A COMPARATIVE STUDY OF NIFTY BANK INDICES

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ABSTRACT

Investment in stock market equity is a golden opportunity to earn best return. Stock market includes several securities that are being traded by speculators and investors day in and day out. There is a lot of risk involved while investing in any sector in the stock market when the thought comes in mind about investing for short run. In the long run, investment in banking sector has been considered as a good opportunity. Bombay Stock Exchange (BSE) and National Stock Exchange (NSE) are leading stock exchanges in our country. NSE was the first exchange to provide the fully automated platform for share trading. It provides trading facility in an easy way to all investors spread across the country. NSE has various indicesthat serve people investing in different sectors. These market indices work as benchmark to measure performance of portfolio or stocks. Banking sector is a growing sector and this study is based on the performance of the banking sector. Banking sector can be divided into two sectors i.e. Public Sector Undertakings (PSUs) and Private Sector Banks. The indices which represent the banking sector include Nifty Bank, Nifty PSU Bank and Nifty Private Bank. The Nifty Bank has 12 constituents. Nifty PSU Bank has 12 constituents and Nifty Private Bank has 10 constituents. This study is based on the performance as well as the risk involved in three Nifty indices based on the Banking sector.The period of study for evaluating risk and return has been taken from April 2016 to March 2020. The researcher has used mean, correlation, regression, beta and standard deviation. It is very important to understand the risk and return involved in various sectors and then decision regarding selection of a particular stock for investment should be taken.

Keywords: Beta, Standard Deviation, nifty, correlation

INTRODUCTION

In the economic system, banking sector has been playing a very important part in the Economic development. PSU and Private Banks have played essential role to build economics of the nation and also in individual's life. The banking system

which is widely spread has contributed towards the economic activity in not only the urban areas, rather in the rural areas also. Development of any country is dependent on existence of a well developed banking sector that provides support to various sectors like Agriculture, household, education, Industry, etc. through loans and other kind of financial assistance. Bank enables formation of capital through its presence and also inculcates the habit of savings among public. Banks are creators of credit. They have been supporting the country in money stabilization and channelizing funds for productive sectors. Banking sector has contributed towards economic growth in our country. This sector has brought significant developments. Investors believe that this sector will flourish and will bring prosperity in future. Banking sector is regulated by RBI. RBI ensures that there exists monetary stabilization in the entire country. Banks could be classified into different segments like PSU, Private, Co-operative as well as Foreign banks. The major portion of the banking sector is dominated by the Public and Private sector banks. In this study we have made an attempt to compare the performance of Nifty Bank, Nifty PSU Bank and Nifty Private Bank.

OBJECTIVES OF THE STUDY

1. To understand the performance of Nifty Bank, Nifty PSU Bank and Nifty Private Bank during the period from April 2016 to March 2020
2. To analyze the relation between the Nifty Bank indices and Nifty 50
3. To compare the risk and return involved in various Nifty Bank indices and Nifty 50

HYPOTHESIS

H_0 – There is no significant correlation between Nifty Bank indices and Nifty 50

H_1 – There is a significant correlation between Nifty Bank indices and Nifty 50

RESEARCH METHODOLOGY

Research design in this study is descriptive in nature. The variables under study in this research paper are Nifty Bank, Nifty PSU Bank and Nifty Private Bank. The data was collected from various secondary sources like research papers, reports, website of NSE etc. For analyzing the data, the closing price of the Nifty Bank Indices have been taken into consideration. The relationship has been analyzed through correlation.

PERIOD OF STUDY

This study intends to understand the performance of Nifty Bank, Nifty PSU Bank and Nifty Private Bank and for this period of study in this research is from April 2016 to March 2020

CONCEPTUAL FRAMEWORK

NSE has introduced three indices which are related to banking companies. One is Nifty Bank Index which represents Public and Private sector banks, the other two Nifty PSU bank and Nifty Private Bank are related to PSU banks and Private sector bank respectively.

NIFTY BANK

The Nifty Bank Index has 12 constituents and these constituents are large stocks of Indian Banks and are most liquid. This provides the investors as well market intermediaries with a benchmark which captures the performance of Indian Banks in the capital market. This index is computed with the help of free float method of market capitalization. The index being discussed could be used for different purposes like launch of index fund, ETFs, structured products and bench marking fund portfolio.

NIFTY PSU BANK

The Nifty PSU Bank index has 12 constituents and it constitutes the PSU banks. All PSUs which are being traded on NSE are actually eligible to be included in this index. These PSUs are subjected to fulfillment of various criteria which includes the history of listing and frequency of trading. This index is computed with the help of free float method of market capitalization. The index being discussed could be used for different purposes like launch of index fund, ETFs, structured products and bench marking fund portfolio.

NIFTY PRIVATE BANK

The Nifty Private Bank Index has 10 constituents and it constitutes the Private Sector Banks. All Private Sector Banks which are being traded on NSE are actually eligible to be included in this index. These Private Sector Banks are subjected to fulfillment of various criteria which includes the history of listing and frequency of trading. This index is computed with the help of free float method of market capitalization. The index being discussed could be used for different purposes like launch of index fund, ETFs, structured products and bench marking fund portfolio.

COMPARATIVE ANALYSIS

PORTFOLIO CHARACTERISTICS

Portfolio Characteristics			
Characteristics	**Nifty Bank**	**Nifty PSU Bank**	**Nifty Private Bank**
Methodology	Periodic Capped Free Float	Periodic Capped Free Float	Periodic Capped Free Float
No. of Constituents	12	12	10
Launch Date	15-Sep-03	30-Aug-07	5-Jan-16
Base Date	1-Jan-00	1-Jan-04	1-Apr-05
Base Value	1000	1000	1000
Calculation Frequency	Online Daily	Online Daily	Online Daily
Index Rebalancing	Semi-Annually	Semi-Annually	Semi-Annually

The portfolio characteristics which are similar in all the Nifty Bank indices including that of PSU and Private bank index include the methodology which is being followed in these indices is periodic capped free float. The number of constituents in Nifty Bank and Nifty PSU Bank are same i.e. 12 and in Nifty Private Bank the number of constituents are 10.

Among these three indices, Nifty Bank index was launched first, then after approx 4 years Nifty PSU Bank was launched and then later in 2016, the Nifty Private Bank index was launched. The base date in each of these indices is different and the base value of these three indices is same i.e. 1000. The frequency of calculation is online daily and the index rebalancing in all three indices is done on semi-annual basis.

TOP CONSTITUENTS BY WEIGHTAGE

Nifty Bank			Nifty PSU Bank	
Company's Name	**Weight (%)**		**Company's Name**	**Weight (%)**
HDFC Bank Ltd.	28.83		State Bank of India	32.64
ICICI Bank Ltd.	19.61		Bank of Baroda	16.92
Kotak Mahindra Bank Ltd.	14.89		Punjab National Bank	12.91
Axis Bank Ltd.	14.36		Canara Bank	10.79
State Bank of India	10.44		Union Bank of India	6.83
IndusInd Bank Ltd.	4.39		Bank of India	5.83
Bandhan Bank Ltd.	2.71		Indian Bank	3.04
Federal Bank Ltd.	1.42		UCO Bank	2.88
RBL Bank Ltd.	1.15		Central Bank of India	2.6
IDFC First Bank Ltd.	0.92		Indian Overseas Bank	2.41

Only State Bank of India has formed a part of the top constituents in Nifty Bank Index out of the top 10 constituents which are part of Nifty PSU Bank. State Bank of India has weight of 10.44% in Nifty Bank Index and 32.64% in Nifty PSU Bank. SBI being a Public Sector bank has major importance in weightage in Nifty PSU Bank Index, but it comes on fifth position in terms of weightage in Nifty Bank Index.

Nifty Bank			Nifty Private Bank	
Company's Name	Weight (%)		Company's Name	Weight (%)
HDFC Bank Ltd.	28.83		HDFC Bank Ltd.	27.25
ICICI Bank Ltd.	19.61		ICICI Bank Ltd.	20.65
Kotak Mahindra Bank Ltd.	14.89		Kotak Mahindra Bank Ltd.	15.68
Axis Bank Ltd.	14.36		Axis Bank Ltd.	15.12
State Bank of India	10.44		IndusInd Bank Ltd.	7.72
IndusInd Bank Ltd.	4.39		Bandhan Bank Ltd.	4.77
Bandhan Bank Ltd.	2.71		City Union Bank Ltd.	2.66
Federal Bank Ltd.	1.42		Federal Bank Ltd.	2.5
RBL Bank Ltd.	1.15		RBL Bank Ltd.	2.03
IDFC First Bank Ltd.	0.92		IDFC First Bank Ltd.	1.62

The Banks which are a part of top 10 constituents in Nifty Bank index and Nifty Private Bank Index are common except State Bank of India and City Union Bank Ltd. SBI has replaced City Union Bank in Bank Nifty Index top 10 constituents. The weightage is different in both the indices though the top 4 banks are common in both the indices.

CORRELATION OF THE NIFTY BANK INDICES WITH NIFTY 50

In this study, correlation between Nifty bank indices and Nifty 50 has been found for understanding the relation amongst them.

Correlations

		Nifty 50	Nifty Bank	Nifty PSU Bank	Nifty Private Bank
Nifty 50	Pearson Correlation	1	.989[**]	-.045	.990[**]
	Sig. (2-tailed)		.000	.759	.000
	N	48	48	48	48
Nifty Bank	Pearson Correlation	.989[**]	1	-.030	.997[**]

	Sig. (2-tailed)	.000		.841	.000
	N	48	48	48	48
Nifty PSU Bank	Pearson Correlation	-.045	-.030	1	-.016
	Sig. (2-tailed)	.759	.841		.915
	N	48	48	48	48
Nifty Private Bank	Pearson Correlation	.990**	.997**	-.016	1
	Sig. (2-tailed)	.000	.000	.915	
	N	48	48	48	48

**. Correlation is significant at the 0.01 level (2-tailed).

This result has been extracted by applying correlation on the data through SPSS. The correlation between Nifty bank index and Nifty Private Bank index with Nifty 50 is positive and the correlation between Nifty PSU Bank and Nifty 50 is negative. The correlation between Nifty Bank index and Nifty 50 is 0.989 and Nifty Private Bank index and Nifty 50 is 0.990 which is very high. While Nifty PSU bank index has -0.045 as correlation with Nifty 50. This indicates that the Banking sector and also Private Sector bank move in same direction as that of the Indian economy as a whole whereas PSU are following a movement which is downward and in the opposite direction.

H_0 – There is no significant correlation between Nifty Bank indices and Nifty 50

H_1 – There is a significant correlation between Nifty Bank indices and Nifty 50

There is no significant correlation between Nifty Bank index and Nifty 50. There is no significant correlation between Nifty Private Bank index and Nifty 50. Hence, hypothesis H0 has been accepted. There is a significant correlation between Nifty PSU Bank index and Nifty 50. Hence, hypothesis H_1has been accepted with reference to Nifty PSU Bank index.

Normal Q-Q plot of the Nifty banking indices and Nifty 50

Estimated Distribution Parameters

		Nifty 50
Normal Distribution	Location	10237.7146
	Scale	1266.43658

The cases are unweighted.

Estimated Distribution Parameters

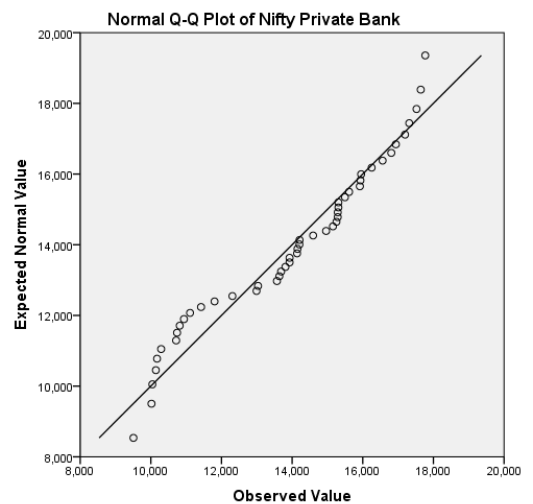|		Nifty Bank
Normal Distribution	Location	24954.6042
	Scale	4341.72364

The cases are unweighted.

Estimated Distribution Parameters			Estimated Distribution Parameters		
		Nifty PSU Bank			Nifty Private Bank
Normal Distribution	Location	2996.1448	Normal Distribution	Location	13945.8042
	Scale	490.00946		Scale	2428.67435

The cases are unweighted.   The cases are unweighted.

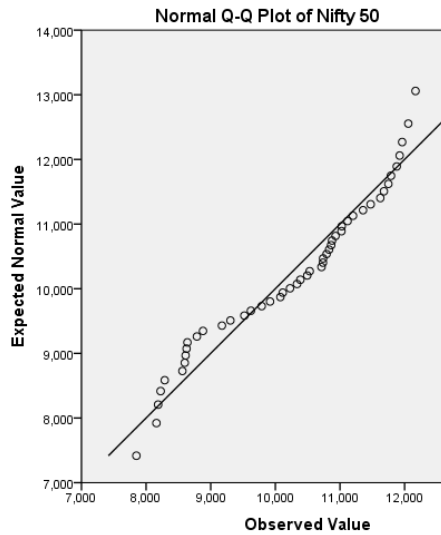Normal Q-Q Plot of Nifty 50

Normal Q-Q Plot of Nifty PSU Bank

Normal Q-Q Plot of Nifty Bank

Normal Q-Q Plot of Nifty Private Bank
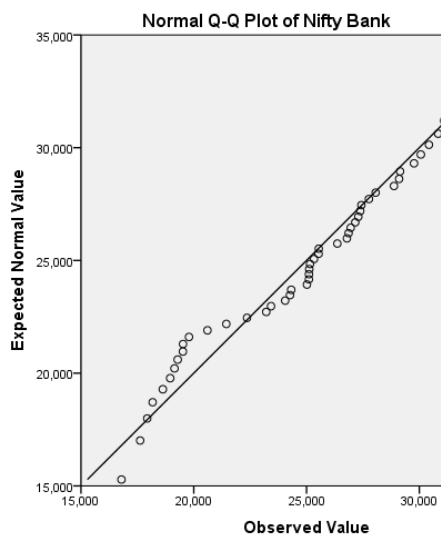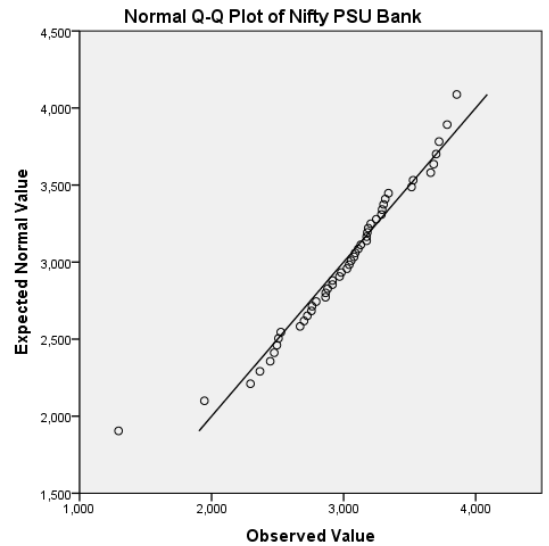
Normal Q-Q plot compares o*bserved* quantiles of data which are depicted in the form of circles with the quantiles which is depicted as solid line. When the data is normally distributed, then circles are quite close to the solid line. The above Q-Q plots have been imported from SPSS. On comparison of Q-Q plot of all the Nifty bank indices and Nifty 50, it could be interpreted that Nifty PSU Bank index is normally distributed and this is not the case with the other indices.

RISK AND RETURN ANALYSIS

The risk and return have been analyzed taking into consideration the movement in the Nifty Bank, Nifty PSU Bank and Nifty Private Bank index.

RISK

For understanding the risk involved in the Nifty Bank indices, regression has been applied through SPSS and the beta as mentioned in table below has been evaluated.

STANDARD DEVIATION

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Nifty 50	48	7849.80	12168.45	10237.7146	1266.43658
Nifty Bank	48	16795.00	32161.65	24954.6042	4341.72364
Nifty PSU Bank	48	1295.45	3856.65	2996.1448	490.00946
Nifty Private Bank	48	9505.50	17767.60	13945.8042	2428.67435

The above table is an output from SPSS. The standard deviation indicates the volatility in the index. Standard deviation helps in evaluating the risk involved in a particular index or stock. In this study we have considered three indices of Banking sector and also Nifty 50 (index of NSE). Higher standard deviation indicates higher risk involved. As per the above table, the standard deviation is highest of Nifty Bank index and the lowest in Nifty PSU Bank Index. This indicates that the Nifty Bank Index involves a lot of fluctuations. The risk involved in investment in Nifty PSU index is lesser, hence those people who are lesser risk averse should prefer to invest in the PSUs and those who are high risk takers, and they should invest in any bank which is a part of Nifty bank index.

RETURN

Year	Nifty 50	% change	Nifty Bank		Nifty PSU		Nifty Private Bank	
2016-17	8498.68		19022.74		3007.43		10628.81	
2017-18	10079.72	18.60	24592.56	29.28	3459.38	15.03	13712.57	29.01
2018-19	10960.88	8.74	26957.19	9.62	2989.28	-13.59	15271.93	11.37
2019-20	11411.59	4.11	29245.93	8.49	2528.50	-15.41	16169.90	5.88

The above data has been calculated taking into consideration the monthly average price as available on www.investing.com. The monthly average prices for Nifty 50, Nifty Bank, Nifty PSU Bank and Nifty Private Bank. This table shows that

Nifty Bank and Nifty Private Bank have performed better than Nifty 50 as compared to the year 2017-18 with 2016-17. Nifty PSU Bank index has performed the worst during this period as compared to the other indices. The return during 2018-19 and 2019-20, the return from Nifty 50, Nifty Bank and Nifty Private Bank have shown a positive growth, rather Nifty PSU has shown a downfall.

Impact of Nifty 50 index on Nifty Bank indices (Beta)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-9743.574	784.643		-12.418	.000
	Nifty 50	3.389	.076	.989	44.552	.000

a. Dependent Variable: Nifty Bank

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3175.839	587.797		5.403	.000
	Nifty 50	-.018	.057	-.045	-.308	.759

a. Dependent Variable: Nifty PSU Bank

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-5495.967	406.152		-13.532	.000
	Nifty 50	1.899	.039	.990	48.225	.000

a. Dependent Variable: Nifty Private Bank

The beta coefficient has been calculated with the use of regression applied through SPSS. The beta coefficient between Nifty Bank index and Nifty Private Bank index with Nifty 50 is positive and the beta coefficient between Nifty PSU Bank and Nifty 50 is negative. The beta coefficient between Nifty Bank index

and Nifty 50 is 0.989 and Nifty Private Bank index and Nifty 50 is 0.990 which is very high. While Nifty PSU bank index has -0.045 as beta coefficient with Nifty 50. This indicates that the Banking sector and also Private Sector bank move in same direction as that of the Indian economy as a whole whereas PSU are following a movement which is downward and in the opposite direction.

FINDINGS AND CONCLUSIONS

Stock market is generally considered very volatile and many people consider this volatility as the key to make investment decisions. In the Indian economy, the banking sector holds good position   among the investor's mind while selection is being made by investors. This study has made an attempt towards measurement of volatility in the Nifty Bank indices. It is very important to understand the risk and return involved in various sectors and then decision regarding selection of a particular stock for investment should be taken. In the this study, researcher intends to understand the volatility in Nifty 50, Nifty Bank, Nifty PSU Bank and Nifty Private Bank index.

FINDINGS

- The correlation between Nifty bank index and Nifty Private Bank index with Nifty 50 is positive and the correlation between Nifty PSU Bank and Nifty 50 is negative. The correlation between Nifty Bank index and Nifty 50 is 0.989 and Nifty Private Bank index and Nifty 50 is 0.990 which is very high. While Nifty PSU bank index has -0.045 as correlation with Nifty 50.

- Nifty PSU Bank index is normally distributed and this is not the case with the other indices

- The standard deviation is highest of Nifty Bank index and the lowest in Nifty PSU Bank Index.

- Nifty Bank and Nifty Private Bank have performed better than Nifty 50 as compared to the year 2017-18 with 2016-17

- The return during 2018-19 and 2019-20, the return from Nifty 50, Nifty Bank and Nifty Private Bank have shown a positive growth, rather Nifty PSU has shown a downfall.

- The beta coefficient between Nifty bank index and Nifty Private Bank index with Nifty 50 is positive and the beta coefficient between Nifty PSU Bank and Nifty 50 is negative.

- The beta coefficient between Nifty Bank index and Nifty 50 is 0.989 and Nifty Private Bank index and Nifty 50 is 0.990 which is very high. While Nifty PSU bank index has -0.045 as beta coefficient with Nifty 50.

- This indicates that the Banking sector and also Private Sector bank move in same direction as that of the Indian economy as a whole whereas PSU are following a movement which is downward and in the opposite direction.

CONCLUSION

Stock market is the one of the investment avenue which offers maximum return with higher rate ofrisk. Volatility of the stock price decides the degree of risk and return one investor can earn from stockmarket. So information regards to the stock price volatility helps the investor to make best investmentdecisions. Here this study attempts to compare the volatility of the public sector banks with the volatility ofprivate sector banks. The portfolio characteristics which are similar in all the Nifty Bank indices including that of PSU and Private bank index include the methodology which is being followed in these indices is periodic capped free float. The number of constituents in Nifty Bank and Nifty PSU Bank are same i.e. 12 and in Nifty Private Bank the number of constituents are 10. Only State Bank of India has formed a part of the top constituents in Nifty Bank Index out of the top 10 constituents which are part of Nifty PSU Bank. The correlation between Nifty bank index and Nifty Private Bank index with Nifty 50 is positive and the correlation between Nifty PSU Bank and Nifty 50 is negative. This indicates that the Banking sector and also Private Sector bank move in same direction as that of the Indian economy as a whole whereas PSU are following a movement which is downward and in the opposite direction. The standard deviation indicates the volatility in the index. Standard deviation helps in evaluating the risk involved in a particular index or stock. In this study we have considered three indices of Banking sector and also Nifty 50 (index of NSE). Higher standard deviation indicates higher risk involved. The standard deviation is highest of Nifty Bank index and the lowest in Nifty PSU Bank Index. This indicates that the Nifty Bank Index involves a lot of fluctuations. The risk involved in investment in Nifty PSU index is lesser, hence those people who are lesser risk averse should prefer to invest in the PSUs and those who are high risk takers, and they should invest in any bank which is a part of Nifty bank index. Nifty Bank and Nifty Private Bank have performed better than Nifty 50 as compared to the year 2017-18 with 2016-17. Nifty PSU Bank index has performed the worst during this period as compared to the other indices. The return during 2018-19 and 2019-20, the return

from Nifty 50, Nifty Bank and Nifty Private Bank have shown a positive growth, rather Nifty PSU has shown a downfall. The beta coefficient between Nifty bank index and Nifty Private Bank index with Nifty 50 is positive and the beta coefficient between Nifty PSU Bank and Nifty 50 is negative. This indicates that the Banking sector and also Private Sector bank move in same direction as that of the Indian economy as a whole whereas PSU are following a movement which is downward and in the opposite direction.

LIMITATIONS

1. In NSE, there are different indices; in this study only three indices have been considered for analysis.
2. The time period was taken to be 4 years from April 2016 to March 2020.

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