

A Case Study of Risk and Return Analysis of Indian Banking Securities

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Abstract:- The primary aim of this research paper is to investigate the risk and returns with respect to banking stocks in the Indian securities market. The study examined the fluctuations of individual securities by selecting a sample of six companies from the National Stock Exchange (NSE) from banking sectors, with three companies chosen from each public and private sector. The study spanned a five-year period from January 1, 2018, to December 31, 2023. The daily returns of the securities were calculated, and their variations were analysed using MS Excel functions, specifically average and variance. The study also looks into correlation between the returns of selected stocks and nifty 50 index. This report offers valuable insights and may prove useful to rational investors for their investment decisions.

Keywords:- NSE index, risk-return analysis, banking stocks.

I. INTRODUCTION

The capital market is crucial to a nation's development in the period of liberalization, privatization, and globalization because it makes individual savings available to businesses and industries for productive use. To encourage individual investors to trust the stock market with their savings, the stock market must provide investors with something of value in return. This something, then, is the rate of return that is higher than what investors may often expect from secure investments like bonds or fixed deposits. The risk of loss in the stock market is present with these high returns, so even after being aware of the risk, investors should find the returns alluring enough to put their assets in the market.

The stock market is a marketplace where businesses and individual investors can come with their own goals and decide on tactics to achieve those goals. There are many people who have become wealthy through investments in the stock market, but there are also many who have lost quite a fortune. The idea that high risk equals big reward is widely held. It might not always be the case, though.

The backbone of the Indian economy, the banking sector, has always been instrumental in preventing the country from experiencing a terrible economic calamity. In the Indian economy, the stock market has a significant foothold. In terms of excellence and technological innovation, the National Stock Exchange (NSE) is amongst the premier exchanges in both India. The banking industry is essential to the development of the Indian economy.

II. LITERATURE REVIEW

In their research, Panchal (2018) employed beta and CAPM to examine the connection between risk and returns. Their findings indicated that while there is indeed correlation in the risk and returns of a stock, but only to an extent. It was observed that the stocks with the highest level of risk do not consistently yield the highest returns. Consequently, investors should take into account additional factors when making investment choices.

In their study, Samadder and Bhunia (2018) examined the extent of integration between the Indian secondary market and first world countries' stock markets like Australia, Canada, France, Germany, and others. The researchers discovered a low correlation between the Indian and the French securities market, indicating how diversification can increase the gains.

In their study, Shanmugasundram and Benedict (2013) focused on examining the impact of risk on the Indian Sectoral indices and Nifty. They discovered that relationship of risk with different periods of time. The researchers selected five indices of various sectors from the NSE and the Nifty Index, spanning a duration of 8 years from 2004 to 2012. To investigate the changes in risk between the sectors and Nifty, they conducted t-tests and ANOVA analyses.

In their research, Patjoshi (2020) employed various statistical methods, i.e., correlation analysis, regression, descriptive statistics, and t-tests. The findings revealed that all stocks exhibited same trends of change as the Sensex, as evidenced by positive beta values. However, an exception was observed in the case of ICICI Bank, which displayed a negative beta.

Shefali and Kaur (2022) had the primary aim of their paper to investigate the returns and risks associated with specific securities in the Indian stock market. A sample of 50 companies was selected from those listed in BSE, representing ten different sectors. The analysis results indicated that securities categorized as low risk occasionally outperformed those categorized as high risk. However, on average, the high-risk securities provided greater returns during the period of 2016-2020, although to a limited extent.

Narayan (2012) conducted an investigation of securities market of Muscat using beta and correlation methodology. The study's findings indicated that securities characterized by low risk demonstrated superior performance in the period leading up to the global financial crisis.

III. OBJECTIVE

- To examine relation between risk and daily returns of NIFTY 50 INDEX and selected securities of Indian banking companies.
- To study return correlation between nifty 50 index and banking stocks.

IV. METHODOLOGY

This study is empirical in nature. Descriptive study is suitable to achieve the objectives set in the paper. To analyse risk, return and correlation, we have used closing price data for five years, i.e. from 1st January 2018 to 31st December 2022. We have used log daily returns in our study.

Sample: National Stock Exchange (NSE) listed equity stocks and Nifty 50 index is used for the study. Six banking company stocks are selected, equally divided between public sector bank and private sector bank. Source of secondary data is yahoo finance website. Additional information is collected from national stock exchange website.

Table below shows the name of the banking stocks utilized in our study:

Table 1: Selected Banks (By the Author)

Public Sector Banks	Private Sector Banks
State Bank of India	HDFC Bank
Bank of Baroda	ICICI Bank
Canara Bank	Axis Bank

V. FINDINGS AND ANALYSIS

Table 2: Descriptive statistics

	Nifty 50	SBI BANK	BANK OF BARODA	CANARA BANK	HDFC BANK	ICICI BANK	AXIS BANK
Mean	0.000427	0.000560593	0.000113	-6.4E-05	0.000456	0.000854	0.000406
Standard deviation	0.012329	0.022492964	0.028604	0.029295	0.016913	0.022152	0.024538
Kurtosis	20.21487	4.675174486	3.815013	5.560686	9.507663	9.102598	30.2468
Skewness	-1.52228	-0.190536315	-0.24581	-0.5073	-0.21892	-0.44764	-1.63241
Minimum	-0.13904	-0.144586519	-0.17885	-0.2349	-0.13475	-0.1966	-0.32727
Maximum	0.084003	0.129525232	0.142865	0.154394	0.109747	0.128942	0.177985

Following charts show the daily returns for Nifty 50 index and six selected stocks:

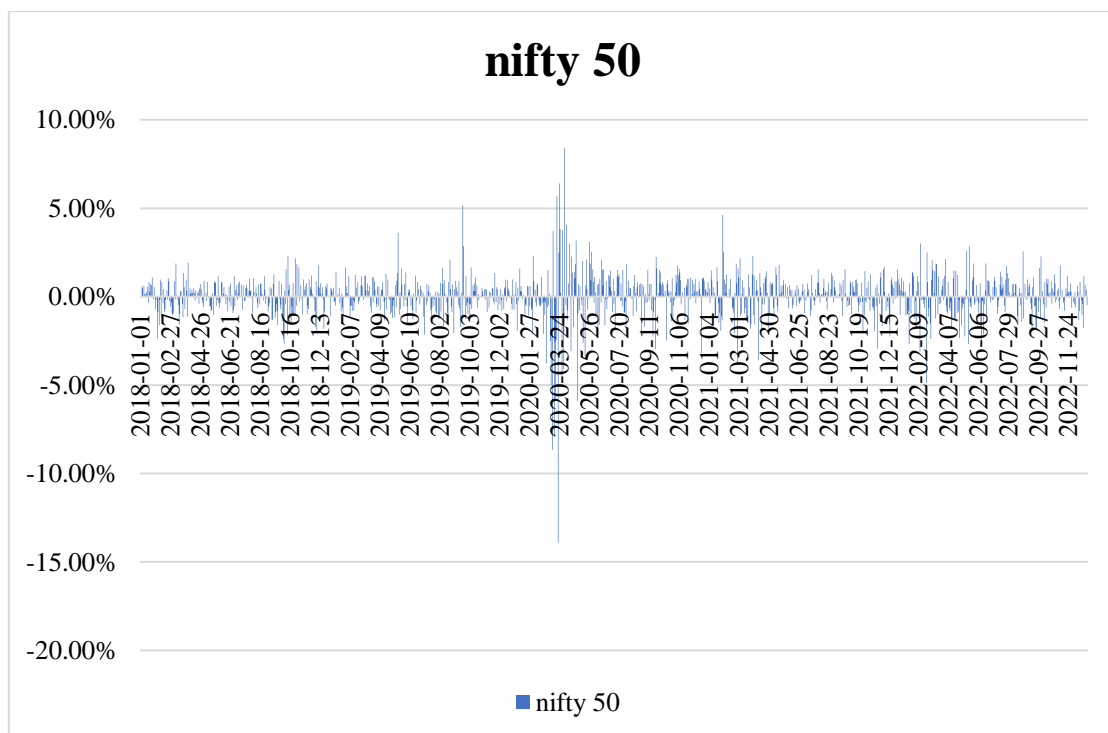


Chart 1: NIFTY INDEX Returns

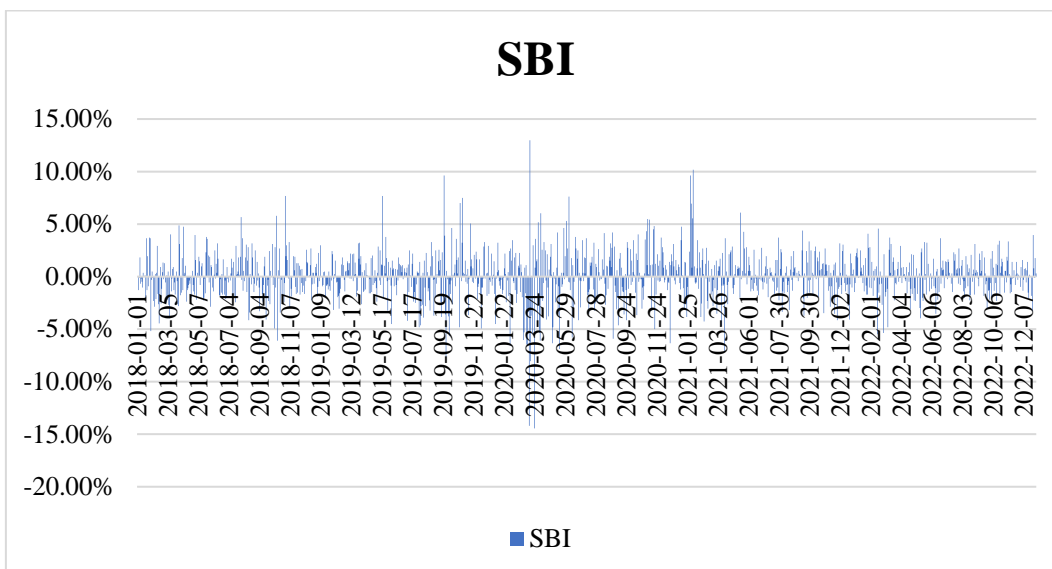


Chart 2: SBI Returns

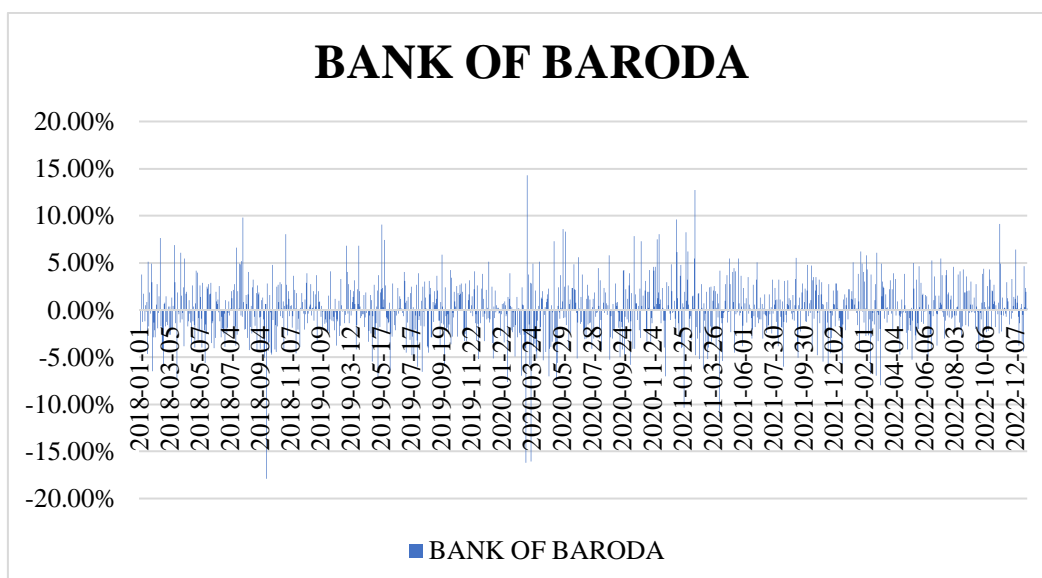


Chart 3: Bank of Baroda Returns

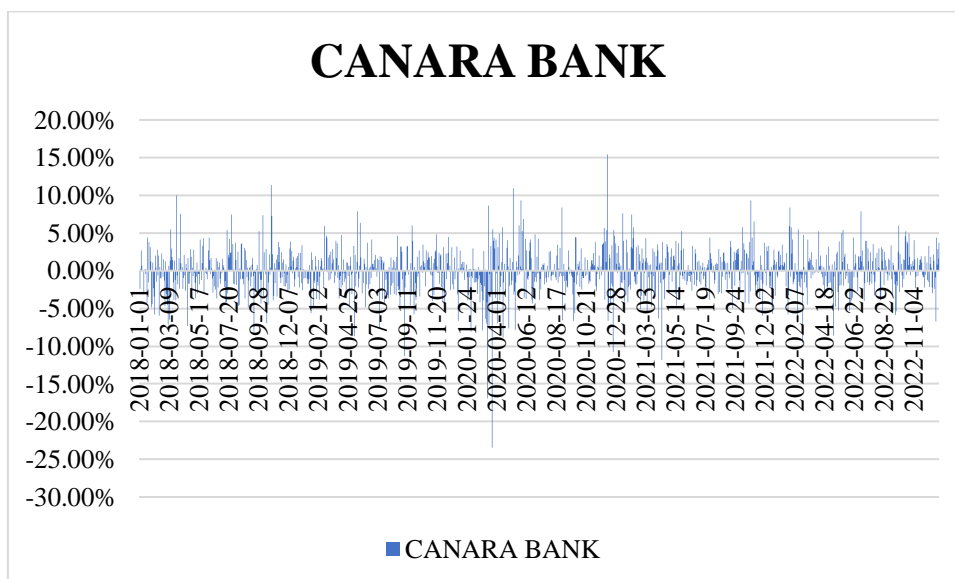


Chart 4: Canara Bank Returns

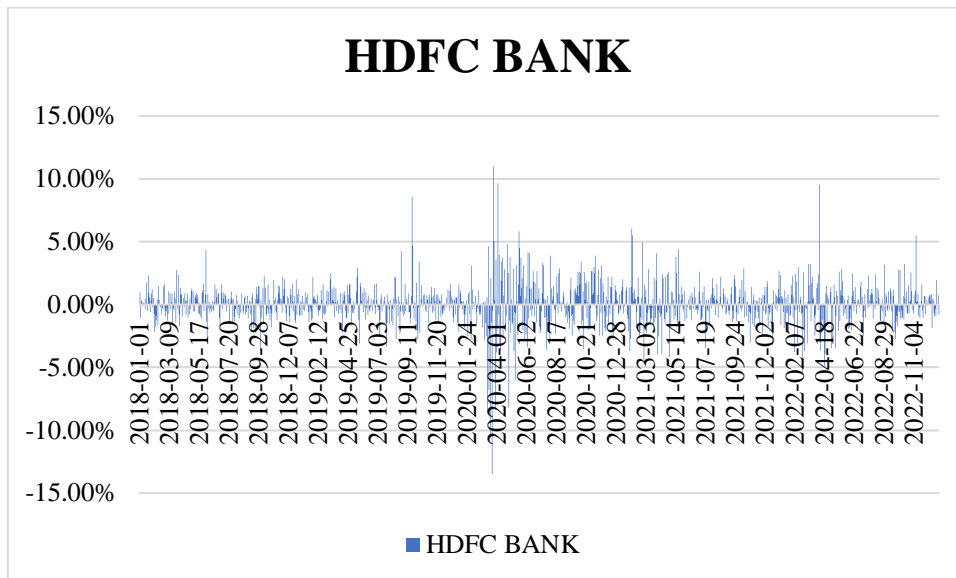


Chart 5: HDFC Bank Returns

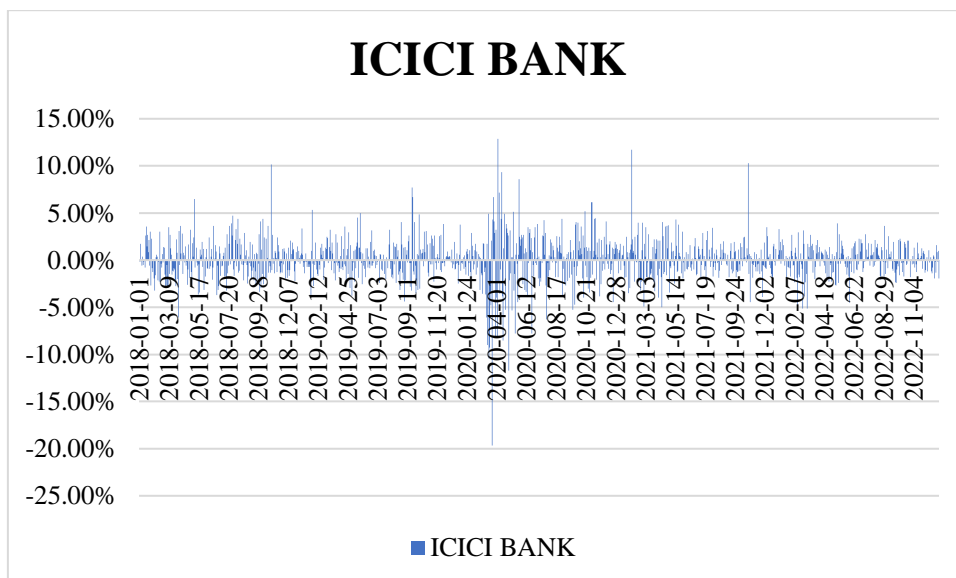


Chart 6: ICICI Bank Returns

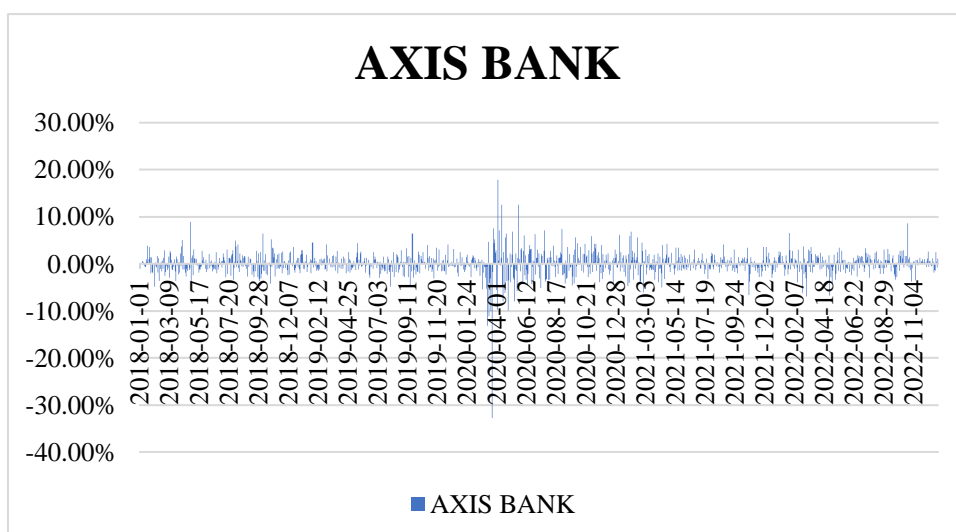


Chart 7: Axis Bank Returns

These statistics provide insights into the distribution, central tendency, spread, and shape of the returns for each stock. Nifty 50 has a relatively high kurtosis, indicating heavy tails and potential outliers. Nifty 50 and AXIS BANK have significant negative skewness, indicating a left-skewed distribution. The minimum and maximum values show the range of returns observed for each stock. Standard deviation

measures the variability of returns, with higher values indicating greater volatility. It's important to note that these statistics alone may not provide a comprehensive understanding of the stocks' performance. Additional analysis and consideration of other factors are necessary for a more thorough evaluation.

Table 3: Correlation Matrix

	NIFTY 50	SBI	BANK OF BARODA	CANARA BANK	HDFC BANK	ICICI BANK	AXIS BANK
NIFTY 50	1						
SBI	-0.04171	1					
BANK OF BARODA	-0.05186	0.716168	1				
CANARA BANK	0.007504	0.733116	0.76059058	1			
HDFC BANK	0.029484	0.505708	0.350581546	0.429688097	1		
ICICI BANK	-0.019	0.685915	0.514070789	0.581432815	0.596431472	1	
AXIS BANK	-0.04803	0.631483	0.488744607	0.549419237	0.519290181	0.733153785	1

NIFTY 50 is the benchmark index, so its correlation with itself is 1 (perfect positive correlation). It serves as the reference point for the other stocks. SBI has a negative correlation of approximately -0.042 with NIFTY 50, indicating a weak negative relationship. BANK OF BARODA shows a negative correlation of around -0.052 with NIFTY 50 and a positive correlation of approximately 0.716 with SBI. CANARA BANK exhibits a positive correlation with all the stocks, ranging from approximately 0.0075 with NIFTY 50 to around 0.761 with BANK OF BARODA. HDFC BANK has a positive correlation of about 0.029 with NIFTY 50, 0.506 with SBI, and 0.351 with BANK OF BARODA. ICICI BANK shows a negative correlation of around -0.019 with NIFTY 50 and positive correlations ranging from approximately 0.515 with BANK OF BARODA to 0.685 with SBI. AXIS BANK exhibits a negative correlation with NIFTY 50, SBI, BANK OF BARODA, and CANARA BANK. The correlations range from approximately -0.048 with NIFTY 50 to around 0.631 with SBI. The magnitude of the correlation values also provides insight into the strength of the relationship, with larger values indicating a stronger correlation.

This correlation matrix can be useful for understanding the relationships and potential dependencies between the stocks. However, it's important to note that correlation is not sufficient, thus factors should be considered when making investment decisions.

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VI. CONCLUSION

The primary objective of this research was to look into the potential gains an investor could make in return of the risks he is ready to bear. The paper also includes discusses correlation amongst different securities of banking sector and a market index. The findings of this study validate the commonly held perception that there is a positive association between high returns and high risk. Consequently, investors may benefit from considering additional factors beyond historical returns when making investment decisions, recognizing that a company's stock value encompasses more than just its past performance.