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Research Paper Management

Study on Volatility and Return of Major Indices of Indian Stock Market with Reference to Sensex And Nifty

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ABSTRACT

The term volatility a statistical measure of the dispersion of returns for a given security or market index. Volatility can either be measured by using the standard deviation or variance between returns from that same security or market index. This paper is used to describe volatility trend of Major Indices of Indian stock market viz SENSEX and NIFTY and Return of Indices also. Whereas ANOVA test has used to know significance among Volatility of Indices and Return. Stastical result shows in case of volatility is Significance different among indices and other side in return no any different found in Indices.

Keywords : Volatility, Standard deviation, SENSEX, NIFTY

Introduction:-

Volatility is a symptom of a highly liquid stock market. Pricing of securities depends on volatility of each asset. An increase in stock market volatility brings a large stock price change of advances or declines. Investors interpret a raise in stock market volatility as an increase in the risk of equity investment and consequently they shift their funds to less risky assets. It has an impact on business investment spending and economic growth through a number of channels. Changes in local or global economic and political environment influence the share price movements and show the state of stock market to the general public. The issues of return and volatility have become increasingly important in recent times to the Indian investors, regulators, brokers, policy makers, dealers and researchers with the increase in the FIIs investment.

Past Studies:-

- Alexakis (2002) examined the price discovery function in daily returns and index in ATHEX. They argue that future lead the cash index return, by Volatility derivatives on S&P CNX Nifty and arrived at a conclusion that increased market efficiency and reduced GARCH, EGARCH, TARCH and component ARCH model. The results suggest CNX Nifty. Junior is obtained from the NSE website. But data on S&P 500 Index are taken from Yahoo Finance study. The average price (highest and lowest price) is the daily return of the stock markets is calculated as: following equation is used in GARCH (1, 1) model:

- Y.P and Shalini (2006) showed that daily spot market volatility in India has marginally declined after the India. They also revealed that significant improvement in the information coefficient 'α' and reduction in 'β' the persistence studied the introduction and expiration effects of index d volatility with no price change in the underlying market due to introduction of derivatives. It also showed that expiration d

- Naliniprava, Ramana and kanagaraj (2009) investigates the impact of introduction of derivative instruments and leverage and asymmetric effect on spot market volatility (Nifty) in India during the period October 1995 to December 2006 by using GARCH towards a decline in spot market volatility and market efficiency improved after introduction of index futures, stock futures the spot market due to increase impact of recent news. This study also finds evidence of leverage and asymmetric effect on spot market where the conditional variance is an asymmetric function of past innovation, raising proportionately more during market declines. It is also observe models provide better fit than the symmetric GARCH model.

Methodology:-

(1) Data collations:

Data have been collected from the Handbook of SEBI about Indian Stock Market- 2010.

(2)Time of study:

This research study is covering two type of time period under which for volatility study researcher has selected thirteen year started from 1997-98 to 2009-10. And for analysis of Return of indices selected eighteen year started from 1992 to 2010.

(3) Stastical tools used:

Researcher has used Mean, Standard Deviation and Single factor ANOVA test.

(4) Objectives of study:

- To Know Volatility of Indian Stock Market Indices.

- To know trend of Return of Major Indices of India SENSEX, NIFTY.

Data Analysis and Discussions:-

Table: 1. Volatility of major Indices in India (%)

YEAR	BSE SENSEX	BSE-100	DOLLEX -200	S&P CNX NIFTY	CNX NIFTY JUNIOR	S&P CNX DIFTY
1997-98	2.3	2.6	–	2	4	–
1998-99	1.8	1.7	–	1.5	2.7	–
1999-00	1.7	2.2	–	1.8	3.1	–
2000-01	2.2	2.4	–	2	2.8	–
2001-02	1.5	1.6	1.6	1.4	1.6	1.4
2002-03	1	1	1	1	1.2	1
2003-04	1.4	1.5	1.5	1.4	1.6	1.5
2004-05	1.5	1.5	1.7	1.6	1.8	1.7
2005-06	1	1	1	1	1.1	1.4
2006-07	1.8	1.8	1.9	1.8	2.1	1.9
2007-08	1.9	2	2.2	2	2.4	2.2
2008-09	2.8	2.7	3	2.7	2.8	3

2009-10	1.9	1.8	2.1	1.9	2	2.2
Mean	1.8	1.8	1.8	1.7	2.2	1.8

*Volatility is the standard deviation of daily logarithmic returns.

Source: BSE, NSE.

Table-1 shows a volatility of major indices of Indian stock market during the thirteen year. Trend of volatility in CNX S&P JUNIOR is with an average of 2.2 followed by BSE SENSEX, BSE-100, and DOLLEX-200 with an average of 1.8 in all three indices. But in year 2008-09 higher volatility found throughout all indices during the study period. S&P CNX NIFTY has lower volatility with an average of 1.7 during the study.

Ho: - There would be no significant different among the volatility of major indices.

H1: - There would be significant different among the volatility of major indices.

Table:-2 ANOVA Analysis of volatility.

Source of Variation	SS	DF	MS	F-computed	F- critical
Between Groups	9.51	5.00	1.90	3.34	2.34
Within Groups	41.03	72.00	0.57		
Total	50.55	77.00			

Table-2 shows result of ANOVA test at 5 % level of significance. Where as significance different found among the volatility of major indices because the critical value of test is lower than F- computed value (3.34). Hence null hypothesis is rejected and there is significance different among volatility of major indices of India.

Table:-3 Return of Indian indices (%)

YEAR	BSE SENSEX	S&P CNX NIFTY
1992	0.1	0
1993	0.1	0
1994	0.1	0
1995	-0.2	-0.2
1996	0	0
1997	0	0.1
1998	-0.1	-0.1
1999	0.2	0.2
2000	-0.1	-0.1
2001	-0.1	-0.1
2002	0	0
2003	0.2	0.2
2004	0	0
2005	0.1	0.1
2006	0.2	0.1
2007	0.2	0.2
2008	-0.2	-0.2
2009	0.2	0.2
2010	0	0
Mean	0.04	0.02

Source: SEBI HANDBOOK-2010.

Table-3 shows return of Indian indices SENSEX, NIFTY. Return of SENSEX is high with an average of 0.04 and 0.02 in NIFTY during the study.

Ho: - There would be no significant different among the Return of major indices SENSEX and NIFTY

H1: - There would be significant different among Return of major indices SENSEX and NIFTY.

Table:-4 ANOVA Analysis of Indices Return.

Source of Variation	SS	DF	MS	F-computed	F- critical
Between Groups	0.002368	1	0.002368	0.13	4.1
Within Groups	0.615789	36	0.017105		
Total	0.618158	37			

Table-4 shows result of ANOVA test at 5 % level of significance. Where as no significance different found among the Return of indices because the critical value of test is higher than F- computed value (4.1). Hence null hypothesis is accepted and there is no significance different among the Return of major indices SENSEX and NIFTY.

Major Findings:

- Mean of Volatility in BSE- SENSEX found 1.8.
- High mean found in S&P CNX JUNOIR was 2.2.
- ANOVA test found volatility in all Indices are not same during the study period.
- Mean return of SENSEX is high found than NIFTY it was 0.04.
- ANOVA test found return of both indices are nearly same during the study period.

Conclusions:

From the study volatility trend in Indian indices are nearly similar year by year except year in which same major change have taken place under our study research found high volatility in the year 2008-09. Where in case of return of indices trend more or less same year by year.

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