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A STUDY ON PERFOMANCE EVALUATION OF SELECTED BANKS IN INDIA

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Abstract

Return and risk are the two main characteristics shared by all investments. The risk of an investment and its return are directly correlated. Investors typically obtain a better return when taking on more risk, whereas the opposite is true when taking on less risk. A portfolio is a collection of different investment opportunities and should have an appropriate balance of high, moderate, and low risk assets. By utilising a variety of portfolio management strategies, institutional and individual investors can reduce risk while still receiving a sufficient return. The Sharpe Index model, Treynor model, and Jensen model all of which are frequently employed in the financial industry to maximise return while minimising risk are used in the study to construct an ideal portfolio. The secondary source was used to choose the data. Ten top-listed banks from the public and private sectors five from each were chosen for the study based on their market capitalization. Out of the ten banks examined, the study discovered that SBI, Axis, ICICI, and HDFC banks have positive returns that are higher than market returns.

Keyword: Return, Risk, Sharpe Index, Treynor, Jensen, beta, variance, Market Index, BSE.

Introduction

Portfolio Analysis

Individual securities have risk return characteristics of their own. The future return expected from a security is variable and this variability of returns is termed risk. It is rare to find investors investing their wealth in a single security. This is because most investors aversion to risk. it is hoped that if money is invested in several

securities simultaneously, the loss is one will be compensated by the gain in others. Thus, holding more than one security at a time is an attempt to spread and minimize risk by not putting all our eggs in one basket.

Meaning of Portfolio

Portfolio is a collection of different financial instruments held by a person at a point of time. These financial instruments might include equity shares, debentures, preference shares, fixed deposit schemes of companies, etc. Most investors thus tend to invest in a group of securities rather than a single security such a group of securities held together as an investment is what is known as a portfolio.

Portfolio Theories

1.Traditional portfolio.

Traditional portfolio theory is a portfolio management in which only two parameters of investment avenues are considered i.e.(a)returns, and (b)risk.

2.Modren portfolio.

Modern portfolio theory was propounded by Harry Markowitz. The theory is based on the relationship between returns and risk.

Perfomance Evaluation

Comparing a portfolios historical return to those produced by other managers or indexes can be instructive, but it does not a complete picture of the portfolio's performance. The central tenet of modern performance measurement is that it is impossible to make a through evaluation of investment without explicitly controlling for the risk of the portfolio.

There are several techniques that are commonly employed in practice, and we will consider the most prominent of these in detail. There are mainly three portfolio performance evaluation techniques.

Treynor Portfolio Performance Measure

It is one of the technique or models to measure the portfolio performance of mutual funds on portfolio. This model was developed by Jock Treynor's. He postulated two components of risk:

(1) Risk produced by general market fluctuations, and
(2) Risk resulting from unique fluctuations in the portfolio securities.

Sharpe Ratio or Model

This model was developed by William Sharpe simply it is called Sharpe Ratio or Sharpe model. It measures the relationship between Risk Premium and Risk of the portfolio. It is also called Reward to Variability.

Jenson's Ratio or Model

Jenson ratio or Differential Return is measuring the performance of the mutual fund or portfolio. This ratio measures the relationship between actual return earn on mutual fund or portfolio and expected return on mutual fund or portfolio. Here expected return calculates with the help of CAPM model it means the fund manager or portfolio has to know the difference between actual returns and expected returns from the respective mutual fund and portfolio.

Need for the Study

To minimise risk and maximise reward in this turbulent economy, it is crucial to diversify investments carefully. When choosing assets for his portfolio, every investor experience confusion. Additionally, he struggles with selecting how much money to invest in each asset. According to empirical study, the financial services sector, particularly the banking sector, offers stocks a sufficient and reliable return. The Indian banking industry has recently come under intense pressure. Here we use the Sharpe's Single Index, Jensen and Treynor Model to guide investors in creating the best portfolio out of the ten businesses selected from the banking industry. In order to maximise the return from the chosen group of companies and to spread risk, it is crucial that investors pool their funds in the best proportion possible. The goal of the current study is to demonstrate that using this approach, both individual and institutional investors may create a portfolio that offers the highest return for a particular amount of risk. **Scope of the Study**

1. The study is confined to conduct at Punjab National Bank, State Bank of India, Canara Bank, Bank of Baroda, Central Bank, Axis Bank, Yes Bank, ICICI Bank, HDFC Bank, IndusInd Bank, Fino payment Bank. with the project title "A Study on Performance Analysis on Selected Banks in India".
2. The study is conducted based on data that is available in BSE website.
3. The study is conducted for the 5 years from 2018-2022.
4. A comparison of the performance of 10 selected banks with Market Index is made.

Statement of the Problem

Every security is underlying with a risk factor. The study is undertaken to calculate return and risk associated with different shares of banking industry listed in Indian Stock market (BSE). The risk and return have an inverse relationship. When the expected return is high, the risk associated with such return is also high. With the understanding of risk and return characteristics one can make rational decision making regarding the investment in which company one can invest.

Literature Review

Raghavendra Rao, R. and Srinivasa Rao, Ch. (2022) the study focuses on evaluation of the performance and efficiency analysis of selected private sector banks with respect to some of the key indicators such as Total deposits, Total advances, Total Assets, Net Profit & Non-Performing Assets of last 10 years. takes they taken top 3 Private Sector banks namely HDFC Bank, ICICI Bank and Kotak Mahindra Bank. all the three banks could rectify the deficiencies stated above, surely, they will outperform in the banking sector and will surpass the public sector banks.

Venkateswarlu, R. and Viswanath, P. (2022), Return and risk are fluctuating in the investments due to external and internal factors. The investors may invest funds based on fundamental and technical analysis the later analysis helps to select the best portfolios. five years yearly data i.e 2017-2021 has been analysed to know the portfolio performance, the tools used are average, standard deviation, correlation and covariance. The selected securities are Wipro, TCS, HDFC, SBI, Tech Mahindra and Bajaj FinServ. The correlation between portfolio (1) securities with (2) securities executing very highly negative relationship i.e., 98% it can be inferred that investors who are risk averters can choose this portfolio.

Nimmakanti Abhinay. and Ramanjaneyulu, N. (2022) in the study it states that the investors should be updated with latest information on the market trends and on the respective company profile in which they are invested. And also, the investors who are willing to earn maximum returns with minimum risk is necessary to have a clear understanding of the investment objectives, tax status and risk tolerance.

Sreenidhi, A. and Basaiah, P. (2021) This study covers the calculation of risk, return on securities in order to find out at what percentage of funds should be invested among scripts. The portfolio is constructed on to Reliance, Wipro and ITC only five years from 2016 - 2017 to 2020 – 2021. Standard deviation, Co-variance, Co-relation co-efficient, Return on portfolio, Risk of portfolio. It can be suggested that the portfolio with Reliance and Wipro has high returns and low risk, when compared with other portfolios.

Jayanth Konanki, and Basaiah, P. (2020) The study is on Comparative Analysis of Risk and Return with Reference to Stocks of Bank Nifty. the study is limited to 12 banks (Axis Bank, Bank of Baroda, Federal Bank, HDFC Bank, ICICI Bank, IDFC First Bank, IndusInd Bank, Kotak Mahindra Bank, Punjab National Bank, Ratnakar Bank Limited, State Bank of India, Yes Bank listed under the bank nifty index in the National Stock Exchange and for the period of one year only i.e., from January 2019 to December 2019. From the study it is suggested that investment in Axis Bank, IDFC First Bank, IndusInd Bank, Kotak Mahindra Bank, RBL Bank, SBI Bank, ICICI Bank would be feasible because they have positive returns compared to others who have negative returns.

Objectives of the study

1. To study the risk and return involved in the investment of security in the market, specifically with the Indian Banking Sector.
2. To evaluate the performance of selected stocks from banking sector.
3. To Compare the portfolio with Bench mark.

RESEARCH METHODOLOGY

Sources of Data

This study of performance analysis of selected public and private selected banks in India is based on secondary data (yahoo finance.com, money control, investing.com etc.). Data for the study is collected from the secondary sources. Data is collected from the websites.

3.3.1. Sample Unit

Financial data which is relevant to 5years from 2018-2022 is taken 10 banks

1. Punjab National Bank
2. State Bank of India.
3. Canara Bank.
4. Bank of Baroda.
5. Central Bank of India.
6. Axis Bank.
7. Yes Bank.
8. ICICI Bank.
9. HDFC Bank.
10. IndusInd Bank.

Data Analysis Tools

i. Monthly stock returns

- ((Current month stock price – previous month stock price) / previous month stock price) *100
- Sum of monthly returns/12 for annualization of stock returns (converting into yearly)

ii. Arithmetic Mean

Arithmetic Mean also known as 'the mean', 'average' or 'arithmetic Average' is the ratio of the sum of all observations to the number of observations.

$$\bar{x} = \frac{\Sigma x}{N}$$

Σx= Sum No. of observations.

N = No. of observations.

iii. Standard Deviation

Standard deviation is the positive square root of the Arithmetic Mean. Square of the deviation given values from the arithmetic mean. It is also known as root square mean deviation. It is denoted by σ (sigma).

$$\sigma x = \sqrt{\frac{n(\varepsilon x^2) - (\sum x)^2}{n^2}}$$

iv. Beta: It is simply known as systematic risk of the stock

$$\beta = \frac{covariance\ of\ X\ \&\ Y}{variance\ of\ x}$$

v. Treynor Portfolio Performance measure

$$\text{Treynor Ratio (TR)} = \frac{Rp - Rf}{\beta p}$$

Whereas,

Rp = Realized Return on Portfolio (Or) Actual Return Earned on Portfolio.

Rf = Risk Free Rate of Return.

βp = Systematic Risk of the Portfolio.

vi. Sharpe Ratio or Model

$$\text{Sharpe Ratio (SR)} = \frac{RP - RF}{SD\ (or)\sigma P}$$

Whereas,

Rp = Realized Return on Portfolio (Or) Actual Return Earned on Portfolio.

Rf = Risk Free Rate of Return.

SD = Standard Deviation.

vii. Jenson's Ratio or Model

$$\alpha p = Rp - E(RP)$$

Whereas,

αp = Differential Return.

RP = Return Earned from portfolio (or) Mutual fund.

$E(RP)$ = Expected Return of Portfolio (or) Mutual Fund

DATA ANALYSIS AND INTERPRETATION

Table 1: Returns of Market Index During the Period 2018 to 2022

Year	Market Index Returns
2018	11.0821
2019	7.287691
2020	9.496125
2021	33.00651
2022	-4.70033
Returns	**$\sum\bar{x}$=11.23442**

Table 2: Yearly Returns of Selected Banks During the Period 2018 to 2022

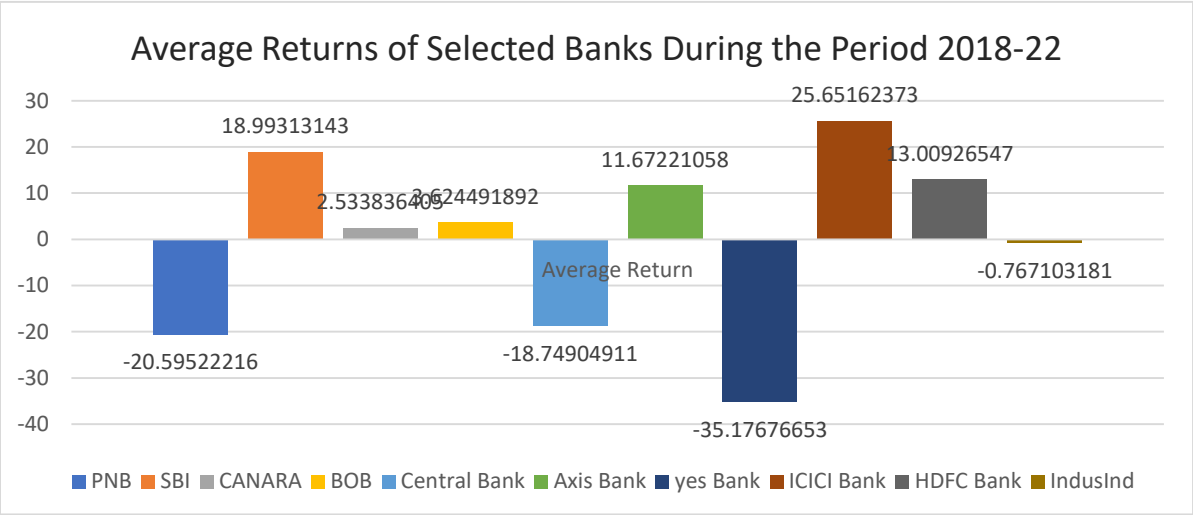
Bank name	Year				
	2018	2019	2020	2021	2022
PNB	-42.1798	-18.1772	-52.2856	10.16284	-0.49633
SBI	-3.43634	13.13228	-29.8834	87.83084	27.32223
Canara Bank	-19.7463	-11.7846	-53.8963	50.13759	47.95882
BOB	-19.8035	-17.0692	-50.3397	48.41685	56.91798
Central Bank	-33.6767	-58.2134	-38.4862	35.31205	1.31897
Axis Bank	11.22714	29.23319	-30.9388	41.44017	7.399347
Yes Bank	-8.45817	-56.6021	-82.6365	-37.2835	9.096463
ICICI Bank	12.58447	35.41486	-4.95239	62.40701	22.80417
HDFC Bank	22.82431	15.52349	-3.58777	32.65522	-2.36893
IndusInd Bank	16.16523	-15.4911	-55.0815	46.5688	4.003024

AVERAGE RETURNS

Table 3: Average Returns of selected Banks During the Period 2018 to 2022 (in ₹)

Banks	Calculation	Average Return
PNB	(-42.179+-18.177+-52.286+10.163+-0.496)/5	-20.5952
SBI	(-3.436+13.13+-29.88+87.83+27.32)/5	18.99313
CANARA Bank	(-19.75+-11.78+-53.9+50.14+47.96)/5	2.533836
BOB Bank	(-19.80+-17.07+-50.34+48.42+56.92)/5	3.624492
Central Bank	(-33.67+-58.21+-38.48+35.31+1.32)/5	-18.749
Axis Bank	(11.23+29.23+-30.94+41.44+7.39)/5	11.67221
yes Bank	(-8.46+-56.60+-82.64+-37.28+9.09)/5	-35.1768
ICICI Bank	(12.58+35.41+-4.95+62.41+22.80)/5	25.65162
HDFC Bank	(22.82+15.52+-3.59+32.66+-2.37)/5	13.00927
IndusInd Bank	(16.17+-15.49+-55.08+46.56+4.00)/5	-0.7671

Graph 1: Average Returns of selected Banks During the Period 2018 – 22



Interpretation: The above graph shows the Average Returns of the banks. The average Return mean the average performance of a bank and it indicates the average percentage gain or loss on investments here PNB (-20.595), SBI (18.993), Canara Bank (2.534), BOB (3.625), Central Bank (-18.749), Axis Bank (11.672), Yes Bank (-35.177), ICICI Bank (25.652), HDFC (13.009), IndusInd (-0.767). In the above graph it clearly shows that PNB, Central Bank and Yes Bank have Negative Returns. SBI, Canara, BOB, Axis Bank, ICICI and HDFC have positive Returns, SBI, ICICI and HDFC have higher average Returns and Canara Bank, BOB, Axis Bank and IndusInd have more moderate average Returns.

Table 4: Returns, Standard Deviation, Beta of portfolio and Risk-Free Rate of Return

Portfolio	Return	SD	Beta
PNB	-20.59522	26.58029	0.426733
SBI	18.99313	43.97256	1.583289
Canara Bank	2.533836	45.31922	0.504279
BOB Bank	3.624492	46.7327	0.326886
Central Bank	-18.74905	37.06465	1.12471
Axis Bank	11.67221	27.51669	0.772638
Yes Bank	-35.17677	36.708	-0.63048
ICICI Bank	25.65162	25.30684	0.923992
HDFC Bank	13.00927	15.8159	0.739619
IndusInd Bank	-0.767103	37.8054	1.183599
Market Index	11.23442	13.66164	1
Risk Free Rate of Return	6.961		

Table 5: Sharpe Ratio, Treynor Ratio and Jensen Ratio of portfoilo and Comparision with Market Index During the period 2018 - 2022

Funds	Sharpe Ratio	Treynor Ratio	Jensen Ratio
PNB	-1.0367	-64.575	-52.166
SBI	0.27363	7.59946	-17.52
Canara	-0.0977	-8.7792	-29.368
BOB	-0.0714	-10.207	-27.52
Central	-0.6937	-22.859	-53.303
Axis	0.17121	6.09756	-21.377
Yes Bank	-1.1479	66.8348	-62.23
ICICI	0.73856	20.2281	-8.0442
HDFC	0.38242	8.17754	-19.899
IndusInd	-0.2044	-6.5293	-35.572
Market Index	0.313	4.273	-22.786

Interpretation: The above table constructed with different securities Here according to Sharpe Model which one is highest Sharpe compare with Market index it is superior and if it is lower than the market Index it is inferior. And it Superior funds are SBI (0.274), Axis (0.171), ICICI (0.739), HDFC Bank (0.382) and inferior funds are PNB (-1.037), Canara (-0.10), BOB (-0.071), Central (-0.694), yes Bank (-1.148) and IndusInd bank (-0.204).

under Treynor Ratio PNB (-64.575), SBI (7.599), Canara Bank (-8.779), BOB (-10.207), Central Bank (-22.859), Axis Bank (6.098), yes Bank (66.835), ICICI (20.228), HDFC (8.178) and IndusInd (-6.529) and compare With Market Index (4.273). here according to Treynor Ratio yes bank (66.83), ICICI (20.228), HDFC (8.178), SBI (7.599) and Axis Bank (6.098) are superior performance compare to market Index and PNB (-64.575), Canara (-8.779), BOB (-10.207), Central Bank (-22.859), and IndusInd Bank (-6.529) is inferior compare with market Index (4.273).

The Jensen ratio is also known as the alpha, it measures the excess return investment fund compare to the expected return based on its beta and the market index. A positive Jensen ratio indicates that the fund has outperformed it's expected return, while a negative value suggests underperformed. While evaluation ten portfolios under Jensen Ratio PNB (-52.166), SBI (-17.520), Canara Bank (-29.368), BOB (-27.519), Central Bank (-53.303), Axis Bank (-21.377), yes Bank (-62.230), ICICI (-8.044), HDFC (-19.899) and IndusInd (-35.573) and compare With Market Index (-22.786). according to Jensen Ratio all are underperformed these funds have not achieved returns higher than expected beta and the market index

FINDINGS

1. Sharpe Ratio: The Sharpe ratio measures the risk-adjusted return of an investment. A higher value indicates better performance.

- The Sharpe ratio Canara is -0.098, BOB is -0.071, and IndusInd bank is -0.20442 indicating a slightly negative risk-adjusted return.
- The Sharpe ratio of PNB is -1.03672, Central is -0.69365 and Yes Bank is -1.14792 indicating a negative risk-adjusted return.
- SBI: The Sharpe ratio is 0.273628, Axis is 0.171213, ICICI is 0.73856 and HDFC is 0.382417 suggesting a positive risk-adjusted return.

2. Treynor Ratio: The Treynor ratio measures the risk-adjusted return relative to the systematic risk of an investment. A higher value indicates better performance.

- The Treynor ratio of PNB is -64.5748 and Central Bank is -22.8593, indicating a significantly negative performance relative to systematic risk.
- The Treynor ratio of SBI is 7.599456, Axis is 6.097563, ICICI is 20.22812 and HDFC is 8.177544, suggesting a positive performance relative to systematic risk.
- The Treynor ratio of Canara Bank is -8.77919, BOB is -10.2069, IndusInd is -6.52932 indicating a negative performance relative to systematic risk.
- Yes Bank: The Treynor ratio is 66.83476, indicating a significantly positive performance relative to systematic risk.

3. Jensen Ratio: The Jensen ratio measures the excess return of an investment compared to its expected return, considering the risk-free rate and systematic risk. A positive value indicates outperformance.

- The Jensen ratio of PNB is -52.1661, Canara Bank is -29.3684, BOB is -27.5197, HDFC Bank is -19.8987 and IndusInd Bank is -35.5724 indicating underperformance compared to the expected return.
- The Jensen ratio of SBI is -17.5202, Axis Bank is -21.3769, ICICI Bank is -8.04424, suggesting slight underperformance compared to the expected return.
- The Jensen ratio of Central Bank is -53.3027 and Yes Bank is -62.2297 indicating significant underperformance compared to the expected return

SUGGESTIONS

- PNB, Canara Bank, Central Bank, Yes Bank, and IndusInd Bank has shown a negative average return and a negative Sharpe ratio. It underperformed the market index consistently. Investors may consider reducing or divesting their holdings.
- SBI, BOB, Axis, ICICI and HDFC bank has a positive average return and a positive Sharpe ratio. It has outperformed the market index. Investors may consider holding or increasing their holdings in SBI, Axis, ICICI and HDFC banks.

CONCLUSION

The investor can choose the securities of his choice with the aid of the research, risk, and return investigation. This type of study offers details on how different market securities have performed in terms of risk and return. In this case we built portfolio with 10 chosen companies which are listed on the BSE. The study can be said to have tested the Sharpe's single index model. the portfolio gave the investor information helps him to decide whether to buy or not. Thus, the study concluded that SBI, Axis, ICICI and HDFC banks have positive returns and outperforming suggesting to investor may hold or increasing their holds in these banks and diversify the other holdings.

Limitations

1. The study is limited to banking sector and is restricted to only 10 companies.
2. This is completely based on the secondary data collected from the website of BSE and broking consultancies. So, the findings of the study will be entirely depending on the accuracy of the data.
3. It is a onetime study, so that it may not valid for long period.

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