



SNAPSHOT OF CO MOVEMENT AMONG VARIOUS INDICES OF BOMBAY STOCK EXCHANGE FOR THE PERIOD 2017

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Abstract

In today's era of highly volatile market and digitalization of India has change the financial health of the country. This paper is an attempt to assess the performance of the prominent indices of the Bombay Stock Exchange (BSE), and determine the mutual relationship shared among them. This study offers a deeper understanding of the era-movement between the selected series during 2016-2017 and also offers an approach to compare individual performances of select indices of the BSE. Research is based on to find out the co-moment among various indices and establishes the possible relationship between risk and return, further to drawn and analyze the influence of risk variable on security returns in the Indian stock Market with appropriate ranking to the indices.

Keywords: *Financial Health, Era-movement, Indices etc.*

Introduction

1.1 BSE (Bombay Stock Exchange)

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. BSE provides a host of other services to capital market participants including risk management, clearing, settlement, market data services and education. It has a global reach with customers around the world and a nation-wide presence. BSE systems and processes are designed to safeguard market integrity, drive the growth of the Indian capital market and stimulate innovation and competition across all market segments.

Also Bombay stock exchange has main five indices namely S&P SENSEX, S&P 500, S&P SMALL 600, S&P MID 400, S&P 100.

Source:- BSE website

Literature Review

Bandivadelta (2003) revealed that futures and Options reduced the volatility effects for all indices of BSE and Nifty 50 of NSE. Findings further showed that BSE Sensex volatility declined due to the lessening of overall market volatility, buy NSE Nifty recorded effects of market as well as and futures.

Raman (2002) explained that static relationship existed between BSE index and market returns, and asserted that in case of constant market, future returns will consequently be lower and show a declining trend. (Hussein, ' Hamid, Akash, & Khan, 2011) studied volatility effects on daily returns for KSE 100 index, and investigated day of week effect m the Pakistani Stock Market Findings saw constant returns for the whole week (based on 5 days working) except Tuesday.

Pandey (2005) The study argued did based on efficiency criteria, conditional volatility model seemed fit for estimating long term volatility and 90:3 market return relationship. On the other hand, based on extreme value estimators, weekly and mainly volatility was forecasted.

Kumar (2012) examined the effects of Indian volatility index on Indian stock market, and revealed are relationship between Indian volatility index and stock markets in developed countries. Findings proved that volatility index return and stock market return are adversely correlated and in the long run the US market would impact volatility index. Interestingly, in case of sharp rises in stock prices liquidity index decreases, but when market decreases sharply, volatility index shows a slow upwards index. Joshi (2013) revealed Co-integration or mutual relationship among the stock indices of BRICS countries. EI Hedi Arouri & Khuong Nguyen (2009) found small co-movements between indices of stock markets of the Gulf and the world market. Also, a positive relation was found to exist between these 00' movements and stock performance of crude oil companies.

Objective Of Study

The purpose of this study is to ascertain from empirical data the co-moment among indices and risk and return relationship that exists in the indices.



Research Methodology

4.1 Data Collection Method

In this study the data were purely collected from secondary sources such as Bombay Stock Exchange, Capitoline, reports and websites of the selected indices. Furthermore, magazines, books, and journals, and other publications were also considered for the study. The present research is exploratory and empirical in nature. The data were drawn from the Bombay Stock Exchange (BSE) for five individual Indices, and their market prices were taken for 12th month of different dates from Jan 2017 to Dec 2017. The reason behind choosing the monthly prices is that short term fluctuations in the market prices of the stocks due to internal and external factors.

4.2 Sample Size-The number of Indices is as 5 i.e. SENSEX, S&P 500, S&P SMALL CAP, S&P MID CAP, S&P LARGE CAP for analysis of Indices as all are very exhaustive and requires through and detailed study.

4.3 Time frame-January 2017 to December 2017

4.4 Method of Sampling-The present study is based on Judgmental sampling method and is used for selected Indices from BSE.

4.5 Tools to analysis-The tools for analysis of collected data have been analyzed by using Standard deviation, variance and correlation coefficient.

Data Analysis&Interpretation

Table 5.1: Returns of Selected Indices

SUMMARY				
Groups	Count	Sum	Average	Variance
Sensex	12	0.264	0.022	0.000817
S&P100	12	0.178	0.014833	0.000132
S&P400	12	0.301	0.025083	0.000994
S&P500	12	0.18	0.015	0.000121
S&P600	12	0.371	0.030917	0.00127

Interpretation

The Table 5.1 depicts that the returns of the selected indices of the Bombay Stock Exchange are (i.e. Sensex, S&P100, S&P400, S&P500 and S&P600) recorded to be positive in nature. The average returns of S&P400 and S&P600 is recorded high 0.025 and 0.031 (rounded off) respectively followed by Sensex 0.22. The average returns of S&P100 and S&P500 are recorded lower to 0.015 each (rounded off).

Table 5.3: Risk Analysis of Selected Indices.

INDICES	STANDARD DEVIATION (S.D)	VARIANCE
SENSEX	0.029	0.000817
S&P 100	0.012	0.000132
S&P 400	0.031	0.000994
S&P 500	0.011	0.000121
S&P 600	0.036	0.000121
AVERAGE	0.023	0.00127

Interpretation

The Table 5.3 present the standard deviation and variance for all the selected Indices such as Sensex, S&P100, S&P400, S&P500 and S&P600. The Standard Deviation-SD of each selected Indices recorded as high risk on S&P 600-0.036 and Low risk on S&P 500-0.011 respectively. The higher risk of this company is clearly reflected in their higher standard deviation value. Investments with higher returns have higher standard deviation is associated with greater risk, and the historical data confirms the existence of a positive relationship between risk and returns.



Table 5.4 Correlation Test: Correlation among indices

	Sensex	S&P 100	S&P 400	S&P 500	S&P 600
Sensex	1				
S&P 100	0.060657134	1			
S&P 400	0.325677096	0.222783992	1		
S&P 500	0.089506717	0.971501237	0.32015581	1	
S&P 600	0.243799815	0.207769091	0.94655424	0.30304746	1

Interpretation: Above analysis reveals that there is moderate relation between S&P100 with Sensex, S&P400 with Sensex and S&P100, S&P500 with S&P400, S&P600 with Sensex, S&P100 and S&P500 respectively. The correlation between S&P500 with S&P100 and S&P600 with S&P400 indicates that there is positive relation between them.

Table 5.5 : Selection of selected Indices.

Indices	Return	Standard Deviation (SD)	Coefficient of Variance (C.V=SD/return)
Sensex	0.022	0.029	1.31
S&P100	0.015	0.012	0.8
S&P400	0.025	0.031	1.24
S&P500	0.015	0.011	0.73
S&P600	0.031	0.036	1.16

Interpretation: On the basis of above table 5.5 calculation it is observed that co-efficient of variance of Index S&P500 is Lowest. i.e. 0.73 which is followed by Index S&P100 i.e. 0.8, Index S&P600 i.e. 1.16, index S&P400 i.e. 1.24 and finally which s followed by Sensex i.e. 1.31.

Findings & Conclusions

This paper has identified several practical implications which give a deeper sense and understanding of the mutual relationship shared by selected indices at the BSE by determining the existence and type of integration among them. The results depict the underlying relationship between the stock indices which are in accordance with the practical scenario discussed in the paper. Data analysis reveals that performance indices have ranked i.e. Rank 1-S&P500, Rank 2-S&P100, Rank 3-S&P600, Rank 4-S&P400, Rank 5-Sensex In fact, systematic observations of daily closed value of series indices based data analysis describe the behavior of individual performances and the mutual dependency or influences of one indices on another at BSE. Study reveals that co-efficient of variance of Index S&P500 is Lowest. i.e. 0.73. The Standard Deviation-SD of each selected Indices recorded as high risk on S&P 600-0.036 and Low risk on S&P 500-0.011 respectively. Further co-efficient of variance of Index S&P500 is Lowest. i.e. 0.73 Sensex i.e. 1.31 is highest. Further, the study will also help investors in calculative analysis for forecasting of influencing returns between series, and aid in the selection of indices for investment at BSE. Significant pair-wise relationships were also present among these indices which proved the existence of mutual or reciprocal associations amongst them. However, before investing, it is critical for investors to have a good understanding of technical and fundamental aspects of stocks and the way the stock market functions.

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