

## Econometric analysis of Foreign Institutional Investors NSE and BSE

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### Abstract

This paper is attempt to study the relationship between Dependent variables (BSE and FII) and Independent Variable (NSE). In this paper the author attempt to explain the behavior of BSE and FII with reference to NSE. Bombay stock exchange is one of the oldest stock exchanges. The National Stock Exchange (NSE) is stock exchange located at Mumbai, India. It is the largest in India by daily turnover and number of trades, for both equities and derivative trading. The study was done by taking two year Day wise data of BSE, NSE and FII was collected for a period of two years i.e. from 01 October 2011 to 01 October 2013. Regression analysis was performed with the help of E views and it was observed that the data are not serially correlated and it was Homoscedastic. The results showed that NSE is regressed with BSE and FII. FII and BSE do have a joint significant impact on NSE.

### Keywords:

FII, Stock exchanges, Regression, BSE, NSE

### Introduction

This study relies to seek out reciprocity of FII with Bombay stock market and National stock market. In this paper the authors are presenting the Interdependency between BSE and NSE. 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. Foreign Institutional capitalist (FII) means that an establishment established or incorporated outside India that proposes to form investment in securities in India. they're registered as FIIs in accordance with Section two (f) of the SEBI (FII) rules 1995. FIIs are allowed to purchase new securities or exchange already issued securities. The BSE SENSEX (Bombay Stock Exchange Sensitive Index), also called the BSE 30 (BOMBAY STOCK EXCHANGE) or simply the SENSEX, is a free-float market capitalization-weighted stock market index of 30 well-established and financially sound companies listed on Bombay Stock Exchange (BSE). BSE the 30 component companies which are some of the largest and most actively traded stocks, are representative of various industrial sectors of the Indian economy. From 1986 BSE is treated as the pulse of Indian stock market. NSE(National Stock Exchange) is mutually owned by a set of leading financial institutions, banks, insurance companies and other financial intermediaries in India but its ownership and management operate as separate entities. The National exchange (NSE) is exchange placed at Bombay, India. The exchange was established in 1992 and has grown up to be the country's largest securities exchange NSE is additionally referred to as the NSE. The

movement of NSE is determined by the 50 companies listed in NSE. An index of fifty major stocks weighted by capitalization.

### Literature Review

**Chittedi (2008)** studied the behavior of Sensex vs. FIIs in Indian stock market and some of the most talked about movements of Sensex starting with the secondary market summary of each year.

**Kulwantraj N. Bindu (2004)** With the assistance of monthly information they discerned that FII inflow depends on exchange returns, inflation rates (both domestic and foreign). In terms of magnitude, the impact of exchange returns and therefore the ex-ante risk clothed to be the main determinants of FII inflow. The study has not found any anorectic link running from FII influx to stock returns.

**Pal, P. (2004)** found that FIIs are major players within the Indian exchange and their impact on the domestic market is increasing. commerce activities of FIIs and therefore the domestic exchange turnover indicates that FII's are getting additional necessary at the margin as Associate in Nursing more and more higher share of exchange turnover is accounted for by FII trading in India

**Rai and Bhanumurthy (2003)** They studied the determinants of foreign institutional investment in Asian nation throughout the amount 1994-2002. They found, exploitation monthly knowledge that the equity returns is that the main drive for FII investment and is critical in the slightest degree levels. They additional studied the impact of stories on FII flows and located that the FIIs react additional (sell heavily) to unhealthy news than to excellent news.

**Gordon and Gupta (2003)** have documented that lagged domestic stock market returns are an important determinant of FII flows.

**Prasuna (1999)** also studied the determinants of FI investments in India using monthly data from Jan 1993 to March 1998. He found that lagged FII investment is significant at 1% level.

**Bekaert and Harvey (1998)** the stock exchange shows a lot of reaction to foreign investment because the economy liberalizes. This acts as destabilizing because the sales by FII s lead the stock market to fall further and their buys increase the stock market

**Agarwal (1997)** based on the correlation of returns during the period 1987-1996 found that emerging markets exhibit a high correlation with one another except for some of the South-East Asian economies, where the overall correlation between the emerging market is low.

### Objective:

The primary objective of this paper is to study causality among Foreign Institutional Investment and Bombay stock exchange and National stock exchange.

### Methodology

#### The Study

This study relies to seek out reciprocity of FII with Bombay stock market and National stock market. In this paper the authors are presenting the Interdependency between BSE and NSE. Foreign Institutional capitalist (FII) means that an establishment established or incorporated outside India that proposes to form investment in securities in India. they're registered as FIIs in

accordance with Section two (f) of the SEBI (FII) rules 1995. FIIs are allowed to purchase new securities or exchange already issued securities. BSE the 30 component companies which are some of the largest and most actively traded stocks, are representative of various industrial sectors of the Indian economy. From 1986 BSE is treated as the pulse of Indian stock market. The National exchange (NSE) is exchange placed at Bombay, India. The exchange was established in 1992 and has grown up to be the country's largest securities exchange NSE is additionally referred to as the NSE (National exchange Fifty), An index of fifty major stocks weighted by capitalization.

### Data Collection

The study was done by taking two year Day wise data of BSE, NSE and FII was collected for a period of two years i.e. from 01 October 2011 to 01 October 2013.

### Data Analysis

The analysis was done on E views software. The Regression analysis was performed to find out the relationship among the variables.

### Hypotheses

Ho1: Foreign Institutional Investment does affect National Stock Exchange

Ho2: Bombay Stock Exchange does affect National Stock Exchange

Ho3: Independent Variables jointly do affect the dependent variables

Ho4: Residuals are not Auto correlated

Ho5: Variance of Residuals is Homoscedastic

Ho6: Residuals follow normal distribution

Ho7: Dependent variable is stable

### Result and Findings

**Ho1:** Foreign Institutional Investment does affect National Stock Exchange

**Hypothesis is accepted.** Thus FII does have significant impact on NSE. The table no 1 shows that the FII does affect NSE. The Probability value of FII is 3.31 percent. It is below 5 percent in order to make a significant impact on NSE.

**Ho2:** Bombay Stock Exchange does affect National Stock Exchange

**Hypothesis is accepted.** Thus BSE does have significant impact on NSE. The table no 1 shows that the BSE does affect NSE. The Probability value of NSE is 0 percent. It is below 5 percent in order to make a significant difference on NSE.

Ho3: Independent Variables jointly do affect the dependent variables

**Hypothesis is accepted.** Thus FII and BSE do have a joint significant impact on NSE. The Probability value of F Statistic is 0 percent. It is below 5 percent in order to make a significant difference on NSE.

**Table No 1**

Dependent Variable: D(NSE)  
 Method: Least Squares  
 Included observations: 500 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.181966	0.225335	-0.807535	0.4197
FII	0.000252	0.000260	0.968749	0.0331
D(BSE)	0.304152	0.001149	264.7019	0.0000
R-squared	0.992972	Mean dependent var		-0.927300
Adjusted R-squared	0.992944	S.D. dependent var		57.40601
S.E. of regression	4.822104	Akaike info criterion		5.990280
Sum squared resid	11556.59	Schwarz criterion		6.015567
Log likelihood	1494.570	F-statistic		35111.49
Durbin-Watson stat	2.141218	Probability(F-statistic)		0.0

**It can also be seen that the value of R square is more than 60 percent. Here in this case it is 99 percent. It shows that the model is fit for regression equation.**

**Ho4:** Residuals are not Auto correlated

**Hypothesis accepted.** The test value in table no 2 shows an observed R squared probability of 20 percent, which shows that Residuals are not Auto Correlated. This is good symptom for the model.

**Table no 2**

Serial Correlation LM Test:

F-statistic	1.588135	Probability	0.205346
Obs*R-squared	3.187897	Probability	0.203122

Test Equation:  
 Dependent Variable: RESID  
 Method: Least Squares

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.011816	0.225177	0.052476	0.9582
FII	-4.68E-05	0.000261	-0.179384	0.8577
D(BSE)	6.64E-05	0.001150	0.057749	0.9540
RESID(-1)	0.075524	0.045124	-1.673698	0.0948
RESID(-2)	0.033256	0.045085	-0.737619	0.4611
R-squared	0.006376	Mean dependent var		-3.86E-16
Adjusted R-squared	0.001653	S.D. dependent var		4.812431
S.E. of regression	4.816408	Akaike info criterion		5.991884
Sum squared resid	11482.90	Schwarz criterion		6.034030
Log likelihood	1492.971	F-statistic		0.794067
Durbin-Watson stat	1.993055	Prob(F-statistic)		0.529383

**Ho5:** Variance of Residuals in Homoscedastic

**Hypothesis is accepted.** The White Heteroskedasticity Test in table no 3 shows that observed R squared statistics probability is 41.7

**Table no 3**  
White Heteroskedasticity Test:

F-statistic	0.975951	Probability	0.420217
Obs*R-squared	3.912382	Probability	0.417994

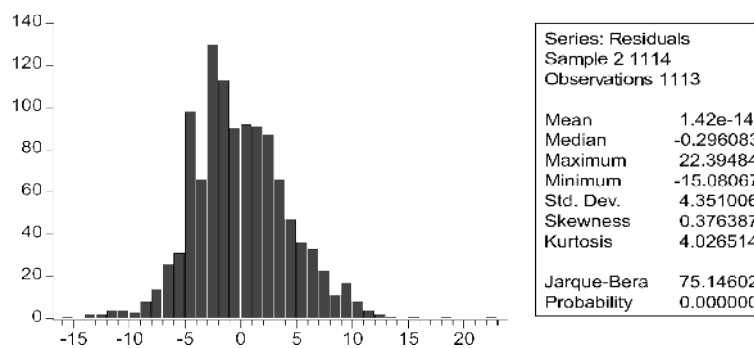
Test Equation:  
Dependent Variable: RESID^2  
Method: Least Squares  
Sample (adjusted): 2 501  
Included observations: 500 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	20.60318	2.281113	9.032075	0.0000
FII	0.004125	0.003020	1.365809	0.1726
FII^2	-2.26E-07	6.21E-07	-0.364006	0.7160
D(BSE)	0.003433	0.009863	0.348075	0.7279
(D(BSE))^2	4.69E-05	3.41E-05	1.373777	0.1701
R-squared	0.007825	Mean dependent var		23.11317
Adjusted R-squared	0.000193	S.D. dependent var		40.56487
S.E. of regression	40.56878	Akaike info criterion		10.25382
Sum squared resid	814683.9	Schwarz criterion		10.29597
Log likelihood	2558.456	F-statistic		0.975951
Durbin-Watson stat	1.909017	Prob(F-statistic)		0.420217

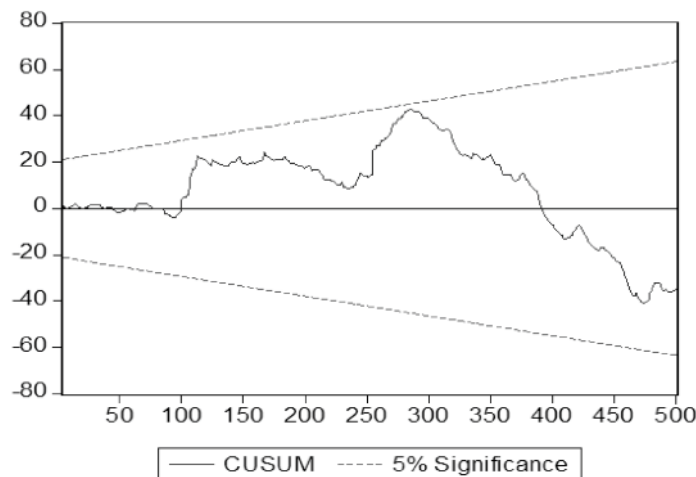
**Ho6:** Residuals follow normal distribution

**Hypothesis is not accepted.** Jarque Bera statistics that residuals do not follow normal distribution. The probability statistic in this case is

Graph 1

**Ho7:** Dependent variable is stable

**Hypothesis is accepted.** CUSUM Test indicates that blue line is between the both red lines hence dependent variable is stable.



**Conclusion**

This study identifies the factors affecting the National stock exchanges. The study was done by taking two year Day wise data of BSE, NSE and FII was collected for a period of two years i.e. from 01 October 2011 to 01 October 2013. In this paper the results showed that NSE is regressed by BSE and FII. The combination of BSE and FII are also regresses NSE. In this paper the results showed that residuals are not Auto Correlated. **These results are in conformity with the results generated by Chittedi, Krishna Reddy (2008).**

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