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A RESEARCH ON THE RETURNS AND VOLATILITY OF INDIAN BANKING SECTOR INDEX WITH REFERENCE TO BSE SENSEX

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ABSTRACT

The main objective of the present paper is to measure the returns and volatility of the bank index stocks as well as comparing that volatility with the fluctuations of BSE. Basically stock markets are meant for volatile. We can't expect a stable growth in this market without a risk. This volatility creates trade-off, market for those shares by change in the demand and supply forces. There are many factors that influence the market behavior. One interesting thing is market volatility is depends on overall fluctuations of different sectors of market volatility of the stock market in India is in line with the volatility of the different sectors in India, in this case the banking sector. Forecasting volatility helps for the pricing of securities as well as understanding stock market volatility and individual share price volatility supports good decisions on the part of investors. Investors who are risk-averse wouldn't be happy to invest in highly fluctuating shares, on the other hand those ready with riskiness would be happily to invest in a highly volatile market. So, this volatility is simply a measure of variability or dispersion from the central values. This research paper makes an attempt to analyze the returns and volatility of Indian banking sector stocks with reference to Bombay stock exchange - Sensex.

KEYWORDS: *stocks, stock market, banking sector, market volatility*

I. INTRODUCTION

In India both capital market and money market are important for getting the funds for organization for both long term and short term funding has undergone many changes in the last two or more decades[2]. Stock markets in India have now become more transparent than ever. Share markets in general are considered are highly fluctuating and volatility plays a key role in measuring the risk and return trade-offs.[1] Whereas there are huge factors that makes the stock market volatile, and it converts the general interest to understand if the volatility of the stock market in India by complying with the volatility of the diverse sectors in India. Banks have been major contributors to the fluctuations in the stock market index[3]. Estimating volatility creates the pricing of stocks & understanding stock market volatility or individual stock price volatility enables good decisions on the side of investors. Investors who are risk avoiders.[4][2] They wouldn't be happy to invest in a highly fluctuating stock, whereas those with a thirst for riskiness would happily invest in a highly volatile market. Volatility is simply a measure of variability or dispersion from the mean values. If the dispersion is more it is considered more fluctuating

Banking sector was chosen in this research to see that movements of the banking sector are in cycle with the national stock movements as reflected in the BSE SENSEX [2]. as on date there are 27 public sector banks in India out if which 19 are nationalised banks and six are SBI and its associate banks, the other two being IDBI Bank and Bharatiya Mahila Bank. Along with this there are 23 private sector banks and a good number of foreign banks operational in the country. Banks in India are regulated by RBI and as such have to comply with regulatory norms like the CRR, SLR, and Basel III among others.[5][7] Has also been made on the recent problem of NPAs because of which provisioning norms have gone up to meet the minimum capital adequacy standards. Reserve bank of India in addition also controls the flow of funds in the economy, and hence when it tries to control the liquidity in the economic system it affects banks' lending and thereby the profitability and therefore the demand for these stocks.[7] So, the question of whether the activities and performance of those banks affect or influence the market. In this study the Bank index is considered to reflect the banking industry of the Indian nation.

II. BOMBAY STOCK EXCHANGE - INTRODUCTION:

The Bombay Stock Exchange (BSE) - Indian stock exchange situated at Dalal Street, Kala Ghoda, Mumbai (formerly Bombay), Maharashtra, India.

Established in 1875, the BSE is Asia's first stock exchange, It claims to be the world's fastest stock exchange, with a median trade speed of 6 microseconds, The BSE is the world's 11th largest stock exchange with an overall market capitalization of more than $ 2 Trillion as of July, 2017. More than 5500 companies are publicly listed on the BSE. Of these, as of November 2016, there are only 7,800 listed companies of which only 4000 trade on the stock exchanges at BSE and NSE. Hence the stocks trading at the BSE and NSE account for only about 4% of the Indian economy.

A) BSE- Sensex: The S&P BSE SENSEX (S&P Bombay Stock Exchange Sensitive Index), also-called the BSE 30 or simply the SENSEX, this is a free float market-weighted stock market index of 30 well-established & financially Very sound companies listed in this Bombay Stock Exchange.[8] These 30 component companies which are some of the major and largest and most actively traded stocks are representative of various industrial sectors of the Indian economy. Published since 1 January 1986, the S&P BSE SENSEX is regarded as the pulse of the domestic stock markets in India. The base value of the S&P BSE SENSEX[8] is taken as 100 on 1 April 1979, and its base year as 1978–79. On 25 July 2001 BSE launched **DOLLEX-30**, a dollar-linked version of S&P BSE SENSEX.

The index serves as a benchmark and helps the investors to easily understand and make perfect decisions with regards to investments in the banking sectors as it reflects the performance of banks in India. The list of the 10 banks appearing in the BSE Sensex is given below:

1. *Allahabad bank*
2. *Andhra bank*
3. *Central bank of India*
4. *Corporation bank of India*
5. *Dena Bank*
6. *Indian Bank*
7. *Oriental Bank Of Commerce*
8. *Syndicate bank*
9. *Union Bank of India*
10. *Vijaya Bank*

All the listed ten banks data are collected from Bombay stock exchange website and also from institute website and few international databases. The sample is selected based on the random selection from the all nationalised banks.

III. REVIEW OF LITERATURE:

Anbukarasi.M, & Nithya B (2013) focused on return and volatility analysis of Indian different indices with reference to national stock exchange.

Nataraja N.S, Ganesh L & Kumar S (2014) focused on dynamic linkages between cnx bank nifty and exchange rates from Indian stock exchange

Swarna Lakshmi P (2013) concentrated on various sectors of indian stock market. before investing in any sector, hence need to check the patterns in the banking sector as it could influence the behaviour of other sector stocks. She focused on reality sector was the most fluctuating than any other sector.

Vimala T(2015) focused on equity share market fluctuations analysis with the help of different sectors of the Indian stock market.

IV. SCOPE OF THE STUDY

This research was focused only on banking sector, so that we can increase the scope by extending the research to all other sectors also. As well as this research is focused on only 10 banking scripts only, but we can extend to all nationalised banks and private banks.

V. OBJECTIVE OF THE STUDY

- This study is focused on relationship between returns and volatility of the bank index
- To find out the level of volatility

VI. RESEARCH METHODOLOGY

- The data used in this research is for the last 12 years data (1st April 2005 – 31st Mar 2017)
- The data is completely secondary in nature
- Sample size is 10 Nationalised banks from Indian BSE – Sensex.
- Volatility is explained using standard Deviation and beta.
- BSE index returns as well as each bank returns are correlated to check relationship

Volatility is a measure of Dispersion. If volatility is high , then we can treat that stock as a risky one. Here standard deviation is a tool to measure volatility. It is prepared based on the data in source. As a part of research standard deviation and beta value are calculated. Correlation is used to check if there exist any relation between BSE index volatility and independent stock returns.

VII. ANALYSIS AND RESULTS

A. Statistical Presentation: Data relating to the overall average value of the index as a whole after considering total 12 years data average separately. For the period of 1st April 2005 to 31st March 2017. Data extracted from the BSE website and the mean and standard deviation were calculated . The table one below shows the daily high, low, average equity share price as a whole and standard deviation of the 10 Nationalised banks index stocks and also the highest, lowest and average values and standard deviation of the Sensex.

TABLE 1 :COMPISTE TABULATION OF HIGHEST, LOWEST, CLOSING MEAN

Stock	Highest Closing	Lowest Closing	Closing Mean	Standard Deviation
BSE SENSEX	**30007.00 (31-03-2017)**	**8467.30 (02-10-2008)**	**19237.15**	**15230.86**
Allahabad Bank	261.50	78.55	170.50	129.36
Andhra Bank	183.50	41.00	112.25	100.76
Central Bank	210.80	25.44	118.12	131.06
Corporation bank	160.40	32.00	96.20	90.79
Dena Bank	144.50	21.70	83.10	72.92
Indian Bank	357.70	59.95	208.82	210.54
Oriental Bank of commerce	540.00	98.50	319.25	312.18
Syndicate bank	176.40	40.00	108.20	96.44
Union bank	420.50	99.10	259.80	227.26
Vijaya Bank	114.50	20.50	67.50	66.46

(Source: Bombay stock exchange websites and company own websites)

The table shows that the highest value of the BSE index for the period 1st April 2005 to 31st March 2017 was 30007.00 (31st Mar 2017) with the lowest being 8467.30 (2nd Dec 2008) and a mean of 15230.86 as a whole and a standard deviation[3] of Among the banks listed in the Bank index, oriental bank of commerce had the highest standard deviation of 312.18 reflecting highest fluctuation in price. Vijaya bank has the least standard deviation of 66.46 reflecting least fluctuation in price.

B. Average Returns Interpretation:

The average of daily returns for Bank index stocks and Average Sensex daily returns was calculated. The average returns of the Sensex index for the period1st April 2005 to 31st March 2017 was negative (-0.59%). Average daily returns for the 10 stock for the corresponding period are presented in Table two below.

TABLE 2: AVERAGE DAILY RETURNS

S.NO	Name of the share	Average Daily Returns (%)
1	Allahabad Bank	**- 0.05**
2	Andhra Bank	**- 0.02**
3	Central Bank of India	**+0.02**
4	Corporation bank of india	**- 0.20**
5	Dena Bank	**+0.05**
6	Indian Bank	**- 0.17**
7	Oriental Bank of commerce	**-0.22**
8	Syndicate bank	**+0.03**
9	Union bank of india	**-0.04**
10	Vijaya Bank	**+0.01**

(Source: Bombay stock exchange websites and company own websites)

The average daily returns shown in the table indicate returns similar to the BSE Sensex average returns. All the stock in the bank index have small amounts of Negative returns for the period mentioned except Central bank of India, Dena Bank and Syndicate Bank, Vijaya bank which have shown a small positive but shown high impact on the overall market.

C. Correlation between the Banks index stock and BSE Index

Correlation: The degree of relationship between the variables under consideration is measure through the correlation analysis. The measure of correlation called the correlation coefficient The degree of relationship is expressed by coefficient which range from correlation ($-1 \leq r \geq +1$). The direction of change is indicated by a sign. The correlation analysis enable us to have an idea about the degree & direction of the relationship between the two variables under study.

Correlation: Correlation is a statistical tool that helps to measure and analyze the degree of relationship between two variables.

Correlation analysis deals with the association between two or more variables.

The correlation statistics between the daily average returns of the individual banks with the BSE index is presented in Table Number 3. From the table 3 it is very clear that all the three banks returns have positively correlated with the BSE index. Dena bank among the 10 banks has the highest correlation Dena bank (0.79) with the BSE index, followed by Andhra bank (0.71), Vijaya bank (0.71), and Indian bank (0.65), Central bank of india (0.49), Syndicate bank (0.48). Dena bank and Vijaya bank have the least More than 75 percentages of the stocks in the bank index have positive correlations of more than 0.60 with that of the BSE index, reflecting that both the bank index stocks and the BSE index move parallel or vary together correlations of 0.40 and 0.41 respectively

TABLE 3: CORRELATION VALUES BETWEEN BSE INDEX

S.NO	NAME OF THE BANK	CORRELATION WITH BSE INDEX
1	Allahabad Bank	**0.60**
2	Andhra Bank	**0.71**
3	Central Bank of India	**0.49**
4	Corporation bank of India	**0.51**
5	Dena Bank	**0.79**
6	Indian Bank	**0.65**
7	Oriental Bank of commerce	**0.58**
8	Syndicate bank	**0.48**
9	Union bank of India	**0.56**
10	Vijaya Bank	**0.71**

D. Beta of Bank Index stocks: In finance, beta, or beta coefficient, measures an asset's sensitivity to movements in the overall stock market. It is a measure of the asset's volatility in relation to the stock market. To calculate the beta of an asset, use regression analysis to compare the historic returns of the asset with the historic returns of the stock market.

Beta is often calculated using at least five years of historic data. An asset with a beta of one will fluctuate with the overall stock market. An asset with a beta higher than one is more volatile than the stock market. An asset with a beta less than one is less volatile than the stock market. An asset with a negative beta coefficient moves inversely to the stock market. Beta is used to compute an asset's expected return in the capital asset pricing model[3].

The beta value represents those fluctuations of respective banks in relation to the entire market movements. Here we consider that Bombay stock exchange movements for doing research. If the beta value is more than one we consider that share as a highly volatile share, the data is considered as monthly returns of Bombay stock exchange. Beta value has also been calculated for all the 10 bank stock appearing in the bank index using SPSS[4]. The data related to daily returns of the BSE index and daily returns of the stock were used to arrive at the beta value to explain the share volatility corresponding to the index.

TABLE 4: BETA VALUES OF THE STOCKS

S.NO	NAME OF THE BANK	BETA VALUE OF THE STOCK
1	Allahabad Bank	**1.51**
2	Andhra Bank	**1.46**
3	Central Bank of India	**1.58**
4	Corporation bank of india	**1.30**
5	Dena Bank	**1.09**
6	Indian Bank	**0.98**
7	Oriental Bank of commerce	**0.88**
8	Syndicate bank	**1.54**
9	Union bank of india	**1.44**
10	Vijaya Bank	**1.37**

(Source: Bombay stock exchange websites and company own websites)

From the above table it is clear that all the bank stocks appearing in the bank index have been highly volatile during the period. Central Bank of India shows the highest beta value of 1.58 followed by syndicate bank (1.54) Allahabad bank (1.51), Andhra bank (1.46), Union Bank of India (1.44), Vijaya Bank (1.37),Dena bank (1.09), Indian Bank (0.98), and the lowest beta value among the banks was Oriental bank of commerce bank with 0.80 beta. This gives a clear indication that all banks except Oriental bank of commerce were more volatile than the market

VIII. CONCLUSION

At the end of this research paper finally the observation is oriental bank of commerce is more volatile than other banks, where as it having 0.80, as well as the main motive of this research paper is to find the relationship between returns and volatility of the banking sector shares in Indian banking industry. Apart from that this research paper also wants to focus correlation between stock returns and Bombay stock exchange fluctuations.

Finally our banking sector shares are given diversified results rather than uniformity, many external factors apart from the regular returns and profits are influence these stock market value volatility.

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