"A STUDY ON VOLATILITY AND ITS IMPACT OF FDI WITH REFERENCE TO MAJOR INDICES IN INDIAN CAPITAL MARKET"

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Abstract

Foreign Direct investors have gained a significant role in Indian stock markets,21st century shows real dynamism of stock market and the various benchmarking of BSE and NSE Indices in terms of highest peaks and sudden falls in market. This paper examines the level of contribution of Foreign Direct Investment in Various Indices of BSE and NSE. Also attempt has been made to identify the behavioral pattern of FDI during the period of April 2009 to March 2014 and examine the volatility of Various Indices due to FDI. The data for the study has been collected and uses the information obtained from the secondary resources like Bulletins of Reserve Bank of India, publications from Ministry of Commerce and BSE and NSE Websites. We have made an attempt to explain the impact of Foreign Direct Investment on stock market in Indian Economy. Also attempts to identify the correlation between FDI and Various Indices of BSE and NSE by the Karl Pearson' Coefficient of correlation test.

Keywords: SMA, STOCK MARKET INDICES, FDI, CNX MIDCAP, TREND ANALYSIS.

Introduction

There are many macroeconomic factors which affect stock market i.e. FDI, GDP, inflation and exchange rates etc. Any Changes in these factors lead to fluctuations in stock market. Stock market Performance depends on many factors. Researchers found that stock price is affected by economic factors, industrial factors as well as company factors.

Foreign direct investment (FDI) has played important role in the process of globalization during past two decades the rapid expansion of FDI by multinational enterprises since the mid-eighties may be attributed to heavy changes in technology, liberalization of trade and investment regimes, deregulation and privatization of market in many countries including developing countries like India. To understand the changes in stock market, it is necessary to understand the relationship between FDI and stock market. FDI investment leads to increase in the BSE and NSE Indices. On the other hand, FDI sale decreases the Market and also cause the rupee to depreciate. FDI affects both market sentiments and also exchange rate movements. In India FDI plays an important role in determining the movement of stock market.

Statement of the Problem

In this research an effort has been made to develop an understanding the influence of FDI on major indices of BSE and NSE and also to identify the volatility of these indices. Many researcher studies about FDI impact in Indian Economy, but no comprehensive study has been made to test the impact of FDI in Major indices of BSE and NSE. Hence the main problems of the research focus on up to what extend FDI have impact on the major indices of BSE and NSE during the period of April 2009 to March 2014.

Objectives of the Study

- To identify the overall performance of Major indices v/s FDI .
- To analyze the impact on Major indices v/s FDI.
- To identify volatility of Major indices, FDI.
- To forecast the trend line of Major indices, FDI.
- To provide suggestion to the investor, policy holder and fund managers.

Sample Selection

Indices such as CNX NIFTY, CNX 100, CNX 500, CNX MIDCAP, BSE SENSEX, BSE 500, BSE 200 and BSE 100. Monthly FDI Investment has been taken for comparison.

Data Collection

This study is based on secondary data. The required data related to FDI have been collected from various sources Bulletins of Reserve Bank of India, publication from Ministry of Commerce, Govt. of India. The BSE and NSE data is downloaded from the websites of bseindia and nseindia respectively. Daily closing rates are taken and averaged to get the index value for each month, which is considered as representative figure of index for the entire year rather any one day's/month's closing figure of the index.

Period of the Study

The period of study ranges from April 2009 to March 2014.

Statistical Tools

1. Descriptive Statistics 2. Correlation Matrix Analysis
3. Simple Regression 4. Simple Moving Average 5. Trend Analysis

Limitations

- ✓ As Secondary data are already available & has been used for analysis & thus might not be reliable.
- ✓ The result might not be accurate due to reliability of the secondary data & limitation on the variables selected & the time span considered.
- ✓ A time span of 5 years has been considered for examining the relation between macroeconomic variables and Indian stock market.
- ✓ This study mainly focuses on selected independent variables which may not completely represent the macroeconomic variables.

DESCRIPTIVE STATISTICS

Table Showing Descriptive Statistics between FDI and INDICES

Particular	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
FDI	4,725	26,351	10,378.27	4,966.993	1.796	.309	3.224	.608
BSE_SENSEX	10885	21809	17980.14	1966.786	-.888	.309	2.053	.608
CNX_NIFTY	3354	6506	5400.95	583.211	-.884	.309	1.685	.608
CNX_MIDCAP	3769	9404	7455.74	995.743	-1.248	.309	3.379	.608
CNX_100	3163	6376	5305.35	599.025	-1.001	.309	1.978	.608
BSE_500	3972	8124	6900.96	744.667	-1.402	.309	3.646	.608
BSE_200	1284	2587	2208.51	238.686	-1.316	.309	3.255	.608
BSE_100	3222	6478	5451.80	586.831	-1.174	.309	2.831	.608
CNX_500	2572	5032	4317.02	448.112	-1.323	.309	3.353	.608

Source: Computed using SPSS 16

REGRESSION ANALYSIS

Table Showing ANOVA Analysis on FDI and CNX NIFTY

ANOVA[b]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1248629.504	1	1248629.504	.050	.824[a]
	Residual	1.454E9	58	2.507E7		
	Total	1.456E9	59			

a. Predictors: (Constant), CNX_NIFTY

b. Dependent Variable: FDI

The F Statistic results are given in the table. The significance value of f should be less than 0.05. Here the significance value is .824 indicates that overall FDI is significantly not enough in predicting the CNX NIFTY.

Table Showing Coefficient values on FDI and CNX NIFTY

Model		Standardized Coefficients	T Value	Sig.
		Beta		
1	(Constant)		1.487	.142
	CNX_NIFTY	.029	.223	.824

Table Indicates that CNX NIFTY and FDI are significant at 0.05 level. It also helps to determine the direction and strength of FDI and CNX NIFTY. Regression coefficient of FDI and CNX NIFTY is positive which means FDI can strongly predicts the CNX NIFTY.

Table Showing Summary of Regression Analysis on FDI and BSE SENSEX

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.043[a]	.002	-.015	5004.90466	1.598

a. Predictors: (Constant), BSE_SENSEX

b. Dependent Variable: FDI

Table provides the R and R^2 value. The R value is .043, which represents small association and therefore indicates high degree of correlation. The R^2 value .002 indicates there is no fit between FDI and BSE SENSEX. The adjusted R^2 value -.015 means that the FDI in the model can predict the variance in the BSE SENSEX implies that the addition factor included in this model denotes negative impact between them. The Durbin-Watson coefficient of 1.598 indicates that there exists no auto correlation.

Table Showing ANOVA Analysis on FDI and BSE SENSEX

ANOVA[b]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	2743835.645	1	2743835.645	.110	.742[a]
	Residual	1.453E9	58	2.505E7		
	Total	1.456E9	59			

a. Predictors: (Constant), BSE_SENSEX

b. Dependent Variable: FDI

The F Statistic results are given in the table. The significance value of f should be less than 0.05. Here the significance value is .742 indicates that overall FDI is significantly not enough in predicting the BSE SENSEX.

Table Showing Coefficient values on FDI and BSE SENSEX

Model		Standardized Coefficient Beta	T Value	Sig.
1	(Constant)		1.403	.166
	BSE_SENSEX	.043	.331	.742

Table indicates that BSE Sensex and FDI are significant at 0.05 level Regression coefficient of FDI and BSE Sensex is positive which means FDI can strongly predicts BSE Sensex.

Table Showing Correlation FDI and Indices

Particular		FDI
CNX_NIFTY	Pearson Correlation	.029
	Sig. (2-tailed)	.824

CNX_100	Pearson Correlation	.011
	Sig. (2-tailed)	.935
CNX_500	Pearson Correlation	-.040
	Sig. (2-tailed)	.764
CNX_MIDCAP	Pearson Correlation	-.155
	Sig. (2-tailed)	.236
BSE_SENSEX	Pearson Correlation	.043
	Sig. (2-tailed)	.742
BSE_500	Pearson Correlation	-.048
	Sig. (2-tailed)	.717
BSE_200	Pearson Correlation	-.027
	Sig. (2-tailed)	.837
BSE_100	Pearson Correlation	.000
	Sig. (2-tailed)	.999

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

Table Showing Yearly SMA of CNX Nifty (Values in terms of market indices)

MONTH	CNX NIFTY	SMA
2009-10	4642	
2010-11	5579	5111
2011-12	5251	5415
2012-13	5526	5388
2013-14	6007	5766

From this table it is clear that the SMA of CNX NIFTY begins at the level of 5111 and it decreases to 5388 and at the end of 2014 it ends in the uptrend to 5766.

Table Showing Yearly SMA of FDI(Values in terms of Crores(Rs.))

MONTH	FDI(in crores)	SMA
2009-10	10281	
2010-11	7377	8829
2011-12	11781	9579
2012-13	10159	10970
2013-14	12293	11226

From the table it is clear that the SMA of FDI begins at the level of 8829 and during the year 2011 to 2012 it gets increases to 9579 and in the year 2012 to 2013 it increases to 10970 and at the end of 2014 it ends in the increases to 11226.

Table Showing Yearly SMA of BSE Sensex(Values in market indices)

MONTH	BSE SENSEX	SMA
2009-10	15527	
2010-11	18592	17059
2011-12	17448	18020
2012-13	18221	17835
2013-14	20113	19167

Source: Computed using MS Excel

From the table it is clear that the SMA of FDI begins at the level of 17059 and during the year 2011 to 2012 it gets increases to 18020 and in the year 2012 to 2013 it decreases to 17835 and at the end of 2014 it ends in the increases to 19167.

Table Showing Trend Analysis of CNX NIFTY

MONTH	CNX NIFTY	TREND PERCENTAGE
2009-10	4642	100.0
2010-11	5579	120.2
2011-12	5251	113.1
2012-13	5526	119.0
2013-14	6007	129.4

Table and Graph provides the trend of CNX NIFTY.CNX NIFTY has begin the Trend Percentage at 100% level and increases to 120.2% in the year ended 2011 and decreases to 113.1% at the year ended 2012 and at the end of the year 2014 it is at the highest percentage increase of 129.4%.

Table Showing Trend Analysis of FDI

MONTH	FDI(in crores)	TREND PERCENTAGE
2009-10	10281	100.0
2010-11	7377	71.8
2011-12	11781	114.6
2012-13	10159	98.8
2013-14	12293	119.6

Table and Graph provides the trend of FDI .FDI has begin the Trend Percentage at 100% level and decreases to 71.8% in the year ended 2011 and increases to 114.6% during the year ended 2012 and at the end of the year 2014 it is at the highest percentage increase of 119.6%.

Table Showing the Trend Analysis of BSE SENSEX

MONTH	BSE SENSEX	TREND PERCENTAGE
2009-10	15527	100.0
2010-11	18592	119.7
2011-12	17448	112.4
2012-13	18221	117.3
2013-14	20113	129.5

Source: Computed using MS Excel

Table and Graph provides the trend of BSE SENSEX.BSE SENSEX begin the Trend Percentage at 100% level and increase to 119.7% during the year ended 2011 and decreases to 112.4% during the year ended 2012 and at the end of the year 2014 it is at the highest percentage increase of 129.5%.

FINDINGS

- ✓ FDI shows high variation from the mean value, which means that it is high volatile in nature. It shows a positive skewness because mean is greater than mode and positive kurtosis (a high peak).
- ✓ BSE SENSEX shows high variation from the mean value, which means it is high volatile in nature. It shows negative skewness because mean is less than mode and positive kurtosis (a high peak).
- ✓ CNX NIFTY shows variation from the mean value, which means it is volatile in nature. It shows negative skewness because mean is less than mode and positive kurtosis (a high peak).
- ✓ The value of R for BSE100, BSE 200, BSE 500, BSE SENSEX, CNX100, CNX 500, CNX MIDCAP, and CNX NIFTY with FDI is low, which means FDI have less impact on these indices during the year APRIL 2009 to MARCH 2014.
- ✓ Correlation between FDI and Different indices: FDI, CNX NIFTY, CNX 100 and BSE SENSEX are significantly correlated. The correlation coefficient is Low, so the effect of FDI, CNX NIFTY, CNX 100 and BSE SENSEX is less.
- ✓ Correlation between FDI and BSE 100: FDI and BSE 100 are significantly correlated. The correlation coefficient is no correlation, effect of BSE 100 is Moderate
- ✓ The movement of FDI gets decreases in the year 2010 to 2011 and increases from 2011. Simple moving average of FDI is increasing.
- ✓ The trend of FDI inflows shows that FDI has decreased from 2010 to 2011.Then increase to the high level to 2011 to 2012 and then decreases during 2012 to 2013 and then to the top level during 2013 to 2014.
- ✓ The trend Indices shows that Major indices of BSE and NSE has increases from 2010 to 2011.Then decrease from 2011 to 2012 and then increases to high at the end of 2014.

Suggestions

- ➢ Government should give relaxation for foreign investors to make them invest in India so that market volatility can be majorly depend on FDI as a important factor in fixing market indices.
- ➢ Indian government given relaxation for the investment of foreign investor recently in Retail, Railway and Insurance sector so that there may exist volatility in the market so the investor can concentrate in this issue and can give importance to these sector stocks.
- ➢ Trend analysis shows that FDI and Major Indices have opposite effect (i.e.) any change in FDI investment may leads to decrease in market index and vice versa. So the market prediction can be monitored in opposite of FDI Inflow.

Conclusion

Even though global economies are suffering with financial crisis and other economic hurdles, India still stands as a global designation. In this study FDI are used to find out their impact on major indices of BSE and NSE. From the study it is clear that Foreign Direct Investment does not determine the movement of stock market indices. FDI and Major stock market indices do not show much relationship between them. Government must also take necessary steps to increase the flow of FDI in the market so that the change in market trend can be fixed by the FDI players.

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