International Journal of Applied Research 2017; 3(2): 251-255


**ISSN Print:** 2394-7500
**ISSN Online:** 2394-5869
**Impact Factor:** 5.2
IJAR 2017; 3(2): 251-255
www.allresearchjournal.com
Received: 19-12-2016
Accepted: 24-01-2017

**Dr. DV Ingle**
Associate Professor,
Department of Commerce,
Smt. L.R.T. College of Commerce, Akola,
Maharashtra, India

**Correspondence**
**Dr. DV Ingle**
Associate Professor,
Department of Commerce,
Smt. L.R.T. College of Commerce, Akola,
Maharashtra, India

# An empirical study of share price volatility of top five market capitalized banks on NSE

## Dr. DV Ingle

**Abstract**
The capital market in India is a very strong and has undergone drastic changes in the last more than two decades and now became more transparent than ever. Stock markets in general are considered volatile. Volatility plays an important role in measuring the risk–return. There are so many factors that make the stock market volatile; it is of general interest to understand if the volatility of the stock market in India in line with the volatility of the different sectors in India. Bank stocks have been major contributors to the fluctuations in the stock market index. Volatility is a measure of variability from the mean values. Given this basis, the banking sector is chosen in this study to see if the movement of the banking sector is in tandem with the national stock movements as reflected in the NSE Nifty. As per the study All the banks shows higher rate of growth when compare to public sector bank. Kotak Mahindra Bank has a growth rate of 65, followed by HDFC bank 15.38. HDFC bank also shows a growth rate of 16.6 in the stock price during the last one year. All the banks show high positive correlation with Nifty PSU Bank index. All banks show high positive correlation with Nifty Private Bank Index.

**Keywords:** Share price, stock volatility, banking sector and financial sector

## 1. Introduction
Volatility is a measure of deviation around the mean or average return of a security. Volatility can be measured using the standard deviation, which signals how tightly the price of a stock is grouped around the mean or moving average (MA). When prices are tightly bunched together, the standard deviation is small. Contrarily, when prices are widely spread apart, the standard deviation is large. Regional and national economic factors, such as tax and interest rate policies, can significantly contribute to the directional change of the market, thereby potentially greatly influencing volatility. For example, in many countries, when a central bank sets the short-term interest rates for overnight borrowing by banks, their stock markets often violently react. Changes in inflation trends, plus industry and sector factors, can also influence the long-term stock market trends and volatility.

## 2. Review of Literature
Dr. Virender Koundal (2012) in his paper titled "performance of Indian banks in Indian financial System" concludes that various reforms have produced favorable effects on commercial banks in India, but it is realized that the major benefit is taken by the private sector banks and foreign banks whereas public sector banks are still lagging behind on various financial parameters.
Chirag V. Jiyani (2015) in his article concludes that private sector banking witnessed substantial growth and superior financial services. Deposits, Advances, Total Income, Total Expenses of private banks have increased during the study period. The study also shows that overall financial performance of private banks improved during the study period.
Baggam Seshu Sailendra, T. Subramanian (2015) in a paper titled "A Study on the Technical Analysis of Share Price Movements of Banking Sector with Special Reference to NSE" published in Transactions on Engineering and Sciences, analyzed that share prices of private sector banks shows more fluctuations than public sector banks".
John William, T. Vimala (2015) in a research paper entitled "a study on equity share price volatility of selected Private Banks in (NSE) stock exchange" observes that even though the private banking companies adopt different operational strategy the share volatility is similar for all the selected private banks.

Gajera Alpesh kumar (2016) in his theses concluded that return on assets is high in private sector banks while return on equity is high in public sector banks which indicate that private sector banks have optimum utilization of their assets. One reason behind deviation is public sector banks have network in rural area also which is not as profitable as urban area due to which public sector banks performance is poor compare to private sector banks.

Milan B. Undavia (2016) in his paper titled "Fundamental Analysis of Selected Public and Private Sector Banks in India" found that South Indian Bank is the best stock from private sector banks for investment purpose & PNB is the best stock from Public Sector banks for investment purpose.

Malaya Ranjan Mohapatra, Avizeet Lenka, Subrat Ku-mar Pradhan (2015) in a paper titled "A Study of Operational Efficiency of Commercial Banks in Indian Financial System: At a Glance have analyzed the operational efficiency of commercial banks in India and challenges faced by public sector banks. The parameters considered for study are labour productivity, branch expansion and profitability ratios.

T. Deva Prasad, C. Chaitanya, A. Thulasi Kumar (2018) in their article states that result that technical indicators can play useful role in the timing stock market entry and exit. By applying technical tools brokers or investors enjoy substantial profit. Shares volatility of banking sectors differ from other sectors because banking share volatility depends upon RBI decision

## 3. Statement of the Problem

The banks play a vital role in the Indian economy. In India Banks are classified into different groups such as scheduled and unscheduled commercial banks, public sector banks, private banks, foreign banks and cooperative banks. Commercial banks occupies lion portion of Indian banking system which consists public sector and private sector banks. The period from 1991 onwards remarkable growth in the banking sector took place regards to liberalization of economic policies. As per the Narasimham Committee recommendation RBI permitted entry of private sector players in Indian Banking system. At present India has a wide range of banking sector which consists of 21 public sector banks and 20 private sector banks. Demonetization announced by the central Govt. on 8th Nov 2016 raised a big controversy in the nation regards its impact. In the light of all these, an attempt is made to compare the volatility of the share price movements of three banks each of private sector and public sector with that of Nifty Private Bank and Nifty PSU Bank through technical analysis.

## 4. Objectives of the Study

1. To study the volatility of share price movements of selected bank.
2. To compare the performance of Nifty with Nifty bank index.

## 5. Research Methodology

The data used in for the study is purely secondary in nature where the monthly average of the NIFTY index and monthly average prices of stock of the banks that appear in the bank index is used. The daily closing prices have been collected from the website of National stock Exchange (NSE) for the period from 1st Jan 2016 to 31st Dec. 2016. For data analysis here the descriptive statistics with regard to daily closing prices average, high and low are used. Volatility is explained using standard deviation and its coefficient. The NIFTY index returns and each of the bank returns have been correlated to see the relationship.

### 5.1 Scope of the Study

The study is limited to only a period of one year from 1st Jan 2016 to 31st Dec. 2016 and is restricted to measuring and comparing the volatility and returns of the bank having top market capitalization. There are various other sectors which are not covered in this study. In addition stock market movements are affected by several other factors that are not discussed in this paper.

### 5.2 Limitations of the Study

This study is mainly carried out based on the top five market capitalized banks which might be not sufficient to generalize whole banking sector. The study is based on technical analysis and no fundamental factors were considered. The period of study restricted for 1st Jan 2016 to 31st Dec. 2016. This might be not sufficient to predict the future trend of market.

### 5.3 Sample

For the study State bank of India, HDFC bank, Kotak Mahindra Bank, AXIS bank and ICICI bank have been selected.

### 5.4 Standard deviation as a measure of volatility

Volatility is a measure of dispersion. If volatility is high, the risk of the security is considered high as well. Here standard deviation is used as a tool to measure volatility. Standard deviation is measure of dispersion of a set of data from its mean. The formula for standard deviation is where the standard deviation, x is is each value of the data set, is the mean value of the data set and n is the number of values in the data set.

### 5.5 Correlation

Correlation is used to find if there is any relationship between the NIFTY index returns and the individual stock returns. In this paper a one to one correlation using Ms Excel is used. The data sets of daily returns of NIFTY index were correlated to the daily returns of the seected banks individually and the correlation coefficient was generated to check if there is a relationship

## 6. Theoretical Background of Banka

### 6.1 State Bank of India

SBI provides a range of banking products through its network of branches in India and overseas, including products aimed at non-resident Indians (NRIs). SBI has 16 regional hubs and 57 zonal offices that are located at important cities throughout India. SBI has over 24000 branches in India. In the financial year 2012–13, its revenue was ₹2.005 trillion (US$28 billion), out of which domestic operations contributed to 95.35% of revenue. Similarly, domestic operations contributed to 88.37% of total profits for the same financial year. Under the Pradhan Mantra Jan Dhan Yojana of financial inclusion launched by Government in August 2014, SBI held 11,300 camps and opened over 3 million accounts by September, which included 2.1 million accounts in rural areas and 1.57 million accounts in urban areas. As of 2014–15, the bank had 191

overseas offices spread over 36 countries having the largest presence in foreign markets among Indian banks. Apart from five of its associate banks (merged with SBI since 1 April 2017), SBI's non-banking subsidiaries include: SBI Capital Market, SBI Cards & Payments Services Pvt. Ltd. (SBICPSL) and SBI Life Insurance Company Limited. In March 2001, SBI (with 74% of the total capital), joined with BNP Paribas (with 26% of the remaining capital), to form a joint venture life insurance company named SBI Life Insurance company Ltd.

### 6.2 HDFC Bank

HDFC Bank's mission is to be a World Class Indian Bank. The objective is to build sound customer franchises across distinct businesses so as to be the preferred provider of banking services for target retail and wholesale customer segments, and to achieve healthy growth in profitability, consistent with the bank's risk appetite. The bank is committed to maintain the highest level of ethical standards, professional integrity, corporate governance and regulatory compliance. HDFC Bank's business philosophy is based on five core values: Operational Excellence, Customer Focus, Product Leadership, People and Sustainability. On May 23, 2008, the amalgamation of Centurion Bank of Punjab with HDFC Bank was formally approved by Reserve Bank of India to complete the statutory and regulatory approval process. The amalgamation added significant value to HDFC Bank in terms of increased branch network, geographic reach, and customer base, and a bigger pool of skilled manpower. In a milestone transaction in the Indian banking industry, Times Bank Limited (another new private sector bank promoted by Bennett, Coleman & Co. a Times Group) was merged with HDFC Bank Ltd., effective February 26, 2000. This was the first merger of two private banks in the New Generation Private Sector Banks.

### 6.3 Kotak Mahindra Bank

Kotak Mahindra Bank is an Indian private sector bank headquartered in Mumbai. In February 2003, the reserve bank of India (RBI) issued a license to Kotak Mahindra Finance Ltd., the group's flagship company. It offers banking products and financial services for corporate and retail customers through a variety of delivery channels and specialized subsidiaries in the areas of personal finance, investment banking, general insurance, life insurance and wealth management. In February 2003, Kotak Mahindra Finance Ltd. (KMFL), the group's flagship company, received a banking license from the Reserve Bank of India (RBI). With this, KMFL became the first non-banking finance company in India to be converted into a bank Kotak Mahindra Bank Limited.

### 6.4 Axis Bank

Axis Bank is the fifth-largest Indian bank offering a wide range of financial products. The bank has its head office in Mumbai, Maharashtra. It has 4,050 branches, 11,801 ATMs and 4,917 cash recyclers spread across the country as of 31 March 2016 and nine international offices. The bank employs over 55,000 people and had a market capitalization of ₹1.31 trillion (US$18 billion). It sells financial services to large and mid-size corporate, SME and retail businesses.

### 6.5 ICICI Bank Limited

ICICI Bank Limited is an Indian multinational banking and financial services company headquartered in Mumbai. As of 2016, ICICI Bank is the second largest bank in India in terms of assets and market capitalization. It offers a wide range of banking products and financial services for corporate and retail customers through a variety of delivery channels and specialized subsidiaries in the areas of investment banking, life, nonlife insurance, venture capital and asset management. The bank has a network of 5,275 branches and 15,589 ATMs across India and has a presence in 17 countries including India. ICICI Bank is one of the big five bank of India. The bank has subsidiaries in the United Kingdom and Canada; branches in United States, Singapore, Bahrain, Hong Kong, Qatar, Oman, Dubai International Finance Centre, China and south Africa and representative offices in United Arab Emirates, Bangladesh, Malaysia and Indonesia. The company's UK subsidiary has also established branches in Belgium and Germany.

## 7. Data Analysis and Interpretation

### 7.1 Basic of Selected Bank Stock

**Table 1:** Basic of Bank

| Items | Face Value | 52 Week High | 52 Week Low |
|---|---|---|---|
| State Bank of India | 1 | 256 | 155 |
| HDFC Bank | 1 | 1134 | 457 |
| Kotak Bank | 5 | 817 | 621 |
| Axis Bank | 2 | 589 | 367 |
| ICICI Bank | 2 | 239 | 172 |

**Source:** www.nseindia.com

### 7.2 Monthly Average Prices of Banks

**Table 2:** Monthly Average Prices from 1st Jan. 2016 to 31st Dec. 2016

| S. No. | Date | State Bank Of India | HDFC Bank | Kotak Bank | Axis Bank | ICICI Bank |
|---|---|---|---|---|---|---|
| 1 | 1 Jan 2016 | 175 | 494 | 682 | 399 | 209 |
| 2 | 1 Feb. 2016 | 155 | 457 | 628 | 367 | 172 |
| 3 | 1 March 2016 | 190 | 504 | 679 | 435 | 215 |
| 4 | 1 April 2016 | 184 | 533 | 715 | 462 | 215 |
| 5 | 1 May 2016 | 200 | 556 | 744 | 505 | 222 |
| 6 | 1 June 2016 | 214 | 554 | 761 | 522 | 218 |
| 7 | 1 July 2016 | 227 | 596 | 761 | 535 | 239 |
| 8 | 1 Aug. 2016 | 250 | 618 | 805 | 589 | 234 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 9 | 1 Sept. 2016 | 249 | 609 | 775 | 535 | 229 |
| 10 | 1 Oct. 2016 | 255 | 603 | 817 | 481 | 251 |
| 11 | 1 Nov. 2016 | 256 | 574 | 754 | 464 | 241 |
| 12 | 1 Dec. 2016 | 247 | 570 | 718 | 445 | 232 |

**Source:** www.nseindia.com

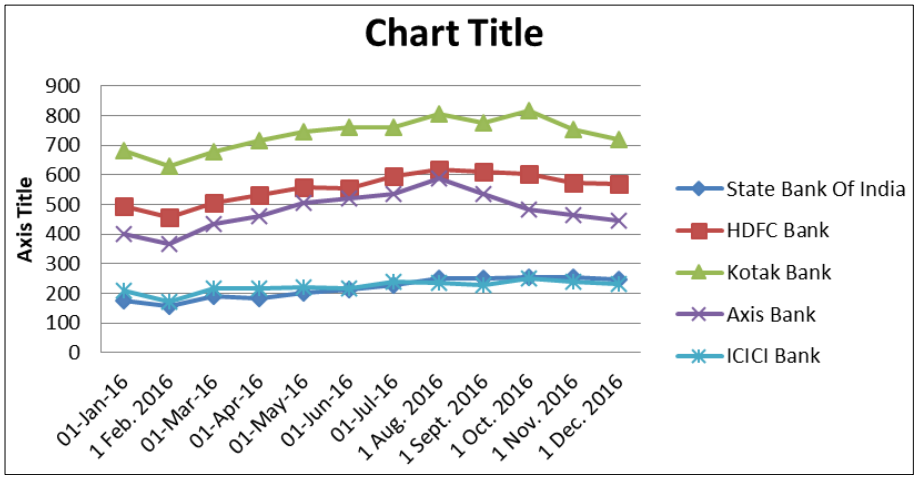


**Chart 1:** Monthly Average Prices from 1st Jan. 2016 to 31st Dec. 2016

Table-2 and the chart-1 show the monthly average of the closing prices of selected bank shares from 1st jan. 2016 to 31st Dec. 2016. This one year period will gives trend of share price movement of Sate Bank Of India, HDFC Bank, Kotak Mahindra Bank, Axis Bank And ICICI Bank.

### 7.3 Analysis of Change in Share Price

**Table 3:** Price Change

| Name | Price on 1st Jan 2016 | Price on 31st Dec. 2016 | Change in Value | % Change |
|---|---|---|---|---|
| State Bank Of India | 175 | 290 | 115 | 65.00 |
| HDFC Bank | 494 | 570 | 76 | 15.38 |
| Kotak mahnidra Bank | 682 | 718 | 36 | 05.27 |
| Axis Bank | 399 | 445 | 46 | 11.52 |
| ICICI Bank | 209 | 232 | 23 | 09.91 |

**Source:** www.nseindia.com

From the above table it is clear that State Bank of India's share price has highest price movement i.e. 65% and least changes are denoted for Kotak Mahindra Bank i.e. 05.27%.

### 7.4 Mean and Standard Deviation

**Table 4:** Mean and Standard Deviation

| Name | Mean Price | Co-efficient of Variation |
|---|---|---|
| State Bank of India | 232.5 | 7.92 |
| HDFC Bank | 534 | 0.8 |
| Kotak Bank | 700 | 6.78 |
| Axis Bank | 422 | 6.9 |
| ICICI Bank | 220.5 | 7.9 |

From the above table it is found that State Bank of India has highest degree of volatility i.e. 7.92 % and HDFC bank has least volatility i.e. 0.8 %.

### 7.5 Correlation with Nifty and Bank Index

**Table 5:** Correlation with Nifty and Bank Index

| Name | Correlation With Nifty | Correlation With Bank Index |
|---|---|---|
| State Bank Of India | 0.29 | 0.48 |
| HDFC Bank | 0.88 | 0.88 |
| Kotak Bank | 0.75 | 0.71 |
| Axis Bank | 0.70 | 0.76 |
| ICICI Bank | 0.76 | 0.89 |

All the banks keep a positive correlation in its share price movement with nifty bank index. HDFC bank has the highest correlation with nifty and bank index.

## 8. Findings

1. All the banks shows higher rate of growth when compare to public sector bank. Kotak Mahindra Bank

has a growth rate of 65, followed by HDFC bank 15.38. HDFC bank also shows a growth rate of 16.6 in the stock price during the last one year.
2. All the banks show high positive correlation with Nifty PSU Bank index.
3. All banks show high positive correlation with Nifty Private Bank Index.
4. While considering the correlation, percentage of growth and volatility it is clear that all the banks keep a positive direction.

## 9. Conclusion

Stock market is the one of the investment avenue which offers maximum return with higher rate of risk. Volatility of the stock price decides the degree of risk and return one investor can earn from stock market. So information regards to the stock price volatility helps the investor to make best investment decisions. Here this study attempts to compare the volatility of the public sector banks with the volatility of private sector banks.

## 10. References

1. Revathy M, Sriram Ramanan PK, Chandrasekhar R. Core Banking Solution, Prentice Hall of India Pvt. Ltd. New Delhi, 2011.
2. Muralidharan D, Modern Banking. Phi Learning Pvt. Ltd., New Delhi, 2009.
3. Snayal Kumar. Stock Market Volatility, Lap Lambert Academic Oublishing, New Delhi, 2013.
4. RBI Report on Stock Market Volatility, 2015.
5. www.nseindia.in