A STUDY ON VOLATILITY INDEX INDIAN CAPITAL MARKET: AN EVALUATION OF NSE

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Abstract

The Indian Stock market is one of the oldest stock market in Asia. Its history dates back nearly 200 years ago. The Indian stock market depends mainly on monsoon, global funds flowing into the qualities and the performance of the various companies. The Indian stock market is wholly determined by the two major stock exchanges-BSE and NSE. The stock market isvolatile in nature. Thestudy mainly engrosses to know the volatility of NSE. To meet the above objectives monthly opening and closing prices, yearly price changes have been collected from the period 2005 to 2011.

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1. INTRODUCTION

1.1 Stock Market Volatility

Volatility is the pace at which stock prices move higher and lower. If a stock is more volatile, it is also more risky also known as beta, risk, relative volatility, implied volatility.Volatility is a measure of dispersion around the mean or average return of a security. One way to measure volatility is by using the standard deviation, which tells you how tightly the price of a stock is grouped around the mean or moving average (MA). When the prices are tightly bunched together, the standard deviation is small. When the price is spread apart, you have a relatively large standard deviation. For securities the higher the standard deviation, the greater the dispersion of returns and the higher the risk associated with the investment.

1.2 Types of Volatility

1. Inter-day Volatility: The variation in share price return between the two trading days is called interday volatility. it is computed by close to close and open to open value of any index level on a daily basis. standard deviation is used to calculate and calculated by close to close and open to open volatility method.

- **Lose to Close Volatility**

  For computing close to close volatility, the closing values of the NIFTY and Sensex are taken.

- **Open to Open Volatility**

  It is considered necessary for much market participation because opening prices of shares and the index value reflect any positive or negative information that arrives after the close of the market and before the start of the nest day's trading.

2. **Intra-day Volatility**

   The variation in shares price return within the trading day is called intra-day volatility. It indicates how the indices and shares behave in a particular day.

1.3 Causes for the Stock Market Volatility

Stock market volatility is the quick movement of stock prices over the short term. Of course, stock prices move constantly, but volatility occurs when the prices make unexpected jumps more quickly than investors expected. Volatility is caused by several factors in the economy. Those are as follows-

- Economic Variables
- Industry Specific Factors
- Firm Specific Factors.
- Market Efficiency
- Ambiguous initial stock values.
- Investor Confidence
- Legal Intervention

1.4 Volatility

The Standard formula for computing standard deviation

$$= (1\ n\text{-}1)\sum(r\text{-}r)^2$$

2. STATEMENT OF THE PROBLEM

Stock Market Volatility is the fluctuations in the daily trading of the market. It leads to the positive negative impact on the market. The market volatility which will influence the lot many factors like monetary policies, inflation, central budget announcements, company internal policy changes and so on. The study mainly attempted to answer the research question of the degree of stock market volatility of NSE

3. OBJECTIVES OF THE STUDY

- To evaluate the volatility of Indian stock prices.
- the calculate the degree of volatility of indices NSE

4. RESEARCH METHODOLGY

The study mainly relied on secondary data which is collected from NSE and BSE websites and other sites, journals magazines. The study involves five different indices of both NSENSE S&P, CNX Nifty, Nifty Junior, S&P CNX 500, CNX midcap 200 and S&P CNX Defty.

5. ANLYSIS AND INTREPRETATION

5.1 Monthly Volatility Comparison of the NSE and BSE

Table 1: Volatallity of NSE monthly indices

Date	Nifty	S&P CNX500	Nifty Junior	CNX midcap	CNX defty
5-Jan	-	-4.95469	-3.57018	-0.29323	-6.73578
5-Feb	--	2.591438	2.545005	5.405699	2.12042
5-March	-3.31344	-3.05101	-2.24725	0.499587	-2.74033
5-April	-7.01183	-4.23415	-5.95269	1.475453	-4.98459
5-May	8.835717	6.918756	8.346176	6.629779	6.354891
5-June	5.980366	3.749967	5.368332	0.066846	2.821271
5-July	3.965748	6.355431	5.100982	6.214593	9.476327
5-Aug	3.044472	3.217337	1.909166	5.368328	1.3596
5-Sep	8.33013	8.034301	4.784583	5.101907	6.440087
5-Oct	-9.70286	-12.8749	-6.9860.	-12.1627	-15.5937
5-Nov	10.60609	12.31939	13.73605	11.04835	11.01536
5-Dec	6.520245	5.343201	5.392114	4.443673	4.461731
6-Jan	5.474659	4.728502	4.893136	6.868761	6.243777
6-Feb	2.387255	1.752396	2.188489	0.387694	-0.74834
6-March	9.638359	9.050458	6.99737	8.674263	7.793858
6-April	2.991648	4.767188	6.411846	4.477969	3.853936
6-May	-10.1341	-13.4699	-10.84.9	-16.3867	-17.7331
6-June	1778978	-6.34927	-2.52701	-14.0266	-13.4348
6-July	0.459723	0	0.065478	-3.33438	-1.17948
6-Aug	8.368728	7.796113	7.519308	10.17024	10.25609

6-Sep	4.860105	6.488748	5.640397	7.487771	8.504086
6-Oct	4.143853	3.752451	4.022089	2.708703	2993598
6-Nov	5.320521	5.527195	5.353278	4.135952	4.678706
6-Dec	0.269766	0.009105	-0.21556	2.609741	0.185749
7-Jan	2.852279	3.83786	4.374714	3.428104	3.074435
7-Feb	NA	-5.94124	-5.31741	-6.75414	-6.11105
7-March	NA	-3.24447	-3.07598	-3.49893	-0.69496
7-April	NA	8.806303	6.452798	8.510147	9.883843
7-May	NA	5.44746	3.92053	7.070481	7.697613
7-June	NA	1.945804	1.61985	6.22776	7.994551
7-July	NA	2.197195	2.852515	0.710331	0.017198
7-Aug	NA	0.024249	0.484991	5.416895	-1.05992
7-Sep	11.04683	10.93338	11.04683	8.154547	11.93904
7-Oct	14.899921	9.537224	11.93904	-7.04728	4.255671
7-Nov	-2.44762	3.371975	0.93445	17.29963	5.524655
7-Dec	6.078748	9.349268	5.168841	11.30342	10.82537
8-Jan	-19.4513	-16.8725	-13.2195	-20.5633	-16.1761
8-Feb	1.587.58	-1.01131	-5.2869	-2.17919	-9.23634
8-March	-10.3137	-6.6832	-3.44496	-12.1896	-15.8051
8-April	8.328655	5.025765	3.3169	7.523232	8.264352
8-May	-8.114582	-5.69621	-4.97731	-4.67186	-9.39627
8-June	-20.5096	-21.0769	-17.71	-21.7513	-26.8189
8-July	6.766752	4.506944	4.072498	2.034361	7.018209
8-Aug	0.651376	0.812542	1.783257	2.106528	2.121654
8-Sep	-11.091	-10.6106	-9.30556	-12.9791	-15.5046
8-Oct	-35.9111	-53.0525	-38.2797	-43.0156	-43.6754
8-Nov	-4.72941	3.812527	-4.72941	-9.36353	-15.2396
8-Dec	6.893872	5.107345	3.573366	8.161531	10.89879
9-Jan	-3.07848	-0.13807	0.613956	-6.75533	-2.10867
9-Feb	-3.9332	-3.43612	-3.9332	-5.276	-5.86854
9-March	8.485741	11.67598	11.06751	6.986706	1022651

9-April	12.95643	14.51514	10.68735	15.27097	19.08789
9-May	21.80852	25.38479	21.75008	25.97529	28.41069
9-June	-3.71233	-3.63445	-1.7118	0.87822	4.896421
9-July	7.422705	6.09309	5.630385	6.736742	5.513563
9-Aug	0.607023	2.2345	2.082475	2.350805	0.88642
9-Sep	8.295715	5.5000637	4.599761	8.453604	8.104528
9-Oct	-7.96952	-5.84327	-5.25182	-1.35402	-0.87859
9-Nov	6.367357	5.702805	4.644104	6.806167	6.309135
9-Dec	3.102258	3.900845	4.560289	3.371114	4.916031
10-Jan	0.473625	-3.78725	-6.11833	-2.84094	-3.64021
10-Feb	3.353107	-0.07026	-0.817707	-0.05372	1.440601
10-March	5.972452	3.306322	6.558122	5.412112	5.181711
10-April	0.545661	1.231657	-0.11178	3.959515	3.280515
10-May	-3.77681	-3.8084	-4.18135	-4.34551	-3.60349
10-June	4.258824	4.053048	3.66195	4.593324	4.534315
10-July	1.034913	1.955242	1.797824	4.002234	3.228052
10-Aug	0.608063	1.078907	0.723834	3.399826	2.227936
10-Sep	10.39644	6.810628	10.12578	4.031594	6.350019
10-Oct	-0.20938	0.073397	-0.00997	0798551	2.227936
10-Nov	-3.91628	-7.18974	-5.91712	-8.89564	-10.6742
10-Dec	4.295379	4.910999	3.687038	-0.42305	3.14706
11-Jan	-12.1969	-12.1287	-12.0697	-10.6044	-12.8818
11-Feb	-3.826	-3.97705	-2.80944	-5.79553	-3.46196
11-March	7.743733	5.607175	5.731972	5.393557	4.148733
11-April	-1.48709	2.74955	1.813201	4.59459	3.545404
11-May	-3.701842	-4.87437	0.516421	-4.13886	-2.11677

Source:www.nseindia.com

In the above table Nifty indices captured the market with increasing volatility of 10.60%. 9.63%, 14.90%. 8.32%, 21.80%, 10.39% and 7.74% from 2005 to 2011 respectively. The decreasing volatility of 9.70%, 10.13%, 2.44%, 8.32%, 35.91%, 3.77%, 12.19% from 2005 to 2011 respectively. In NSE S & P in continued in 12.31%, 9.05%, 10.93%, 5.10%, 25.38%,10.39% and

5.60% from 2005 to 2011 respectively and decreasing volatility of -4.95%, -12.87%, -13.46%, -5.94%, -53.05%, -5.84%, 7.18% and 12.12% from 2005 to 2011 respectively. In NSE Nifty Junior increasing volatility of 13.73%, 7.52%, 11.93%, 3.57%, 11.06% and 5.73% from 2005 to 2011 respectively and decreasing volatility of -6.98%, 10.84%, -5.3%, -13.21%, -38.27%, -6.11% and -12.06% from 2005 to 2011 respectively. in NSE CNX midcap increasing volatility of 11.04%, 1017%, 17.29%, 8.16%, 25.97%, 5.41% and 5.39% from 2005 to 2011 respectively and decreasing volatility of -12.16%, -16.38%, -6.75%, -43.01%, -6.75%, -4.34%, -10.60%, from 2005 to 2011 respectively. In NSE CNX with increasing volatility of 11.01%, 10.25%, 11.83%, 10.89 %, 19.08%, 6.35% and 4.14% from 2005 to 2011 respectively and decreasing volatility of -15.59%, -17.73%, -6.11%, -43.69%, -5.86%, -3.64% and -12.88% from 2005 to 2011 respectively.

	S & P Nifty	**SNX500**	**Nifty Junior**	**CNX Midcap**	**S & P CNX defty**
2005	26.6715	26.0512	26.6715	35.0817	18.0298
2006	28.4793	25.18867	28. 4793	22.2165	21.8179
2007	35.3884	37.5516	34.7624	43.3825	42.329
2008	-107.382	-141.256	-113.317	-161.09	-187.312
2009	43.025	48.56	44.86	51.52	58.210
2010	15.219	12.610	13.821	14.857	15.3938
2011	-11.102	-92583.2	NA	NA	12253.15

Source; www. nseindia.com

	2005	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
Average	22.08426	21.02983	32.23565	-118.393	41.03808	11.99809	----
SD	6.034297	3.234241	3.964997	33.31386	6.038145	1.128013	----

Above table shows the early increasing and decreasing volatility of the indices. The volatility shows the efficient market captured by NSE. CNX midcap captured the increasing volatility with

35.08 in the year 2005. NSE took bullish in 2009 it recorded average 41.0808 from all the five indices. There was a negative trend in NSE in the years 2008 and the market average decreasing volatility was 118.393. The reason for this was due to the American Mortgage Crisis impacted on all other share markets call market spillover. By comparing all the year indices except 2008 and 2011 performed well. 2007 and 2009 average volatility was 31.0112 and 47.07633 respectively. NSE also showed the same performance by 32.23565 and 41.03808 in 2007 and 2009 respectively. it was because of efficient market condition, favorable investment in India.

6. CONCLUSION

NSE indices had more volatility in the year 2007 and 2009, market was showing bullish trend and the stock market reached the peak points. In the year 2008 market showed the down ward moment due to the American mortgage crises it affected the other markets. In May 2006 due to foreign institutional investment caused for volatility in May, 2006. The investor should take into consideration factors like the performance of the market, policy change announcement, increasing and decreasing the interest rates, regulation of the government and encouragement of the priority sectors while investing in the stock market. The investor should carefully evaluate and analyze the systematic risk and unsystematic situation to selling and buying of the securities in the market and the should know about the economic condition of the other countries which will have influence on the domestic market.

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