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BENCHMARK INDICES OF INDIAN ECONOMY: A COMPARATIVE ANALYSIS OF SENSEX AND NIFTY

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ABSTRACT

Bombay Stock Exchange(BSE) and National Stock Exchange (NSE) are the two nationalised Stock exchanges of India. Both the stock exchanges of India are in cut throat competition with each other. The Stock index is a barometer of nation's economic health as market prices reflect expectation about the economy's performance. However, it measures overall market sentiment through a set of stocks that are representative of the market and provides investors information regarding the average share price in the market. The indices of BSE and NSE reflect the overall market sentiments, that is both SENSEX and NIFTY have shown up pattern when economy was good, both slowed down when there was a depression. Therefore, both the indices can referred as benchmark indices of the Indian Economy.

Keywords: CAGR, CNX NIFTY, S&P SENSEX.

INTRODUCTION

The Indian stock exchanges hold a place of prominence not only in Asia but also at the global stage. The Bombay Stock Exchange (BSE) is one of the oldest exchanges across the world, while the National Stock Exchange (NSE) is among the best in terms of sophistication and advancement of technology. The stock market index is the most important indices of all as it measures overall market sentiment through a set of stocks that are representative of the market. The stock market is a barometer of market behavior. It reflects market direction and indicates day to day fluctuations in stock prices. The market index reflects expectations about the behavior of economy as a whole. It is a precursor of economic cycles. The function of stock index is to provide investors with information regarding the average share price in the market. A well constructed index captures the overall behavior of the market and represents the return obtained by a typical portfolio investing in the market. An ideal index must represent changes in the prices of scrips and reflect price movements of typical shares for better market representations. Stock index is a barometer of nation's economic health as market prices reflect expectation about the economy's performance.

Stock indices are termed as leading economic indicators as they indicate what is going to happen in the economy in the future. The returns generated in the stock market are based on future expectations. The future streams of expected returns from the companies are

discounted to arrive at their present value known as market price. There are various varieties of indices which are offered by NSE and BSE. The major indices of BSE are SENSEX; MID-CAP, SMALL CAP, BSE 100, BSE 200, BSE DOLLEX, and Sectoral indices are BSE IT INDEX, BSE CAPITAL GOODS INDEX, and BSE FMCG. The major indices of NSE are S&P CNX NIFTY, CNX NIFTY JUNOIR, NIFTY 500, THE NIFTY MIDCAP 50, THE CNX MIDCAP 50 and other sectoral Indices Such as, IT, BANK, FMCG, PSE, MNC, ENERGY, PHARMA and Realty.

This study pertains to comparative analysis of the Indian Stock Exchanges with respect to two major indices viz., Sensex and Nifty. Sensex first compiled in 1986 and NIFTY started in 1995.

LITERATURE REVIEW

Following are some of the important studies on the concerned subject:

Kaurs study- The study by Kaur (2004) describes the extent and pattern of stock return, volatility of Indian stock market during the last decade of previous millennium, that is, 1999-2000.

Kirti and Rinku (2011)- The study describes the extent and pattern of daily return on Sensex and Nifty and their volatility. The study also compared Indian market performance with the global markets.

Debjiban Mukherjee (2007)- The study captures the trend, similarities and patterns in the activities and movements of the Indian Stock Market in comparison to its international counterparts.

NEED FOR PRESENT STUDY

The Sensex and Nifty are considered to be the benchmark indices of Indian Economy. Therefore, both the indices are of utmost importance to all the stakeholders. The present study attempts to compare the two major indices of Indian Stock market. The Rationale behind the present study is to offer a better view of the two indices by comparing them at different parameters.

OBJECTIVES

- The main objective of this study is to trace the movements, similarities, and patterns of two major indices viz., Sensex and Nifty.
- To help the investors (current and potential) understand the impact of important happenings in the Indian Stock market.

METHODOLOGY

For the comparative analysis of the two major indices, that is, Sensex of BSE and Nifty of NSE. The period chosen is from 1st January 2000 to 31st December, 2012. This period is divided 13 years, in order to capture the effect and movement of stock indices with each other annually. The data for the said purpose was collected mainly from the official websites of BSE and NSE. The economic situation changes during different times. 2001 represents technology boom and tech bubble bursting period, 2001-2003 represents the slow global

recovery from the recession, 2003-2006 period represents the investment boom period especially in the developing and emerging markets. The year 2008 witnessed the tragic sub-prime crisis and the global melt down.

COMPARATIVE DATA ANALYSIS

The comparative analysis of two major indices i.e., SENSEX and S&P CNX NIFTY has been done both qualitatively and quantitatively on various parameters;

Qualitative Analysis

Criteria for stock selection in index

S&P Sensex: The criteria for the selection of stocks to be included in sensex are as follows:

1. Equities of companies listed on BSE Ltd. (excluding companies classified in Z group, listed mutual funds, scrip's suspended on the last day of the month prior to review date, stocks objected by the Surveillance department of the Exchange and those that are traded under permitted category and SME category) shall be considered eligible The scrip should have a listing history of at least three months at BSE. An exception may be granted to one month, if the average free-float market capitalization of a newly listed company ranks in the top 10 of all companies listed at BSE. In the event that a company is listed on account of a merger / demerger / amalgamation, a minimum listing history is not required.
2. The stock should have been traded on each and every trading day in the last three months at BSE. Exceptions can be made for extreme reasons like scrip suspension etc. Companies that have reported revenue in the latest four quarters from its core activity are considered eligible.
3. From the list of constituents selected through Steps 1-2, the top 75 companies based on free-float market capitalization (avg. 3 months) are selected as well as any additional companies that are in the top 75 based on full market capitalization (avg. 3 months). The filtered list of constituents selected (which can be greater than 75 companies) is then ranked on absolute turnover (avg. 3 months). Any company in the filtered, sorted list that has Cumulative Turnover of >98%, are excluded, so long as the remaining list has more than 30 scrip's. The filtered list calculated is then sorted by free float market capitalization. Any company having a weight within this filtered constituent list of <0.50% shall be excluded
4. All remaining companies will be sorted on sector and sub-sorted in the descending order of rank on free-float market capitalization. Industry/Sector Representation**:** Scrip selection will generally attempt to maintain index sectoral weights that are broadly in-line with the overall market.

CNX Nifty: The criteria for the selection of stocks to be included in Nifty are as follows:

1. For inclusion in the index, the security should have traded at an average impact cost of 0.50% or less during the last six months for 90% of the observations for a basket size of Rs. 2 Crores. Impact cost is cost of executing a transaction in a security in proportion to the weightage of its free float market capitalization as against the index free float market capitalization at any point of time. This is the percentage mark up

suffered while buying / selling the desired quantity of a security compared to its ideal price (best buy + best sell) / 2

2. Companies eligible for inclusion in CNX Nifty should have atleast 10% floating stock. For this purpose, floating stock shall mean stocks which are not held by the promoters and associated entities (where identifiable) of such companies.
3. A company which comes out with a IPO will be eligible for inclusion in the index, if it fulfills the normal eligibility criteria for the index like impact cost, market capitalization and floating stock, for a 3 month period instead of a 6 month period.
4. A stock may be replaced from the index reasons may be compulsory changes like corporate actions, delisting etc. In such a scenario, the stock having largest free float market capitalization and satisfying other requirements related to liquidity, turnover and free float will be considered for inclusion.

Methodology for calculating index

SENSEX

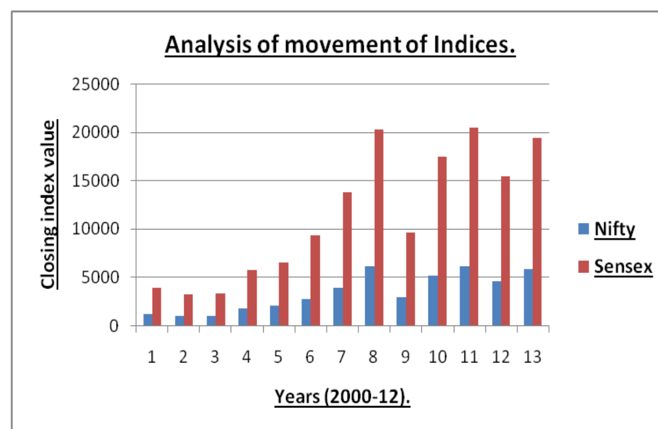
S&P Sensex was first compiled in 1986 and is calculated by free-float market capitalization methodology. It consists of 30 scrip's representing large, well established and financially sound companies across key sectors. Base year for Sensex was taken as 1978-79 with base value of 100 index points.

NIFTY

The CNX Nifty is a well diversified stock index accounting for 22 sectors of economy. It is owned and managed by India Index Services and Products (ISL) which is a joint venture between NSE and Crisil. It was started in 1995 with the base value of 1000 index points. It is calculated by free-float market capitalization methodology

Quantitative Analysis

Index Movement

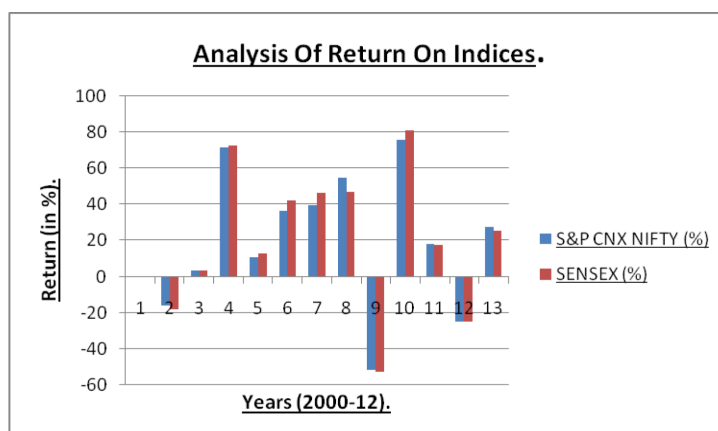


Graph 1

The stock market has shown greater amount of volatility from past decade due to fluctuations in various economy factors both domestically as well as worldwide. The fluctuations are shown in the above graph. The closing value of year 2000 stands at 3990.65 points and the decline was observed in 2001, index closed at 3262 indicating a sharp decline. The reason may be associated with the happenings of September 2001 attack on U.S twin towers. The SENSEX in this year experienced 8 year low value. SENSEX regained a few points in the coming year and there after showed a constant upward trend. In year 2008, the SENSEX crashed below by almost 10,000 points, the reason behind was Sub-prime crises and the global melt down. The crises started in US by the shutdown of 120 year old bank Lehman Brothers. The heat of this meltdown was felt across the world and in India also. The downward trend can been seen in the above graph.

The decline in the value of NIFTY in 2001 on account of global economic recession. There is also a downward slope in the year 2008 reason being Sub-prime crises and the global meltdown. NIFTY was down more than 1000 points in this year. There was again drop in the value of SENSEX and NIFTY in the year 2011 on account of same economic global crises.

Risk and Return



Graph 2

The return on an index can be defined as return from a portfolio of stocks representing that particular index. The closing price data for Nifty has been taken from NSE website (www.nseindia.com) and Sensex from BSE website (www.bseindia.com). The returns are calculated as yearend price differences in order to treat positive and negative returns. The returns calculated as:

rt = (pt/pt-1)*100

and

$\sigma = \sum^{n}{}_{i=1} (n-r)^2$

Where as

n= number of observation

rt= return on year t.

Pt= price at the end of the year.

Pt-1= price at the beginning of the year.

It is observed that year end returns offered by the indices fluctuates depending on various economic factors both domestically as well as worldwide. Nifty offered negative returns to the extent of -16% (2001) and positive returns to the extent of 42% (2005) and in the coming years return have increased. Again negative returns -51% in the year 2008. Average return for the given period is 20.46% with a standard deviation of 38.79%. SENSEX exhibits similar pattern of fluctuations, the returns ranging from -52% (2008) to 81% (2009). The average return for the given period is 21.21% with a Standard deviation of 39.90%.

Compound Annual Growth Rate (CAGR)

The CAGR means the year over year growth rate of an investment over a specified period of time. The CAGR is calculated by taking the nth root of the total percentage growth rate. Where "n" is no. of years in the period being considered? This can be calculated as follow:

$$\textbf{CAGR} = (\textbf{Ending value/Beginning value})^{(1/\text{no. of years})} - 1$$

The CAGR isn't the actual return in reality. It is an imaginary number that describes the rate at which an investment would have grown if it grew at a steady rate. The calculated CAGR of SENSEX and NIFTY is 12.94% and 12.59% respectively.

CONCLUSION

The returns offered by Sensex and BSE exhibited a fluctuating pattern. But the average return for the given period is positive. This transcends a warm message to the investors to hold the investment for a longer period of time. The CAGR of Sensex is slightly more than Nifty indicating a better index for investment purposes. The Sensex and Nifty movements almost show a similar trend. This is evident from the Pearson's coefficient of Correlation (r=-995), almost a perfect one. The indices reflect the overall market sentiments and are hereby called as BENCHMARK INDICES of Indian Economy.

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