Examining Volatility of Sustainability Index in Bombay Stock Exchange In Angel Broking Limited, kovilpatti

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Abstract

The Indian stock market is a promoting market with numerous opportunities for investors where majority of trading takes place at major exchanges namely the Bombay stock exchange (BSE) and national stock exchange (NSE). The BSE is the foremost exchange in existence since 1875, whereas NSE came into existence in 1992. Trading at this exchange takes place as all the major firms of india are listed on this exchange. There is an existence of market efficiency, also reduced costs. The buyers and sellers in the Indian stock market are anonymous and enjoys and advantage of transparency there exists order driven market.

***Key words**: Stock market*

1.0 Introduction

There are trading opportunities as the stock prices are not constant and they tend to change every day by the market. Volatility in market is concerned with velocity of price changes, it could be either for stocks, commodities and forex market. However the increased volatility in the stock market indicates either market top or bottom. The traders bid higher prices on the reaction to a good news and short sell on bad news which drives prices down. With the increase in stock market volatility there comes large stock price change either in terms of advances or decline. Volatility being is one of the most basic tools to measure statistical risk is used to measure market risk for both individual stocks and portfolio. Volatility is expressed many ways with very basic is the variation of the stock return. And this study is concerned with analyzing the return and volatility is observed in terms of inter-day volatility and intra-day volatility. As the stock exchange index is the representation of the entire market scenario however the index sensex representing the performance of foremost Bombay stock exchange is taken into consideration and also the individual sock belonging from differential sectors forms a part of the study.

2.0 Financial market

The Financial market is pervasive in nature since financial transactions are themselves very pervasive throughout the economic system. For instance, issue of equity shares, granting of loan by term lending institutions, deposit of money into a bank, purchase of debentures, sale of shares. The financial market can be referred to as those centers and arrangements which facilitate buying and selling of financial assets, claims and services.

The financial markets are typically defined by having transparent pricing, basic regulations on trading, costs and fees and market forces determining the prices of securities that trade. Some financial markets only allow participants that meet certain criteria, which can be based on factors like the amount of money held, the investors geographical location, knowledge of the markets or the profession of the participant.

Types of financial markets

A financial market consists of two major segments in india, i.e., (a) money market and (b) capital market. While the money market deals with short-term credit, the capital market handles the medium term and long-term credit. Let us discuss these two types of markets in detail.

- Money market
- Capital market

3.0 Objectives of the study

1. To study the various aspects of Indian stock market.
2. To know the changes in the shares price of sustainability index.
3. To identify the measurement of stock market volatility.
4. To evaluate the volatility of sustainability index through share price behavior.

4.0 Review of Literature

Kenneth Kim and Ghon Rhee (1997)[1] claimed that the price limits decrease stock volatility, counter overreaction and do not interfere with trading activity. Conversely, price limit critics claim that price limit cause higher volatility levels on subsequent days, prevent prices from efficiently reaching their equilibrium level and interface with trading due to limitation imposed by the price limits. The empirical research does not provide conclusive support for either position. Their evidence supports all three hypotheses suggesting that price limits may be ineffective.

Kate Phylaktis et al. (1999)[2] the effects of price limits on the stock volatility in the Athens Stock Exchanges. They put forward, the information hypothesis, which implies that the price only slow down the process of adjustment and have no effect on stock volatility; and the over reaction hypothesis, which assumes that the investors tends to overreact to the new information, so that the price limits give time to reassess the information , and reduce stock volatility. Their result show strong support for the information hypothesis. They obtained the evidence by performing the tests on ten stocks.

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Hee-JoonAhn et al. (2001)[3] investigated the role of limits order in the liquidity provision in a pure order driven market. They focused on the dynamic relation between transitory volatility and order flow. They examined how transitory volatility affects the mix between limit orders and market orders. Their results showed that the market depth rises subsequently to an increase in the market depth. The result is consistent with the existence of liquidity providers who enter the market and place limit orders on either the bid or ask side depending on which side will earn profits for the liquidity provision.

Amita Batra (2004)[4] conducted "**A Study On Stock Market Return Volatility Pattern In India".** The objective of the study was to analyse the time variation volatility in Indian stock market during the period of 1979 to 2003. The study used secondary data which was collected from official source such as SEBI RBI and BSE. The daily closing price of the stock Sensex were used as a source data to arrive at monthly data.

5.0 RESEARCH METHODOLOGY

Descriptive Statistics

Descriptive Statistics was used to identify the measure of average return and risk. Measures of central tendency include the mean while measures of variability include standard deviation, skewness and kurtosis. Descriptive Statistics provided a useful summary of security returns and the historical account of return behavior. Although past information is useful in any analysis, one should always consider the expectations of future events.

i) Mean

Mean is the average value of the series, obtained by adding up the series and dividing by the number of observations. It is the most common measure of central tendency.

ii) Standard Deviation

Standard Deviation is the square root of the mean of the squared deviation from the arithmetic mean.

iii) Skewness

Measures of skewness tell us the direction and the extent of skewness. Skewness is a measure of symmetry, or more precisely, the lack of symmetry.

iv) Kurtosis

Kurtosis measures the amount of peakedness of distribution. A flatter distribution than normal distribution is called Platykurtic

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6.0 FINDINGS

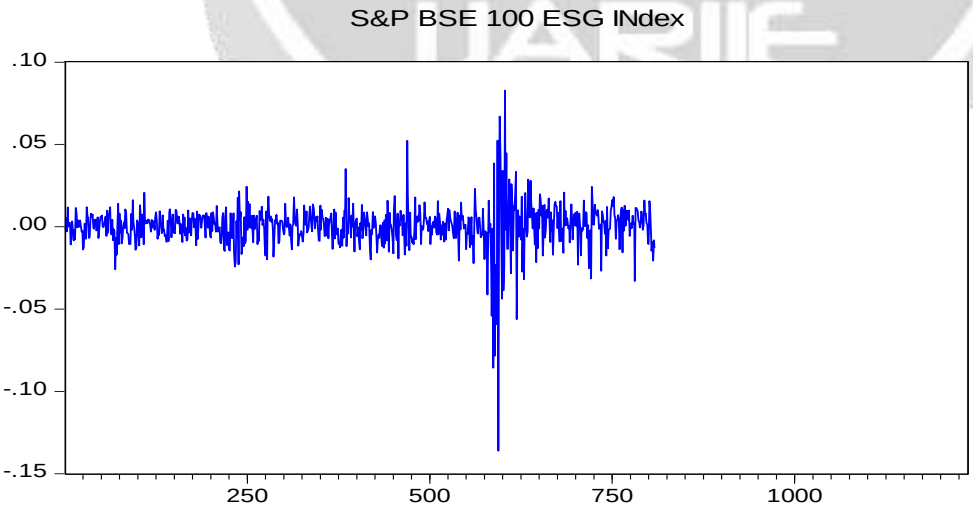
Result of descriptive statistics for selected S&P BSE 100 ESG index during the period from 01st January, 2016 to December, 2020

	S&P BSE 100 ESG INDEX
Mean	0.0004
Maximum	0.0829
Minimum	-0.1361
Std. Dev.	0.0132
Skewness	-1.7075
Kurtosis	24.5720
Jarque-Bera	16059.4200
Probability	0.0000
Sum	0.3106
Sum Sq. Dev.	0.1401
Observations	808.0000
	0.3103

SOURCE: Data collected from www.https:// bseindia.com and computed using E-views

Table 1 shows the results of descriptive statistics for sample stock market indices during the study period from 01-01-2016 to 31-12-2020. Summary statistics, namely, mean, minimum, maximum, standard deviation (SD), Skewness, kurtosis and the Jarque-Bera were used to analyse the sample indices return during the study period. It is clear from the table that during the study period, the index S&P BSE 100 ESG recorded the value 0.0004(mean), 0.0829(maximum), -0.1361(minimum), 0.0132(std.dev) during the study period.

Movements of S&P BSE 100 ESG Index during the period from 01st January, 2016 to 31st December, 2020



SOURCE: Data collected from www.https:// bseindia.com and compute using E-views.

Figure 3.1 shows the movements of sustainability indices (S&P BSE 100, BSE 200, BSE CARBONEX, GREENEX and SENSEX) during the study period from 01st January 2016 to 31st December 2016. It is clear from the figure that selected indices were fluctuating highly during the above period.

Result of Volatility Analysis for selected S&P BSE 100 index during the period from 01st January, 2016 to December, 2020

Variable	Coefficient	Std. Error	Z-Statistic	Prob.
C	0.000	0.000	2.908	0.004
RESID(-1)^2	0.117	0.016	7.368	0.000
GARCH(-1)	0.850	0.025	33.662	0.000

SOURCE: Data collected from S&P BSE 100 and computed using E-views

INTERPRETATION:

The results of volatility for S&P BSE 100 ESG index during the period from 01st January 2016 to 31st December 2016, are summarized in Table 2. It shows that the results of volatility. Using GRACH (1,1) model for daily return of S&P BSE 100 ESG index during the study period. From the table, it is clearly observed that value of the probability value was at zero.

7.0 SUGGESTION OF THE STUDY

It is observed that the sustainable index in Bombay Stock Exchange recorded significant level of volatility during the study period. These results, apart from offering a much better understanding of the Volatility, in the sample indices may have important implications for capital market. The volatility level of the sample indices guides the participant of the share market. It supports the investors to buy and sell the share based on the level of fluctuation. Finally, this study results would help to portfolio managers, multinational corporations, and policymakers for decision-making.

8.0 CONCLUSION

In this study an attempt has been made to examine the volatility of sustainable index in BSE for the period from 1st January, 2016 to 31st December, 2020. It summarized that the indices showed the significant level of volatility during the study period. For every country, economic positions are integrated and having long term impact on capital market. The regulators and policy makers are in the position to monitor the movements of Indian Stock Market. Hence, this study is very important and useful for the investors to design their investment portfolio.

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