"Foreign Investments and Indian Stock Market- Cause and Effect"

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Abstract: *This research paper studied the impact of foreign investments on Indian stock market. For achieving such objective, the monthly data have been collected for BSE Sensex and Foreign Equity Investments during year 2011 to 2016. For data analysis and interpretation, various statistical tools have been used such as Phillips-Perron (PP) Test, Granger Causality Test, Johansen Co-integration Test and Vector Error Correction Model. To conclude, foreign investments do not cause the movement of Indian stock market but the Indian stock market causes foreign investments. Further, there is no long run causality from Indian stock market to foreign investments.*

Keywords: *BSE Sensex, Foreign Institutional Investments, Granger Causality test, Vector Error Correction Model*

I. Introduction

A stock market can be defined as "The market for long-term funds where securities such as common stock, preferred stock, and bonds are traded". Stock Market is a market where the trading of company stock, both listed securities and unlisted takes place. It is an organized marketplace, either corporation or mutual organization, where members of the organization gather to trade company stocks or other securities.

The Indian Securities Contracts (Regulation) Act of 1956, defines Stock Market as,

"An association, organization or body of individuals, whether incorporated or not, established for the purpose of assisting, regulating and controlling business in buying, selling and dealing in securities."

Bombay Stock Exchange (BSE)

It was established in 1875, BSE (formerly known as Bombay Stock Exchange Ltd.), is Asia's first & the Fastest Stock Exchange in world with the speed of 6 micro seconds and one of India's leading exchange groups. Over the past 140 years, BSE has facilitated the growth of the Indian corporate sector by providing it an efficient capital-raising platform. Popularly known as BSE, the bourse was established as "The Native Share & Stock Brokers' Association" in 1875. BSE is a corporatized and demutualised entity, with a broad shareholder-base which includes two leading global exchanges, Deutsche Bourse and Singapore Exchange as strategic partners. BSE provides an efficient and transparent market for trading in equity, debt instruments, derivatives, mutual funds. It also has a platform for trading in equities of small-and-medium enterprises (SME).

Foreign Institutional Investments

Foreign institutional investors (FIIs) are those institutional investors which invest in the assets belonging to a different country other than that where these organizations are based. Foreign institutional investors play a very important role in any economy. These are the big companies such as investment banks, mutual funds etc, who invest considerable amount of money in the Indian markets. With the buying of securities by these big players, markets trend to move upward and vice-versa. They exert strong influence on the total inflows coming into the economy.

II. Review Of Literature

Jasneek Arora, Santosh Kumar (2015), "Impact of Foreign Institutional Investors on Indian Capital Market", this study made an attempt to study the effects of trading behavior of foreign institutional investors on the Indian capital market. The objective of this study was to study the relationship between foreign institutional investments and Indian capital market. For achieving such objective, monthly data of FII's net investments and returns of Indian stock market (NSE) were collected from January 2012 to November 2014. The unit root Augmented Dickey Fuller (ADF) test was used to make data stationary. The statistical tool like GARCH

(Generalized Autoregressive Conditional Heteroscadasticity was used. To conclude, there was no volatility in the market on account of FIIs.

Dr.K.B.Singh & Dr.S.K.Singh (2012) found that there was a significant impact of FIIs on CNX-Nifty Index and there was a moderate impact of FIIs investment in the fluctuation of the CNX-Nifty Index for their study period.

Mishra. P.K. Das K.B & Pradhan (2009) studied the performance of Indian capital market by way of establishing relationship between net equity investment by FII and stock return. By using monthly data of sensex and Net FII inflows over a period of 17 years i.e. from January 1993 to May 2009, it was proved that there was a positive correlation between FII net flows and stock market return and there was substantial evidence to vindicate that Indian capital market was fairly explained by FII net flow.

Ahmad, Ashif and Ahmed (2005), made a firm level analysis of FII"s role in the Indian equity market. At the aggregate level, FII investments and NSE Nifty seem to have a strong bi-directional causality. At the firm level, FIIs are influencing equity returns especially in the government owned companies. He also confirmed that there has been very little destabilizing effect of FII flows on individual equity returns of the firms during their period of study.

Bohra, N. Singh and Dutt, Akash (2005), studied the behavioral pattern of FII in India and figure out the reasons for indifferent responses of BSE Sensex due to FII inflows. They found the correlation between FII investment and turnover of different individual groups at BSE Sensex.

III. Research Methodology

Research Statement
"Foreign Investments and Indian Stock Market-Cause & Effect"
Research Objectives
To study the impact of foreign institutional investments on Indian stock market.
To study whether foreign investments affect the Indian stock market or Indian stock market affects the movement of foreign investments.
To study the co-integration between Indian stock market and foreign investments.

Research Design
To study the cause and effect relationship between foreign institutional investments and Indian stock market, the Causal Research Design is used.

Data Collection Method
Secondary data collection method has been used; these data are those, which have been gathered earlier for some other purpose. Secondary Data have been collected from official websites of Bombay stock exchange, journals, magazines, books etc.

Sample
Two samples are selected for this study i.e. Foreign investments (FIIs) in Indian equity market and BSE Sensex which represents Indian stock market.

Sample Period
Monthly data of Foreign Institutional Investments and BSE Sensex have been collected during January- 2011 to June-2016.

Statistical Tools
Statistical tools used in this study are Phillips-Perron (PP) Test, Granger Causality Test, Johansen Co-integration Test and Vector Error Correction Model (VECM) by using Eviews7 and Microsoft Excel.

Limitations of the Study
FIIs' equity investments in India are considered.
The study is based on secondary data collection method. Hence, the limitations of this method are applied in this study.

IV. Data Analysis & Interpretation

PHILLIPS-PERRON (PP) TEST:
The result of PP test for this study is shown below:

Table 1.1 PP Test for BSE Sensex and FIIs

H0: δ=0 (unit root)	p value	
	BSE Sensex	FIIs
At Level – I(0)	0.8650	0.0000
At First Difference – I(1)	0.0000	-

Interpretation

The above table 1.1 shows that at level I(0), the PP test for BSE Sensex is statistically not significant at 5% level of significance as the p value is 0.8650 which is more than 0.05 and it is significant at level I(1) where its p value is 0.0000 which is less than 0.05. This mean that BSE Sensex series is considered as stationary series at first difference level i.e. at I(1).

Similarly, at level I(0), the PP test for FIIs is statistically significant at 5% level of significance as the p value is 0.0000 which is less than 0.05.This mean that FIIs series is considered as stationary series at level zero i.e. at I(0). So, there is no need to check it at first difference level.

Granger Causality Test:
The result of Granger Causality Test is as below:

Table 1.2 Pair Wise Granger Causality Test for FIIs and BSE Sensex

Null Hypothesis	F-Statistic	p-value
FIIS does not Granger Cause DBSE Sensex	0.47646	0.9118
DBSE Sensex does not Granger Cause FIIS	2.23102	0.0394

Interpretation

From the above Tale 1.2 it can be said that the first null hypothesis i.e. FIIS does not granger cause DBSE Sensex is not significant at 5% level of significance. The p value of second null hypothesis is 0.9118 which is more than 0.05. It means that the first null hypothesis cannot be rejected. Thus it can be said that there no impact of foreign investments on Indian stock market i.e. BSESENSEX.

Further the second null hypothesis i.e. DBSE Sensex does not granger cause FIIS is significant at 5% level of significance. The p value of first null hypothesis is 0.0394 which is less than 0.05. It means that the second null hypothesis can be rejected. Thus it can be said that there is an impact of Indian stock market (BSESENSEX) on foreign investments.

Johansen Co-Integration Test:

If two or more series are individually integrated (in the time series sense) then the series are said to be co-integrated. The Unrestricted Co-integration Rank Test (Trace) and the Unrestricted Co-integration Rank Test (Maximum Eigen Value) are used to check the co-integration between all variables. The result of this test is as below:

Table 1.3 Unrestricted Co-integration Rank Test

Trace	Max-Eigen
p value	p value
0.0203	0.0138

Interpretation

The above table 1.3 provides the Unrestricted Co-integration Rank Test. Trace and Max-Eigen test statistics are used to interpret whether null hypothesis can be rejected at 5% level of significance. As per both test statistics, null hypothesis can be rejected since their p values are 0.0203 and 0.0138 which are less than 5% and hence it is significant. It implies that there is co-integrating variable exists which confirm co-integration between BSESENSEX and FIIs.

Vector Error Correction Model (VECM):
The Vector Error Correction Model is used only when if the variables are co-integrated with each other. According to Johansen Co-integration test used in this study, it has been confirmed that all variables of this study are co-integrated with each other.
As per Granger causality test, it is found that there is an impact of BSESENSEX on FIIs. Therefore, in this case BSE Sensex and is taken as independent variables and FIIs as dependent variable.

Table 1.4 Vector Error Correction Model for BSE Sensex and FIIs

Vector Error Correction Estimates				
Dependent Variable: FIIs				
Co-integrating Eq:	**CointEq1**			
FIIs(-1)	1.000000		R-squared	0.379625
BSE Sensex(-1)	-0.500562		Adjusted	0.325207
			R-squared	
	(0.35177)		F-statistics	6.975994
	[1.42299]		Prob (F-statistics)	0.000000
C	-16857.89			
	Co-efficient	**Std. Error**	**t-Statistics**	**Probability**
C(1)	-0.548826	0.193043	-2.843019	0.053

Interpretation

The above table 1.4 exhibits the outcome of vector error correction model. In this case the coefficient is negative (-0.54) but its corresponding p value is 0.053 which is higher than 0.05. Therefore, the coefficient is not significant at 5% level of significance. It means the null hypothesis i.e. there is no long run causality from BSE Sensex to FIIs cannot be rejected.

Therefore, it can be said that there is no long run causality running from BSE Sensex to FIIs. R squared value is 0.37 which is comparatively less but it is positive.

V. Conclusions

It can be concluded from the data analysis that there is causality from BSE Sensex to Foreign Institutional Investments and there is no reverse causation present on it. It means there is no impact of foreign investments on Indian stock market but there is an impact of Indian stock market on foreign investments. There is no direct relationship that foreign investments cause the movement of Indian stock market, but a direct relationship could be established that the movement in Indian stock market causes foreign investors to invest or disinvest in or from Indian equity market. It can be concluded from the VECM model that there is no long run causality running from Indian stock market to FIIs. It can also be concluded from the R squared value that only 37% variation in foreign investments is explained by Indian equity market, it means that there can be other factors also which play their roles to affect foreign investments in Indian stock market.

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