

ANALYSIS OF RETURN OF SELECT INDIAN STOCK INDICES

POOJA SINGH

Research Scholar, Department of Commerce, Banaras Hindu University, Varanasi, Uttar Pradesh, India

ABSTRACT

The return and volatility trade off persist throughout the market. According to nerdy sounding financial jargons saying, more risk offers more return. It means risk and return are proportional to each other. More volatile day give high return than that of less volatile period. The study helps in developing the market strategy and policy formation for government to take corrective action in market promotion and investors to decide for the right time to enter in the market by hedging risk. The daily return as well as volatility is useful at several places like policy makers, regulators, market participants and investors. The indices show extreme positive and negative price movement. The irregularities in the market have created high fluctuation from the mean value of the return.

Volatility in Indian stock market will show alot for market development. Indian stock market are by and large stable and volatility has been under control. The development of any market requires removal of bottlenecks on supply as well as demand side, while putting in place alongside sound institutional and legal framework. As the market evolution is an ongoing process, the Indian equity market would have to continuously strive to keep up to the international standards.

KEYWORDS: Volatility, Return

INTRODUCTION

The capital market fosters economic growth in various ways such as by augmenting the quantum of savings and capital formation and through efficient allocation of capital which in turn raises the productivity of investment. Financial markets, especially stock markets have grown considerably in developed and developing countries over the last two decades. Better fundamentals (higher economic growth, more macroeconomic stability), structural reforms (notably privatization of state owned enterprises), and specific policy changes (notably domestic financial reforms and capital account liberalization) have aided in their growth.

In Indian context, the process of economic reforms was set in motion in the mid-eighties and its pace was accelerated in 1991 when the economy suffered severely from a precariously low foreign exchange reserve, burgeoning imbalance on the external account, declining industrial production, galloping inflation and arising fiscal deficit. The securities market reforms were aimed at creating efficient and competitive market subject to effective regulation by SEBI which would ensure investor protection. The two most prominent stock exchanges with more the 95% of investment of Indian investors are Bombay stock Exchange and National Stock Exchange.

VOLATILITY

Volatility days when large market movements, particularly down moves, occur. These precipitous market wide price drops cannot always be traced to a specific news event. Nor should this lack of smoking gun be seen as in any way anomalous in market for assets like common stock whose value depends on subjective judgement about cash flow and resale prices in highly uncertain future. The public takes a more deterministic view of stock prices; if the market crashes, there must be a specific reason (Merton Miller, 1991).

Volatility is an inevitable market experience mirroring fundamentals, information and market expectations. Interestingly, these three elements are closely associated and interact with each other. Adjustments in equity prices echo changes in various aspects of our society such as economic, political, monetary, and so forth (**Gregorious, 2009**). The issues of volatility and risk have become increasingly important in recent time to financial practitioners, market participants, regulator and researchers (**Raju & Ghosh, 2004**).

REVIEW OF THE STUDY

Stock market has become important from the point of view of the aggregate economy. Stock market liberalization is a decision by a country's government to allow foreigners to purchase share in that country's stock market. Standard International Asset Pricing Models (IAPMs) predicts that stock market liberalization may reduce the liberalizing may reduce the liberalizing country's cost of equity capital by allowing for risk sharing between domestic and foreign agents (Henry, 2000).

There is a consensus among the academics that liberalization encourages the formation of equity markets where they did not exist and help in their deepening where they predated the reforms (Grabel, 1995).

Some of these markets are even comparable in size to the small European market and many of them have been growing at a faster rate than European market over the last few years and are likely to continue to do so. All these encouraging development in the emerging markets have been largely overshadowed by excessive fluctuation of share prices (**Roy**, **1999**).

Financial security as a global public good-while no one has the responsibility to ensure it, all countries stand to benefit from it (World Bank Report, 2000). There is no long-term relationship of the Indian equity market with that of the US & Japanese equity markets. Nasdaq & Nikkei have strong causal relationship in 1999-2001 which becomes either very weak or disappears in 2002-2004 (Khan Masood Ahmad, Shahid Ashraf & Shahid Ahmed, 2005). In post-reform era, the trading in Indian stock market increasingly concentrated on a few sector and companies and an increase in annual turnover is mainly attributed to this increased concentration on a few companies and sector. A market plagued with severe price volatility can hardly achieve the desired objective as by (JoydeepBiswas, 2007). Indian Stock market seems to be a sideshow in providing price signals to Indian managers and investment decision are predominantly determined by a firm's fundamental. (Saumitra N. Bhaduri&Bhrgavi Shankar, 2007). The Indian evidences show that though there is a general rise in the trends for the financial indicators, liquid liabilities and private credit grow particularly slowly after financial liberalization, having stagnated during 1980s (Peter Lawrence, 2008).

OBJECTIVE AND SCOPE OF THE STUDY

The main objective of the study is to

• Examine volatility in Indian equity market in post 1991 period. The development of financial markets, especially the equity market, is important for the economy as it serves as a benchmark.

The equity market in India has been modernized over the past 22 years and is now comparable with the international markets.

RESEARCH METHODOLOGY

The data is collected from various sources such as BSE, NSE and other stock exchange annual. The secondary data include RBI Report of Currency and Finance and RBI Website and from the official publications of capital market. The use of statistical tool will be applied as per the objective of the study.

Data: Prowess database of CMIE is used as the data source. The two popular indices involve Bombay Stock Exchange (BSE) Sensex and S&P CNX Nifty. The recognised stock price indices is obtained using time series data for 22 year period starting from 1991:01 to 2012: 12. For S&P CNX Nifty data is not available for the entire period since there was no index from the starting date. The analysis and conclusion is not affected by this short coming as we study each index separately. The time series of volatility has been analysed. For calculating daily return, logarithmic difference of prices are calculated. The closing level of index on date 't' and closing level for previous day are used for this purpose.

Return

The return is calculated using logarithmic method is as follows-

 $\mathbf{Rt} = \mathbf{In} \; (\mathbf{I_{t}} / \; \mathbf{I_{t-1}})$

 $I_T = Closing price of index$

 $I_{t-1} = Closing price of index for previous day$

 $In = Natural \log I$

Volatility

Volatility is expressed as standard deviation. The standard formula for calculating standard deviation is as follows-

$$\sigma = \sqrt{\sum_{i=1}^{n} \frac{(Rt-R)2}{n-1}}$$

Where, n= sample size

ANALYSIS AND INTERPRETATION

Daily return and volatility (standard deviation) are calculated for each month. Return and volatility show a high variation over a period of time.

The daily return as well as volatility are useful at several places like policy makers, regulators, market participants and investors. The indices show extreme positive and negative price movement. The irregularities in the market have created high fluctuation from the mean value of the return.

The value of standard deviation of BSE Sensex shows dispersion from the value of mean of daily average return. With starting from1991, volatility was high in the months of 1993 during November and December. Return was highest to 5.06 during this month. The reason can be many related to the changing policy of the government and market reforms. The daily return of CNX Nifty from the year of availability of data is negative for regularly 1996, 1997 and 1998. The daily return is comparatively more negative for BSE Sensex. The annual daily return is positive from Sensex and Nifty during the year 2000 to 2003 Comparatively BSE emerged as more profitable investment opportunity for investors rather than NSE during these years. The return was comparatively high for BSE Sensex i.e 0.59 for 2000. The year 2004 was negative return year.

2005 show high returns of 2.37 and 2.69 for Sensex and Nifty respectively. Indian stock market recognized highest return in the ongoing history of share market in the year 2008 which was 6.99 and 8.22 for Sensex and Nifty as well.

| Month | Return | Standard Deviation |
|--------|--------|---------------------------|
| Jan-91 | 2.74 | 0.14 |
| Feb-91 | -0.09 | 0.71 |
| Mar-91 | -0.22 | 0.75 |
| Apr-91 | -2.55 | 1.45 |
| May-91 | 0 | 0.69 |
| Jun-91 | -1.55 | 1.15 |
| Jul-91 | 0 | 0.69 |
| Aug-91 | -1.73 | 1.21 |
| Sep-91 | 0 | 0.69 |
| Oct-91 | 1.5 | 0.23 |
| Nov-91 | 2.53 | 0.08 |
| Dec-91 | -0.33 | 0.79 |
| Jan-92 | 0.12 | 0.35 |
| Feb-92 | 0 | 0.39 |
| Mar-92 | 4.73 | 1.03 |
| Apr-92 | 5.81 | 1.35 |
| May-92 | -2.16 | 1.05 |
| Jun-92 | -0.03 | 0.4 |
| Jul-92 | 1.05 | 0.08 |
| Aug-92 | 1.16 | 0.05 |
| Sep-92 | 3.09 | 0.54 |
| Oct-92 | -1.01 | 0.7 |
| Nov-92 | 1.27 | 0.01 |
| Dec-92 | 1.71 | 0.12 |
| Jan-93 | 1 | 1.26 |
| Feb-93 | -5.71 | 10.89 |
| Mar-93 | 2.49 | 3.96 |
| Apr-93 | -1.02 | 2.34 |
| May-93 | 1.25 | 1.71 |
| Jun-93 | 0.74 | 0.79 |
| Jul-93 | 4.29 | 7.22 |
| Aug-93 | -1.32 | 2.94 |
| Sep-93 | 0.87 | 1.02 |
| Oct-93 | -0.84 | 2.07 |
| Nov-93 | 5.06 | 8.61 |
| Dec-93 | -3.15 | 6.52 |
| Jan-94 | -1.46 | 0.45 |
| Feb-94 | 1.16 | 0.34 |
| Mar-94 | 0.07 | 0.01 |
| Apr-94 | 0.15 | 0.04 |
| May-94 | 0.02 | 0.002 |

 Table 1: Volatility of S & P BSE Sensex of Daily Return in a Month from Jan 1991 - Oct 2013

Analysis of Return of Select Indian Stock Indices

| Table 1: Contd., | | |
|------------------|-------|-------|
| Jun-94 | -1.29 | 0.39 |
| Jul-94 | 2.05 | 0.61 |
| Aug-94 | 1.39 | 0.41 |
| Sep-94 | -1.77 | 0.54 |
| Oct-94 | -0.11 | 0.042 |
| Nov-94 | -0.62 | 0.19 |
| Dec-94 | 0.02 | 0.22 |
| Lop 05 | 1.2 | 0.22 |
| Jall-95 | 1.2 | 0.33 |
| Feb-93 | -0.97 | 0.31 |
| Mar-95 | -0.85 | 0.27 |
| Apr-95 | -2.41 | 0.74 |
| May-95 | 2.29 | 0.68 |
| Jun-95 | -1.14 | 0.36 |
| Jul-95 | -1.91 | 0.59 |
| Aug-95 | 0.55 | 0.15 |
| Sep-95 | 1.06 | 0.31 |
| Oct-95 | 0.12 | 0.02 |
| Nov-95 | 2.47 | 0.72 |
| Dec-95 | 0.17 | 0.04 |
| Jan-96 | 0.75 | 0.13 |
| Feb-96 | -2.92 | 0.97 |
| Mar-96 | 1 71 | 0.42 |
| Apr 96 | 1.71 | 0.42 |
| Apr-90 | 0.66 | 0.4 |
| May-90 | 0.00 | 0.11 |
| Jun-96 | -0.95 | 0.58 |
| Jul-96 | 2.57 | 0.68 |
| Aug-96 | 0.6 | 0.09 |
| Sep-96 | -0.47 | 0.24 |
| Oct-96 | -0.29 | 0.18 |
| Nov-96 | 0.68 | 0.11 |
| Dec-96 | -0.25 | 0.17 |
| Jan-97 | -3.63 | 0.93 |
| Feb-97 | 6.54 | 2.13 |
| Mar-97 | -8.26 | 2.33 |
| Apr-97 | 0.85 | 0.416 |
| May-97 | 0.83 | 0.41 |
| Jun-97 | 2.97 | 1.06 |
| Jul-97 | 1 43 | 0.59 |
| Δ110-07 | _222 | 0.5 |
| Sen_07 | _0.28 | 0.0 |
| Oct 07 | 2 22 | 0.00 |
| Nov 07 | -3.33 | 0.04 |
| INOV-97 | -1.8/ | 0.4 |
| Dec-97 | 0.58 | 0.33 |
| Jan-98 | 0.46 | 0.19 |
| Feb-98 | 1.42 | 0.48 |
| Mar-98 | -0.13 | 0.01 |
| Apr-98 | 0.92 | 0.33 |
| May-98 | -0.95 | 0.24 |
| Jun-98 | -1.18 | 0.31 |
| Jul-98 | -0.02 | 0.04 |
| Aug-98 | 0.89 | 0.32 |
| Sep-98 | -1.42 | 0.38 |
| Oct-98 | -1.15 | 0.29 |
| Nov-98 | 0.99 | 0.35 |
| Dec 08 | 1 77 | 0.35 |
| Dec-98 | -1.// | 0.49 |

| Table 1: Contd., | | |
|-------------------|-------|------|
| Jan-99 | 0.69 | 0.01 |
| Feb-99 | 5.13 | 1.33 |
| Mar-99 | 1.53 | 0.24 |
| Apr-99 | 1.62 | 0.27 |
| May-99 | 5.04 | 13 |
| Jun-99 | -0.72 | 0.44 |
| Jul-99 | -1.33 | 0.62 |
| Δμα-99 | -0.16 | 0.02 |
| Sep 00 | 0.10 | 0.27 |
| Oot 00 | 3.26 | 1.2 |
| Nov 00 | -3.20 | 0.33 |
| Dec 00 | 1.37 | 0.55 |
| Dec-99 | 2.45 | 0.18 |
| Jail-00 Eab 00 | -2.43 | 0.00 |
| Feb-00 | -3.12 | 0.16 |
| Mar-00 | -0.79 | 0.16 |
| Apr-00 | -0.47 | 0.06 |
| May-00 | 2.83 | 0.93 |
| Jun-00 | -0.92 | 0.19 |
| Jul-00 | 0.07 | 0.1 |
| Aug-00 | 1.48 | 0.53 |
| Sep-00 | 0.57 | 0.25 |
| Oct-00 | 0.59 | 0.26 |
| Nov-00 | 0.05 | 0.09 |
| Dec-00 | 1 | 0.38 |
| Jan-01 | -1.04 | 0.56 |
| Feb-01 | 4.36 | 1.07 |
| Mar-01 | -3.92 | 1.43 |
| Apr-01 | 2.82 | 0.6 |
| May-01 | -0.82 | 0.49 |
| Jun-01 | 1.52 | 0.21 |
| Jul-01 | 1.32 | 0.15 |
| Aug-01 | -1.28 | 0.63 |
| Sep-01 | 3.54 | 0.82 |
| Oct-01 | 1.08 | 0.08 |
| Nov-01 | -0.2 | 0.31 |
| Dec-01 | 2.45 | 0.49 |
| Jan-02 | 0.37 | 0.08 |
| Feb-02 | -3.87 | 1.2 |
| Mar-02 | 0.3 | 0.06 |
| Apr-02 | 1.12 | 0.3 |
| Mav-02 | -0.32 | 0.13 |
| Jun-02 | 0.86 | 0.22 |
| Jul-02 | -0.11 | 0.07 |
| Aug-02 | 2.15 | 0.61 |
| Sep-02 | -1 51 | 0.49 |
| Oct-02 | 2.1 | 0.19 |
| Nov-02 | 0.25 | 0.04 |
| Dec_02 | 0.07 | 0.04 |
| Ian_03 | 0.07 | 0.01 |
| Feb 02 | 0.95 | 0.1 |
| Mor 02 | 0.19 | 0.15 |
| Apr 02 | -2.14 | 0.00 |
| Apr-03 | 0.55 | 0.00 |
| May-03 | 0.52 | 0.03 |
| Jun-03 | 0.67 | 0.02 |
| Jul-03 | 0.32 | 0.09 |

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| Table 1: Contd., | | |
|------------------|-------|------|
| Aug-03 | 0.77 | 0.05 |
| Sep-03 | 1.16 | 0.17 |
| Oct-03 | 2.64 | 0.61 |
| Nov-03 | 1.12 | 0.15 |
| Dec-03 | 0.81 | 0.06 |
| Jan-04 | -1.85 | 0.65 |
| Feb-04 | 1.8 | 0.09 |
| Mor 04 | 1.0 | 0.4) |
| Apr 04 | 0.24 | 0.33 |
| Apr-04 | -0.24 | 0.15 |
| May-04 | -1.37 | 0.33 |
| Jun-04 | -0.95 | 0.34 |
| Jul-04 | 0.97 | 0.24 |
| Aug-04 | 0.11 | 0.02 |
| Sep-04 | 1.01 | 0.25 |
| Oct-04 | -0.76 | 0.29 |
| Nov-04 | 1.24 | 0.32 |
| Dec-04 | 1.23 | 0.31 |
| Jan-05 | 2.13 | 0.42 |
| Feb-05 | 2.19 | 0.44 |
| Mar-05 | 1.75 | 0.31 |
| Apr-05 | -2.06 | 0.84 |
| Mav-05 | 0.77 | 0.01 |
| Jun-05 | 1.04 | 0.09 |
| Jul-05 | 0.4 | 0.09 |
| Jui-05 | 0.4 | 0.02 |
| Aug-05 | 0.78 | 0.02 |
| Sep-05 | -0.18 | 0.27 |
| 0ct-05 | 2.69 | 0.59 |
| Nov-05 | -1.59 | 0.68 |
| Dec-05 | 0.8 | 0.02 |
| Jan-06 | 0.72 | 0.11 |
| Feb-06 | 0.86 | 0.15 |
| Mar-06 | -0.24 | 0.18 |
| Apr-06 | 1.61 | 0.37 |
| May-06 | -3.6 | 1.19 |
| Jun-06 | 4.4 | 1.22 |
| Jul-06 | 0.6 | 0.07 |
| Aug-06 | -0.21 | 0.17 |
| Sep-06 | 0.6 | 0.07 |
| Oct-06 | -0.48 | 0.26 |
| Nov-06 | 0.58 | 0.06 |
| Dec-06 | -0.43 | 0.24 |
| Jan-07 | -0.85 | 0.36 |
| Feb-07 | -4 01 | 1 31 |
| Mar 07 | 0.71 | 0.11 |
| Apr 07 | 0.71 | 0.11 |
| Mor: 07 | -0.20 | 0.10 |
| Iviay-07 | 0.92 | 0.17 |
| Jun-0/ | 1.01 | 0.2 |
| Jul-07 | 1.9 | 0.47 |
| Aug-07 | 1.3 | 0.29 |
| Sep-07 | 0.82 | 0.14 |
| Oct-07 | 0.28 | 0.02 |
| Nov-07 | 1.89 | 0.47 |
| Dec-07 | 0.4 | 0.02 |
| Jan-08 | -0.62 | 0.33 |
| Feb-08 | -1.38 | 0.56 |

79

| Table 1: Contd., | | |
|------------------|-------|-------|
| Mar-08 | -4.44 | 1.48 |
| Apr-08 | -0.52 | 0.29 |
| May-08 | 0.61 | 0.04 |
| Jun-08 | -2.47 | 0.89 |
| Jul-08 | 0.48 | 0.002 |
| Aug-08 | 3.67 | 0.96 |
| Sep-08 | 2.1 | 0.49 |
| Oct-08 | 8.22 | 2.33 |
| Nov-08 | 0.73 | 0.08 |
| Dec-08 | -0.71 | 0.36 |
| Jan-09 | 2.04 | 0.36 |
| Feb-09 | -0.71 | 0.47 |
| Mar-09 | 1.47 | 0.189 |
| Apr-09 | 3.65 | 0.85 |
| May-09 | 2.3 | 0.44 |
| Jun-09 | -1.97 | 0.85 |
| Jul-09 | 1.83 | 0.29 |
| Aug-09 | -1.61 | 0.74 |
| Sep-09 | 1.63 | 0.24 |
| Oct-09 | -0.97 | 0.55 |
| Nov-09 | 1.77 | 0.28 |
| Dec-09 | 0.7 | 0.04 |
| Jan-10 | 0.31 | 0.01 |
| Feb-10 | 1.08 | 0.23 |
| Mar-10 | -0.35 | 0.21 |
| Apr-10 | 0.32 | 0.01 |
| May-10 | 0.48 | 0.04 |
| Jun-10 | 0.95 | 0.19 |
| Jul-10 | -0.69 | 0.31 |
| Aug-10 | -0.34 | 0.2 |
| Sep-10 | 0.57 | 0.07 |
| Oct-10 | 0.46 | 0.04 |
| Nov-10 | 0.6 | 0.08 |
| Dec-10 | 0.59 | 0.08 |
| Jan-11 | -0.37 | 0.17 |
| Feb-11 | 0.69 | 0.15 |
| Mar-11 | 0.8 | 0.18 |
| Apr-11 | -0.81 | 0.3 |
| May-11 | 1.49 | 0.39 |
| Jun-11 | 0.81 | 0.19 |
| Jul-11 | -0.07 | 0.08 |
| Aug-11 | 1.59 | 0.42 |
| Sep-11 | -1.46 | 0.49 |
| Oct-11 | -0.56 | 0.23 |
| Nov-11 | 0.72 | 0.16 |
| Dec-11 | -0.57 | 0.23 |
| Jan-12 | 1.96 | 0.37 |
| Feb-12 | 0.12 | 0.19 |
| Mar-12 | 2.03 | 0.39 |
| Apr-12 | 0.76 | 0.01 |
| Mav-12 | -0.57 | 0.39 |
| Jun-12 | 2.59 | 0.56 |
| Jul-12 | 0.54 | 0.06 |
| Aug-12 | -0.64 | 0.42 |
| Sep-12 | 0.99 | 0.07 |
| ~~ 12 | 5.77 | 5.57 |

80

| Table 1: Contd., | | | | |
|------------------------|------|------|--|--|
| Oct-12 | 0.4 | 0.11 | | |
| Nov-12 | 0.88 | 0.04 | | |
| Dec-12 -0.09 0.25 | | | | |
| Source: CMIE data base | | | | |

The end of 2008 started with crises in US market with its impact on other markets of the world. The year 2009 came with changing global seen of international stock market, domestic market could not survive in the phase of. The month of January, 2009 saw 13% downturn only during two trading days. This turmoil brought stock indices to the negative return of 0.82 and 0.97 respectively for Sensex and Nifty which was 6.99 and 8.22 during previous year.

A normal economy is characterized by expansion phase of six to ten years followed by a recession phase of two months to about two year. Thus if this phase can be taken as good time for economy to recover and emerge as strong and more stable economy.

| Date | Return | Standard Deviation |
|---------|--------|--------------------|
| Jan-96 | -0.22 | 0.045 |
| Feb-96 | -3.4 | 0.043 |
| Mar-96 | -1.21 | 0.912 |
| Apr 96 | -1.21 | 0.23 |
| Apr-90 | -0.30 | 0.004 |
| Jup 06 | 0.05 | 0.02 |
| Juli-96 | -0.44 | 0.02 |
| Jul-96 | 2.70 | 0.94 |
| Aug-96 | 0.31 | 0.205 |
| Sep-96 | -0.35 | 0.007 |
| Oct-96 | -1.85 | 0.45 |
| Nov-96 | 0.59 | 0.29 |
| Dec-96 | -1.39 | 0.31 |
| Jan-97 | -2.73 | 3.68 |
| Feb-97 | 6.12 | 1.91 |
| Mar-97 | -8.46 | 2.5 |
| Apr-97 | 2.12 | 0.7 |
| May-97 | 1.22 | 0.43 |
| Jun-97 | 1.95 | 0.22 |
| Jul-97 | 1.97 | 0.21 |
| Aug-97 | -2.61 | 0.35 |
| Sep-97 | -0.17 | 0.24 |
| Oct-97 | -1.96 | 0.05 |
| Nov-97 | -2.18 | 0.1 |
| Dec-97 | 1.97 | 0.12 |
| Jan-98 | 2.35 | 1.16 |
| Feb-98 | 1.43 | 0.42 |
| Mar-98 | -0.71 | 0.16 |
| Apr-98 | 0.72 | 1.09 |
| May-98 | -1.15 | 0.48 |
| Jun-98 | -0.78 | 0.17 |
| Jul-98 | -0.13 | 1.22 |
| Aug-98 | 0.35 | 0.29 |
| Sep-98 | -0.38 | 0.55 |
| Oct-98 | -0.59 | 0.42 |
| Nov-98 | 0.85 | 0.24 |
| Dec-98 | -1.74 | 1.13 |

Table 2: Monthly Volatility of CNX Nifty Index from January 1996 to October 2013

| Table 2: Contd., | | |
|------------------|-------|-------|
| Jan-99 | 1.16 | 2.24 |
| Feb-99 | 4.26 | 1.09 |
| Mar-99 | 2.22 | 0.88 |
| Apr-99 | 1.2 | 1.07 |
| May-99 | 4.7 | 0.3 |
| Jun-99 | -0.3 | 0.11 |
| Jul-99 | -1.17 | 0.91 |
| Aug-99 | -0.75 | 0.31 |
| Sep-99 | -0.16 | 0.09 |
| Oct-99 | -3.09 | 0.51 |
| Nov-99 | -0.61 | 0.24 |
| Dec-99 | 0.01 | 0.26 |
| Ian-00 | -3.31 | 1.9 |
| Feb-00 | -3.93 | 1.07 |
| Mar 00 | 1 36 | 0.38 |
| $\Delta pr 00$ | 0.73 | 1.00 |
| May 00 | -0.75 | 1.09 |
| Jun 00 | 2.03 | 0.45 |
| Juii-00 | -1.4 | 0.45 |
| Jui-00 | -0.07 | 0.43 |
| Aug-00 | 1.32 | 0.18 |
| Sep-00 | 0.41 | 0.12 |
| Oct-00 | 0.48 | 0.5 |
| Nov-00 | 0.27 | 0.6 |
| Dec-00 | 1.17 | 0.07 |
| Jan-01 | -0.58 | 2.17 |
| Feb-01 | 4.31 | 1.09 |
| Mar-01 | -3.92 | 1.2 |
| Apr-01 | 2.17 | 0.15 |
| May-01 | -0.82 | 0.27 |
| Jun-01 | 1.27 | 0.11 |
| Jul-01 | 1.07 | 0.25 |
| Aug-01 | -0.98 | 0.07 |
| Sep-01 | 2.68 | 0.7 |
| Oct-01 | 0.91 | 0.43 |
| Nov-01 | -0.34 | 0.42 |
| Dec-01 | 2.44 | 0.004 |
| Feb-02 | -3.96 | 1.58 |
| Mar-02 | 0.55 | 0.15 |
| Apr-02 | 0.96 | 0.02 |
| May-02 | -0.32 | 0.11 |
| Jun-02 | 0.88 | 0.86 |
| Jul-02 | -0.18 | 0.13 |
| Aug-02 | 2.37 | 0.06 |
| Sep-02 | -1.36 | 0.04 |
| Oct-02 | 1.46 | 0.11 |
| Nov-02 | 0.04 | 0.16 |
| Dec-02 | 0.14 | 0.18 |
| Jan-03 | 0.7 | 1.11 |
| Feb-03 | 0.99 | 0.11 |
| Mar-03 | -2.24 | 0.59 |
| Apr-03 | 0.19 | 0.55 |
| Mav-03 | 0.42 | 0.34 |
| Jun-03 | 0.76 | 0.25 |
| Jul-03 | 0.70 | 0.54 |
| Δ11σ-03 | 1 16 | 0.29 |
| 1146 05 | 1.10 | 0.27 |

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Analysis of Return of Select Indian Stock Indices

| Table 2: Contd., | | |
|-------------------|-------|-------|
| Sep-03 | 1.23 | 0.22 |
| Oct-03 | 2.57 | 0.02 |
| Nov-03 | 1.06 | 0.27 |
| Dec-03 | 0.35 | 0.26 |
| Jan-04 | -1.84 | 1.24 |
| Fab 04 | 1.04 | 0.55 |
| 1-e0-04 Mar 04 | 1.95 | 0.53 |
| Mar-04 | 1.24 | 0.54 |
| Apr-04 | -0./1 | 0.42 |
| May-04 | -1.67 | 0.43 |
| Jun-04 | -0.84 | 0.8 |
| Jul-04 | 0.84 | 0.02 |
| Aug-04 | 0.2 | 0.2 |
| Sep-04 | 1.02 | 0.29 |
| Oct-04 | -0.73 | 0.02 |
| Nov-04 | 0.99 | 0.31 |
| Dec-04 | 1 | 0.52 |
| Jan-05 | 2 45 | 1.52 |
| Fab 05 | 2.45 | 0.42 |
| Fe0-05 | 2.03 | 0.42 |
| Mar-05 | 2.1 | 0.19 |
| Apr-05 | -2 | 0.006 |
| May-05 | 0.73 | 0.22 |
| Jun-05 | 1.32 | 0.34 |
| Jul-05 | -0.29 | 1.16 |
| Aug-05 | 0.71 | 1.23 |
| Sep-05 | -0.38 | 0.04 |
| Oct-05 | 2.37 | 0.22 |
| Nov-05 | -1 71 | 0.06 |
| Dec-05 | 0.52 | 0.00 |
| Lop 06 | 0.32 | 1.20 |
| Jail-00 | 0.89 | 1.8 |
| Feb-06 | 0.24 | 0.006 |
| Mar-06 | -0.48 | 0.44 |
| Apr-06 | 1.4 | 1.28 |
| May-06 | -3.59 | 0.06 |
| Jun-06 | 4.35 | 0.09 |
| Jul-06 | 0.4 | 0.2 |
| Aug-06 | -0.48 | 0.13 |
| Sep-06 | 0.47 | 0.47 |
| Oct-06 | -0.66 | 0.22 |
| Nov-06 | 0.67 | 0.004 |
| Dec-06 | -0.1 | 0.03 |
| Ian 07 | _1.01 | 2.05 |
| Eab 07 | -1.01 | 2.3 |
| гер-07 | -3.82 | 1.28 |
| Mar-07 | 0.62 | 0.28 |
| Apr-07 | 0.11 | 0.45 |
| May-07 | 1.09 | 1.38 |
| Jun-07 | 0.85 | 0.27 |
| Jul-07 | 2 | 0.12 |
| Aug-07 | 1.17 | 0.8 |
| Sep-07 | 0.42 | 0.03 |
| Oct-07 | 0.54 | 0.94 |
| Nov-07 | 2.27 | 0.46 |
| Dec_07 | 0.07 | 2 01 |
| Lon 09 | 0.77 | 2.01 |
| Jail-08 | -0.38 | 2.04 |
| Feb-08 | -1.1/ | 0.45 |
| Mar-08 | -4.2 | 0.31 |

83

| Table 2: Contd., | | |
|-------------------------|-------|-------|
| Apr-08 | -0.57 | 0.47 |
| May-08 | 0.72 | 0.2 |
| Jun-08 | -2.32 | 0.77 |
| Jul-08 | 0.45 | 1.62 |
| Aug-08 | 3.46 | 2.71 |
| Sep-08 | 1.85 | 0.58 |
| Oct-08 | 6.99 | 2.01 |
| Nov-08 | 0.1 | 0.69 |
| Dec-08 | -0.68 | 1.42 |
| Jan-09 | 1.8 | 1.73 |
| Feb-09 | -0.79 | 0.47 |
| Mar-09 | 1.44 | 0.02 |
| Apr-09 | 3.32 | 0.28 |
| May-09 | 2.58 | 0.19 |
| Jun-09 | -2.27 | 0.02 |
| Jul-09 | 1.42 | 0.005 |
| Aug-09 | -1.48 | 0.21 |
| Sep-09 | 1.54 | 0.34 |
| Oct-09 | -0.82 | 0.19 |
| Nov-09 | 1.84 | 0.08 |
| Dec-09 | 0.61 | 0100 |
| Jan-10 | 0.3 | 0.57 |
| Feb-10 | 1.29 | 0.28 |
| Mar-10 | -0.25 | 0.1 |
| Apr-10 | 0.45 | 0.1 |
| May-10 | 0.39 | 0.18 |
| Jun-10 | 1.07 | 0.25 |
| Jul-10 | -0.76 | 0.41 |
| Aug-10 | -0.24 | 0.19 |
| Sep-10 | 0.65 | 0.1 |
| Oct-10 | 0.5 | 0.43 |
| Nov-10 | 0.56 | 0.49 |
| Dec-10 | 0.50 | 0.15 |
| Jan-11 | -0.11 | 0.20 |
| Feb-11 | 0.11 | 0.1 |
| Mar_11 | 0.50 | 0.1 |
| $\frac{1}{1}$ | 0.62 | 0.17 |
| May 11 | -0.02 | 0.17 |
| $I_{\text{III}n_{-}11}$ | 0.84 | 0.1 |
| Jul_11 | _0.0- | 0.39 |
| Δ11σ_11 | 1 65 | 0.57 |
| Sep_11 | -1 // | 0.05 |
| O_{ct}_{11} | -1.44 | 0.55 |
| Nov 11 | -0.04 | 0.55 |
| Dec 11 | _0.30 | 0.00 |
| Jan 12 | -0.47 | 1 11 |
| Feb 12 | 0.19 | 0.17 |
| Mar 12 | 2.10 | 0.17 |
| $\frac{1}{101}$ | 0.75 | 0.07 |
| Apr-12 May 12 | 0.73 | 0.33 |
| Iviay-12 | -0.34 | 0.25 |
| Juli-12 | 2.32 | 0.13 |
| Jui-12 | 0.30 | 0.0/ |
| Aug-12 | -1.00 | 0.00 |
| Sep-12 | 0.95 | 0.00 |
| Oct-12 | 0.39 | 0.30 |

84

| Table 2: Contd., | | | |
|------------------------|------|-----|--|
| Nov-12 | 0.94 | 0.5 | |
| Dec-12 -0.06 0.24 | | | |
| Source: CMIE data base | | | |

The return and volatility trade off persist throughout the observation. According to nerdy sounding financial jargons saying, more risk offers more return. It means risk and return are proportional to each other. More volatile day give high return than that of less volatile period.

CONCLUSIONS

The global economy continued to expand at a robust pace in the growth momentum in recent years. The Indian capital market has to face the global competition. Sound development of various segments of the capital market is a pre-requisite for a well-functioning financial system. The equity market in India has been modernized over the past years and is now comparable with the international markets.

The study helps in developing the market strategy and policy formation for government to take corrective action in market promotion and investors to decide for the right time to enter in the market by hedging risk. Volatility in Indian stock market will show alot for market development. Indian stock market are by and large stable and volatility has been under control. The development of any market requires removal of bottlenecks on supply as well as demand side, while putting in place alongside sound institutional and legal framework. There is a need to ensure that the corporate are able to raise resources from the capital market in a timely and cost-effective manner. As the market evolution is an ongoing process, the Indian equity market would have to continuously strive to keep up to the international standards.

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