

A COMPARATIVE ANALYSIS OF BSE AND NSE WITH SPECIAL REFERENCE TO RISK AND RETURNS

Submitted in partial fulfilment of the requirements for the award of
Master of Business Administration

by

H RAMYA KALYANI

Register No. 39410168



SCHOOL OF BUSINESS ADMINISTRATION

SATHYABAMA

**INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY)**

**Accredited with Grade "A" by NAAC | 12B Status by UGC | Approved by AICTE
JEPPIAAR NAGAR, RAJIV GANDHI SALAI, CHENNAI - 600 119**

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Jeppiaar Nagar, Rajiv Gandhi Salai, Chennai – 600 119
www.sathyabama.ac.in

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BONAFIDE CERTIFICATE

This is to certify that this Project Report is the bonafide work of **H. RAMYA KALYANI** (Register No.39410168) who have done the project entitled "**A Comparative analysis of BSE And NSE with special reference to risk and returns**" under my supervision from January 2021 to March 2021.

Dr. Y. AYSHA FATHIMA
Internal Guide

Dr. BHUVANESWARI.G,
Dean – School of Business Administration

Submitted for Viva voce Examination held on _____

Internal Examiner

External Examiner

DECLARATION

I **H. RAMYAKALYANI (Register No. 39410168)** hereby declare that the Project Report entitled **“A Comparative analysis of BSE and NSE with special reference to risk and returns”** done by me under the guidance of **Dr. Y. AYSHA FATHIMA** at **SATHYABAMA INSTITUTE OF SCIENCE AND TECHNOLOGY, CHENNAI** is submitted in partial fulfillment of the requirements for the award of Master of Business Administration degree.

DATE:

PLACE: Chennai

SIGNATURE OF THE CANDIDATE

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ABSTRACT

In every part of life while making decisions, risk and return analysis play a crucial role. In that, Stock Exchange is a market where various securities are traded, for example, Equity shares, mutual funds, debentures, bonds insurance products, common assets and so on, generally the current securities are traded in this market. Indian Financial sector plays a vital in in the country economy development and engages a major share in the stock trading scenario. Risk and Returns are two sides of a same coin, where both the aspects influence each other for an investment. Consequently, understanding the risk associated with the venture assists with maximizing returns. This present study is to examine the Risk and return analysis of the Sensex Banking stocks of BSE & NSE. The health of the economy is reflected by the development of stock market. To light with this research paper is a comparative study of Bombay Stock Exchange and the National Stock Exchange during the period from 2010 to 2021. And the fluctuations in share prices of these companies for 12 long years. This research paper helps the investors to examine and compare the assessments along with the market and to find out that out of these two stock exchanges which one is performing better financially on various basis and to identify the company which would be preferable to invest based on their risk-taking ability.

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

Stock Markets have a significant impact and it turn as an indicator reflecting the performance of the country's monetary condition. The securities exchange alludes to the assortment of business sectors and trades where ordinary exercises of purchasing, selling and issuance of portions of freely held organizations occur. The greater part of the exchanging the Indian financial exchange happens on its two stock trades: The Bombay Stock Exchange (BSE) and the National Stock Exchange (NSE). The essential market is the place where organizations glide offers to the overall population in an Initial Public Offering (IPO) to raise capital.

When new securities have been sold in the essential market, they are exchanged secondary market, where one investor purchases shares from another investor at the overarching market cost or at whatever costs both the purchaser and dealer concur upon. The optional market or the stock trades are managed by the administrative power. In India, the optional and essential business sectors are represented by the Security and Exchange Board of India (SEBI).

Prior in Mid 1990s the standard region hypothesis was bank interest, gold, property and such various sorts of broad assets. Presently Indian monetary area is the foundation of the country economy advancement, the financial area places a vital job in strengthening, all things considered. The Banking sector connects with significant divide between different areas in Indian stock exchanging situation. In the capital market equity market is playing monetary advancement of country yet banking area, equity market has unpredictability and less profits from interest in a portion of the banks and a portion of the banks have greater instability and capital misfortune in venture too. The purchasers and merchants exchange on various monetary securities in the financial exchange which experience to achieve their monetary destinations from their ventures.

Interests in financial exchange include vulnerabilities, which is the risk needs to endure by every one of the investors for the normal returns. Subsequently, interests in securities exchange bargains both risks just as returns. The financial backers that is the investors must know about the risks associated with making investments.

This present research paper is to analyse the performance of the Banking Stocks of Bombay Stock Exchange (BSE) and National Stock Exchange (NSE) for a period of 12 years from January 1st, 2010 to January 31st, 2021. By examining the risk & returns of year closing share prices of the stocks, this study would help the investors to compare and analyse and can make decisions of where to invest in which will be more beneficial with regards to their risk-taking ability. Along these lines, the financial backers need to process the beta and correlation coefficient to know the current state of the stock its connection with the market record and do the stocks are able to produce returns for their ventures. The significance of Risk return relationship is advocate from both of the investors and firms. Assess the connection between Expected pace of return and the risk of resource would assist the investors with settling on upgraded and more exact choice on putting resources into various enterprises. The investors have to distinguish the base risk and greatest profit from investment decisions through portfolio analysis.

1.2 INVESTMENT

An investment is a resource or thing obtained with the objective of generating income or appreciation. From a financial perspective, a venture that is an investment is the acquisition of merchandise that are not consumed today however are utilized later on to make abundance. In economics, an investment is a financial resource bought with the possibility that the resource will turn out revenue later on or will later be sold at a greater cost for a benefit. Investing is putting money to something to do to begin or grow project or to buy a resource or premium – where those assets are then given something to do, with the objective to pay and expanded an incentive over the long haul. Assets to be contributed come from resources previously possessed, acquired cash and investment funds. There are two sorts of investments: Real investments and Financial investments.

Real investments for the most part include some sort of substantial resource, like land, hardware, processing plants, gear's and so on, Financial investments include in paper or electronic structure like stocks, bonds, debentures.

Conversion of money or cash into a financial resource or a case on future cash for a return are called as Investments. This return is saving and facing a challenge including the vulnerability about the real return, season of pausing, and cost of getting back reserves, wellbeing of assets and risk of the inconstancy of the return. The financial backers can examine these by contrasting the inborn worth and the protections Current market cost.

On the off chance that the current market cost is underneath the characteristic worth, a buy is suggested, and if the other way around is the case deal is suggested. An individual (financial backer) dynamic interaction is affected by the manner in which he investigations the return and the risk related with the investments.

1.2.1 ELEMENTS OF INVESTMENTS

The basic elements of investment to be understood in terms of risk, return, safety, liquidity etc. These terms can be utilised for the purpose of investment in securities and determining the basic things which are required in stock market.



Fig 1.1 refers to the elements of investments

- ***Risk***

It is the way toward distinguishing, surveying, and controlling threats to a company's capital and income. This was trailed by facilitated and efficient use of assets to limit, screen and control the likelihood or effect of disastrous occasions or to amplify the acknowledgment of chances. The progressions suggest towards probability that the veritable consequence of an endeavour will surrender from anticipated outcome. Even more especially, most examiners are stressed over the authentic outcome being not as much as the ordinary outcome. The more in-depth scope of conceivable results a lot of noteworthy the risk. The broader extent of possible outcome is more significant the risk. risk is inborn in any venture capital, default of return or changeability of profits.

The risk of a speculation is controlled by the ventures, development period, reimbursement limit, nature of return responsibility, etc. Risk and expected return of a speculation are connected. Hypothetically, the higher the risk, higher is the expected returns. The better yield is a remuneration expected by financial backers for their readiness to bear the higher danger. The embodiment of danger in a

speculation is the variety in its profits. This variety in returns is brought about by various elements. These variables which produce varieties in the profits from a venture establish the components of risk.

$$\textbf{Total risk = Systematic Risk + Unsystematic Risk}$$

An individual making a speculation hopes to get some returns from the interest in future. But, as future is uncertain, so is the future anticipated return. It is this uncertainty related with the profits from a speculation that brings hazard into a venture we can recognize the expected return what's more, the acknowledged get back from a speculation. The expects return is the questionable future return that a financial backer hopes to get from his speculation, the acknowledged return, despite what might be expected, is the sure return that a financial backer has actually obtained from his speculation toward the finish of the holding time frame.

Based on the expected returns the investor makes a decision on investments which are less risky and more profitable. The investor makes the investment decision based on the expected return from the investment. This possibility of variety of the real get back from the actual return is named risk. Risk emerges where there is a chance of variety among assumptions and acknowledge as to an investment. Risk can be characterized in terms of fluctuation of profits. "Risk is the potential for inconstancy in returns." An investment whose returns are genuinely steady is viewed as a low – risk investment, while an investment whose returns vary essentially is viewed as a high-risk investment.

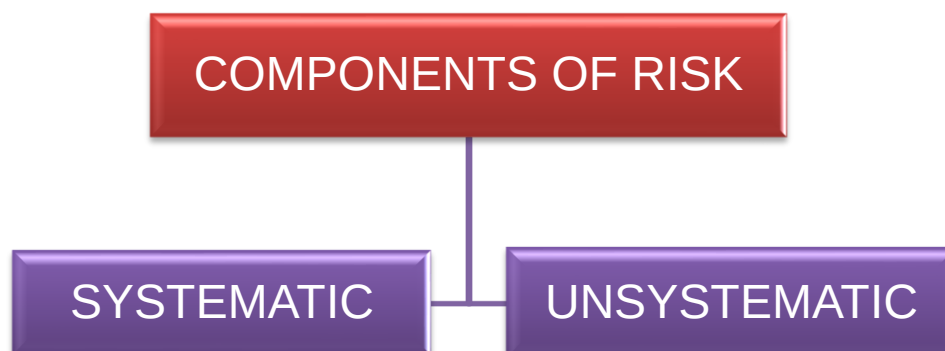


Fig 1.2 refers to the components of risk

1.2.2 COMPONENTS OF RISK

1. Systematic risk

Systematic risk or undiversifiable risk which has an influence on the performance of the companies and there by on their stock price. The impact is methodical return makes the costs of all individual securities move in same bearing. This risk is as a matter of course and cannot be controlled. The systematic risk includes market risk, interest rate risk, risk purchasing power, liquidation risk.

➤ Market risk

Assortment in costs got going due to certified social, political and financial events is implied as market risk. Grandstand peril arises out of changes famous and supply loads in the market taking after the changing stream of information or want.

➤ Interest risk

Loan fee risk is the risk that emerges for security proprietors from fluctuating financing costs. How much interest rate risk a security has relies upon how delicate its value is to loan fee changes on the lookout. The affectability relies upon two things, the security's an ideal opportunity to development, and the coupon pace of the bond.

➤ Risk of purchasing power

This risk alludes to the sort of danger where the incomes from an interest in future won't match estimation of the current buying influence of cash. Swelling assumes a fundamental part in this.

➤ Liquidation risk

The risk that accompanies momentary exchanging of stocks which may turn out badly or inverse to the hypothesis of the intermediaries or merchants. Such a danger is normal in some endeavour hypothesis decision yet it is discussed broadly in hypothesis courses.

2. *Unsystematic risk*

Unsystematic risk implies that fragment of hazard that is welcomed on in light of components stand-out or related to a firm or an industry. Unsystematic risk arises in light of taking after parts:

➤ *Business risk*

Business risk can be inward and also outside. Inside risk is achieved in light of the fact that of dishonourable thing mix, non-openness of materials, nonattendance of crucial organization, etc. External risk arises in light of progress in working conditions, change in business laws, widespread financial circumstances, etc.

➤ *Financial risk*

Financial risk is connected with capital design of the association. An association with no commitment financing has no budgetary risk. The level of cash related danger depends on upon the utilization of the affiliation's capital construction.

• *Return:*

All investments are portrayed by the assumption for a return. Truth be told, ventures are made with the essential goal of inferring return. The assumption for a return might be from pay (yield) just as through capital appreciation. Capital appreciation is the distinction between the purchase price and the sale price. The expected returns an investment relies on the nature of investment, development period, market interest, etc.

Return is fundamental prodding power that drives adventure. It alludes to the compensation for the movement of facing challenge. Hence the assessment of return is imperative to comprehend the benefit or the working of the firm. There are two kinds of returns, those are:

1. *Current return*

The fragment routinely hits home when one is contemplating return in periodic pay as isolated or premium delivered by the endeavour. Current return is estimated as the discontinuous return in association with the beginning expense of the endeavour.

2. Capital return

The second basic piece of return is reflected in the worth change called the capital return. It is essentially the expense of gratefulness (or crumbling) divided by the beginning expense of advantage.

$$\textbf{Total return = capital return + current return}$$

- **Safety**

The wellbeing of venture is related to the assurance of return of capital without loss of time or cash. It is the relationship between expected probability and the break-even point. Security is another component that a financial backer longing from investments. Each investor hopes to get back the underlying capital on development immediately.

- **Liquidity:**

It is the process of finding how long and what cost it takes to convert an investment into cash. An investment that is effectively saleable without deficiency of cash or time is supposed to be fluid. A very much created secondary market for security expands the liquidity of the investments. An investor will in general favour maximum of anticipated return, minimization of danger, security of assets and liquidity of investments.

1.3 RELATIONSHIP BETWEEN RISK AND RETURN

There is sure relationship between the proportion of risk accepted and the measure of profits anticipated. More noteworthy the risk, the bigger the expected returns and bigger the possibility of significant misfortune. The main objective of a rational investor (financial backer) would have some level of hazard avoidance, he would anticipate the risk just in the event that he sufficiently made up for it.

The accompanying figure shows connection between the measure of risk assumed and measure of expected returns.

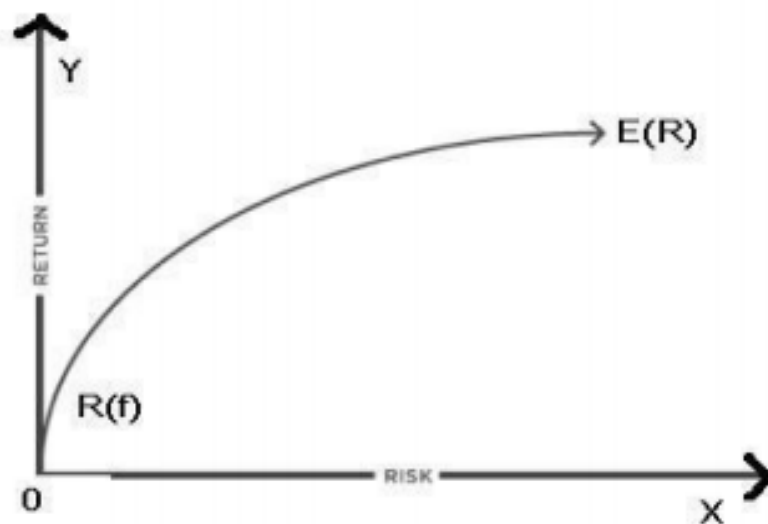


Fig 1.3 refers to the relationship of Risk and Return

The comparison between the terms states about the risk involved in every situation. Risk is estimated along x-axis and return along y-axis. Risk increments from left to right and return ascends from base to top. The line 0 to R(f) shows rate of return from hazard less investments. The diagonal curve from R(f) to E(r) represents the idea of expected pace of return expanding shows a straight connection among risk and return.

The financial division in India has encountered numerous changes, particularly in the capital market Segment, since 1990s. The share price fluctuations in the market can affect the economy of the country. A variance happens in the price level of stock in view of changes in a few elements, as monetary, social and political.

A section from these elements data delivered by the corporate bodies causes unstable nature in the offer costs anyway the corporate declaration impressively affects the impact on the share price movements. Additionally, the individual investors change their investment design depending upon the arrival of data by the corporate bodies. At the end of the day the corporate declarations reflect wide varieties in the offer costs and financial backer's standard of conduct. This reality is brought into the organizations consistently making critical declaration with positive also, negative data which will reflect in their costs. At the point when corporate declaration contains uplifting news this stock costs go up, though declarations containing awful news push the stock's price down. Given this reality the financial backers can respond negatively or positively depending upon whether it is positive or negative data. Henceforth the market responses show that the realized data is promptly examined by all investors and it reflects in the stock prices in stock market.

The data that influences the costs of securities is strikes, lockouts, joint endeavour arrangements, dispatching of the new items, monetary reports incorporate yearly and quarterly deliveries, public statements, declaration of dividend including interim announcement of profit including interval profit, outcome of board of directors meeting, outcome of annual general meeting, right issues, bonus issues, allotment of equity shares including allocation of offers under employee investment stock option scheme, amalgamation, acquisition, obtaining, repurchase offer and sale of shares and so on. Among these different corporate declarations giving data, some are probably going to have most critical effect on the share price fluctuation.

1.4 INDUSTRY PROFILE:

1.4.1 BOMBAY STOCK EXCHANGE

Bombay Stock Exchange (BSE) 1875 In Asia, Bombay Stock trade is the most established one. Over past 143 years, BSE was facilitated the development of the Indian Corporate part by raising platform with proficient capital. BSE provides a proficient and clear exchange market in equity, debts instruments, derivatives and mutual funds. It has a stage to trade in equities of Small and Medium Enterprises (SME). The BSE has helped develop India's capital market including the retail debt market, and has helped grow the Indian corporate sector.

Mumbai is now a major financial centre in India and Dalal Street is home to a large number of banks, investment firms, and related financial service companies. The importance of Dalal Street to India is similar to that of Wall Street in the United States. Indian investors and the press will cite the investment activity of Dalal Street and will use it as a figure of speech to represent the Indian financial industry,

The BSE is Asia's first stock exchange and also includes an equities trading platform for small-and-medium enterprises (SME). BSE has diversified into providing other capital market services including clearing, settlement, and risk management. They additionally give a large group of their administrations to capital market members who incorporate hazard administration, clearing, settlement, market information service and instruction. In 2017 BSE become the 1st listed stock exchange of India. More than five thousand five hundred organisations are recorded in BSE and making it main trade as far as recorded organizations. BSE utilised the file to open its subsidiary market and began exchanging SENSEX future contracts. The BSE also provides other important capital market trading services such as risk management, clearing, settlement, and investor education. Today, electronic trading systems dominate the financial industry overall, offering fewer errors, faster execution, and better efficiency than traditional open outcry trading systems. Securities that the BSE lists include stocks, stock futures, stock options, index futures, index options, and weekly options.

The BSE's overall performance is measured by the Sensex, a benchmark index of 30 of the BSE's largest and most actively traded stocks covering 12 sectors. Debuting in 1986, the Sensex is India's oldest stock index. Also called the "BSE 30," the index broadly represents the composition of India's entire market.

1.4.2 NATIONAL STOCK EXCHANGE (NSE)

The National Stock exchange came into existence on 1992 of November, it was recognised in 1993 of April. It is located in Mumbai. The National Stock exchange has expanded its exchanging activities from June 1994, when the entire deal obligation advertise fragment was done live. The basic purpose of this exchange was to bring the transparency in the stock markets. The National Stock Exchange of India Limited (NSE) is India's largest financial market and the fourth largest market by trading volume. The National Stock Exchange of India Limited was the first exchange in India to provide modern, fully automated electronic trading. The NSE is the largest private wide-area network in India.

The NSE has been a pioneer in Indian financial markets, being the first electronic limit order book to trade derivatives and ETFs. The National Stock Exchange of India Limited was the first exchange in India to provide modern, fully automated electronic trading. It was set up by a group of Indian financial institutions with the goal of bringing greater transparency to the Indian capital market. This was started its operation in the wholesale debt market in June 1994. It has completely modern and fully automated screen-based trading system having more than two lakh trading terminals, which provides the facility to the investors to trade from anywhere in India.

The National Stock Exchange of India Ltd. (NSE) is the trading stock exchange in India and the second largest in the world by number of trades in equity shares from January to June 2018, according to World Federation of Exchanges (WFE) report. The National Stock Exchange is a premier marketplace for companies preparing to list on a major exchange. The sheer volume of trading activity and application of automated systems promotes greater transparency in trade matching and the settlement process. This in itself can boost visibility in the market and lift investor confidence. Using cutting-edge technology also allows orders to be filled more efficiently, resulting in greater liquidity and accurate prices.

1.4.3 FINANCIAL SERVICE SECTORS

The economy is made up of many different segments called sectors. These sectors are comprised of different businesses that provide goods and services to consumers. The companies that are grouped together in a sector provide a similar product or service. For instance, companies that offer agricultural services make up the agricultural sector. Corporations that provide mobile or cellular telephone services are part of the telecommunications sector.

This article looks at the financial services sector, one of the most important segments of the economy. The financial services sector provides financial services to people and corporations. This segment of the economy is made up of a variety of financial firms including banks, investment houses, lenders, finance companies, real estate brokers, and insurance companies.

Financial services make up one of the economy's most important and influential sectors. Financial services are a broad range of more specific activities such as banking, investing, and insurance. Financial services are limited to the activity of financial services firms and their professionals while financial products are the actual goods, accounts, or investments they provide. According to the finance and development department of the International Monetary Fund (IMF), financial services are the processes by which consumers or businesses acquire financial goods. For example, a payment system provider offers a financial service when it accepts and transfers funds between payers and recipients. This includes accounts settled through credit and debit cards, checks, and electronic funds transfers.

1.4.4 BROKERAGE FIRMS

A broker is an individual or firm that acts as an intermediary between an investor and a securities exchange. Brokerage company is a firm which serves buying and selling of financial assets or securities linking buyer and seller. Brokerage company facilitates a customer of investors who buy or sell public stocks or other securities. The members of this kind of firms are trusted with the duty of market research to provide proper communication.

A brokerage firm is a brokerage firm that provides a range of financial services in addition to allowing you to buy and sell securities. These firms can provide customers with financial planning services as well as consulting services. They can also provide trust services and wealth management services. Of course, the level of service you receive is reflected in the commissions the brokerage firm will charge on your orders. This is the most expensive type of brokerage firm. Also, with this type of brokerage firm, you will be able to place your buy and sell orders over the internet or over the phone.

However, if it's over the phone, the brokerage firm may charge an extra service fee for the additional assistance. Brokerage firms are financial institutions that help you buy and sell securities. They act as the middle man between the buyer and the seller. Depending on the brokerage firm type you choose, you can either make your buys and sales via telephone, internet, or smartphone.

1.4.5 PORTFOLIO MANAGERS

A portfolio manager is a person or group of people responsible for investing a mutual, exchange traded or closed-end fund's assets, implementing its investment strategy, and managing day-to-day portfolio trading. A portfolio manager is a person or group of people responsible for investing a fund's assets, implementing the fund's investment strategies, and managing day-to-day portfolio management. A portfolio manager holds great influence on a fund, no matter if that fund is a closed or open mutual fund, hedge fund, venture capital fund or exchange-traded fund.

The manager of the fund's portfolio will directly affect the overall returns of the fund. Portfolio managers are thus usually experienced investors, brokers, or traders, with strong backgrounds in financial management and track records of sustained success. Active managers make a list of thousands of companies and pair it down to a list of a few hundred. The shortlist is then given to fund analysts to analyse the fundamentals of the potential investments, after which the portfolio manager assesses the companies and makes an investment decision. Passive managers also conduct research by looking at the various market indices and choosing the one best-suited for the fund.

A portfolio manager is one of the most important factors to consider when looking at fund investing. Portfolio management can be active or passive, and historical performance records indicate that only a minority of active fund managers consistently beat the market. Portfolio managers means the person registered with securities exchange who is accordance with law with customers, directors or undertakes on behalf of them it may be discreet otherwise or in other words portfolio manager is who exercises under a contract relating to portfolio management.

1.5 STATEMENT OF THE PROBLEM

Indian monetary area is the foundation of the country economy advancement, the Banking sector place a critical part in strengthening, everything being equal. The financial area draws in significant divide between different areas in Indian stock trading scenario.

Bombay Stock Exchange (BSE) and National Stock Exchange (NSE) is a market where number of securities are traded which have been already Issued and recorded in a stock trade. The current number of investors suffer due to lack awareness about how to invest their money in profitable stocks.

This current investigation is to analyse the Risk and Return examination of the Sensex Banking stocks of BSE and NSE. Furthermore, the Fluctuations in Share prices of these organizations. This investigation causes the financial backers to inspect and contrast the appraisals along and the market and to recognize the organization which would be desirable over contribute dependent on their risk-taking capacity.

1.6 SIGNIFICANCE OF THE STUDY

Return express the quantity that which the capitalist truly acquired on an investment during a definite period. Risk is that the likelihood that a particular investment may or may not deliver the actual/expected returns. The risk and return trade off say that the potential returns rises with a rise in risk. it is necessary for an investor to decide on a balance between the desire for the lowest potential risk and highest possibly come back.

Return and risk analysis helps the investor to create positive he/she does no commit any mistake by stepping into a wrong investment or taking a wrong call. The capitalist will use varied tools and techniques to analyse them. This research study helps in analysing the risk and returns related to eight monetary services corporations listed within the Bombay stock exchange (BSE) and National Stock Exchange (NSE) by utilizing varied tools.

1.7 NEED FOR THE STUDY

This research paper was represented to analyse the comparative study of Bombay Stock Exchange and National stock exchange with special reference to risk and returns. This analysis the fluctuations of risk and returns of the Sensex Banking stocks. It also identifies the performance of the banking stocks in the share market with the share prices of each security. This is based on the efficiency of stock market that has direct consequences for the action of investors in the market for profitable benefits. The financial service sectors should provide proper information to the investors for understanding the banking stocks to invest their money in a profitable investment decision with the latest current scenario of the stock market.

1.8 SCOPE OF THE STUDY

This study is based on Banking equity analysis of Indian stock market for the investors to invest in best securities which provide sufficient Knowledge about the funds and profitable companies in taking part a rational and best investment decision. There are eight banking stocks out of which 4 from Bombay Stock Exchange (BSE) and another 4 from National stock exchange (NSE).

- This covers the risk of beta value with banking returns and Sensex returns
- This study analysis the correlation between different securities.
- This involves the calculation of individual Standard Deviation securities with the Mean values and the total returns of each banking stock
- This also calculates the covariance coefficient of the stocks to analyse the risking ability of each investments.
- These percentage helps in allocating the funds available for investment based on risky portfolios.

1.9 OBJECTIVES OF THE STUDY

The objectives of this research paper are to capture the risk and return analysis of sample Banking Stock invested in Bombay Stock Exchange (BSE) and National Stock Exchange (NSE). The aim is to help the investors understand the risk return trade off of banking stock at Bombay stock exchange and National Stock Exchange.

Primary Objective

- To examine the relationship between risk & returns of Sensex Banking stocks.

Secondary Objective

- To study the risk involved in the securities of the selected companies.
- To analyse the constancy of Beta for the Banking stocks of BSE & NSE Sensex with respect to Sensex.
- To identify the best investment of the banking Equities on selected banks.

1.10 LIMITATIONS OF THE STUDY

- The research study is limited to data collected for a period of 12 years i.e. from January 2010 to January 2021, (for the purpose of calculating beta, standard deviation, correlation and covariance).
- The study is limited to data collected from eight companies listed under Financial Services of Bombay stock exchange (BSE) and National stock exchange (NSE)
- The prediction of the risk cannot be accurate since the fluctuations in the market is based on other External factors and it is uncertain.
- The study is limited to a smaller sample size of number.

CHAPTER 2

REVIEW OF LITERATURE

2.1 REVIEW OF LITERATURE

Philippe Jorion (1991) revealed about the pricing of exchange rate risk in the stock market. He made an effort to study the stock returns and the value of the dollar that differs across the countries by using two factor and multifactor arbitrage pricing models.

Jawahar Lal (1992) presents a profile of Indian Investors and evaluates their investment decisions the main objective of the company is to focus on the requirements of the general people. He put forth an attempt to examine their experience with and perception of monetary data, and the degree to which this is put to utilize. The data that the organizations give by and large neglects to address the issues of an assortment of individual financial backers and there is an overall impression that the organization's Annual report and all other process of statements are not generally welcomed.

Raghavan. R. et.al, (2000) commented on the risk perceptions and the risk measure parameters. This process would vary from different methods of using the tool. As indicated by him, hazard the board is building up speed when there is expanding tension on banks and monetary foundations to more readily deal with their resources and improve their asset report. The more prominent unpredictability of anticipated returns, the higher is the danger. The substance of danger the board is to diminish the instability.

Phillipe Gergoorie et.al, (2001) conducted a study on Predictive Power of Technical Analysis: the moving average rules of European According to him simple forms of technical analysis possessed significant forecast power on various market indexes. He shows that these results can be replicated on selected European indexes, which almost completely eliminates any influences from data snooping.

S. Hakim (2002), directed a paper about Risk and Return of Islamic Stock Market Indexes. An equal and unlimited partner of DJIMI is the Wilshire 5000 Index (W5000) which tracks the value execution of the biggest 5000 US organizations. In this investigation it talks about the Dow Jones Islamic market record US (DJIMI) tracks the supplies of organizations viable with Islamic law. Of that list, roughly 75% of the organizations neglect to meet the Islamic measures, leaving just around 700 organizations as possible contender for incorporation in the DJIMI. Utilizing cointegration methods we place the DJIMI under logical examination and ask (1) how has this determination limitation influenced the presentation of Islamic ventures addressed by the DJIM list? (2) is the DJIM record less broadened than the DJW file? (3) provided that this is true, how much has the restricted enhancement influenced its danger and return? (4) lastly, what dynamic connection and long-haul relationship exist between the two files over the long run.

Rodriguez, Michael Hardleand Wolfgang (2002) they investigate. They built up a two phases computation that first checks the associations among stocks and document in a flexible manner and furthermore calculates the ideal loads that limit the accompanying slip. Finally, the procedure is associated to the DAX-Index and an assessment with a guileless model that thinks about the certified loads of each stock in the rundown is given. It gives that the framework prevails with regards to decreasing the following slip. Introduction of flexible relationship assessors doesn't upgrade generally the accompanying bungle; eventually it obtains another dispersal of loads that is exploitable on the decision business in order to create flightiness exchanges.

DG Praveen AND Nihar Ranajn Panda (2002) had conducted a study on “Beat the market with hammer “, Japanese candlestick analysis is one of most popular and oldest forms of technical analysis. Candlestick charting studies the records of the market movements in the past to identify the future patterns. It identifies exuberant buying and panic selling, enabling the trader to pocket a great deal of profits from the stock market. Compared to traditional bar charts, many traders consider candlestick charts more visually appealing and easier to interpret. Each candlestick provides an easy to decipher picture of price action. Immediately a trader can see and compare the relationship between the open and close as well as the high and low.

Nath and Verma (2003) look at the relationship of the three significant financial exchanges in south Asia financial exchange lists specifically India (NSE-Nifty), Taiwan (Taiex) and Singapore (STI) by utilizing bivariate and multivariate to co incorporation investigation to show the linkages among the securities exchanges, No, co-joining was found for the whole time frame (every day information from January 1994 to November 2002). They presumed that there is no since a long time ago run balance. By using different kinds of methods and techniques.

Dwivedi sunny Dmello Bosco (2004) conducted a study with the purpose of comparing the effect of the change in indices of Bombay stock exchange (BSE) and National stock exchange (NSE) which are the two nationalized stock exchange of India on various sectors of India. Researcher done the study with the objectives to show that what the effect was on oil and gas indices when there was the change in the nifty and USD/INR indices, and to find out whether the average returns in both the indices (Oil and gas and I.T) are same or not.

Stephen Sault (2006) had led an investigation on principal and specialized examination written works put impressive exertion in evaluating their individual capacity to clarify share costs, they perpetually do as such without reference to one another. In this setting we propose a value when valuation model coordinating both major and specialized investigation. That is the integrating models both fundamental and technical analysis. Furthermore, in doing as such, perceive their potential commendations instead of as substitutes.

CHEOL-HO PARK AND SCOTT H. IRWIN (2004) The purpose of this report is to review the evidence on the profitability of technical analysis. To achieve this purpose, the report comprehensively reviews survey, theoretical and empirical studies regarding technical trading strategies. We begin by over viewing survey studies that have directly investigated market participants' experience and views on technical analysis. Foreign exchange markets, and that about 30% to 40% of practitioners appear to believe that technical analysis is an important factor in determining price movement at shorter time horizons up to 6 months

Sensarma R Jayadev (2009) demonstrates about the financial Stocks are touchy to chance management. This paper endeavours to sum up the data contained in bank budget reports on the danger the board capacities of banks and afterward learns the affectability of bank stocks to chance management. The paper deciphers the chose book keeping proportions as risk the executive's factors and endeavours to measure the general danger the executive's ability of banks by summing up these bookkeeping proportions as scores through the use of multivariate factual procedures. At long last, the paper dissects the effect of these hazards the board scores on stock returns through relapse examination. And furthermore, tracks down that the outcomes dependent on information for Indian banks uncover that banks' danger the executive's capacities have been improving after some time aside from over the most recent two years.

Surrender S. Yadav (2010), The inspiration driving this paper is to review the illuminating profitability of S&P CNX Nifty record decisions in Indian protections promote. The S&P CNX Nifty record is a principle stock document of India, involves 50 most as frequently as could really be expected traded protections recorded on NSE and to give the all, out list on securities exchange mix and to isolate the disclosures what's more, possible results of the overviews pondered for survey toward the requirement for more cautious agreement of administrative meanings of risk and return.

Gupta and Yang (2011) explored the weak form efficiency or random walk hypothesis for the two major equity markets (BSE and NSE) in India. Stock Exchange as the inefficient in the weak form therefore, investors may make better returns on the basis of historical data. This study found that the market efficiency was mixed.

Geetha and Ramesh (2011) studied the Indian's behaviour about investment preferences. The data for their study was collected with the help of questionnaire and their total sample size was 210 respondents. They studied the effect of demographic variables on investment preferences. The study found that people were not aware about all the investment options available to them and they lack knowledge about securities.

Sharma et.al, (2012) talks about the performance of Risk return trade off of the stocks listed in the stock exchanges of Asia. This study found that expected return and risk connected over time by using the descriptive statistics. And also, high returns and rational risk complicated in those Asian countries

Nitin Sethi & Sonia Gupta (2012) conducted the study with the objective of to measure the nature of correlation of nifty and Sensex. This research paper was an attempt to consider the moving trend of Nifty and Sensex are correlated or not. The research design of the paper was casual in nature. For 24 months the data was collected and monitored by the researcher. Data was collected from different journals, magazines, and websites. Thus, the data analysis proved that there was positive correlation between Nifty and Sensex.

Chaturvedi and Khare (2012) examined the investment pattern and awareness of the Indian investors about different investment instruments. The results suggest that age, education, occupation and income level of the individual affects their investment behaviour. Awareness of respondents towards traditional investment options is much higher than that for corporate securities, mutual funds, equity shares and preference shares. They also identified the factors which contribute to investor awareness. They found that occupation, education and income level affects the awareness level of investors towards various investment avenues.

Zarei. F Fathi. S (2012) endeavoured considering the job of Financial Risk Management on Return on Equity. These days hazard plays an indispensable altogether nations, and its administration is significant for banks to the degree that they distribute their applying strategies about hazard the board and their activities and results in a planned request toward client direction to acquire investors' certainty. In this article, three instruments of bank hazard the board are addressed by methods for monetary proportions comprising of loan cost hazard, capital risk and risk of regular supporting. Along these lines, the fundamental issue in this paper is the effect of danger the board on investors' wealth. Stockholders' abundance is estimated by Return on Equity (ROE). Results show that loan cost risk and broadening hazard have huge relationship with ROE, however there is no huge connection between credit risk and ROE.

Debasish & Khan, (2012) the study undertook analyses and selection of an optimal portfolio of selected stocks in manufacturing sectors of India. The daily data of fourteen stock of NSE Nifty Index have been considered from January 2003 to November 2012. The weight age of investment under each security is determined based on respective beta values, Stock movement variance, unsystematic risk, return on Stock and risk-free return. Out of 14 manufacturing sector stocks only 3 stocks namely Hero Motors Corp., Tata Motors and Asian paints constitute an optimal portfolio with Hero Motor, showing a highest proportion of investment of around 58.22%.

S. Kevin (2013), made an attempt to examine the degree of instability of the chosen stocks share costs across various nations for various time-frames. The examination depended on the information which is gathered for a time of year and a half. The month to month Co-fluctuation esteems were determined for every one of the stock trades of various chose nations and geographic districts to perform t-test. By using the technique, they reasoned that there was no significant contrast in the instability between the stock trades.

Chandran setiwan (2013), uncovered about the Syariah and Conventional Stocks Performance of Public Companies Listed on Indonesia Stock Exchange. In light of the qualities of the targets he utilized is that to discover two issues. Right off the bat, regardless of whether there is a huge contrast in risk and returns between Syariah stocks and customary loads of chosen public organizations recorded on Indonesia Stock Exchange (IDX) during the time of 2009-2011; and also, whether there are critical connections between stock returns and monetary proportions of both chose Syariah and traditional stocks. Since moving in the venture inclinations from traditional to Syariah account has been an arising pattern during the previous twenty years.

The analyst utilized free examples T-test and Mann Whitney U-test, the outcome shows no proof of critical factual contrasts in total returns, standard deviation and beta among Syariah and regular stocks. Also, this examination utilizes hazard changed return estimation comprising of Sharpe proportion, Treynor proportion and Jensen's Alpha to survey the exhibition of Syariah and customary stocks portfolios. The outcome demonstrates that hazard changed return of the two stocks' portfolio is acted likewise.

Swarna Lakshmi, (2013) examined the instability design in various Sectoral Indices Stock market using Autoregressive Conditional Heteroskedasticity, a financial model. This examination was directed for the time frame beginning from 2008 till 2012 of eleven sectoral Indices from NSE. Specialist decided the truth area has highest instability than other area, anyway the financial area has bottommost unpredictability for the time frame.

Niranjan Mandal (2013) in the examination of Sharpe's single list model and its application to build ideal portfolio: an experimental study found that there was a noteworthy contrast between the aggregate danger of the ideal portfolio figured under two distinct instruments viz., Sharpe Index Model and Markowitz's model. The aggregate danger of the ideal portfolio was 2.87% (as far as SD) under Sharpe Index Model and the aggregate danger of the portfolio was observed to be 1.79% (as far as SD) in Markowitz's model.

Nagarajan and Prabhakaran (2013), the authors conducted the study in order to analyse the risk and return aspects associated with the selected 10 major FMCG companies listed on NSE and also the fluctuations of their stock prices. The stock prices data was being collected for a period of one year. The tools such as standard deviation, correlation, beta, covariation was being used. They concluded that the stock prices of the companies HUL & ITC were comparatively more volatile than other companies under the study period, and that the companies had a positive movement in the prices in relation to the market. Beta of all the selected companies

were below 1. They also analysed that Dabur company's share prices were more variable compared to other companies due to high SD & Variation. They explained as to it is very important to always analyse the financial mix, the benefits and the costs of debts should be analysed before making an investment.

Mr. K. O Emenike and Mr. W. U. Ani (2014), conducted a study on Volatility of banking sector stock returns in Nigeria. The study was based on most capitalized and liquid banks listed on the Nigerian stock exchange, and it include Access bank Plc, ETI Plc, Diamond bank Plc, Fidelity bank Plc, and GTB Plc. Others are: Skye bank Plc, Sterling bank Plc, United Bank for Africa, Union bank Plc, and Zenith bank Plc. The period of study begins from 3rd January 2006 and ends on 31st December 2012. And the tool used for analysis is ARMA GARCH Model, and the study suggest that stock returns volatility of the Nigerian banking sector move in cluster and that volatility persistence is high for the sample period. The results also indicate that stock returns distribution of the banking sector is leptokurtic and that sign of the innovations have insignificant influence on the volatility of stock returns of the banks.

Mr. Sunil M Rashinkar and Mrs. Divya U (2014), conducted a study on Market Risk Analysis of selected Banking Stock in India, the study was limited to five nationalized banks in India. And it includes State Bank of India, Industrial Development Bank of India, Syndicate Bank, Punjab National Bank, Bank of Baroda. And the duration of study was 1 year (1 July 2013- 31 march 2014), and the tool used for analysis was Beta Coefficient. The study reveals that the betas of State Bank of India, Industrial Development Bank of India, & syndicate bank were negative which implies that these stocks are moved against the market and less affected by market risk. On the other hand the betas of Punjab National Bank & Bank of Baroda were more than one. It indicates that these stocks were exposed to high market risk

Nalini, (2014) the researcher of this study stated about an approach to portfolio selection using Single index Model. The main objective of this study was to create investors awareness about the applicability and benefits of SIM approach. The yearly data of fifteen companies S & P BSE Sensex index was utilized. From the results it was revealed that four securities comprise an optimum portfolio.

Dr. Krishnaprabha and Vijayakumar (2015) talks about a study on Risk and Return Analysis of Selected stocks in India. He found that the Risk and Return analysis plays a key role in most individual decision-making process. Based on the topic he used Banking and Automobile sectors for calculating the Risk and return analysis of the Daily basis. He also states that Alpha stock is positive and the companies are independent to market return and have a profitable return.

Rajesh Ramkumar et.al, (2015) reveals about the Efficiency of Sectoral Indices: A Comparative study on BSE and NSE Ltd. This research is for investors who plan to select better stocks to invest. This could provide useful input to the investors to identify the efficient sectors and to channel the available resources into the profitable sectors. This study measured random distribution and weak form of efficiency in BSE and NSE sectoral Indices.

Anita Tripathi (2015); This study concludes that some individual characteristics, such as risk preference, are transmitted to investment decision behaviour through the mediating effects of risk propensity and risk perception, affecting investors' expected returns and construction of portfolios,

Bedanta Bora, Anindita Adhikary (2015) has led an investigation on 'Risk and Return Relationship – an Empirical Study of BSE Sensex Companies in India'. The essential structure of the examination was investigation of connection among danger and benefits based on beta of 30 organizations recorded at BSE Sensex. It presumed that 99% of variety in the Sensex is clarified by variety in contents.

Narayan Gaonkar and Dr.Kushalappa (2015), made an attempt to analyse the risk and returns assessments of the selected 30 companies which are listed on NSE and to find out the extent of the variation of the stock of the selected companies for a period of one year. They also analysed the portfolio of these companies. They used tools such as beta and CAPM model. They found out that Axis Bank had the highest CAPM returns, HCL had highest abnormal and actual returns, where as Asian Paints had the least actual returns. They concluded that thirteen companies have less returns than the portfolio returns and also concluded that the stocks which has high systematic risk would not be preferable for an investor due to the high risk involved.

Shubham Kumar kirankumar (2016) stated that comparative study between BSE and NSE during five year. He talks about the economy is reflected by the growth of stock market and the impact of important happenings on the Indian Stock Exchange. It represents out which one is performing better financially on various basis, which would help in different countries to take investment decisions while investing in different markets.

Dr. Pramod kumar Patjoshi (2016), analysed the risk and return assessments for four selected stocks which are listed on BSE for a period of Fifteen years. The study was based on the relationship between the risk and returns of the bank stocks and Sensex. Tools and techniques like correlation, t-test & regression was used for the study. From the study they found that the Sensex had high returns when compared to the selected stocks apart from few stocks. Few stocks had positive correlation and few stocks had negative correlation with the Sensex returns. They concluded that the banking stocks and the Sensex change in the similar trend.

Prathibha and Dinakar (2016) The creator dissected the risk of 12 banks recorded in bank nifty for a period beginning from seventh December 2015 till eighth February 2016. The creator found from their examination that, every one of the stocks had negative returns during the investigation time frame with the exception of Yes bank and Kotak Mahindra bank. The creator established that Yes Bank had given the best yield and the most minimal return was given by Punjab National Bank. It was additionally tracked down that deliberate danger was most elevated for SBI and least for Yes bank. The author came to a conclusion that the Punjab National bank and Bank of Baroda had the highest market risk while Bank of India and Syndicate Bank were less affected by market risk due to the negative beta.

T. Mallikarjunappa and Shaini Naveen (2016) conducted a study on Comparative Analysis of Risk and Return with Reference to Stocks of CNX Bank Nifty. This study analyzes the risk and returns in the banking sector. The researchers compare the 12 listed banks in the Nifty through analyses of the performance of banking stocks mainly to understand the required rate of return and risk. In this analysis found some stocks move in the opposite direction to the Stock market, some stocks move along with the market, some stocks are less volatile compared to the market and some stocks are more volatile compared to the market.

Dr. M. Muthu Gopalakrishnan & Amal Vijay A K (2017), attempted to analyse the risk return aspects of ten selected pharmaceutical companies which are listed on NSE. The tools which were used to perform the analysis were mean, beta, standard deviation, alpha, correlation and covariance. The data collected was for a period of five years, from 2012 to 2015. By analysing these companies, they understood that if the investor has to get high returns it is very important to consider the risk and return factors of the stocks.

E. kamali (2017), addressed a paper on Investors' Perception of Bank Risk Management: Multivariate Analysis Techniques. Danger the board is at the core of monetary organizations the executives, banks are presented to different sorts of risks. In this examination, the analyst planned to sum up the data substance of bank fiscal reports on assorted dangers looked by banks and afterward decide how securities exchanges respond to bank's danger the executives conduct. The technique utilized in this investigation is the Principal Component Analysis (PCA) and Discriminant Analysis (DA). In this examination, we assess the situation with hazard the board in recorded banks on Tehran Stock Exchange through budget summaries investigation and afterward explore its relationship with banks' stock re-visitations of decide if capital market members consider the situation with hazard the executives in their valuing choices or not.

Dr. S Poornima and Swathiga (2017), examined by selected stocks with the relationship between risk and returns. These companies are selected from 2 different sectors i.e., automobile and IT sector, which are listed on NSE. The tools like average return, SD, and CAPM model are used to perform the analysis. the comparative analysis played a vital role in this research. Analysis is done for a period of 3 years. They concluded that the analysis helps the investors to select based on their own choice. And automobile sector had better market than the IT sector.

Dr. P. Subramanyam and Dr. Nalla Bala Kalyan (2018), analysed the return and risk assessments of the equity purchased from the secondary market for ten different companies for a period of one month. The tools and techniques used in this research are beta, expected return and co-efficient of variation. This paper emphasizes on the market fluctuations relations to the prices of Scrip's though it is difficult to observe a pattern for the price movements but efforts have been taken using fundamental analysis and technical analysis. They concluded that one method is not sufficient to analyse and interpret the fluctuations. However, suggested that these tools help the investor to define the trends to some extent. They also concluded from the research that, the month February 2017 was not favorable to invest in the infrastructure companies.

Juhi Ahuja (2018) presents a review of Indian Capital Market & its structure. In last decade or so, it has been observed that there has been a paradigm shift in Indian capital market. The application of many reforms & developments in Indian capital market has made the Indian capital market comparable with the international capital markets. Now, the market features a developed regulatory mechanism and a modern market infrastructure with growing market capitalization, market liquidity, and mobilization of resources. The emergence of Private Corporate Debt market is also a good innovation replacing the banking mode of corporate finance. However, the market has witnessed its worst time with the recent global financial crisis that originated from the US sub-prime mortgage market and spread over to the entire world as a contagion. The capital market of India delivered a sluggish performance.

Lakshman Raj Kandel (2018), the author made an attempt to analyse the risk and return relationship of two selected commercial banks which are listed on the Nepal stock exchange. The data was collected for a period five years and tools such as correlation, SD, covariance, and also portfolio analysis & t-test were used for the purpose of analysis. They analysed that both the banks had high proportions of unsystematic risk, and the prices of the stocks were overpriced. So, they concluded that it was preferable for the investors to go for short selling.

Hariharan Cr (2018), Conducted a paper on Volatility Behaviour of Indian Stock Market: A study with special reference to sectoral indices of BSE. In India, various sectors play a vital role in the growth and development of the economy. These sectors obtain their money from the public via stock markets. Share price of various sectors are influenced by various factors like economic, social, political, etc, From the BSE, twelve sectoral indices were selected, on the basis of turnover, during the study period, January 2012 to December 2016. Hence this study suggests that investors of the Indian stock markets may focus on these indices for better return in future. Further, investors should watch the market movement before investing their money in stock markets.

Shumbhamkumar Kirankumar (2019), revealed about the comparative study between BSE and NSE for a period of Five years. Entrepreneurs needed money for long term whereas investors demanded liquidity the facility to convert their investments into cash at any given time. To light with this research paper is a comparative study of Bombay Stock Exchange and National Stock Exchange during 2013 – 2018. This is especially relevant in the current scenario when the financial markets across the globe are getting integrated into one big market and the impact of one market on the other markets. The present study is to find out that out of these two stock exchanges which one is performing better financially on various basis. The study of the stock exchanges in countries would definitely help the future investors to take investment decisions while investing in different markets.

Sarada Angaraju (2020), attempted a paper on risk and return analysis of selected banks in NSE Market. In this study he talks about the Indian financial sector is the back bone of the country economy development, the banking sector place a key role in empowerment of all areas. In the capital market equity market is playing economic development of nation but banking sector equity market have volatility and less returns on investment in some of the banks and some of the banks have more volatility and capital loss in investment also. The investors identify the minimum risk and maximum return on investment decisions through portfolio analysis. This is helpful to the investors to take best decision on investment based on market volatility.

Fabiano O. Drozoda (2020), indicated about the Computational Intelligence Techniques used for stock market prediction: A systematic Review. With the advancement of various computational techniques and the growing search for assertive predictive models, computational intelligence methods have attracted much attention. In this context, the objective of this paper is to present a systematic review of the literature on recent research involving forecasting techniques in the stock market, and the computational intelligence were the ones that stood out. To define these techniques, articles were collected from four large databases and a keyword filter was applied, which reduced the initial volume.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 RESEARCH DESIGN

Research Methodology refers to the plan which examines the methods, tools, and techniques and the procedures being used for the purpose of collecting and analysing the data. In this present paper different Bombay stock exchange (BSE) and National Stock Exchange (NSE) Sensex and banking stocks have been utilised to determine the risk return trade off. These analyses give clear idea about the selection of bank equity for investment list in stock market. The methodology may include publication research, interviews, surveys, and other research techniques and could conclude both present and historical information.

3.2 SAMPLING TECHNIQUE

The present research paper is tested the performance of Banking stocks listed in both Bombay Stock Exchange (BSE) and National Stock Exchange (NSE). Turnover values of indices were wanted to decide the sample size for this study. For the analysis of stocks in the securities market are taken for 8 banking stocks. Out of which 4 from Bombay stock exchange (BSE) and another 4 from National stock exchange (NSE). Based on the turnover values, the top leading companies which has growth in market standards, where selected taken for analysis purpose.

3.3 SOURCE OF DATA

The study is purely based on secondary data i.e., year closing values of both Stock returns and the returns value of Bombay stock exchange (BSE) and National stock exchange (NSE) were used. Based on the descriptive analysis, the details regarding sample returns value were collected from www.moneycontrol.com. Other than that, all other related data or information were collected from various books, websites, and journals.

3.4 PERIOD OF THE STUDY

This research paper is an attempt to compare the relative difference between Bombay stock exchange (BSE) and National stock exchange (NSE) by analysing the share price returns of Banking stocks from the Indian stock market. The Data is collected for a period of 12 years of the 8 selected stocks of the Financial services sector listed in BSE and NSE for the purpose of calculating the risk and returns during the period from January 2010 to January 2021.

3.5 SAMPLE SIZE

Based on the turnover values, the 8 top leading companies which has growth in market standards, where selected taken for analysis purpose.

3.5.1 AXIS BANK LTD

Axis Bank is the third largest private sector bank in India. The Bank offers the entire spectrum of financial services to customer segments covering Large and Mid-Corporates, MSME, Agriculture and Retail Businesses. As of 30 June 2016, 30.81% shares are owned by the promoters. The remaining 69.19% shares are owned by mutual funds, FIIS, banks, insurance companies, corporate bodies and individual investors.¹ With a balance sheet size of Rs. 9,15,165 crores as on 31st March 2020, Axis Bank has achieved consistent growth and with a 5year CAGR (2014-15 to 2019-20) of 15% each in Total Assets, Deposits and Advances.

3.5.2 ICICI BANK LTD

ICICI Bank Limited is an Indian multinational banking and financial services company with its registered office in Vadodara, Gujarat and corporate office in Mumbai, Maharashtra. It offers a wide range of banking products and financial services for corporate and retail customers through a variety of delivery channels and specialised subsidiaries in the areas of investment banking. Life, non-life 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. The current market capitalisation stands Rs 284747 Cr. The company is listed on the Bombay Stock Exchange (BSE)

3.5.3 CITY UNION BANK LTD

City Union Bank Limited (CUB) is an Indian bank headquartered in Kumbakonam, Tamil Nadu. The bank was initially named Kumbakonam Bank Limited, and was incorporated on 31 October 1904. The bank preferred the role of a regional bank in the Thanjavur district of Tamil Nadu. CUB provides a gamut of technological services such as net banking, mobile banking, self-service kiosks, bulk note acceptors, and point of sales. Union Bank of India is quoting at Rs 33, up 2.17% on the day as on 12:49 IST on the BSE. The stock is down 30.75% in last one year as compared to a 24.25% slide in NIFTY and a 10.63% slide in the Nifty PSU Bank index.

3.5.4 YES BANK LTD

Yes Bank Limited is an Indian private sector bank headquartered in Mumbai, India and was founded by Rana Kapoor and Ashok Kapur in 2004. It offers wide range of banking and financial products for corporate and retail customers through retail banking and asset management services. After a 30% fall of its share price, Yes Bank gets very high beta stock for day traders and hence could be very dreadful for some and fruitful for some. As the market sentiment is weak and bearish, more fall could be possible. Now, a waiting game would be more advisable than running for investment in the stock.

3.5.5 STATE BANK OF INDIA

State bank of India (SBI) is an Indian multinational, public sector banking and financial services statutory body headquartered in Mumbai, Maharashtra. SBI is the 43rd largest bank in the world and ranked 221st in the *Fortune Global 500* list of the world's biggest corporations of 2020, being the only Indian bank on the list. A nationalised bank, it is the largest in India with a 23% market share by assets and a 25% share of the total loan and deposits market.

3.5.6 INDUSIND BANK LTD

IndusInd Bank Limited is a new-generation^[a] Indian bank headquartered in Pune. The bank offers commercial, transactional and electronic banking products and services. IndusInd Bank was inaugurated in April 1994 by then Union Finance Minister Manmohan Singh. IndusInd Bank is the first among the new-generation private banks in India. At net NPA levels of 1.5 percent, the bank does not seem to have a high risk from bad loans. Promoter quality is average, so investing in fixed deposits of IndusInd is fine.

3.5.7 HDFC BANK LTD

HDFC Bank Limited is an Indian banking and financial services company headquartered in Mumbai. It is the largest bank in India by market capitalisation as of March 2020. HDFC Bank stock is placed well on the technical charts, Jain said. The downside risks are low. If the markets do well, this counter is poised well to outperform. HDFC Bank share price is trading near the 52-week high of 1502.85 while the 52-week low is 738.75 which it hit on 24 March 2020.

3.5.8 KOTAK MAHINDRA BANK LTD

Kotak Mahindra Bank Limited is an Indian private sector bank headquartered in Mumbai, Maharashtra, India. It offers banking products and financial services for corporate and retail customers in the areas of personal finance, investment banking, life insurance, and wealth management. Over the last three years, Kotak Mahindra Bank has grown EPS by 17% per year. That growth rate is fairly good, assuming the company can keep it up. While we note Kotak Mahindra Bank's EBIT margins were flat over the last year, revenue grew by a solid 2.7% to ₹337b

3.6 TOOLS USED FOR ANALYSIS

3.6.1 TOTAL RETURNS

Any rational investor, before investing his or her investible wealth in the stock, analyses the risk associated with the particular stock. The actual return he receives from a stock may vary from his expected return and the risk is expressed in terms of variability of return.

Expression for calculating the rate of return earned on any asset over time period is,

$$R = \frac{p_1 - p_0}{P_0}$$

R = expected rate of return during time period

P1 = Closing price

P0 = Opening price

3.6.2 MEAN

Mean is the average value of the series, obtained by adding up the series and dividing by the number of observations. It is the most common measure of central tendency.

$$\text{Average returns or Mean } (\bar{x}) = \frac{\sum x_i}{n} \text{ (or) } R/N$$

3.6.3 RISK

Investment is a measure of the risk arising from exposure to general market movements. The process involves identifying and analysing the amount of risk involved in an investment, and either accepting that risk or mitigating it.

3.6.4 STANDARD DEVIATION

The standard deviation is often used by investors to measure the risk of a stock or a stock portfolio. The basic idea is that the standard deviation is a measure of volatility: the more a stock's returns vary from the stock's average return, the more volatile the stock.

$$\text{Standard deviation} = \sqrt{\text{variance}}$$

$$\text{Variance} = 1/n-1(\sum d^2)$$

3.6.5 BETA INTERPRETATION

The beta (β) of an investment security (i.e. a stock) is a measurement of its volatility of returns relative to the entire market. It is used as a measure of risk and is an integral part of the Capital Asset Pricing Model (CAPM). A company with a higher beta has greater risk and also greater expected returns.

- The beta coefficient can be interpreted as follows:
- $\beta = 1$ exactly as volatile as the market
- $\beta > 1$ more volatile than the market
- $\beta < 1 > 0$ less volatile than the market
- $\beta = 0$ uncorrelated to the market
- $\beta < 0$ negatively correlated to the market

$$\beta = \frac{\text{COV}(r_i, r_m)}{\text{VAR}(r_m)}$$

3.6.6 CORRELATION COEFFICIENT

The correlation coefficient is a measure of the association between two variables. It is used to find the relationship is between data and a measure to check how strong it is. The formulas return a value between -1 and 1,

- 1 indicates a strong positive relationship.
- -1 indicates a strong negative relationship.
- A result of zero indicates no relationship at all

$$R = \frac{n(\Sigma xy) - (\Sigma x)(\Sigma y)}{\sqrt{(n\Sigma x^2 - (\Sigma x)^2)(n\Sigma y^2 - (\Sigma y)^2)}}$$

3.6.7 COVARIANCE COEFFICIENT

The covariance coefficient is a measure of the relationship between two random Variables. The metric evaluates how much - to what extent the variables change together. The term covariance coefficient is measured in units. The units are computed by multiplying the units of the two variables. The variance can take any positive or negative values. The values are analysed as follows:

Positive covariance: This states that two variables tend to move in the same direction.

Negative Covariance: Reveals about the two variables tend to move in inverse directions.

- x_i = data value of x
- y_i = data value of y
- $\bar{x}$ = mean of x
- $\bar{y}$ = mean of y
- N = number of data values.

$$\text{Cova (X, Y)} = \frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{N - 1}$$

CHAPTER 4

DATA ANALYSIS AND INTERPRETATION

In every aspect of life, risk and return relationship is not only for financial analysis, but also for fundamental concepts. If a decision has to lead to benefit maximization, it is necessary that individuals/institutions consider the combined influence on expected (future) return or benefit as well as on risk. The requirement that expected return is commensurate with risk is known as the “risk return trade-off” in finance.

For the purpose of carrying out the data analysis and calculation of Mean Returns, Standard Deviation, Beta, Correlation and Covariance, yearly closing prices of the selected eight financial services company stocks from the year 2010 to 2021 have been collected. Correlation and covariance of these companies were calculated in comparison with the Financial services market. These yearly closing prices were tabulated and with the use of excel the calculations and interpretations were made.

Below are the analysis of Risk and Returns of the eight Banking stocks of which first four are from Bombay Stock Exchange (BSE) and another four from National Stock exchange (NSE).

4.1 CALCULATIONS OF AVERAGE STOCK RETURNS OF THE SELECTED BANKING STOCKS

Average returns (R) = (R)/N

(P0) = Opening price of the share

(P1) = Closing price of the share

Expression for calculating the rate of return earned on any asset over time period is,

$$R = \frac{p_1 - p_0}{P_0}$$

4.1.1 AXIS BANK LTD

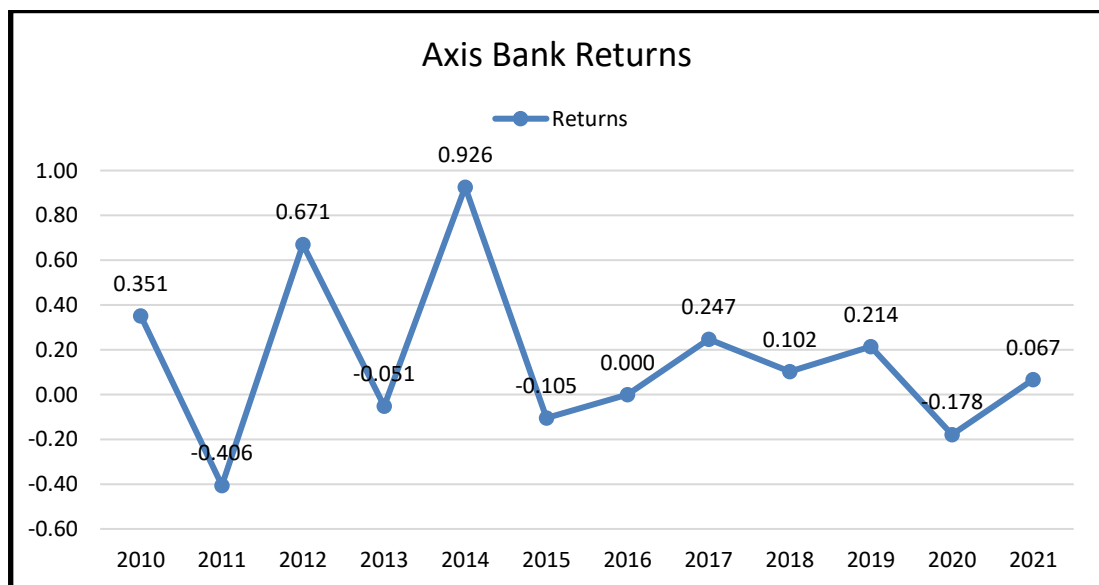
Average Returns on Axis Bank Ltd from Jan 2010 to Jan 2021

Year	Opening price PO	Closing price P1	Returns (p1- p0)/p0
2010	199.8	269.9	0.351
2011	271.45	161.35	-0.406
2012	162.4	271.3	0.671
2013	274	259.93	-0.051
2014	260.61	502.05	0.926
2015	502	449.5	-0.105
2016	450	450	0.000
2017	451	562.4	0.247
2018	562.4	619.8	0.102
2019	621.2	754	0.214
2020	755	620.35	-0.178
2021	621.9	663.5	0.067
Total Returns			1.838

Table 4.1 calculation of total return of Axis Bank Ltd values

Average Return = $1.838/12 = 0.153$

Graph 1: Representing Returns of Axis Bank Ltd.



Interpretation: In the year 2010 the returns were 35.09% and in the year 2021 the returns were 6.69%. The average return of the Axis Bank Ltd is 15.31%. This was analysed using Mean variation. And this process shows that the company has relatively high values of returns. In the year 2016 it has nil balance also.

4.1.2 ICICI Bank Ltd

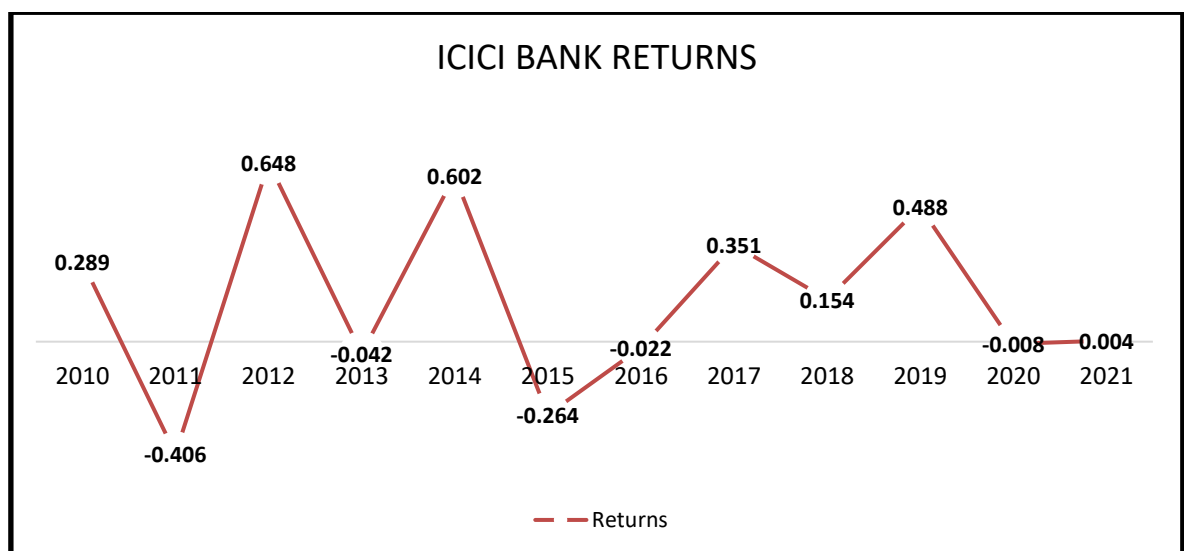
Average Returns on ICICI Bank Ltd from Jan 2010 to Jan 2021

Year	Opening price PO	Closing price P1	Returns (p1-p0)/p0
2010	161.45	208.12	0.289
2011	209.64	124.47	-0.406
2012	125.45	206.78	0.648
2013	208.55	199.72	-0.042
2014	200.36	320.91	0.602
2015	323.14	237.68	-0.264
2016	237.27	232.09	-0.022
2017	232.45	314	0.351
2018	312	360	0.154
2019	362	538.75	0.488
2020	539.2	534.8	-0.008
2021	534.8	537	0.004
Total Returns			1.793

Table 4.2 calculation of total return values of ICICI Bank

Average Return = $1.793/12 = 0.149$

Graph 2: Representing Returns of ICICI Bank Ltd.



Interpretation: In the year 2010 the returns were 28.91% and in the year 2021 the returns were 0.41%. The average return of the ICICI Bank Ltd is 14.94%. This was analysed by using Mean variation. And this process shows that the company has relatively high values of returns. In this study period, the returns were slightly ups and downs of share prices.

4.1.3 CITY UNION BANK LTD

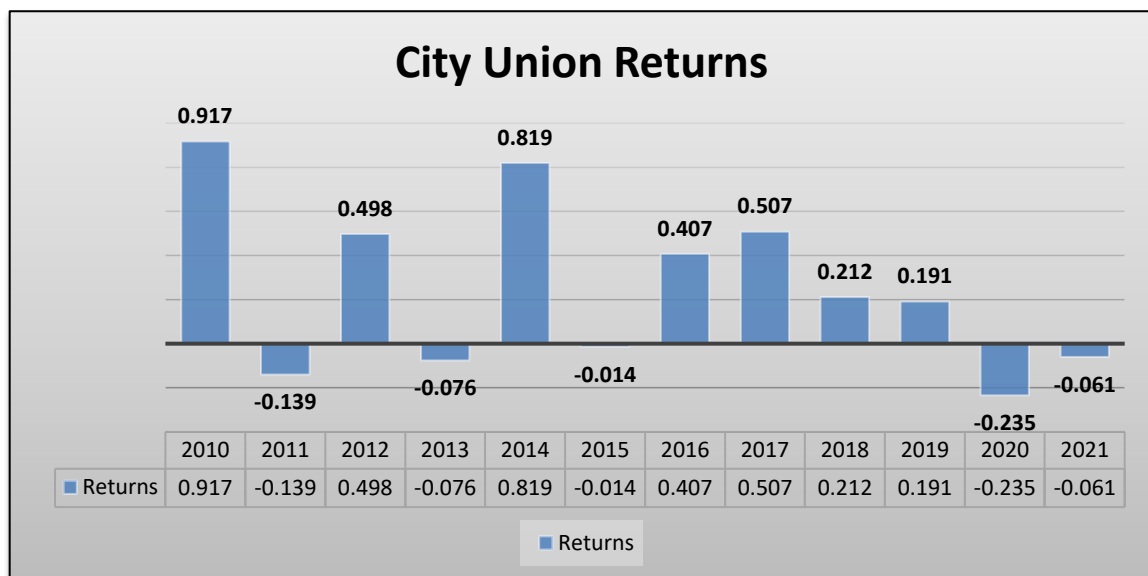
Average Returns on City Union Ltd from Jan 2010 to Jan 2021

Year	Opening price PO	Closing price P1	Returns (p1- p0)/p0
2010	18.54	35.55	0.917
2011	35.87	30.87	-0.139
2012	30.87	46.23	0.498
2013	46.4	42.89	-0.076
2014	42.76	77.79	0.819
2015	77.01	75.97	-0.014
2016	75.77	106.59	0.407
2017	108.49	163.53	0.507
2018	160.57	194.6	0.212
2019	196.9	234.5	0.191
2020	235.7	180.3	-0.235
2021	180	169.1	-0.061
Total Returns			3.027

Table 4.3 calculation of total return values of City union Bank

Average Return = $3.027/12 = 0.252$

Graph 3: Representing Returns of City Union Bank Ltd.



Interpretation: In the year 2010 the returns were 91.75% and in the year 2021 the returns were -6.06%. The average return of the City Union Bank Ltd is 25.23%. This was analysed by using Mean variation. And this process shows that the company has higher positive values of returns. And this indicates increasing order of returns.

4.1.4 YES BANK LTD

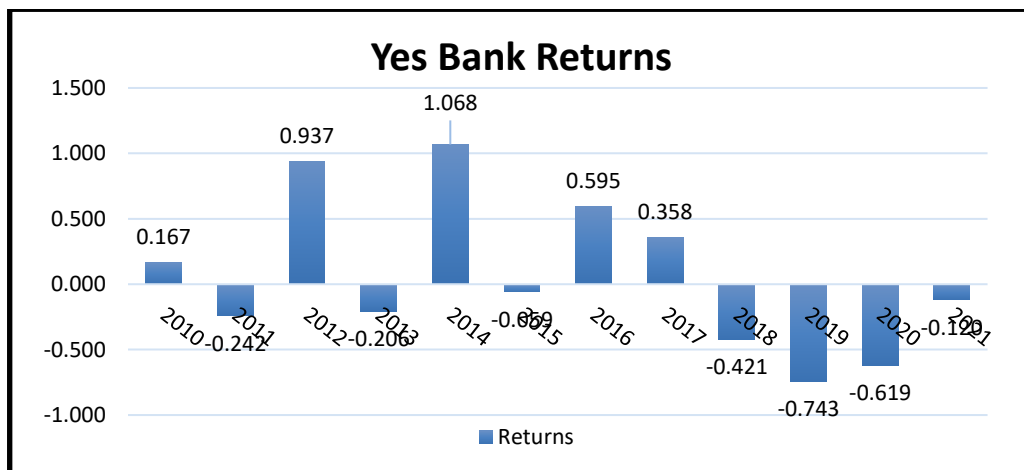
Average Returns on Yes Bank Ltd from Jan 2010 to Jan 2021

Date	Opening price PO	Closing price P1	Returns (p1-p0)/p0
2010	53.6	62.54	0.167
2011	62.98	47.72	-0.242
2012	47.92	92.84	0.937
2013	93.2	74.02	-0.206
2014	74.74	154.57	1.068
2015	154.4	145.23	-0.059
2016	145	231.26	0.595
2017	231.98	315.05	0.358
2018	314	181.75	-0.421
2019	182.85	46.95	-0.743
2020	46.9	17.86	-0.619
2021	17.9	15.75	-0.120
Total Returns			0.714

Table 4.4 calculation of total return values of Yes Bank

Average Return = $0.714/12 = 0.060$

Graph 4: Representing Returns of Yes Bank Ltd.



Interpretation: In the year 2010 the returns were 16.68% and in the year 2021 the returns were -12.01%. The average return of the Yes Bank Ltd is 5.95%. This was analysed by using Mean variation. And this process shows that the company has relatively lower returns. Yes Bank Ltd indicates of having negative returns and it is started with good form and then reduced.

4.1.5 STATE BANK OF INDIA LTD

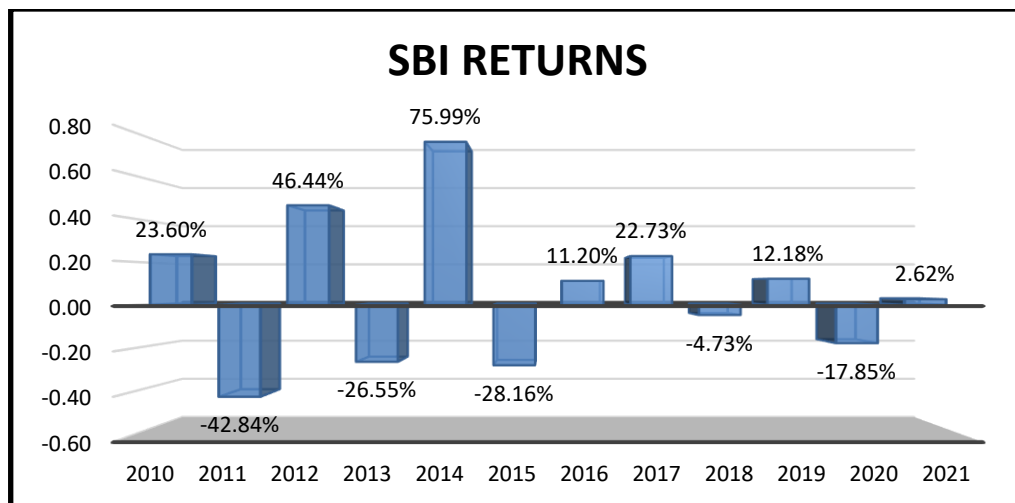
Average Returns on State Bank of India Ltd from Jan 2010 to Jan 2021

Year	Opening price PO	Closing price P1	Returns (p1-p0)/p0
2010	227.5	281.19	0.236
2011	283.27	161.91	-0.428
2012	162.9	238.55	0.464
2013	240.49	176.65	-0.265
2014	177.2	311.85	0.760
2015	312.45	224.45	-0.282
2016	225	250.2	0.112
2017	252.5	309.9	0.227
2018	310.6	295.9	-0.047
2019	297.5	333.75	0.122
2020	334.7	274.95	-0.179
2021	274.9	282.1	0.026
Total Returns			0.746

Table 4.5 calculation of total return values of SBI

Average Return = $0.746/12 = 0.062$

Graph 5: Representing Returns of SBI Bank Ltd.



Interpretation: In the year 2010 the returns were 23.60% and in the year 2021 the returns were 2.62%. The average return of the State Bank of India Ltd is 6.22%. This was analysed by using Mean variation. And this process shows that the company has relatively lower of returns. And this indicates of having negative returns too.

4.1.6 INDUSIND BANK LTD

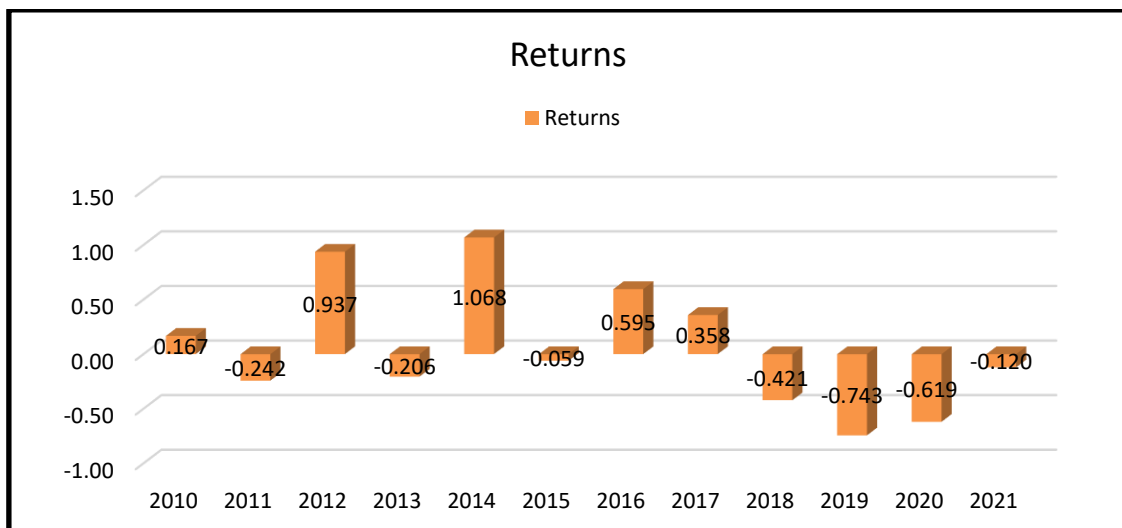
Average Returns on IndusInd Bank Ltd from Jan 2010 to Jan 2021

Year	Opening price PO	Closing price P1	Returns (p1-p0)/p0
2010	53.6	62.54	0.167
2011	62.98	47.72	-0.242
2012	47.92	92.84	0.937
2013	93.2	74.02	-0.206
2014	74.74	154.57	1.068
2015	154.4	145.23	-0.059
2016	145	231.26	0.595
2017	231.98	315.05	0.358
2018	314	181.75	-0.421
2019	182.85	46.95	-0.743
2020	46.9	17.86	-0.619
2021	17.9	15.75	-0.120
Total Returns			0.714

Table 4.6 calculation of total return values of IndusInd Bank

Average Return = $0.714/12 = 0.060$

Graph 6: Representing Returns of IndusInd Bank Ltd.



Interpretation: In the year 2010 the returns were 16.68% and in the year 2021 the returns were -12.01%. The average return of the IndusInd Bank Ltd is 5.95%. This was analysed by using Mean variation. And this process shows that the company has relatively lower returns. IndusInd Bank Ltd indicates of having negative returns and it is started with good form and then reduced.

4.1.7 HDFC BANK LT*D

Average Returns on HDFC Bank Ltd from Jan 2010 to Jan 2021

Year	Opening price PO	Closing price P1	Returns (p1-p0)/p0
2010	170	234.64	0.380
2011	237	213.43	-0.099
2012	214.45	339.3	0.582
2013	341.05	332.93	-0.024
2014	334	475.8	0.425
2015	475.5	541.08	0.138
2016	541.2	603.1	0.114
2017	604.73	936.2	0.548
2018	936.35	1060.85	0.133
2019	1063.83	1272.1	0.196
2020	1276.1	1436.3	0.126
2021	1440	1390.5	-0.034
Total Returns			2.484

Table 4.7 calculation of total return values of HDFC Bank

Average Return = $2.484/12 = 0.207$

Graph 7: Representing Returns of HDFC Bank Ltd.



Interpretation: In the year 2010 the returns were 38.02% and in the year 2021 the returns were -3.44%. The average return of the HDFC Bank Ltd is 20.7%. This was analysed by using Mean variation. And this process shows that the company has higher positive values of returns. And this indicates constantly having positive returns.

4.1.8 KOTAK MAHINDRA BANK LTD

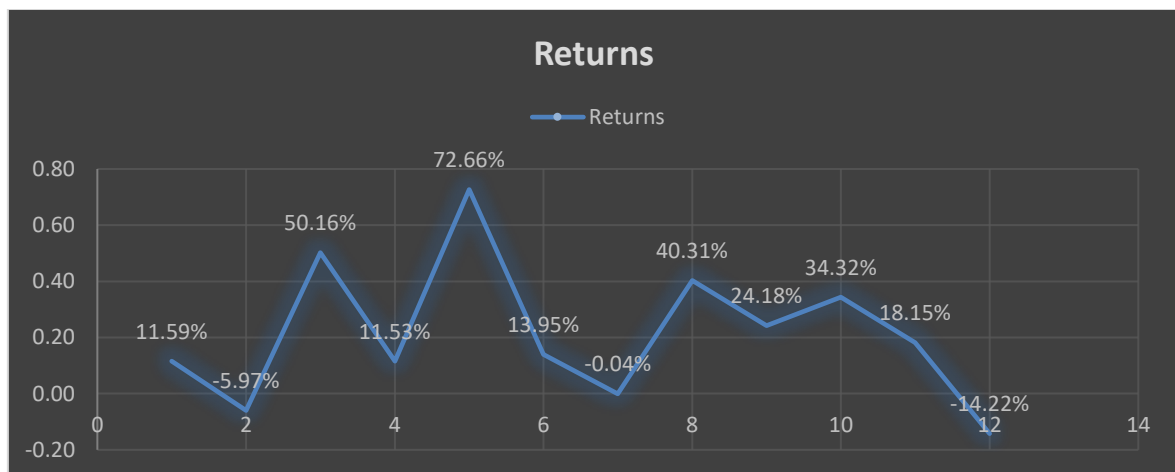
Average Returns on Kotak Mahindra Bank Ltd from Jan 2010 to Jan 2021

Year	Opening price P0	Closing price P1	Returns (p1- p0)/p0
2010	203.28	226.83	0.116
2011	228.95	215.28	-0.060
2012	216.45	325.03	0.502
2013	326.48	364.13	0.115
2014	366	631.95	0.727
2015	631.9	720.05	0.139
2016	720	719.7	0.000
2017	720	1010.2	0.403
2018	1011.85	1256.5	0.242
2019	1254	1684.35	0.343
2020	1689	1995.6	0.182
2021	1996.9	1712.95	-0.142
Total Returns			2.566

Table 4.8 calculation of total return values of Kotak Mahindra Bank

Average Return = $2.566/12 = 0.214$

Graph 8: Representing Returns of Kotak Mahindra Bank Ltd.



Interpretation: In the year 2010 the returns were 11.59% and in the year 2021 the returns were -14.22%. The average return of the Kotak Mahindra Bank Ltd is 21.38%. This was analysed by using Mean variation. And this process shows that the company has higher positive values of returns. And this indicates increasing order of returns. In the year 2015 with a nil balance.

4.2 CALCULATIONS OF RISK OF THE SELECTED BANKING STOCKS

Expression for calculating the Risk with the relationship of Total returns and Average returns

$$\text{Standard deviation} = \sqrt{\text{variance}}$$

$$\text{Variance} = 1/n-1(\sum d^2)$$

4.2.1 AXIS BANK LTD

Year	Returns (p1-p0)/p0	Average Returns	D(R-R")	D ²
2010	0.351	0.153	0.198	0.039
2011	-0.406	0.153	-0.559	0.312
2012	0.671	0.153	0.517	0.268
2013	-0.051	0.153	-0.204	0.042
2014	0.926	0.153	0.773	0.598
2015	-0.105	0.153	-0.258	0.066
2016	0.000	0.153	-0.153	0.023
2017	0.247	0.153	0.094	0.009
2018	0.102	0.153	-0.051	0.003
2019	0.214	0.153	0.061	0.004
2020	-0.178	0.153	-0.331	0.110
2021	0.067	0.153	-0.086	0.007
TOTAL	1.838			1.481

Table 4.9 calculation of Standard deviation of Axis Bank

Calculation

$$\text{Variance} = 1/n-1(\sum d^2) = 1/11(1.481) = 0.135 \text{ (13.46\%)}$$

$$\text{Standard deviation} = \sqrt{\text{variance}} = \sqrt{0.135}$$

$$= 0.367 \text{ (36.69 \%)}$$

Interpretation:

The above table states about the risk involved in a particular banking stock with the relationship of Total Stock Returns and the Average returns of the Axis Bank Ltd. With the help of the Standard Deviation tool, it can be observed that the Axis Bank Ltd has higher risk involved during the study period. This can be easily seen with

the variations that has happened through variance. In the year, 2018 it has shown a very low risk with a value of 0.003, while in the year 2014 it has a very high risk 0.598, and the deviation of the stock return is 36.69%.

4.2.2 ICICI BANK LTD

Year	Returns (p1-p0)/p0	Average Returns	D(R-R")	D ²
2010	0.289	0.149	0.140	0.020
2011	-0.406	0.149	-0.556	0.309
2012	0.648	0.149	0.499	0.249
2013	-0.042	0.149	-0.192	0.037
2014	0.602	0.149	0.452	0.205
2015	-0.264	0.149	-0.414	0.171
2016	-0.022	0.149	-0.171	0.029
2017	0.351	0.149	0.201	0.041
2018	0.154	0.149	0.004	0.000
2019	0.488	0.149	0.339	0.115
2020	-0.008	0.149	-0.158	0.025
2021	0.004	0.149	-0.145	0.021
Total	1.793			1.220

Table 4.10 calculation of Standard deviation of ICICI Bank

$$\text{Variance} = 1/n-1(\sum d^2) = 1/11(1.220) = 0.111 \text{ (11.09\%)}$$

$$\text{Standard deviation} = \sqrt{\text{variance}} = \sqrt{0.111}$$

$$= 0.333 \text{ (33.33 \%)}$$

Interpretation:

The above table indicates about the risk involved in a particular banking stock with the relationship of Total Stock Returns and the Average returns of the ICICI Bank Ltd. With the help of the Standard Deviation tool, it can be observed that the ICICI Bank Ltd has a very high risk involved during the study period. This can be easily seen with the variations that has happened through variance. In this it is slightly ups and downs of share prices in the study period. And In the year, 2018 it has shown no risk as the deviation has nil balance, while in the year 2011 it has a very high risk with a value 0.309, and the deviation of the stock return is 33.33%.

4.2.3 CITY UNION BANK LTD

Year	Returns (p1-p0)/p0	Average Returns	D(R-R")	D ²
2010	0.917	0.252	0.665	0.443
2011	-0.139	0.252	-0.392	0.153
2012	0.498	0.252	0.245	0.060
2013	-0.076	0.252	-0.328	0.108
2014	0.819	0.252	0.567	0.321
2015	-0.014	0.252	-0.266	0.071
2016	0.407	0.252	0.154	0.024
2017	0.507	0.252	0.255	0.065
2018	0.212	0.252	-0.040	0.002
2019	0.191	0.252	-0.061	0.004
2020	-0.235	0.252	-0.487	0.237
2021	-0.061	0.252	-0.313	0.098
	3.027			1.585

Table 4.11 calculation of Standard deviation of City Union Bank

Calculation:

$$\text{Variance} = 1/n-1(\sum d^2) = 1/11(1.585) = 0.144 \text{ (14.41\%)}$$

$$\text{Standard deviation} = \sqrt{\text{variance}} = \sqrt{0.144}$$

$$= 0.380 \text{ (37.96 \%)}$$

Interpretation:

Out of the Total returns and the Average returns of the Banking stock that is the City Union Bank, the major risk involved is shown during the study period. With the help of the Standard Deviation tool, it can be observed that the City Union Bank Ltd has a very high risk involved during the research period. This can be easily seen with the variations that were occurred through the variance. In this it is started with the high level of risk and then reduced. And In the year, 2018 it has shown very low risk as the deviation has 0.002 balance, while in the year 2010 it has a very high risk with the value 0.443, and the deviation of the stock return is 37.96%.

4.2.4 YES BANK LTD

Year	Returns (p1-p0)/p0	Average Returns	D(R-R")	D ²
2010	0.167	0.060	0.107	0.012
2011	-0.242	0.060	-0.302	0.091
2012	0.937	0.060	0.878	0.771
2013	-0.206	0.060	-0.265	0.070
2014	1.068	0.060	1.009	1.017
2015	-0.059	0.060	-0.119	0.014
2016	0.595	0.060	0.535	0.287
2017	0.358	0.060	0.299	0.089
2018	-0.421	0.060	-0.481	0.231
2019	-0.743	0.060	-0.803	0.644
2020	-0.619	0.060	-0.679	0.461
2021	-0.120	0.060	-0.180	0.032
Total	0.714			3.719

Table 4.12 calculation of Standard deviation of YES Bank

Calculation

$$\text{Variance} = 1/n-1(\sum d^2) = 1/11(3.719) = 0.338 \text{ (33.81\%)}$$

$$\begin{aligned} \text{Standard deviation} &= \sqrt{\text{variance}} = \sqrt{0.338} \\ &= 0.581 \text{ (58.15 \%)} \end{aligned}$$

Interpretation:

Out of the Total returns and the Average returns of the Banking stock that is the Yes Bank Ltd, the higher risk involved is shown during the research period. With the help of the Standard Deviation tool, it can be observed that the Yes Bank Ltd has a very high risk involved during the research period. This can be easily seen with the variations that were occurred through the variance. In this it is started with the low level of risk and then increased. And In the year, 2010 it has shown very low risk as the deviation has 0.012 balance, while in the year 2014 it has a very high risk with the value 1.017, and the deviation of the stock return is 58.15%. The investor has to compare both the risk and returns before investing in the security.

4.2.5 STATE BANK OF INDIA LTD

Year	Returns (p1-p0)/p0	Average Returns	D(R-R")	D ²
2010	0.236	0.062	0.174	0.030
2011	-0.428	0.062	-0.491	0.241
2012	0.464	0.062	0.402	0.162
2013	-0.265	0.062	-0.328	0.107
2014	0.760	0.062	0.698	0.487
2015	-0.282	0.062	-0.344	0.118
2016	0.112	0.062	0.050	0.002
2017	0.227	0.062	0.165	0.027
2018	-0.047	0.062	-0.110	0.012
2019	0.122	0.062	0.060	0.004
2020	-0.179	0.062	-0.241	0.058
2021	0.026	0.062	-0.036	0.001
TOTAL	0.746			1.250

Table 4.13 calculation of Standard deviation of State Bank of India

Calculation:

$$\text{Variance} = 1/n-1(\sum d^2) = 1/11(1.250) = 0.114 \text{ (11.36\%)}$$

$$\begin{aligned} \text{Standard deviation} &= \sqrt{\text{variance}} = \sqrt{0.114} \\ &= 0.337 \text{ (33.70 \%)} \end{aligned}$$

Interpretation:

Out of the Total returns and the Average returns of the Banking stock that is the State Bank of India, the risk involved is shown during the study period. With the help of the Standard Deviation tool, it can be observed that the State Bank of India Ltd has a moderately risk involved during the research period. This can be easily seen with the variations that were occurred through the variance. In this it is started with the high level of risk and then reduced. And In the year, 2021 it has shown very low risk as the deviation has 0.001 balance, while in the year 2014 it has a very high risk with a value 0.487, and the deviation of the stock return is 33.70%.

4.2.6 INDUSIND BANK LTD

Year	Returns (p1-p0)/p0	Average Returns	D(R-R")	D ²
2010	0.167	0.060	0.107	0.012
2011	-0.242	0.060	-0.302	0.091
2012	0.937	0.060	0.878	0.771
2013	-0.206	0.060	-0.265	0.070
2014	1.068	0.060	1.009	1.017
2015	-0.059	0.060	-0.119	0.014
2016	0.595	0.060	0.535	0.287
2017	0.358	0.060	0.299	0.089
2018	-0.421	0.060	-0.481	0.231
2019	-0.743	0.060	-0.803	0.644
2020	-0.619	0.060	-0.679	0.461
2021	-0.120	0.060	-0.180	0.032
Total	0.714			3.719

Table 4.14 calculation of Standard deviation of IndusInd Bank

Calculation:

$$\text{Variance} = 1/n-1(\sum d^2) = 1/11(3.719) = 0.338 \text{ (33.81\%)}$$

$$\begin{aligned} \text{Standard deviation} &= \sqrt{\text{variance}} = \sqrt{0.338} \\ &= 0.581 \text{ (58.15 \%)} \end{aligned}$$

Interpretation:

Out of the Total returns and the Average returns of the Banking stock that is the IndusInd Bank Ltd, the higher risk involved is shown during the research period. With the help of the Standard Deviation tool, it can be observed that the IndusInd Bank Ltd has a very high risk involved during the research period. This can be easily seen with the variations that were occurred through the variance. In this it is started with the low level of risk and then increased. And In the year, 2010 it has shown very low risk as the deviation has 0.012 balance, while in the year 2014 it has a very high risk with the value 1.017, and the deviation of the stock return is 58.15%. The investor has to compare both the risk and returns before investing in the security.

4.2.7 HDFC BANK LTD

Year	Returns (p1-p0)/p0	Average Returns	D(R-R ["])	D ²
2010	0.380	0.207	0.173	0.030
2011	-0.099	0.207	-0.306	0.094
2012	0.582	0.207	0.375	0.141
2013	-0.024	0.207	-0.231	0.053
2014	0.425	0.207	0.218	0.047
2015	0.138	0.207	-0.069	0.005
2016	0.114	0.207	-0.093	0.009
2017	0.548	0.207	0.341	0.116
2018	0.133	0.207	-0.074	0.005
2019	0.196	0.207	-0.011	0.000
2020	0.126	0.207	-0.081	0.007
2021	-0.034	0.207	-0.241	0.058
TOTAL	2.484			0.566

Table 4.15 calculation of Standard deviation of HDFC Bank

Calculation:

$$\text{Variance} = 1/n-1(\sum d^2) = 1/11(0.566) = 0.051 (5.14\%)$$

$$\text{Standard deviation} = \sqrt{\text{variance}} = \sqrt{0.051}$$

$$= 0.227 (22.67 \%)$$

Interpretation

The above table indicates about the risk involved in a particular banking stock with the relationship of Total Stock Returns and the Average returns of the HDFC Bank Ltd. With the help of the Standard Deviation tool, it can be observed that the HDFC Bank Ltd has comparatively Low risk involved during the study period. This can be easily seen with the variations that has happened through variance. In this it is started higher risk to lower of the share prices in the study period. And In the year, 2019 it has shown no risk as the deviation has nil balance, while in the year 2012 it has a very high risk with a value of 0.141, and the deviation of the stock return is 22.67%.

4.2.8 KOTAK MAHINDRA BANK LTD

Year	Returns (p1-p0)/p0	Average Returns	D(R-R")	D ²
2010	0.116	0.207	-0.091	0.008
2011	-0.060	0.207	-0.267	0.071
2012	0.502	0.207	0.295	0.087
2013	0.115	0.207	-0.092	0.008
2014	0.727	0.207	0.520	0.270
2015	0.139	0.207	-0.068	0.005
2016	0.000	0.207	-0.207	0.043
2017	0.403	0.207	0.196	0.038
2018	0.242	0.207	0.035	0.001
2019	0.343	0.207	0.136	0.019
2020	0.182	0.207	-0.025	0.001
2021	-0.142	0.207	-0.349	0.122
Total	2.566			0.673

Table 4.16 calculation of Standard deviation of Kotak Mahindra Bank

Calculation

$$\text{Variance} = 1/n-1(\sum d^2) = 1/11(0.673) = 0.061 (6.12\%)$$

$$\begin{aligned} \text{Standard deviation} &= \sqrt{\text{variance}} = \sqrt{0.061} \\ &= 0.247 (24.74\%) \end{aligned}$$

Interpretation:

Out of the Total returns and the Average returns of the Banking stock that is the Kotak Mahindra Bank Ltd, the moderately low risk involved is shown during the research period. With the help of the Standard Deviation tool, it can be observed that the Kotak Mahindra Bank Ltd has moderately low risk involved during the research period. This can be easily seen with the variations that were occurred through the variance. In this it is slightly with ups and down risk and then increased. And In the year, 2018 and 2020 it has shown very low risk as the deviation has 0.001 balance, while in the year 2014 it has a very high risk with the value 0.207, and the deviation of the stock return is 24.74%. The investor has to compare both the risk and returns before investing in the security.

4.3 RISK ANALYSIS OF BETA, CORRELATION COEFFICIENT, COVARIANCE

Analysing the Risk Variations of the Selected Banking Stocks with returns of BSE Sensex using BETA, Correlation coefficient, and Covariance

4.3.1 AXIS BANK LTD

Year	Returns (p1-p0)/p0	BSE Returns
2010	0.351	0.174
2011	-0.406	-0.251
2012	0.671	0.251
2013	-0.051	0.085
2014	0.926	0.296
2015	-0.105	-0.050
2016	0.000	0.020
2017	0.247	0.275
2018	0.102	0.059
2019	0.214	0.141
2020	-0.178	0.155
2021	0.067	0.063
Total	1.838	1.217

Table 4.17 calculation of risk analysis of Axis Bank

With reference to the above table, the variations of the stocks are analysed.

1. Beta (β)

$$\beta = \frac{\text{cov}(r_i, r_m)}{\text{VAR}(r_m)} = 1.947$$

2. Correlation Coefficient (R)

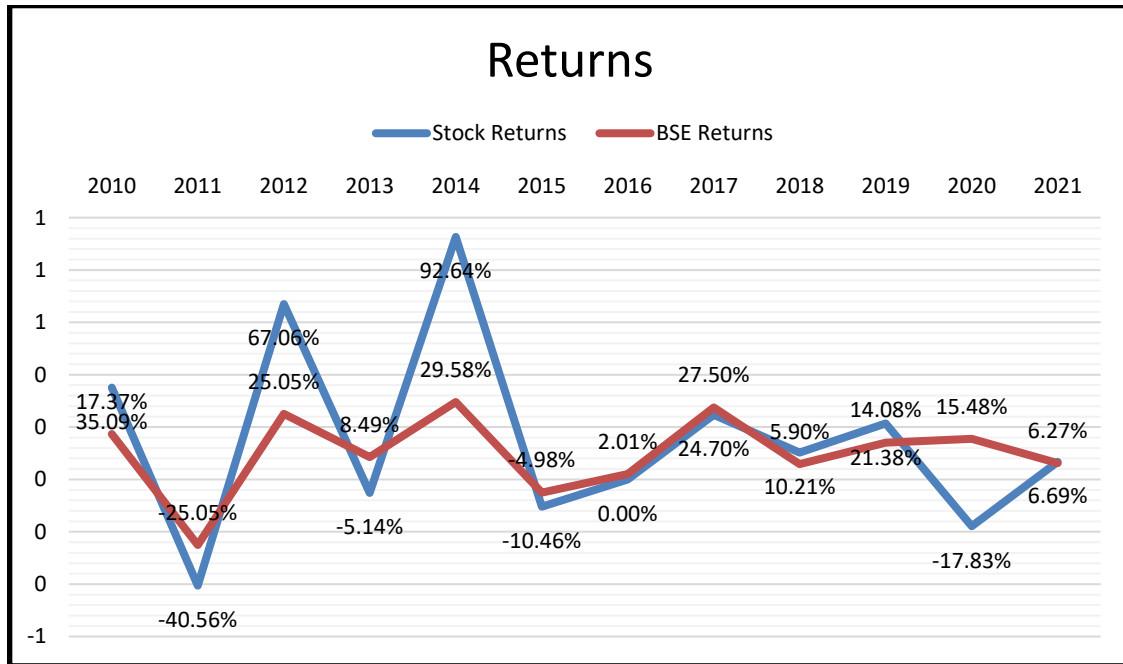
$$R = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{(n\sum x^2 - (\sum x)^2)(n\sum y^2 - (\sum y)^2)}}$$

Therefore, R = 0.810

3. Covariance

$$\text{Cova (X, Y)} = \frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{N-1}$$

$$\text{Cova (X, Y)} = 0.042$$



Graph 9, representing Axis Bank stock returns and BSE Returns

Interpretation:

From the above table and graph, it shows that in the years 2011, 2015, 2020 are of negative returns in Axis Bank Ltd. And in BSE Returns there are 2 negative returns in the year 2011 & 2015. Other than that, all the other returns have positive values with good returns both in Axis Bank Ltd and Sensex Returns. In the Year 2016, there is no Negative or positive Returns in Axis Bank Ltd which has a Nil Balance during at that time. We can analyse that a time change in market returns leads to 1.947 change in stock returns. So, here we used the statistical tool called beta. This stock has a high in beta level. But which is more than 1, so it is risky to invest. And the correlation coefficient is to measure the relationship between the securities. The value correlation is 0.810 and the covariance is 0.042 which has no negative returns.

4.3.2 ICICI BANK LTD

Year	Returns (p1-p0)/p0	BSE Returns
2010	0.289	0.174
2011	-0.406	-0.251
2012	0.648	0.251
2013	-0.042	0.085
2014	0.602	0.296
2015	-0.264	-0.050
2016	-0.022	0.020
2017	0.351	0.275
2018	0.154	0.059
2019	0.488	0.141
2020	-0.008	0.155
2021	0.004	0.063
	1.793	1.217

Table 4.18 calculation of risk analysis of ICICI Bank

With reference to the above table, the variations of the stocks are analysed.

1. Beta (β)

$$\beta = \frac{\text{cov}(r_i, r_m)}{\text{VAR}(r_m)} = 1.920$$

2. Correlation Coefficient (R)

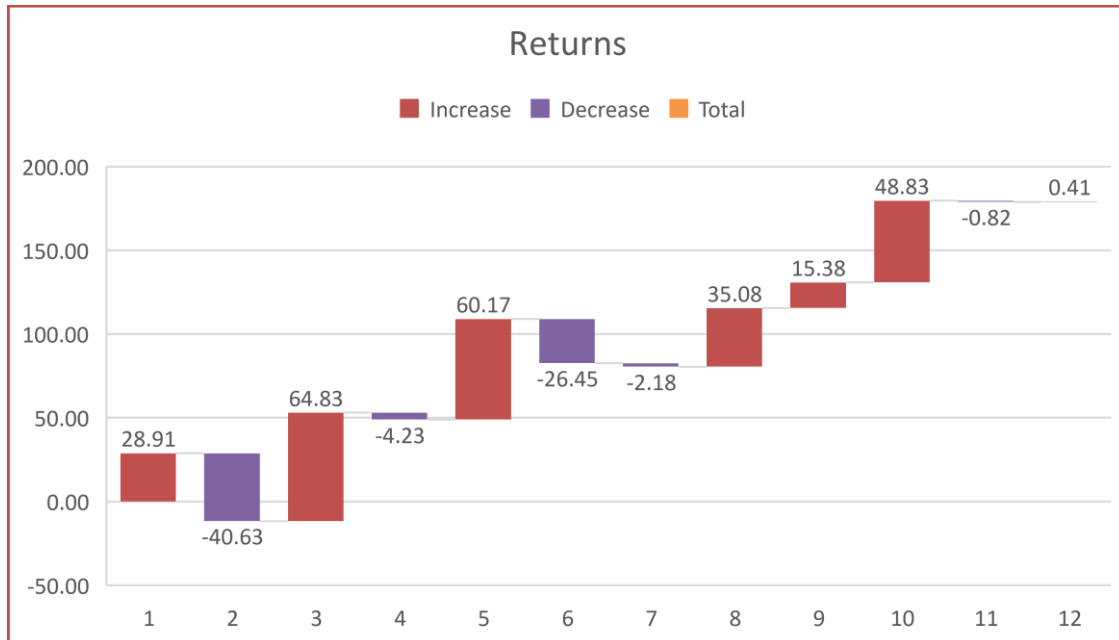
$$R = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{(n\sum x^2 - (\sum x)^2)(n\sum y^2 - (\sum y)^2)}}$$

Therefore, R = 0.881

3. Covariance

$$\text{Cova (X, Y)} = \frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{N-1}$$

$$\text{Cova (X, Y)} = 0.041$$



Graph10. representing ICICI bank stock returns and BSE Returns

Interpretation:

From the above table and graph, it shows that in the years 2011, 2013, 2015 and 2016 are of negative returns in ICICI Bank Ltd. And in BSE Returns there are two negative returns in the year 2011 and 2015. Other than that, all the other returns have positive values with relatively good returns both in ICICI Bank Ltd and Sensex Returns. Currently, In the Year 2021, there is very low returns during that time. We can analyse that a time change in market returns leads to 1.92 change in stock returns. So, here we used the statistical tool called beta. This stock has relatively high value in beta level. But which is more than 1, so it is riskier to invest. And also gives moderate returns during the study period. And the correlation coefficient is to measure the relationship between the securities. The value correlation is 0.881 and the covariance is 0.041 which has no negative returns.

4.3.3 CITY UNION BANK LTD

Year	Returns (p1-p0)/p0*100	BSE Returns
2010	0.917	0.174
2011	-0.139	-0.251
2012	0.498	0.251
2013	-0.076	0.085
2014	0.819	0.296
2015	-0.014	-0.050
2016	0.407	0.020
2017	0.507	0.275
2018	0.212	0.059
2019	0.191	0.141
2020	-0.235	0.155
2021	-0.061	0.063
Total	3.027	1.217

Table 4.19 calculation of risk analysis of City Union Bank

With reference to the above table, the variations of the stocks are analysed.

1. Beta (β)

$$\beta = \frac{\text{cov}(r_i, r_m)}{\text{VAR}(r_m)} = 1.54$$

2. Correlation Coefficient (R)

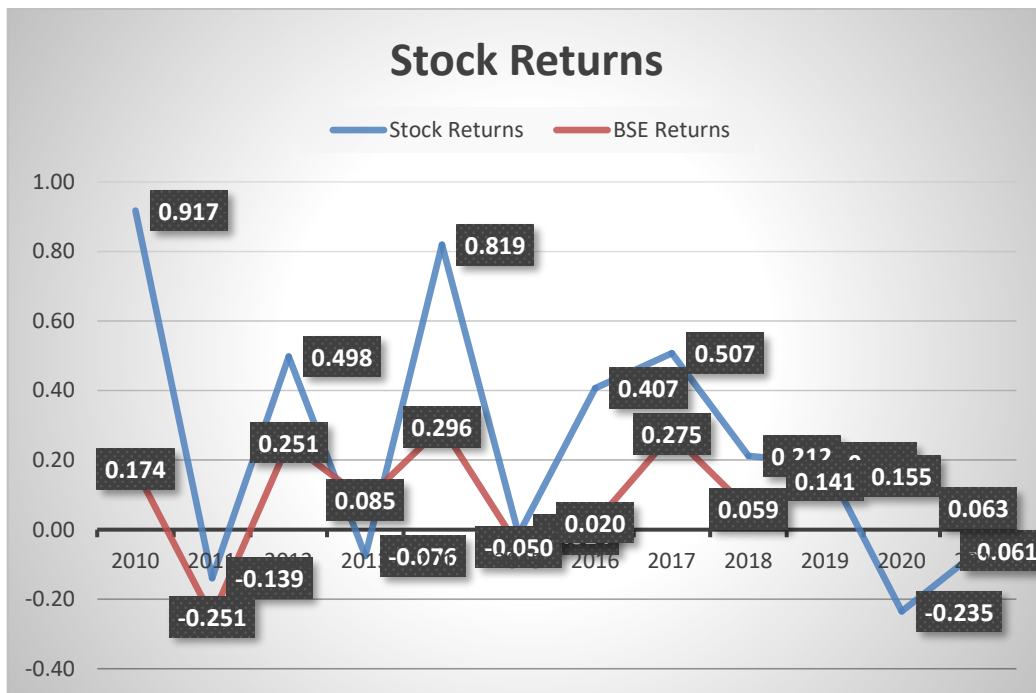
$$R = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{(n\sum x^2 - (\sum x)^2)(n\sum y^2 - (\sum y)^2)}}$$

Therefore, R = 0.62

3. Covariance

$$\text{Cova}(X, Y) = \frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{N-1}$$

$$\text{Cova}(X, Y) = 0.033$$



Graph11, representing City Union bank stock returns and BSE Returns

Interpretation:

From the above table and graph, this gives the best investment returns. It shows that in the years 2011, 2015, 2020, & 2021 are of negative returns in City Union Bank Ltd. And in BSE Returns there are two negative returns in the year 2011 and 2015. Other than that, all the other returns have positive values with good returns both in City Union Bank Ltd and Sensex Returns. In the Year 2010, there is high Returns in City Union Bank Ltd, after that it has slightly ups and downs of the returns value. We can analyse that a time change in market returns leads to 1.54 change in stock returns. So, here we used the statistical tool called beta. This stock has a moderately high value in beta level. But which is more than 1, so it is risky to invest. But still it gives the best returns so, it can be considered as a best investment decision. And the correlation coefficient is to measure the relationship between the securities. The value correlation is 0.62 and the covariance is 0.033 which has no negative returns.

4.3.4 YES BANK LTD

Year	Returns (p1-p0)/p0	BSE Returns
2010	0.167	0.174
2011	-0.242	-0.251
2012	0.937	0.251
2013	-0.206	0.085
2014	1.068	0.296
2015	-0.059	-0.050
2016	0.595	0.020
2017	0.358	0.275
2018	-0.421	0.059
2019	-0.743	0.141
2020	-0.619	0.155
2021	-0.120	0.063
Total	0.714	1.217

Table 4.20 calculation of risk analysis of Yes Bank

With reference to the above table, the variations of the stocks are analysed.

1. Beta (β)

$$\beta = \frac{\text{cov}(r_i, r_m)}{\text{VAR}(r_m)} = 1.679$$

2. Correlation Coefficient (R)

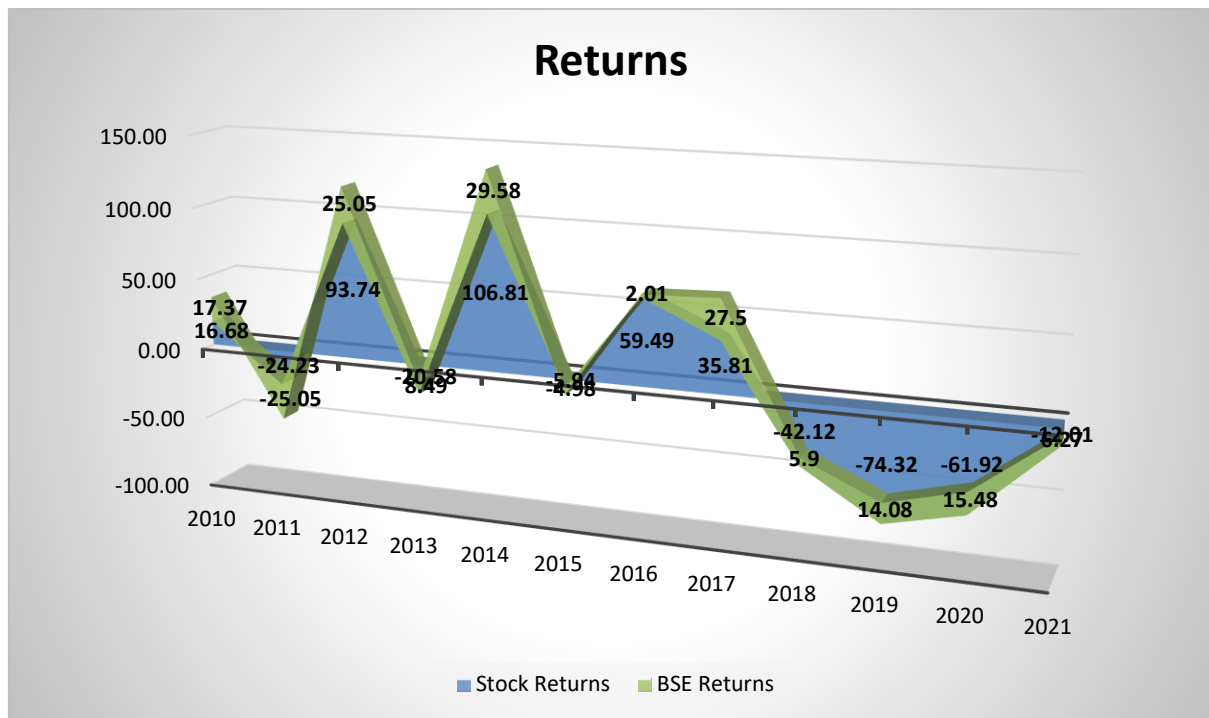
$$R = \frac{n(\Sigma xy) - (\Sigma x)(\Sigma y)}{\sqrt{(n\Sigma x^2 - (\Sigma x)^2)(n\Sigma y^2 - (\Sigma y)^2)}}$$

Therefore, R = 0.441

3. Covariance

$$\text{Cova}(X, Y) = \frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{N-1}$$

$$\text{Cova}(X, Y) = 0.036$$



Graph12, representing Yes bank stock returns and BSE Returns

Interpretation:

From the above table and graph, this gives the lower investment returns. It shows that in the years 2011, 2013, 2015, 2018 to 2021 are of with negative returns in Yes Bank Ltd. And in BSE Returns there are two negative returns in the year 2011 and 2015. Other than that, all the other returns have positive returns both in Yes Bank Ltd and Sensex Returns. In the Year 2014, there is high Returns in the Yes Bank Ltd, and in 2019 it has the lowest returns of negative value. We can analyse that a time change in market returns leads to 1.68 change in stock returns. So, here we used the statistical tool called beta. This stock has a moderately high value in beta level. But which is more than 1, so it is risky to invest with lower returns. So, it is better to suggest that not to invest in this security which has more risk. And the correlation coefficient is to measure the relationship between the securities. The value correlation is 0.441 and the covariance is 0.036 which has no negative returns.

4.3.5 STATE BANK OF INDIA

Year	Returns (p1-p0)/p0	NSE returns
2010	0.236	0.070
2011	-0.428	0.146
2012	0.464	0.118
2013	-0.265	0.031
2014	0.760	0.283
2015	-0.282	0.031
2016	0.112	-0.039
2017	0.227	0.310
2018	-0.047	0.062
2019	0.122	0.273
2020	-0.179	-0.251
2021	0.026	0.180
Total	0.746	1.212

Table 4.21 calculation of risk analysis of SBI

With reference to the above table, the variations of the stocks are analysed.

1. Beta (β)

$$\beta = \frac{\text{cov}(r_i, r_m)}{\text{VAR}(r_m)} = 1.02$$

2. Correlation Coefficient ®

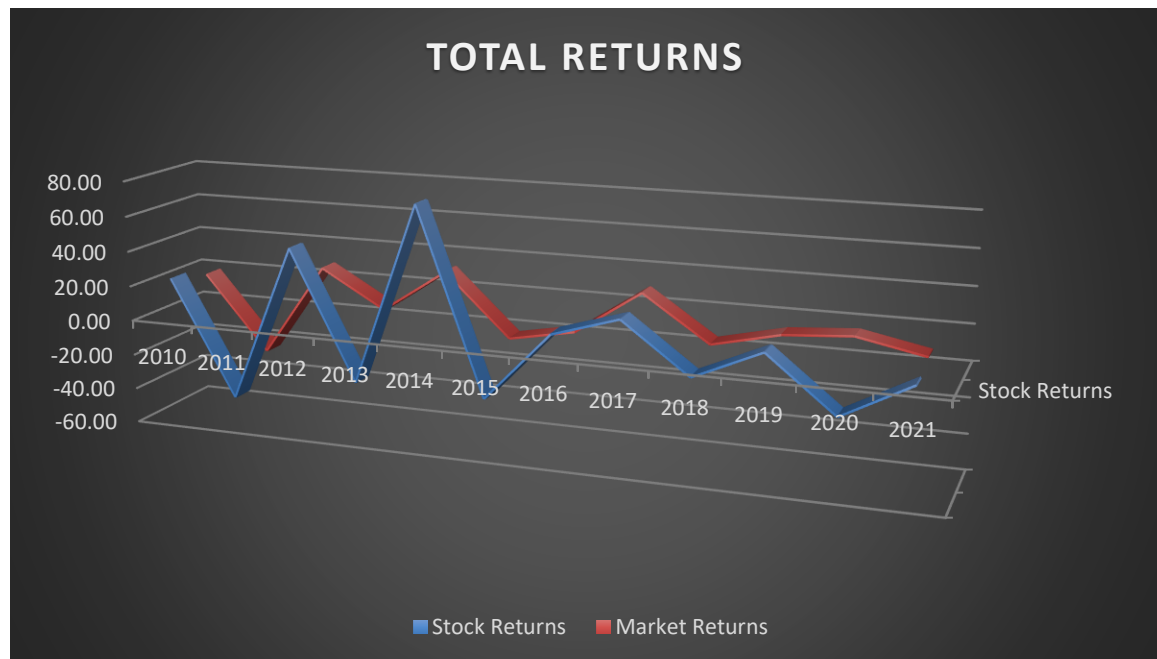
$$R = \frac{n(\Sigma xy) - (\Sigma x)(\Sigma y)}{\sqrt{(n\Sigma x^2 - (\Sigma x)^2)(n\Sigma y^2 - (\Sigma y)^2)}}$$

Therefore, R = 0.48

3. Covariance

$$\text{Cova}(X, Y) = \frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{N-1}$$

$$\text{Cova}(X, Y) = 0.02$$



Graph13, representing SBI bank stock returns and NSE Returns

Interpretation:

From the above table and graph, this gives the lower investment returns. It shows that in the years 2011, 2013, 2015, 2018 & 2020 are of with negative returns in State Bank of India Ltd. And in NSE Returns there are two negative returns in the year 2016 and 2020. Other than that, all the other returns have positive returns both in State Bank of India Ltd and Nifty Returns. In the Year 2012, there is high Returns in the SBI Ltd, and in 2011 it has the lowest returns of negative value, after that it has slightly ups and downs of the returns value. We can analyse that a time change in market returns leads to 1.02 change in stock returns. So, here we used the statistical tool called beta. This stock has a Relatively high value in beta level. But which is more than 1, so it is more risk to invest with lower returns. So, it is better to suggest that not to invest in this security which has more risk. And the correlation coefficient is to measure the relationship between the securities. The value correlation is 0.48 and the covariance is 0.02 which has no negative returns.

4.3.6 INDUSIND BANK LTD

Date	Returns (p1-p0)/p0	NSE returns
2010	0.167	0.070
2011	-0.242	0.146
2012	0.937	0.118
2013	-0.206	0.031
2014	1.068	0.283
2015	-0.059	0.031
2016	0.595	-0.039
2017	0.358	0.310
2018	-0.421	0.062
2019	-0.743	0.273
2020	-0.619	-0.251
2021	-0.120	0.180
TOTAL	0.714	1.212

Table 4.22 calculation of risk analysis of INDUSIND Bank

With reference to the above table, the variations of the stocks are analysed.

1. Beta (β)

$$\beta = \frac{\text{cov}(r_i, r_m)}{\text{VAR}(r_m)} = 1.115$$

2. Correlation Coefficient ®

$$R = \frac{n(\Sigma xy) - (\Sigma x)(\Sigma y)}{\sqrt{(n\Sigma x^2 - (\Sigma x)^2)(n\Sigma y^2 - (\Sigma y)^2)}}$$

Therefore, R = 0.301

3. Covariance

$$\text{Cova}(X, Y) = \frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{N-1}$$

$$\text{Cova}(X, Y) = 0.025$$



Graph14, representing IndusInd bank stock returns and NSE Returns

Interpretation:

From the above table and graph, this gives the lower investment returns. It shows that in the years 2011, 2015, 2018 to 2021 are of with negative returns in IndusInd Bank Ltd. And in NSE Returns there are two negative returns in the year 2016 and 2020. Other than that, all the other returns have positive returns both in IndusInd Bank Ltd and Nifty Returns. In the Year 2014, there is high Returns in the IndusInd Bank Ltd, and in 2019 it has the lowest returns of negative value. We can analyse that a time change in market returns leads to 1.115 change in stock returns. So, here we used the statistical tool called beta. This stock has a moderately high value in beta level. But which is more than 1, so it is risky to invest with lower returns. So, it is better to suggest that not to invest in this security which has more risk. And the correlation coefficient is to measure the relationship between the securities. The value correlation is 0.301 and the covariance is 0.025 which has no negative returns.

4.3.7 HDFC BANK LTD

Year	Returns (p1-p0)/p0	NSE returns
2010	0.380	0.070
2011	-0.099	0.146
2012	0.582	0.118
2013	-0.024	0.031
2014	0.425	0.283
2015	0.138	0.031
2016	0.114	-0.039
2017	0.548	0.310
2018	0.133	0.062
2019	0.196	0.273
2020	0.126	-0.251
2021	-0.034	0.180
TOTAL	2.484	1.212

Table 4.23 calculation of risk analysis of HDFC Bank

With reference to the above table, the variations of the stocks are analysed.

1. Beta (β)

$$\beta = \frac{\text{cov}(r_i, r_m)}{\text{VAR}(r_m)} = 0.528$$

2. Correlation Coefficient (R)

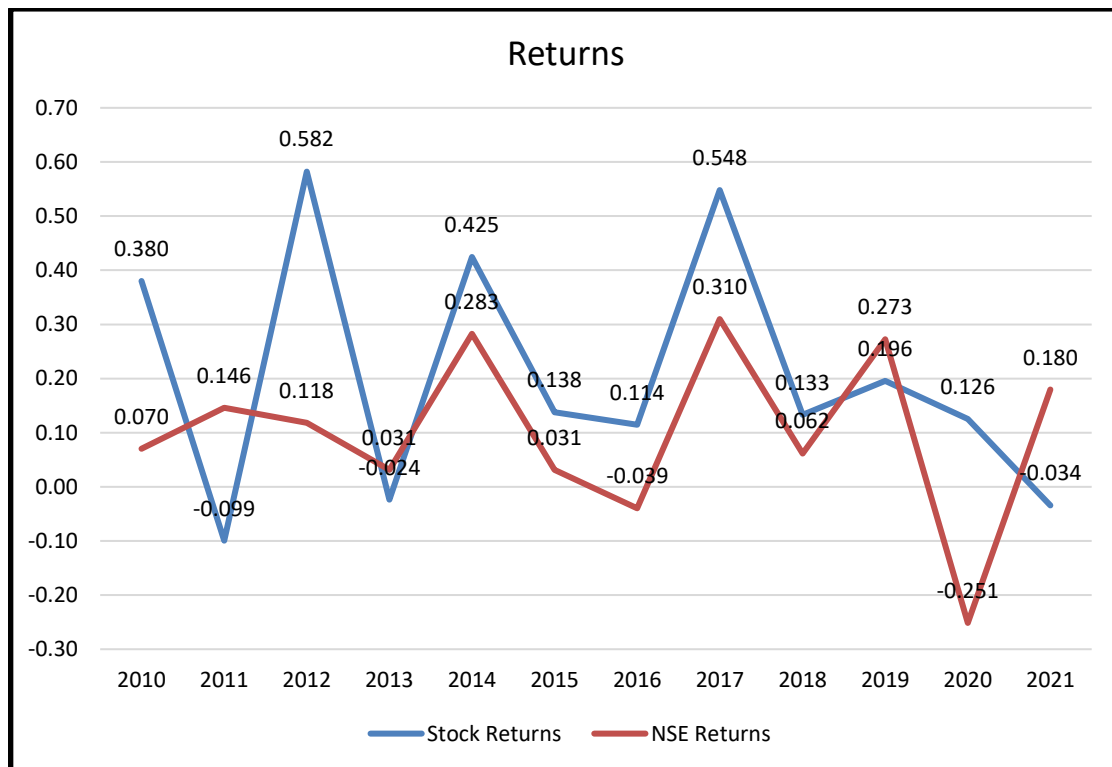
$$R = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{(n\sum x^2 - (\sum x)^2)(n\sum y^2 - (\sum y)^2)}}$$

Therefore, R = 0.365

3. Covariance

$$\text{Cova}(X, Y) = \frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{N-1}$$

$$\text{Cova}(X, Y) = 0.012$$



Graph15, representing HDFC bank stock returns and NSE Returns

Interpretation:

From the above table and graph, this gives the best investment returns. It shows that in the years 2011, 2013, 2021 are of with the negative returns in HDFC Bank Ltd. And in NSE Returns there are two negative returns in the year 2016 and 2020. Hence, all the other returns have positive values with good returns both in City Union Bank Ltd and Nifty Returns. In the Year 2012, there is high Returns in HDFC Bank Ltd, after that it has slightly ups and downs of the returns value. We can analyse that a time change in market returns leads to 0.528 change in stock returns. So, here we used the statistical tool called beta. This stock has a moderately high value in beta level. But which is less than 1, so it is less risky to invest. And also, it gives the best returns so, it can be considered as a best investment decision. And the correlation coefficient is to measure the relationship between the securities. The value correlation is 0.365 and the covariance is 0.012 which has no negative returns.

4.3.8 KOTAK MAHINDRA BANK LTD

Year	Returns (p1-p0)/p0	NSE returns
2010	0.116	0.070
2011	-0.060	0.146
2012	0.502	0.118
2013	0.115	0.031
2014	0.727	0.283
2015	0.139	0.031
2016	0.000	-0.039
2017	0.403	0.310
2018	0.242	0.062
2019	0.343	0.273
2020	0.182	-0.251
2021	-0.142	0.180
Total	2.566	1.212

Table 4.24 calculation of risk analysis of KOTAK MAHINDRA Bank

With reference to the above table, the variations of the stocks are analysed.

1. Beta (β)

$$\beta = \frac{\text{cov}(r_i, r_m)}{\text{VAR}(r_m)} = 0.647$$

2. Correlation Coefficient (R)

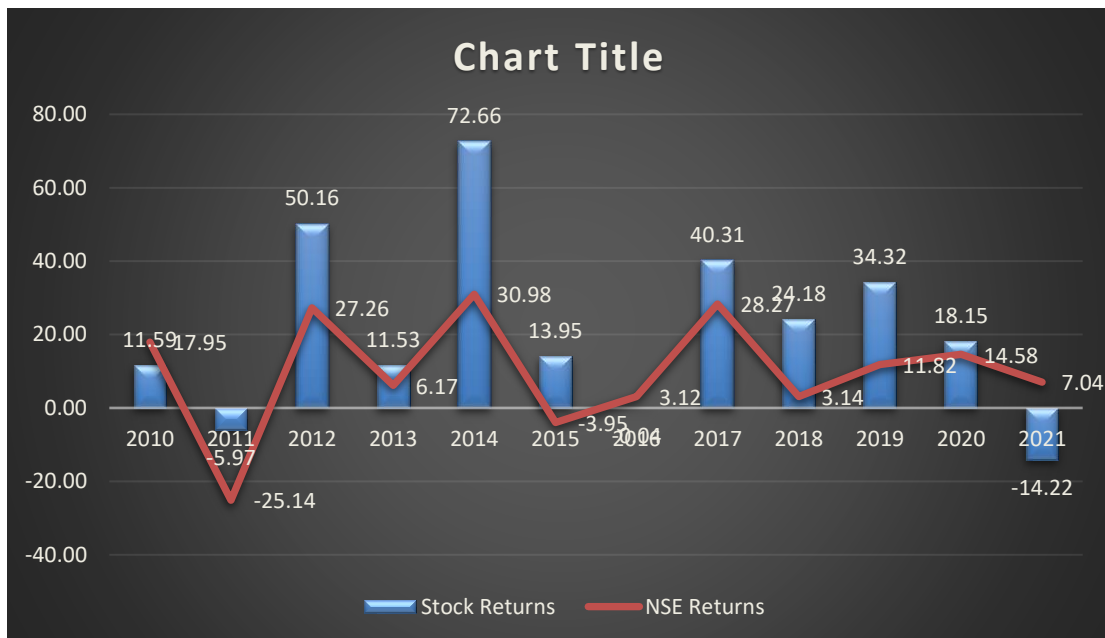
$$R = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{(n\sum x^2 - (\sum x)^2)(n\sum y^2 - (\sum y)^2)}}$$

Therefore, R = 0.41

3. Covariance

$$\text{Cova}(X, Y) = \frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{N-1}$$

$$\text{Cova}(X, Y) = 0.015$$



Graph16, representing Kotak Mahindra bank stock returns and NSE Returns

Interpretation:

From the above table and graph, this gives another best investment return. It shows that in the years 2011, 2016, 2021 are of with the negative returns in Kotak Mahindra Bank Ltd. And in NSE Returns there are two negative returns in the year 2016 and 2020. Hence, all the other returns have positive values with good returns both in Kotak Mahindra Bank Ltd and Sensex Returns. In the Year 2014, there is high Returns in Kotak Mahindra Bank Ltd, and currently in 2021 it has got low returns. We can analyse that a time change in market returns leads to 0.647 change in stock returns. So, here we used the statistical tool called beta. This stock has a slightly high value in beta level. But which is Less than 1, so it is not risky to invest. But still it gives the best returns so, it can be considered as a best investment decision. And the correlation coefficient is to measure the relationship between the securities. The value correlation is 0.410 and the covariance is 0.015 which has no negative returns.

4.4 DEPICTING ALL CALCULATED VALUES

Showing the Returns and risk variations of Banking Stocks
Listed in BSE &NSE

Company	Total Returns	Mean	Standard Deviation	Beta
BSE				
Axis Bank LTD	1.838	0.153	0.367	1.947
City Union Bank LTD	3.027	0.252	0.38	1.54
ICICI Bank LTD	1.793	0.149	0.333	1.92
Yes Bank LTD	0.714	0.06	0.581	1.679
NSE				
IndusInd Bank LTD	0.714	0.06	0.581	1.115
HDFC Bank LTD	2.484	0.207	0.227	0.528
State Bank of India LTD	0.746	0.062	0.337	1.02
Kotak Mahindra Bank LTD	2.566	0.214	0.247	0.647

Table 4.25 relationship to risk and returns analysis



Graph17, representing total returns of the banking stocks

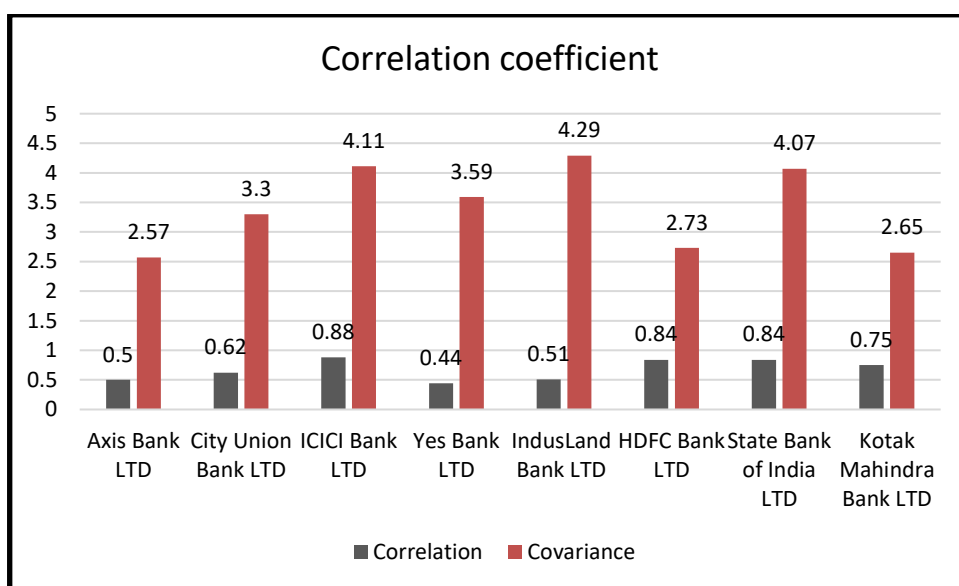
Interpretation

It has observed from the above table during the study period, from Jan 2010 to Jan 2021, all the Stocks showed positive average daily returns. The above table clearly indicates that City Union Bank of Bombay Stock Exchange (BSE) and Kotak Mahindra Bank of National Stock Exchange (NSE) were top performers which have higher returns, when compared to all other companies but City Union Bank have relatively high beta as well, which shows the company was involved with high risks which in turn gave good returns and Kotak Mahindra which has low risk level and it is preferable to invest and the company's stock is volatile because it has a beta of 1.54 and 0.647. HDFC Bank of NSE would be the Second option for an investor who wants lower risk with good returns, has comparatively less volatility. Axis Bank of BSE have positive returns as well as high beta level of 1.92, so the investor should be careful while investing in this security. The HDFC bank and Kotak Mahindra Bank has Beta value within the value 1, and also provides positive returns. While the Lowest returns would be Yes Bank and IndusInd Bank in BSE and NSE with high levels of Risk involved with 1.679 and 1.115 of beta level, so it is not preferable for an investor to choose these companies as the investment would definitely give them low returns and they are highly volatile stocks.

**Showing the correlation and covariance of the selected
eight Banking stocks Listed in BSE & NSE**

Company	Correlation	covariance
Axis Bank LTD	0.81	0.042
City Union Bank LTD	0.62	0.033
ICICI Bank LTD	0.881	0.041
Yes Bank LTD	0.441	0.036
IndusInd Bank LTD	0.301	0.025
HDFC Bank LTD	0.365	0.012
State Bank of India LTD	0.48	0.02
Kotak Mahindra Bank LTD	0.41	0.015

Table 4.26 relationship of risk and returns analysis



Graph18, representing correlation and covariance of the banking stocks

Interpretation:

The correlation and the covariance of these companies are calculated in comparison with the market returns. ICICI Bank returns had a very strong correlation with the BSE Returns with a covariance of 0.041. HDFC Bank and State Bank of India had a very strong correlation with the National Stock Exchange (NSE) returns with a covariance of 0.012 & 0.02. Out of these banks, all other banks had moderately high correlation with the market returns.

CHAPTER 5

FINDINGS AND SUGGESTIONS

5.1 FINDINGS

Based on the Objectives, the following were found in this research paper:

- Here we have taken 8 Banking stocks out of which 4 from BSE and another 4 from NSE to calculate the risk and returns for the period of Jan 2010 to Jan 2021.
- As per the requirements for analysis, here we calculated the average returns of the selected stocks and standard deviation for identifying the risk levels of the stocks.
- Beta describes the relationship between the stock returns and the index returns. From the Betas of banks, it is found that all the banks have a positive beta values according to which the stock values move as per the movement of the market index.
- Out of BSE Stock returns City Union Bank earned the highest returns of 25% Followed by the other banks in BSE Axis 15% ICICI 14% and YES bank 5%.
- Out of NSE Stock returns Kotak Mahindra earned more with returns of 20% and all other banks in NSE with HDFC 21% SBI 6% IndusInd 5%.
- City Union Bank had a high beta level i.e. 1.541, but the company was earning very good returns. So, if an investor is ready to take high risk levels to get good returns, it is preferable to invest in City Union Bank.
- Kotak Mahindra Bank has higher returns with moderately low beta value, which is within the value 1, so this would be considered as the best performer to invest with lower risk compared to all other Banking stocks.
- Many companies like YES, SBI, ICICI, and IndusInd had high levels of beta in the study period which is more volatile in nature, but the returns were low, and for ICICI it turned out to be moderately positive returns but with higher risk involved.

- HDFC Bank had a beta of 0.528 and returns of 20.7% Amongst the eight companies, HDFC Bank was the only company which had the combination of comparatively low beta with good returns.
- Companies like SBI, ICICI and Axis bank had strong correlation with the market, but they had high volatility in their prices. All the other companies had moderate correlation with the market returns and with the movement of the market.
- Historical data of both the market is measurable of the banking stocks because both BSE & NSE has same functioning with the little difference in price in both the market. There are many companies which are listed in both the markets so similar type of fluctuations can be seen.
- Both the market has shown great results in recent times. As BSE has higher number of returns than that of NSE it can be visible that the fluctuation in BSE is more than NSE.

5.2 SUGGESTIONS

1. As the average returns of the Banking stocks, City union, Kotak Mahindra and HDFC were high, the investors who are willing to earn more returns, can invest in these stocks.
2. The banking stocks IndusInd, SBI and Yes Bank are risky in investing because of high volatility, it is suggested that the investors should be careful while investing in these securities as they are having low returns.
3. The comparison between the risk and returns of the selected stocks in BSE and NSE, reveals that BSE recorded the highest return as well as the second highest risk. It is advisable for the investors to invest in BSE.
4. According to the analysis both BSE and NSE Stocks were not weak form efficient during the study period. It is required to know the complete knowledge of investments before investing in securities.
5. If the Investor wants to invest in the stocks with lower risks and positive returns, he is suggested to invest in those securities whose Beta is moderately low.
6. Don't put your entire investment in one security. It is like "putting all the eggs in one basket". This will make high risk in the long term.
7. Investors are always diversifying their investments in different sectors stocks to overcome the risk of drastic fall of stocks due to fundamental weakness of company.
8. Good advisory body always gives proper suggestions to investors which will help to get higher returns with lower risk.

5.3 CONCLUSIONS

Therefore, after by studying and comparing both the Bombay stock exchange and National Stock exchange, we can conclude that both BSE and NSE are the pillars of Indian Stock Market. As a whole stock market is sometimes highly volatile and has lot of fluctuations. It depends upon the investors how he can make use of this to get the money which he has put in the market. Risk and returns analysis are very essential, because it helps to calculate future predictable returns and risk of the stock. From this study, during the period Jan 2010 to Jan 2021 with the selected stocks it is clear that investment in City union bank, Kotak Mahindra and HDFC has higher returns with moderately high risk also. While compared to other banks have high risk with low returns in variations. An investor should be in a position to analyse the various investment options available to him and thus minimize the risk and maximize the returns.

Beta is useful to tool for comparing the relative systematic risk of different stocks, as such the risk is directly correlated with return. It is generally believed that higher the risk, the greater the reward but seeking excessive risk does not ensure excessive return. At a given level, each Investment has a degree of risk. It is therefore important for an investor to analyse the continuous volatility of bank stock while constructing a profitable portfolio.

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A Comparative Analysis of Bse and Nse With Special Refrence To Risk And Returns

H Ramya Kalyani, Y. Aysha Fathima

Department of MBA, School of Management Studies, Sathyabama Institute of Science and Technology, Chennai, India

Assistant professor, School of Management Studies, Sathyabama Institute of Science and Technology, Chennai, India

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ABSTRACT: In every part of life while making decisions, risk and return analysis play a crucial role. In that, Stock Exchange is a market where various securities are traded, for example, Equity shares, mutual funds, debentures, bonds insurance products, common assets and so on, generally the current securities are traded in this market. Indian Financial sector plays a vital in in the country economy development and engages a major share in the stock trading scenario. Risk and Returns are two sides of a same coin, where both the aspects influence each other for an investment. Consequently, understanding the risk associated with the venture assists with maximizing returns. This present study is to examine the Risk and return analysis of the Sensex Banking stocks of BSE & NSE. The health of the economy is reflected by the development of stock market. To light with this research paper is a comparative study of Bombay Stock Exchange and the National Stock Exchange during the period from 2010 to 2021. And the fluctuations in share prices of these companies for 12 long years. This research paper helps the investors to examine and compare the assessments along with the market and to find out that out of these two stock exchanges which one is performing better financially on various basis and to identify the company which would be preferable to invest based on their risk-taking ability.

Keywords: Stock Exchange, BSE, NSE, Indian Financial Sector

I. INTRODUCTION

Stock Markets have a significant impact and it turn as an indicator reflecting the performance of the country's monetary condition. The securities exchange alludes to the assortment of business sectors and trades where ordinary exercises of purchasing, selling and issuance of portions of freely held organizations occur. The greater part of the exchanging the Indian financial exchange happens on its two stock trades: The

Bombay Stock Exchange (BSE) and the National Stock Exchange (NSE). The essential market is the place where organizations glide offers to the overall population in an Initial Public Offering (IPO) to raise capital.

When new securities have been sold in the essential market, they are exchanged secondary market, where one investor purchases shares from another investor at the overarching market cost or at whatever costs both the purchaser and dealer concur upon. The optional market or the stock trades are managed by the administrative power. In India, the optional and essential business sectors are represented by the Security and Exchange Board of India (SEBI).

Prior in Mid 1990s the standard region hypothesis was bank interest, gold, property and such various sorts of broad assets. Presently Indian monetary area is the foundation of the country economy advancement, the financial area places a vital job in strengthening, all things considered. The Banking sector connects with significant divide between different areas in Indian stock exchanging situation. In the capital market equity market is playing monetary advancement of country yet banking area, equity market has unpredictability and less profits from interest in a portion of the banks and a portion of the banks have greater instability and capital misfortune in venture too. The purchasers and merchants exchange on various monetary securities in the financial exchange which experience to achieve their monetary destinations from their ventures.

This present research paper is to analyse the performance of the Banking Stocks of Bombay Stock Exchange (BSE) and National Stock Exchange (NSE) for a period of 12 years from January 1st, 2010 to January 31st, 2021. By examining the risk & returns of year closing share prices of the stocks, this study would help the investors to compare and analyse and can make decisions of where to invest in which will be more

beneficial with regards to their risk-taking ability. Along these lines, the financial backers need to process the beta and correlation coefficient to know the current state of the stock its connection with the market record and do the stocks are able to produce returns for their ventures. The significance of Risk return relationship is advocate from both of the investors and firms. Assess the connection between Expected pace of return and the risk of resource would assist the investors with settling on upgraded and more exact choice on putting resources into various enterprises. The investors have to distinguish the base risk and greatest profit from investment decisions through portfolio analysis.

II. LITERATURE REVIEW

Nitin Sethi & Sonia Gupta (2012) conducted the study with the objective of to measure the nature of correlation of nifty and Sensex. This research paper was an attempt to consider the moving trend of Nifty and Sensex are correlated or not. The research design of the paper was casual in nature. For 24 months the data was collected and monitored by the researcher. Data was collected from different journals, magazines, and websites. Thus, the data analysis proved that there was positive correlation between Nifty and Sensex.

Dr. Krishnaprabha and Vijayakumar (2015) talks about a study on Risk and Return Analysis of Selected stocks in India. He found that the Risk and Return analysis plays a key role in most individual decision-making process. Based on the topic he used Banking and Automobile sectors for calculating the Risk and return analysis of the Daily basis. He also states that Alpha stock is positive and the companies are independent to market return and have a profitable return.

Dr. S Poornima and Swathiga (2017), examined by selected stocks with the relationship between risk and returns. These companies are selected from 2 different sectors i.e., automobile and IT sector, which are listed on NSE. The tools like average return, SD, and CAPM model are used to perform the analysis. the comparative analysis played a vital role in this research. Analysis is done for a period of 3 years. They concluded that the analysis helps the investors to select based on their own choice. And automobile sector had better market than the IT sector.

III. OBJECTIVES OF THE STUDY

The objectives of this research paper are to capture the risk and return analysis of sample Banking Stock invested in Bombay Stock Exchange (BSE) and National Stock Exchange

(NSE). The aim is to help the investors understand the risk return trade off of banking stock at Bombay stock exchange and National Stock Exchange.

Primary Objective

- To examine the relationship between risk & returns of Sensex Banking stocks.

Secondary Objective

- To study the risk involved in the securities of the selected companies.
- To analyse the constancy of Beta for the Banking stocks of BSE & NSE Sensex with respect to Sensex.
- To identify the best investment of the banking Equities on selected banks.

RESEARCH METHODOLOGY

Research Methodology refers to the plan which examines the methods, tools, and techniques and the procedures being used for the purpose of collecting and analysing the data. In this present paper different Bombay stock exchange (BSE) and National Stock Exchange (NSE) Sensex and banking stocks have been utilised to determine the risk return trade off. These analyses give clear idea about the selection of bank equity for investment list in stock market.

NEED FOR THE STUDY

This research paper was represented to analyse the comparative study of Bombay Stock Exchange and National stock exchange with special reference to risk and returns. This analysis the fluctuations of risk and returns of the Sensex Banking stocks. It also identifies the performance of the banking stocks in the share market with the share prices of each security. This is based on the efficiency of stock market that has direct consequences for the action of investors in the market for profitable benefits. The financial service sectors should provide proper information to the investors for understanding the banking stocks to invest their money in a profitable investment decision with the latest current scenario of the stock market.

SAMPLING SELECTION

The present research paper is tested the performance of Banking stocks listed in both Bombay Stock Exchange (BSE) and National Stock Exchange (NSE). Turnover values of indices were wanted to decide the sample size for this study. For the analysis of stocks in the securities market are taken for 8 banking stocks. Out of which 4 from Bombay stock exchange (BSE) and another 4 from National stock exchange (NSE). Based on the

turnover values, the top leading companies which has growth in market standards, where selected taken for analysis purpose. The 8 banks which are considered for this research paper are:

- Axis Bank Ltd
- City Union Bank Ltd
- ICICI Bank Ltd
- Yes Bank Ltd
- IndusInd Bank Ltd
- State Bank of India Ltd
- HDFC Bank Ltd
- Kotak Mahindra Bank Ltd

SOURCE OF DATA

The study is purely based on secondary data i.e., year closing values of both Stock returns and the returns value of Bombay stock exchange (BSE) and National stock exchange (NSE) were used. Based on the descriptive analysis, the details regarding sample returns value were collected from www.moneycontrol.com. Other than that, all other related data or information were collected from various books, websites, and journals.

PERIOD OF THE STUDY

This research paper is an attempt to compare the relative difference between Bombay stock exchange (BSE) and National stock exchange (NSE) by analysing the share price returns of Banking stocks from the Indian stock market. The Data is collected for a period of 12 years of the 8 selected stocks of the Financial services sector listed in BSE and NSE for the purpose of calculating the risk and returns during the period from January 2010 to January 2021.

LIMITATIONS OF THE STUDY

- The research study is limited to data collected for a period of 12 years i.e. from January 2010 to January 2021. (for the purpose of calculating beta, standard deviation, correlation and covariance).
- The study is limited to data collected from eight companies listed under Financial Services of Bombay stock exchange (BSE) and National stock exchange (NSE)
- The prediction of the risk cannot be accurate since the fluctuations in the market is based on other External factors and it is uncertain.

TOOLS USED FOR ANALYSIS

TOTAL RETURNS

Any rational financial backer, prior to putting their investible abundance in the stock, investigations the risk related with the specific stock. The genuine return he gets from a stock may

differ from his normal return and the danger is communicated as far as changeability of return.

Expression for calculating the rate of return earned on any asset over time period is,

$$R = \frac{p_1 - p_0}{P_0}$$

R = expected rate of return during time period

P1 = Closing price

P0 = Opening price

MEAN

Mean is the normal estimation of the arrangement, gotten by including the arrangement and partitioning by the quantity of perceptions. It is the most well-known proportion of focal inclination.

Average returns or Mean ($\bar{x}$) = $\frac{\sum x_i}{n}$ (or) R/N

RISK MEASUREMENT

Investment is a proportion of the risk emerging from openness to general market developments. The interaction includes recognizing and breaking down the measure of risk associated with a venture, and either accepting that risk or relieving it.

STANDARD DEVIATION

The standard deviation is regularly utilized by Investors to gauge the risk of a stock or a stock portfolio. The essential thought is that the standard deviation is a proportion of unpredictability: the more a stock's profits differ from the stock's average return, the more unstable the stock.

$$\text{Standard deviation} = \sqrt{\text{variance}}$$

$$\text{Variance} = 1/n-1(\sum d^2)$$

BETA INTERPRETATION

The beta (β) of an investment security (for example a stock) is an estimation of its unpredictability of profits comparative with the whole market. An organization with a higher beta has more serious danger and furthermore more prominent anticipated returns.

$$\beta = \frac{\text{cov}(r_i, r_m)}{\text{VAR}(r_m)}$$

CORRELATION COEFFICIENT

The correlation coefficient is a proportion of the relationship between two factors. It is utilized to discover the relationship is among information and an action to check how solid it is. The equations return a worth between - 1 and 1,

$$R = \frac{n(\Sigma xy) - (\Sigma x)(\Sigma y)}{\sqrt{(n\Sigma x^2 - (\Sigma x)^2)(n\Sigma y^2 - (\Sigma y)^2)}}$$

COVARIANCE COEFFICIENT

The covariance coefficient is a proportion of the connection between two arbitrary Variables. The measurement assesses how a lot - how much the factors change together. The units are processed by duplicating the units of the two factors. The

change can take any certain or negative qualities. The qualities are examined as follows:

Positive covariance: This expresses that two factors will in general move a similar way.
Negative Covariance: Reveals about the two factors will in general move in opposite headings.

DATA ANALYSIS AND INTERPRETATION

In each part of life, Risk and return relationship isn't just for monetary investigation, yet in addition for central ideas. The prerequisite that normal return is proportionate with risk is known as the "risk-return trade off" in finance. The following are the examination of Risk and Returns of the Banking stocks from Bombay Stock Exchange (BSE) and National Stock trade (NSE). Showing the Risk and Return variations of Banking Stocks

Showing the Risk and Return variations of Banking Stocks Listed in BSE &NSE

Company	Total Returns	Mean	Standard Deviation	Beta
BSE				
Axis Bank LTD	1.838	0.153	0.367	1.947
City Union Bank LTD	3.027	0.252	0.38	1.54
ICICI Bank LTD	1.793	0.149	0.333	1.92
Yes Bank LTD	0.714	0.06	0.581	1.679
NSE				
IndusInd Bank LTD	0.714	0.06	0.581	1.115
HDFC Bank LTD	2.484	0.207	0.227	0.528
State Bank of India LTD	0.746	0.062	0.337	1.02
Kotak Mahindra Bank LTD	2.566	0.214	0.247	0.647

Interpretation

It has observed from the above table during the study period, from Jan 2010 to Jan 2021, all the Stocks showed positive average daily returns. The above table clearly indicates that City Union Bank of Bombay Stock Exchange (BSE) and Kotak Mahindra Bank of National Stock Exchange (NSE) were top performers which have higher returns, when compared to all other companies but City Union Bank have relatively high beta as well, which shows the company was involved with high risks which in turn gave good returns and Kotak Mahindra which has low risk level and it is preferable to invest and the company's stock is

volatile because it has a beta of 1.54 and 0.647. HDFC Bank of NSE would be the Second option for an investor who wants lower risk with good returns, has comparatively less volatility. Axis Bank of BSE have positive returns as well as high beta level of 1.92, so the investor should be careful while investing in this security. The HDFC bank and Kotak Mahindra Bank has Beta value within the value 1, and also provides positive returns. While the Lowest returns would be Yes Bank and IndusInd Bank in BSE and NSE with high levels of Risk involved with 1.679 and 1.115 of beta level, so it is not preferable for an investor to choose these companies as the investment would definitely

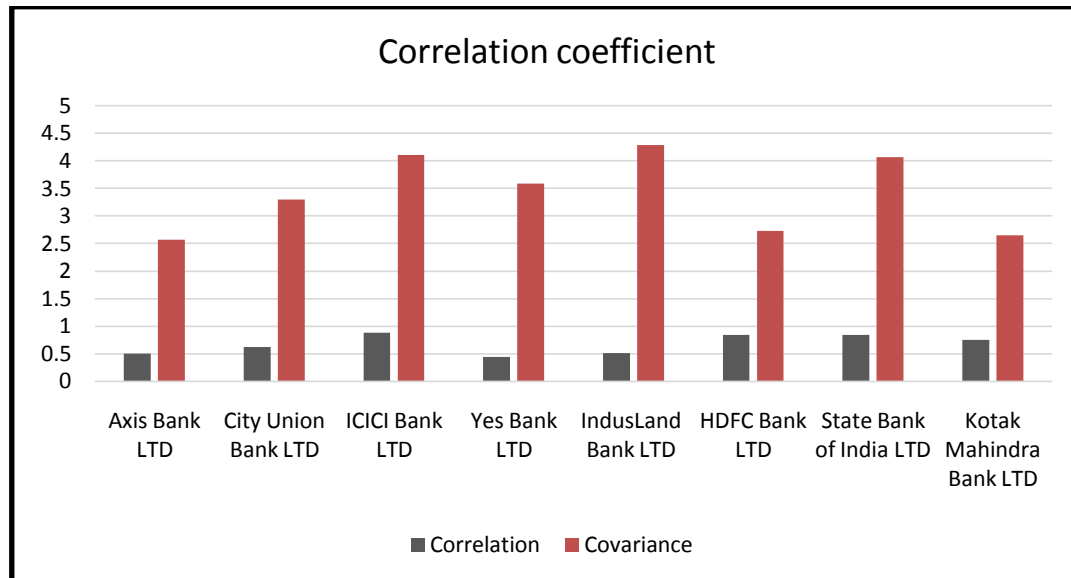
give them low returns and they are highly volatile stocks.



Graph 1 representing total returns of the banking stocks

Showing the correlation and covariance of the selected eight Banking stocks Listed in BSE & NSE

Company	Correlation	Covariance
Axis Bank LTD	0.81	0.042
City Union Bank LTD	0.62	0.033
ICICI Bank LTD	0.881	0.041
Yes Bank LTD	0.441	0.036
IndusInd Bank LTD	0.301	0.025
HDFC Bank LTD	0.365	0.012
State Bank of India LTD	0.48	0.02
Kotak Mahindra Bank LTD	0.41	0.015



Graph 2, representing correlation and covariance of the banking stocks

Interpretation:

The correlation and the covariance of these companies are calculated in comparison with the market returns. ICICI Bank returns had a very strong correlation with the BSE Returns with a covariance of 0.041. HDFC Bank and State Bank of India had a very strong correlation with the National Stock Exchange (NSE) returns with a covariance of 0.012 & 0.02. Out of these banks, all other banks had moderately high correlation with the market returns.

IV. FINDINGS

Based on the Objectives, the following were found in this research paper:

- Here we have taken 8 Banking stocks out of which 4 from BSE and another 4 from NSE to calculate the risk and returns for the period of Jan 2010 to Jan 2021.
- Beta describes the relationship between the stock returns and the index returns. From the Betas of banks, it is found that all the banks have a positive beta values according to which the stock values move as per the movement of the market index.
- Out of BSE Stock returns City Union Bank earned the highest returns of 25% Followed by the other banks in BSE Axis 15% ICICI 14% and YES bank 5%. Out of NSE Stock returns Kotak Mahindra earned more with returns of 20% and all other banks in NSE with HDFC 21% SBI 6% IndusInd 5%.
- City Union Bank had a high beta level i.e. 1.541, but the company was earning very good returns. So, if an investor is ready to take high

risk levels to get good returns, it is preferable to invest in City Union Bank.

- Kotak Mahindra Bank has higher returns with moderately low beta value, which is within the value 1, so this would be considered as the best performer to invest with lower risk compared to all other Banking stocks.
- Many companies like YES, SBI, ICICI, and IndusInd had high levels of beta in the study period which is more volatile in nature, but the returns were low, and for ICICI it turned out to be moderately positive returns but with higher risk involved.
- Historical data of both the market is measurable of the banking stocks because both BSE & NSE has same functioning with the little difference in price in both the market. There are many companies which are listed in both the markets so similar type of fluctuations can be seen.
- Both the market has shown great results in recent times. As BSE has higher number of returns than that of NSE it can be visible that the fluctuation in BSE is more than NSE.

V. SUGGESTIONS

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6.Try not to place your whole interest in one security. It resembles "placing all the money tied up on one place". This will make risky in the long term investment decisions.

VI. CONCLUSIONS

Therefore, after by studying and comparing both the Bombay stock exchange and National Stock exchange, we can conclude that both BSE and NSE are the pillars of Indian Stock Market. As a whole stock market is sometimes highly volatile and has lot of fluctuations. It depends upon the investors how he can make use of this to get the money which he has put in the market. Risk and returns analysis are very essential, because it helps to calculate future predictable returns and risk of the stock. From this study, during the period Jan 2010 to Jan 2021 with the selected stocks it is clear that investment in City union bank, Kotak Mahindra and HDFC has higher returns with moderately high risk also. While compared to other banks have high risk with low returns in variations. An investor should be in a position to analyse the various investment options available to him and thus minimize the risk and maximize the returns.

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