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Volatility in Indian Stock Market: A Study on S & P BSE Sensex

Abstract

Stock price movements do not always shows a random behaviour. In fact, financial market reflects the every sudden effect of change in any economic sector on its relevant scrip. The patterns of the stock markets have long been the interest that attracts economists, mathematicians and most recently computer scientists. The study tries to discuss the volatility in Indian stock market and make an attempt to explore the impact of different micro and macro level variables at different point of time on Indian stock market. It analyzes the behaviour of S & P BSE Sensex during the period from 2011 to 2017. It has especially focused on the significant changes in Indian stock market during the aforesaid period.

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Keywords: Sensex, Scrip, Volatility, Stock Market.

Introduction

Stock market plays an important role in promoting economic development and in financing the Indian corporate sector. The evidence from past research has shown that the healthy functioning of stock markets have considerable effect on growth of an economy in a developing country. The stock market performance and economic growth has been the matter of intensive theoretical and empirical work among academia and policy makers. The mobilization of resources for investment from the investors, maintenance of liquidity, and disciplining company managements are the key functions of the stock market. It also offers capital investment at competitive cost to entrepreneurs that boost the economic growth.

Stock market in India has a long history. Indian stock market marks to be one of the oldest stock market in Asia. The first stock exchange was established in Bombay in 1875. Since then, the number of stock exchanges has grown including over the counter exchange of India. These stock exchanges are governed and regulated by SEBI (Securities and Exchange Board of India). The NSE and BSE are the major stock exchanges in India.

The Indian policy makers have adopted various modern strategies for the development of stock market till late 1980. But, the introduction of economic reforms of 1991 has been proved a landmark in pushing Indian stock market to its miles. The expansion in number of listed companies, shareholders in the market and increased market capitalization are the rewards of these financial sector reforms. This has resulted in Indian stock market to become one of the most active and leading player among all developing countries of the globe.

The Indian stock market has seen many up and downs in its long journey either in terms of prices or in volume. The public expectations towards government's policies, news, and decisions of company officials have direct impact on the stock price movement. An increase in stock prices is an indication of a bullish trend, which reflects future expansion of economic growth and a decline in stock prices is a signal of bearish trend that is associated with expected potential economic recession. The volatility aspect of stock market makes investment of shareholders' risky. The macro economic variables influence stock prices and these factors can affect a single firm's price and can be specific to a firm. On the contrary, some factors commonly have an effect on all the firms.

The study is divided into six major parts. The first part deals with the objective of the study. The second part focuses on review of literature. The third part of the study presents the research design. The fourth part discusses the volatility in Indian stock market. The fifth part gives the biggest falls of Indian stock market. Finally, the last part concludes the paper.

Objectives of the Study

The study is based on the following objectives:

1. To study the volatility in Indian stock market
2. To discuss the significant changes in S & P BSE Sensex

Review of Literature

Various researchers have given their observations and views regarding different worldwide stock markets.

Joshi and (n.d.) explored the dynamics of comovement of stock markets of USA ,Brazil, Mexico, China and India during the period from January, 1996 to July, 2007 using daily closing price data. It attempts to analyze the speed of adjustment coefficients using daily, weekly and monthly data. It also tried to examine the efficiency of the stock market as a result of initiatives and regulatory measures taken by NSE and SEBI respectively. (Kalara & Pandey, 2015) analyzed the time variation in volatility in the Indian stock market during 2009 - 2014. Analysis has been done to examine if there has been an increase or a decrease in volatility persistence in the Indian stock market on account of the process of financial slowdown in India after the global crisis. (Gupta & kumar, n.d.) examined the volatility in individual stocks listed at NSE using daily closing prices of 29 companies by covering a period from 1996-97 from 2006-07.

(Chakrabarti & Sen, 2013) also explored the latent structure in the Indian stock market, along with its sectors, around the financial crisis and tried to understand the market structure. (Anubha Srivastava, 2014) studied the volatility in Indian stock market. (Shah, 2014) examined the trend and pattern of FII flow in India and also examined the relationship between FII and Nifty. (Kavitha, Udhayakumar & Nagarajan D, n.d.) gave an idea about the trend analysis of stock market behaviour using Hidden Markov Model (HMM) and the pattern of the stock market behaviour is then decided based for a particular time.

(Singh & Kaur, 2015), tried to access the factors which resist common man in India from investing in stock market and ways to overcome such hesitations with the sole motive to induce investment in Indian Stock Market. Mukherjee (2007) captured the trends, similarities and patterns in the activities and movements of the Indian Stock Market in comparison to its international counterparts. This study covered New York Stock Exchange (NYSE), Hong Kong Stock exchange (HSE), Tokyo Stock exchange (TSE), Russian Stock exchange (RSE), Korean Stock exchange (KSE) from various socio-politico-economic backgrounds. Both the Bombay Stock exchange (BSE) and the National Stock Exchange of Indian Limited (NSE) have been used in the study as a part of Indian Stock Market.

The different studies have been conducted on various aspects related to stock market. But there is need for a study that collectively presents the biggest dives in Indian stock market with their relevant causes and impact. The present study fulfills this need and shows these parameters in a significant manner.

Research Design

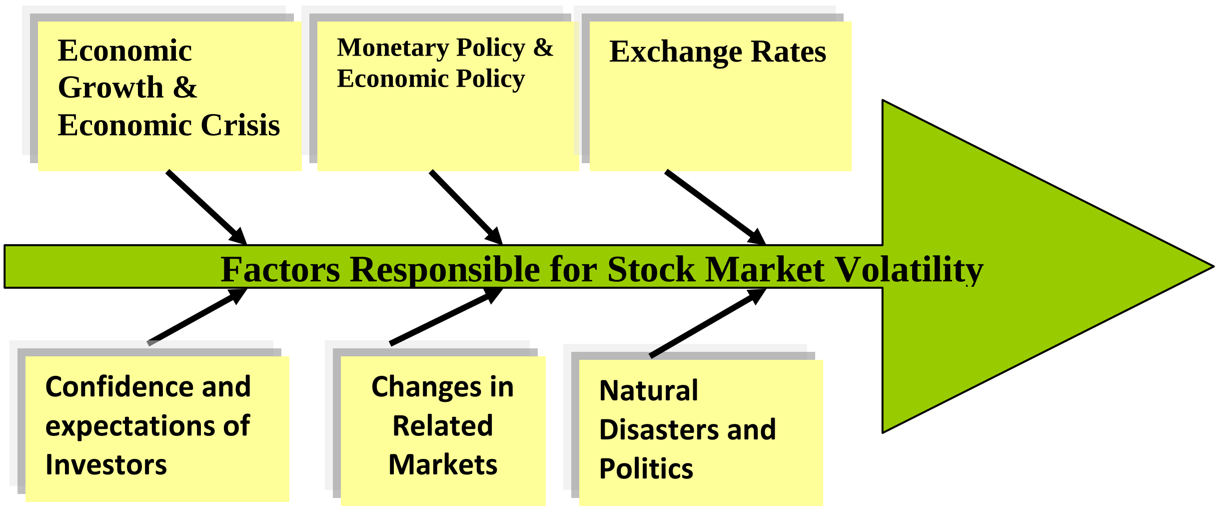
The research design of the proposed study is secondary data based descriptive –analytical research methodology. The secondary data is collected through various websites related to stock market. The different articles from newspapers, magazines and journals are used for the purpose of this study. The volatility in Indian stock market has been studied by considering the significant ups and downs of BSE Sensex between the period of 2011 and 2017. For the purpose of this study, the significant up and down in BSE Sensex is considered at a point where Sensex has crossed 400 points.

Volatility in Indian Stock Market

Volatility indicates the level of unpredictability, uncertainty or risk about the value of a security. In other words, it is a measure of variability in the price of an asset. So, high volatility means higher risk as a security's value can potentially go through large price movements on either directions. A lower volatility specifies that a security's price does not vary radically, but changes in price at a steady pace over a period of time. Investors prefer low volatility as it reduces unnecessary risk and enables market traders to liquidate their securities without significant variations in prices. In statistical terminology, volatility measures variability or dispersion about a central tendency. More accurately, it shows how far the current price of a stock deviates from its average historical prices. The greater the value of the deviation, the greater will be the volatility and vice-versa (Raju, 2004).

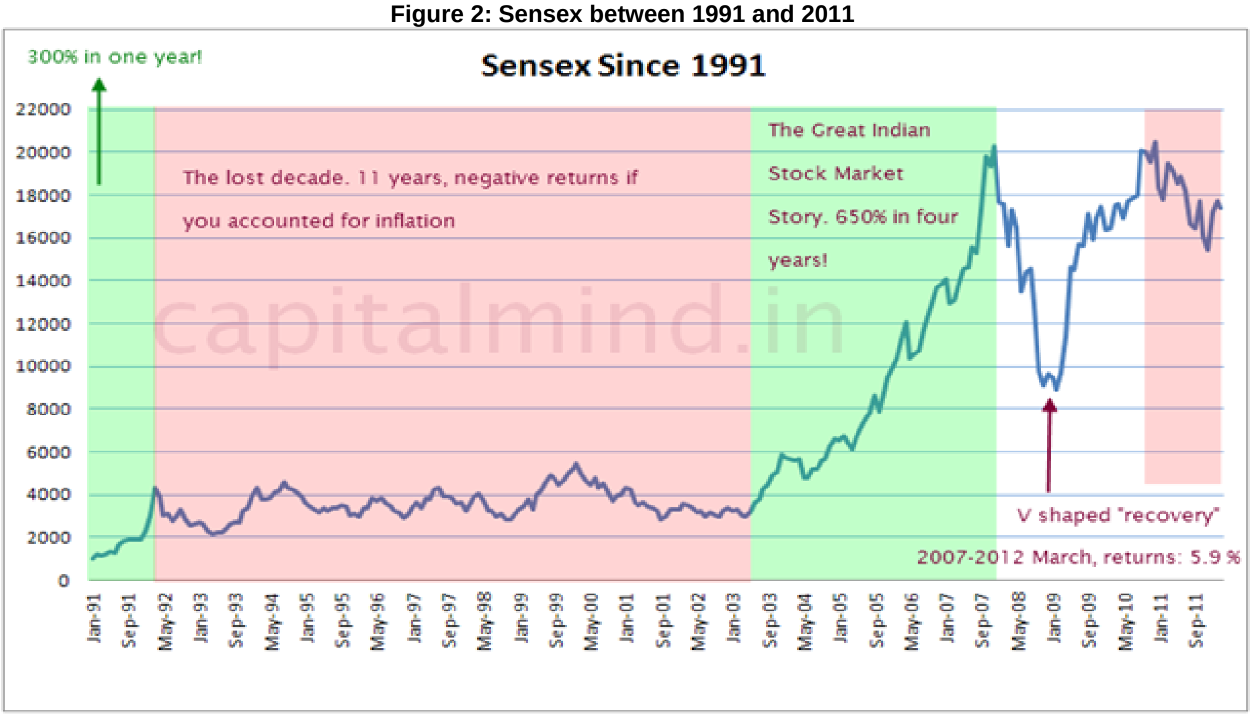
Volatility can be held responsible for increasing the risk level in stock market, but this is only one facet of coin. On the other side, it provides opportunity to make money to those who can understand it and may take advantage of fluctuation in prices. Investors may buy stock when prices fall and sell when prices are increasing. So, to get benefit of volatility it is need to be understood well. Volatility affects business investment spending and economic growth through a number of channels. In fact this is one of the best phenomenons which provide charm to the stock market and its behaviour. Without the concept of volatility, the stock market will just like a dish which has no spice (Dr. Anubha Srivastava, 2014). There are number of factors which are responsible for stock market volatility. The following figure 1 presents these factors:

Figure 1: Factors Responsible for Stock Market Volatility



After the adoption of liberalization, globalization and privatization, the flow of Foreign Institutional Investment (FII) has increased in India and as a result the issue of volatility has become more significant. As a result Indian equity market becomes more dependent on global capital market variations. This is the general belief of the investors that that holding investment in stock market for longer period is always give fair returns but that's not true. If the performance of Indian stock market is observed between year 1991 to 2011, it can be seen that its all about only four years 2003-2007, where stock market indices have changed dramatically. According to one study, returns in September 2001 were just 49% higher as compared to returns in September 1991, a compound return that is even lesser as compared to the return on a saving bank account deposit (Shodhganga, n.d.). The following Figure 2 depicts the aforesaid scenario of Indian stock market during the said period:

Figure 2: Sensex between 1991 and 2011



Source: capitalmind.in

The whole growth in stock market is attained during 2003 and 2007, besides this phase, the stock market has given only substandard returns. The scrip prices have high returns but overall stock market doesn't raise much. Further, the end of 2007and beginning of 2008 observed the arrival of global financial meltdown which had bought the disaster to the financial markets around the world. The seed of financial crisis were incorporated by liquidity shortfall in US banking system and continual downturn in stock prices on news that Lehman Brothers, Merill Lynch and many other investment bankers and companies are collapsing. The Sensex which had touched historically high levels in the beginning of 2008, turned down to its level about three years back (Anil K. Sharma and Neha Seth, 2011).

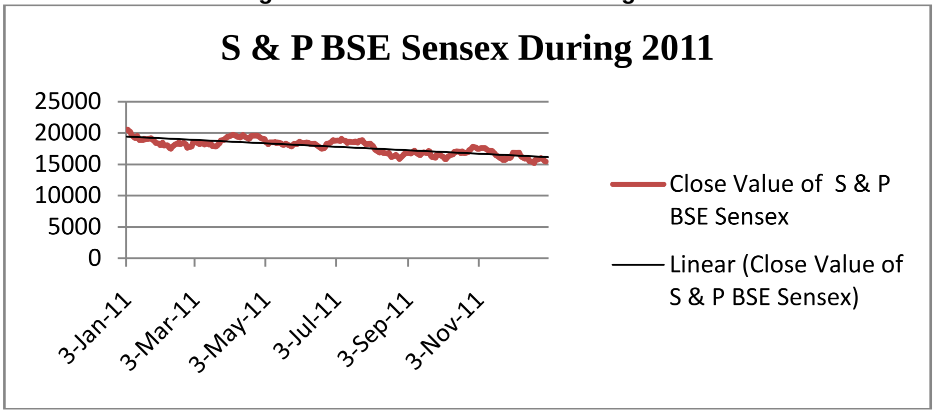
Significant Movements of BSE SENSEX

The up and downs of Indian stock market emphasizing S & P BSE Sensex are presented in the following segments:

S & P BSE Sensex during 2011

During 2011, the Sensex has tumbled 5,054.17 points, or 24.64 per cent, eroding Rs. 20 lakh crore in investor wealth (NDTV, 2011). The stock market was affected due to many global and domestic reasons like 2G scam, rising inflation, RBI's rate hike, disappointing quarterly results, government's prolonged divestment programme, lack of policy reforms, rupee depreciation and the unsolved European debt crisis among others (Money Control, 2011). The Figure 3 depicts the status of S & P BSE Sensex during 2011:

Figure 3: S & P BSE Sensex during 2011



The barometer BSE Sensex six times tumbled down and eight times jumped in upward direction by more than 400 points. The Indian stock market reached to their lowest level in nearly 14 months on 5 August 2011 as worries of global economic downturn indicated a fall in markets worldwide. The BSE Sensex dropped to a low of 16,990.91 in intraday trading, losing 702 points before closing at 17305.87 on short covering. The reason behind this fall was due to a fear of an impending slowdown in the Western markets, which forced investors across the world to sell shares and further uncertainties of a double-dip recession in the US and worries of more sovereign debt defaults in Europe intensified the situation (Mohan & Laskar, 2011).

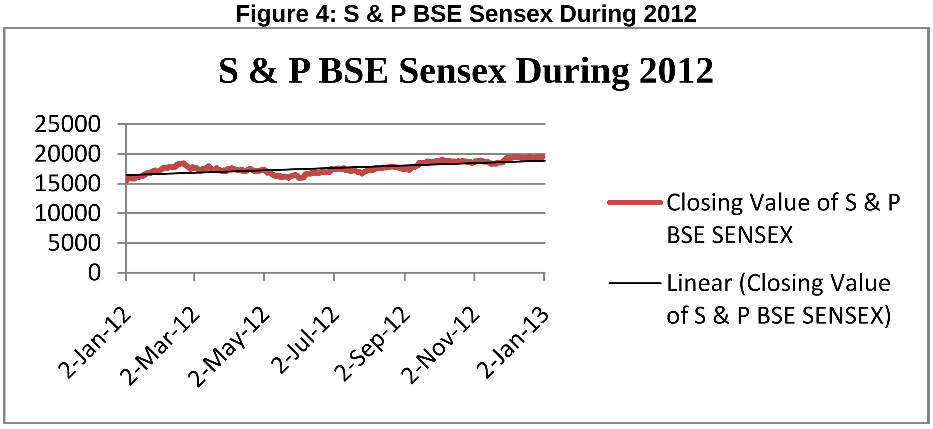
The another significant fall in BSE Sensex was on 22 September 2011, when it slumped 4.1 percent i.e. 704 points, a biggest one-day fall in over 26 months as the investors started releasing risky assets across worldwide markets on a gloomy US economic outlook and slowing manufacturing growth in China. The rupee was also drop down sharply (Reuters, 2011**)**.

Further from the above figure, it can be observed that from last week of October 2011 till last of November 2011, the Sensex was in downward side and after a little bit recovery it again tumbled till the end of 2011. The last day of 2011 was quite bad for the market and Sensex closed lower for the fourth consecutive session and touched a level of 15,454.92 (Money control, 2011).

S & P Sensex during 2012

This year was a little bit relaxing for the investors as Sensex clocked 25.69 per cent gain, or 3,971.79 points, in 2012 and it was the best gains in three years as strong overseas inflows and the government's fiscal and economic reforms outweighed fears about the domestic economy (Business Today, 2012). Moreover, expectations regarding the spilling over of European sovereign debt crisis and slowdown in the US economy have also driven the index movement (Reddy, 2012). The following Figure 4 depicts the Sensex movement during the year 2012:

Figure 4: S & P BSE Sensex During 2012

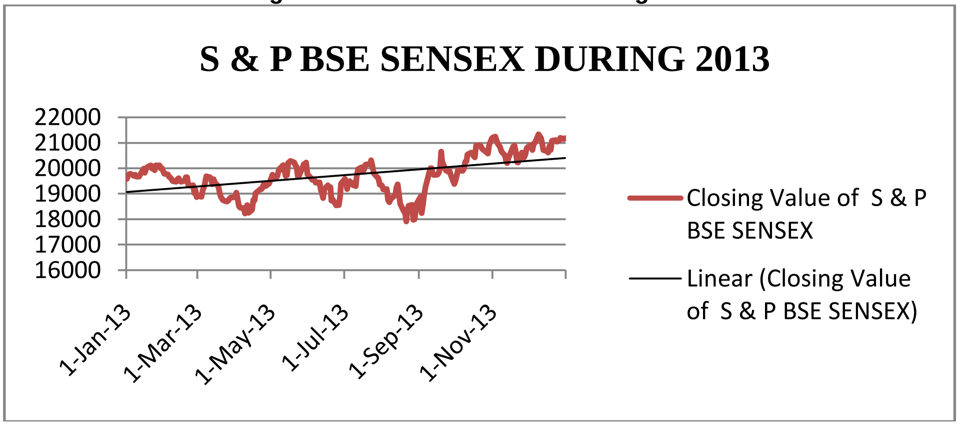


The BSE Sensex crosses 400 points seven times in year 2012, out of which, the five movements was in upward direction and two on downward side. The best single day gain of the year was on 14 September 2014, when Sensex vaulted 443 points to a 14-month high of 18,464.27 as investors cheered with positive sentiments on account of government's decision to hike diesel prices and approval of US Federal Reserve for a new economic stimulus plan to spur growth (India Today, 2012). However, the biggest fall of the year was on 27 February 2012, when Sensex tumbled 477.82 points due to sale of shares worth a net Rs 542.50 crore on Monday, 27 February 2012 by Foreign institutional investors (FIIs) (IIFL, 2012).

S & P BSE SENSEX during 2013

The performance of BSE Sensex during 2013 was better than the previous year as index rise to an all-time high as foreign investors pumped in $20.1 billion into equities. The Sensex had soared over 21000 and touched a record high of 21,483.74 on December 9 after the BJP's wins in three state elections. On the other side the factors that drove investor sentiment and affected the BSE Sensex negatively this year were the depreciation in the value of rupee, which fell to a record low in August, the US Federal Reserve's plan to taper its stimulus programme and increase in the Reserve Bank's interest rate for combating inflation (Business Today, 2013). The Figure 5 presents the status of S & P BSE Sensex during 2013:

Figure 5: S & P BSE Sensex During 2013



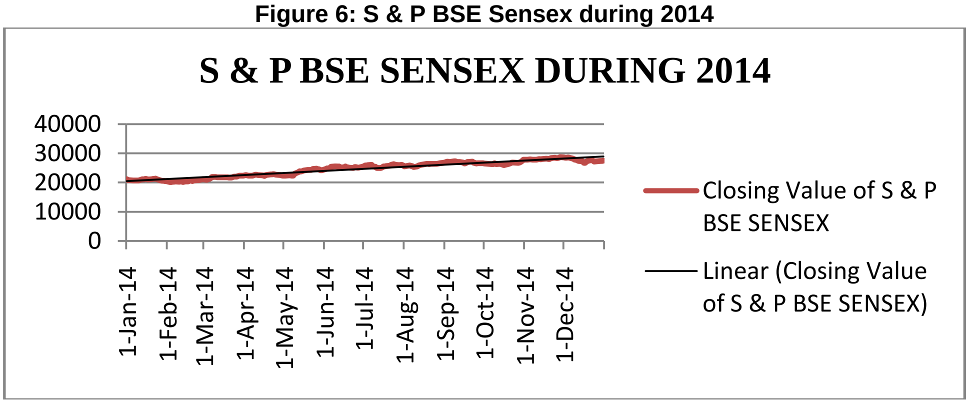
Overall, the Sensex has dropped eight times and climbed nine times by more than 400 points during the whole year. This is cleared from the above figure that in middle of July, 2013 Sensex had jumper over 20000, but in the beginning of August, 2013 the Sensex tumbled badly. As After touching a high on July 23, 2013, the BSE-Sensex had fallen 1,138 points (-5.6%) as of August 02, 2013. Surprisingly, the Indian bourses had been falling during this time period when several worldwide markets were witnessing gains. This has indicated that the problems were much domestic (Equity Master, 2013).

Further, the biggest fall of the year was on August 16, 2013, when S&P BSE Sensex plunged by over 750 points, to end at 18,598. It was the Sensex's biggest single-day fall since July 2009. This was due to the fall in rupee to a record low of 62 per dollar amid heavy selling by foreign funds (The Hindu, 2013).

S & P BSE Sensex During 2014

The year 2014 kept Sensex on an upward side on account of different positive factors. The BSE Sensex outperformed in last five years and rallied more than 6000 points in 2014 , aided by Narendra Modi government's 'majority' win in Lok Sabha elections, sharp fall in inflation and crude oil prices, and hopes of reforms and decrease in interest rate by RBI. In fact, the Indian markets outshined Asian and global peers during the year. Moreover, Foreign Institutional Investors (FIIs) were the key players behind this performance, with the purchase of more than Rs 97,000 crore worth of equity shares in 2014, the leading net buying in the last four years (Money Control, 2014). The Figure 6 shows the trend of S & P BSE Sensex during 2014:

Figure 6: S & P BSE Sensex during 2014

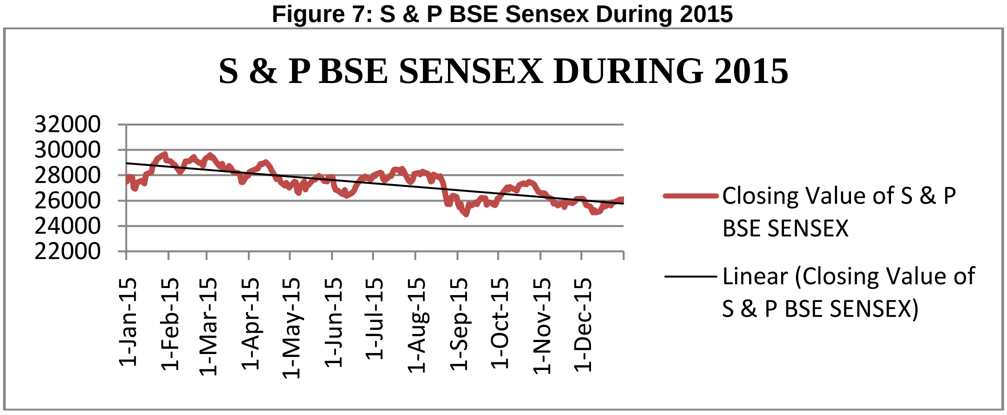


This is reflected from the above figure that there is upward trend in Sensex during 2014. The Sensex plunged by more than 400 points seven times and driven by more than 400 points only four times. The biggest hit of the year was on May 9, 2014, when Sensex soared over by 650.19 points on speculation that Bharatiya Janata Party (BJP) will be able to form the next government at the centre and Narendra Modi will be the next Prime Minister of India after Lok Sabha elections.

S & P BSE Sensex During 2015

The 2015 was a turbulent year for the Indian stock market. A tumultuous equity movement, depressing corporate earnings, sub normal monsoons, dive in oil and commodity prices accompanied by astonish interest rate cuts had made this year unforgettable for Indian markets (Business Standard, 2015). The Figure 7 depicts the clear picture of the S & P BSE Sensex during 2015:

Figure 7: S & P BSE Sensex During 2015



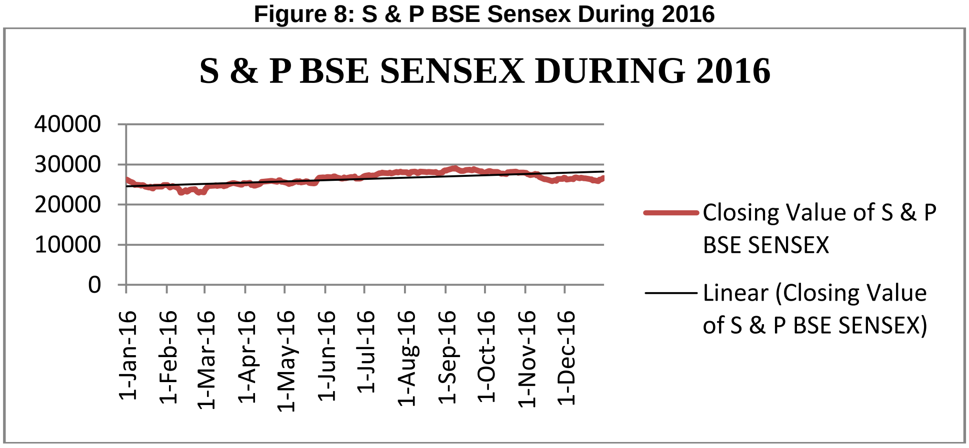
The Sensex jumped by 400 points in a bearish manner 16 times and in a bullish manner 12 times. This is evident from the above figure that Indian stock market faced a significant fall in its first week of its trading this year i.e. on 6 January 2015 when Sensex finally ended with a hefty loss of 854.86 points at 26987.46 on account of weak trends in the worldwide market and unabated selling across-the-board (Bramesh, 2015).

The biggest fall of the year was on 24 August 2015, when BSE Sensex crashed 1624.51 points to end at 25741.56. The key reason for this drop was global slowdown fears led by the Chinese economy. The domestic front has also affected the market negatively with a disappointing earnings season of the concerned quarter. Further, the net sale of shares worth Rs 5,275 crore by foreign institutional investors (FIIs/FPIs) had also multiplied the situation (Business Today, 2015).

S & P Sensex During 2016

Calendar 2016 was unsuccessful to cheer market participants as the benchmark indices gave up most of the gains made during the year. It would be an understatement to say that the bears had the upper hand for most parts of 2016. Heavy domestic instability and extraordinary reactions to overseas news kept the markets grounded whenever it threatened to break out. The panic selling observed across sectors was one of the leading overreactions this year (Shriram Sivaraman, 2016). The figure 8 demonstrates the trend of BSE Sensex during 2016:

Figure 8: S & P BSE Sensex During 2016

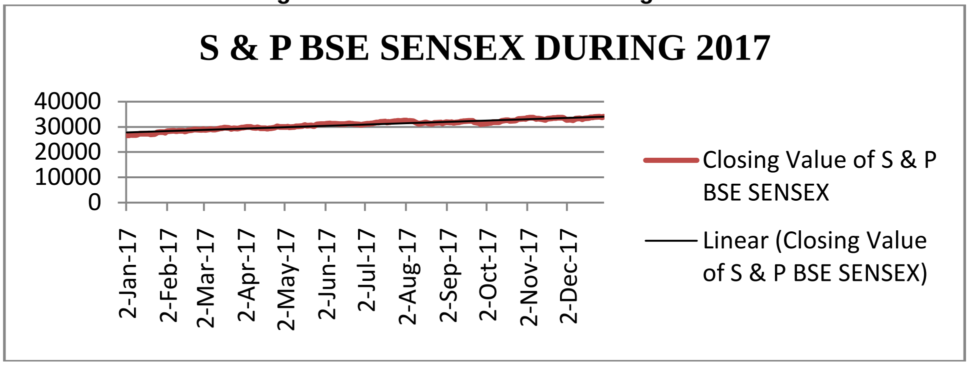


This is clearly visible in the above figure that the overall movement of BSE Sensex during 2016 was in upward trend. However, the Sensex jumped by 400 points, sixteen times in upward direction and twelve times in downward side. The biggest fall of the year was on 11 February 2016, when Sensex closed 807.07 points down at 22951.83 on account of substantial sell-off in bank, power, realty and stocks coupled with weak global cues (Oberoi, 2016). The other significant turning point on the downward side of the market is on 9, November 2016 when BSE Sensex witnessed a fall of 1,688 points, in early hours of trade to strike a low of 25,902 against its earlier day's close of 27,591 (Mudgil,2016).

S & P BSE Sensex During 2017

India's barometer index S & P BSE Sensex gained 35 per cent return in terms of dollar in 2017 and raised its status among the three emerging markets apart from Hungary and South Korea. The Sensex touched the heights of 34000 for the first time in 2017. Indian market capitalization raised 46 per cent to $ 2.29 trillion and resultantly, the Indian stock market received the tag of eighth market in the world. Moreover, domestic investors outshined the foreign portfolio investors (FPIs) in terms of money flow into Indian equities in a cumulative two-year cycle for the first time in seven years. (Ashutosh Shyam, 2017). The figure 9 depicts the pattern of S & P BSE Sensex during the year 2017:

Figure 9: S & P BSE Sensex during 2017



This is evident from the above figure that the overall trend of S & P BSE Sensex was on upward side. The Sensex jumped by more than 400 points six times during the whole year, out of which three times in upward side and three times in downward side. The biggest jump in upward direction was on 14 March 2017, when Sensex jumped by 496.40 points. A solid rally was witnessed on the bourses on account of the ruling party at the Centre, BJP, registering a stunning show in then held assembly elections in five states. However, a recovery in industrial production in January, 2017 had also boosted the sentiments of investors (IIFL, 2017).

The other facet of coin shows the biggest fall of the year was on 30 November 2017, when Sensex tumbled by 453.41 points. This reduction was caused by fiscal deficit readings for the April-October period and State Bank of India's move to raise bulk deposit rates. The weakness in global markets added spice to the existing bearish move of the index (Economic times, 2017).

Conclusion

Sensex is regarded as the pulse of the domestic Indian stock market. In these seven years, the Sensex has been through a roller-coaster ride and the journey of the benchmark Sensex on BSE had been extremely eventful, expanding by leaps and bounds on the back of robust foreign capital inflows. The journey of Sensex during this period has witnessed that political factors, domestic reasons, inflow or outflow by FIIs and FPIs and other global cues had attempted to hit the Sensex on both the sides of bearish and bullish trend. But, the strong performance of the markets can be gauged from the fact that Sensex gave positive returns in 5 out of 7 years, emphasizing the buoyant feel among investors and their faith in equity markets.

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