIIs during the total period is Rs. 1549 Crores. FIIs has withdrawn the highest amount Rs. -29447 crores and highest investment in Rs.25376 Crores during the entire period. Looking out Figure 1 shows how much money FIIs pumped into Indian capital market and how much the Sensex return move during the period. This indicate that FIIs net investment influence Sensex movement and the correlation between FIIs investment and Sensex return is positive. If FIIs net investment there is a possibility of greater return in Sensex index.

**Domestic Institutional Investment in India**

Domestic Institutional Investors refers to the Indian institutional investors who are investing in the Indian capital market. The Figure 2 shows that DIIs have withdrawn the highest amount Rs. -16891 Crores and highest investment in Rs.18277 Crores .The average flows of DIIs during the entire period is Rs.709 Crores. There is a negative correlation coefficient between net DIIs investment and Sensex return. The result is not expected and certainly surprising.

**Figure 2: Investment Behaviour of DIIs and Sensex Return**



Source: Compiled from Handbook of Statistics of Indian Economy

**Unit Root Test**

Unit root test is mainly used for determining the stationarity properties of the data. Most of economic data are having unit root (non stationary) and this result as the problem of spurious regression. To avoid this problem the study does a test for stationarity for the time series data using the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) test statistic. As can be seen from Table 1, Foreign Institutional Investors investment (FIIs), Avg Sensex return (ASR) are integrated at level and Domestic Institutional Investors (DIIs) investment is integrated at level one.

**Table 1: ADF Unit Root Tests Results**

Series	Order of Integration
ASR	I(0)
FIIs	I(0)
DIIs	I(1)

**ARDL Model**

The Autoregressive Distributed Lag (ARDL) is a technique that allows simultaneously estimate the short-run and long-run coefficients of Sensex return (BSE return) in India. In this model dependent variable is always affected by number of explanatory variables in the current period as well as in the earlier period. That means all explanatory variables are cumulative effect upon the dependent variable. Here Sensex return is the dependent variable. Foreign Institutional Investment and Domestic Institution Investment are independent variables of the model.

**Table 2: Impact of FIIs and DIIs on Stock Market Return (ARDL Model)**

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
ASR(-1)	0.402113	0.087187	4.612064	0.0000
ASR(-2)	-0.175986	0.078282	-2.248118	0.0266
ASR(-3)	0.137272	0.073740	1.861567	0.0654
FIIs	0.000456	9.55E-05	4.773753	0.0000
DIIs	0.000146	0.000140	1.047141	0.2974
DIIs(-1)	0.000153	7.41E-05	2.063491	0.0414
C	-0.454759	0.466677	-0.974462	0.3320
R-squared	0.478822	Mean dependent var		0.759828
Adjusted R-squared	0.450134	S.D. dependent var		5.785859
S.E. of regression	4.290387	Akaike info criterion		5.809078
Sum squared resid	2006.409	Schwarz criterion		5.975243
Log likelihood	-329.9265	Hannan-Quinn criter.		5.876532
F-statistic	16.69028	Durbin-Watson stat		2.167822
Prob(F-statistic)	0.000000			

\*Note: p-values and any subsequent tests do not account for model selection.

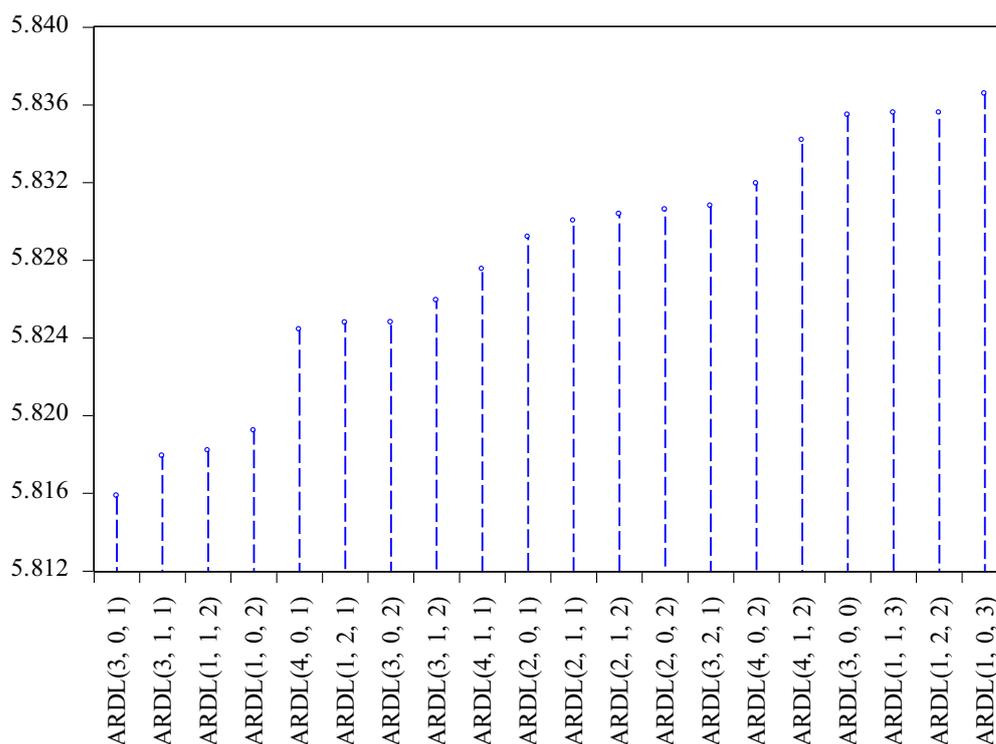
Table 2 shows that R- square value is 47 percentage. This indicate that FIIs and DIIs (independent variables) explained by 47 percent variation or influence to Sensex return (dependent variable). The probability value of F –Statistic value less than 0.05. Thus all variables are influencing the performance of stock market in India.

**Optimum Lag Length Criteria**

Akaike Information Criterion (AIC) is used for determine the optimum lag length of the model. That means how lags should be used for a particular model. The result shows the 20 best model with lowest AIC values. As seen in Figure, the lowest AIC value shows that the optimal lag length is ARDL (3, 0 and 1). It signifies that the dependent variable has 3 lags, and the independent variables have 0 and 1 lags. The lower the AIC, the better the model.

Figure 3: Akaike Information Criterion (AIC)

Akaike Information Criteria (top 20 models)



**Heteroskedasticity Test**

The Breush-Pagan test is the most efficient test for determine the heteroskedasticity. This test indicate that its P value is greater than 0.05 (refer Table 3). Therefore there is no problem of Heteroskedasticity.

Table 3: Heteroskedasticity Test: Breusch-Pagan-Godfrey

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.806202	Prob. F(6,109)	0.5672
Obs*R-squared	4.929116	Prob. Chi-Square(6)	0.5529
Scaled explained SS	13.81983	Prob. Chi-Square(6)	0.0317

Table 4: Breusch-Godfrey Serial Correlation LM Test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.924546	Prob. F(2,107)	0.1510
Obs*R-squared	4.027950	Prob. Chi-Square(2)	0.1335

The serial correlation is tested by B.G LM test and F-Statistic probability value is greater than 0.05. Therefore there is no auto correlation. The serial correlation test results for this model (refer Table 4) probability value is greater than 0.05. Therefore there is no problem of serial correlation.

**ARDL Bound Test**

After determining the order of integration of all the variables and lag length selection the next step is to investigate the co-integration or long run relationship among the variables of the model. If the calculated F-statistics turns out to be higher than the upper-bound critical value at the 5 percent level. This suggests that

there is a co-integrating relationship among the variables included in the model. If the F-statistic value for the Bounds Test is 10.23, (refer Table 5), which is greater than the critical value of the upper bounds at 5 percentage level of significance. Consequently, this test strongly reject the assumption of 'No Long-Run Relationship'. Thus all variables are co-integrated or long run relationship among variables.

**Table 5: ARDL Bound Test**

Null Hypothesis: No long-run relationships exist		
Test Statistic	Value	k
F-statistic	10.23649	2

Critical Value Bounds		
Significance	I(0) Bound	I(1) Bound
10%	3.17	4.14
5%	3.79	4.85
2.5%	4.41	5.52
1%	5.15	6.36

**Table 6: ARDL Cointegrating And Long Run Form**

Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(ASR(-1))	0.038714	0.088107	0.439393	0.6612
D(ASR(-2))	-0.137272	0.073740	-1.861567	0.0654
D(FIIs)	0.000456	0.000095	4.773753	0.0000
D(DIIs)	0.000146	0.000140	1.047141	0.2974
CointEq(-1)	-0.636601	0.108928	-5.844258	0.0000

$$\text{Cointeq} = \text{AVERAGE\_SENSEX\_RETURN} - (0.0007 * \text{FIIS\_NET\_INVESTMENT} + 0.0005 * \text{DIIS\_NET\_INVESTMENT} - 0.7144)$$
  

Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
FIIs	0.000716	0.000178	4.013650	0.0001
DIIs	0.000470	0.000230	2.042279	0.0435
C	-0.714355	0.757871	-0.942581	0.3480

The next step is to estimate the long- and short-run estimates of ARDL model. The estimated long run and short run coefficients are described in the Table 6. The coefficient of the Error Correction Term (-0.64) is negative and significant meaning that there is a long run causality running from independent variables to dependent variable. The coefficient of Error Correction Term is highly significant with expected sign which confirm the result of bound test for co-integration. The system corrects its previous period disequilibrium at a

speed of 64 % monthly. Moreover, the coefficient of the Error Correction Term implies that the divergence from long run equilibrium level of (dependent variable) of the current period is adjusted by 64 percent in the next period to bring back balance. In long run FIIs and DIIs are significant influencing the performance of Indian capital market. In summation Foreign Institutional Investors and Domestic Institutional Investors helps in the development of financial market and overall development of the economy. Though the share of FIIs and DIIs determine the health of any capital market, but still the investment pattern differs both FIIs and DIIs, depending upon the nature of the industry.

#### Variance Decomposition Analysis (VAR)

The variance decomposition analysis helps to estimate the proportion of average Sensex return variance is affected by institutional investors like FIIs and DIIs in long run. Table 7 indicate that variance decomposition result of the dependent variable of average Sensex return for the period of ten months' time horizon. The empirical evidence indicate that 97.39 % of Sensex return change is contributed by its own innovative shocks. The remaining 3 % changes are explained by institutional investors like FIIs and DIIs.

**Table 7: Variance decomposition of Avg. stock return**

Period	S.E.	ASR	FIIs	DIIs
1	5.522092	100.0000	0.000000	0.000000
2	5.914827	97.55171	2.136001	0.312287
3	5.919503	97.39805	2.241015	0.360932
4	5.920113	97.39470	2.243775	0.361526
5	5.920164	97.39323	2.245132	0.361642
6	5.920180	97.39275	2.245486	0.361760
7	5.920187	97.39255	2.245628	0.361821
8	5.920191	97.39243	2.245647	0.361925
9	5.920192	97.39237	2.245652	0.361974
10	5.920193	97.39234	2.245652	0.362009

#### Conclusion

The Foreign Institutional Investment and Domestic Institutional Investment have become an important part for strengthening and improving the functioning of the domestic capital market in India. FIIs and DIIs pumped huge amount of money in to the domestic equity market over the years. The average monthly flow of FIIs and DIIs during the entire period is Rs.1549 Crores and Rs.709 Crores respectively. These capital flows contribute increase stock price, lower cost of equity Capital and encourage the investment by Indian firms. The fund flows from both Domestic Institutional Investments and Foreign Institutional Investments have direct impact of Indian stock market. In short FIIs and DIIs are prominent role in the development of financial system and overall development of the economy. Both flows have been considered as a key factor in determining potential return in Indian equities. Thus India has the potential for attracting more funds into the economy of the internal and external sectors and thus leads to major effects on the movement of FIIs and DIIs. Because it has been proved that the FIIs movement affects stock market indices thus affecting the DIIs movement also.

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