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# An Analysis of Stock Market Performance Using Jensen, Sharpe and Treynor Measure

Prof. Mohammed Farzana Begum[1], Prof. Devika Rani P[2], Vyas Jayesh Arvind[3]

[1]Assistant Professor – Department of Management Studies, Ballari Institute of Technology & Management, Ballari, Karnataka
[2]Assistant Professor - Department of Management Studies, Ballari Institute of Technology & Management, Ballari, Karnataka
[3]Student - Department of Management Studies, Ballari Institute of Technology & Management, Ballari, Karnataka

**ABSTRACT**

**Financial instruments are categorized into two forms a) debt and b) equity or may be hybrid. Return of the investor depends upon the company's performance in the industry/market, higher the market capitalization higher will be the price of share and higher profit the investor will get. Generally, two types of benefits an investor get, the first one is return which is calculated on face value and second is capital gains which occur if there is change in price of share. Hence, analysis and interpretation of the share of various firms becomes necessary in order to know it position in market. This analysis will help the investor in better investment. This study helps the investor to select stocks which are performing good in the market with the help of Sharpe, Jensen and Treynor Ratio. The companies whose shares are traded in National Stock Exchange are more than 1600 but this study is confined to only NSE NIFTY E.g., Top 30 companies by market capitalization in 2020 which are financially sound companies listed in NSE NIFTY. The study is carried out on the basis of last 5 years data i.e., from January 2015 to December 2019.**

**Keywords:** ***Stock Exchange, Sharpe, Jensen, Treynor, market capitalization.***

## INTRODUCTION

As part of monetary progression, Securities Exchange play a main role to raise funds from investors. Various techniques and methods are being adapted by individual investors to make an investment. Indian stock exchanges not only empower the resources from speculators for venture purpose but gives liquidity to financial specialist. This study is taken for the reason of carrying out performance evaluation of securities in the National Stock Exchanges. It is directly related with analysis of tradable financial instruments. Before any investment, an investor needs to evaluate the performance of financial instruments and this study helps us in evaluating such instruments.

Evaluation of securities varies from investors to investors because the need and objective of investment differs and the perception of investors differs. There are three measures which evaluates the performance of the companies:

**Sharpe's performance index**
It was introduced by Nobel laureate William F. Sharpe. This index mostly used to calculate the risk- returns and also it has been considered as standard ratio for evaluating performance of share amongst companies. Sharpe index ranks the performance based on the value. Sharpe ratio is the mean return earned exceeding risk-free return, i.e. Public securities. Sharpe ratio uses standard deviation for calculation.

**Treynor's performance index**
It is reward as instability proportion. It measures the connection between the actual market return and the stock returns. The proportion is measured to know how much effective a venture will be in analyzing financial opportunities with a thought for the investments natural level of risk. At the point where the Treynor proportion estimate is high, it means that he has created exceptional yields on each of the market hazards bearded by the investors.

**Jensen's Alpha Performance Index**

Michael Jensen used that measure for the first time in 1968 and was originally designed to judge fund manager. The aim of Jensen index is to find out whether a stock can outperform repeatedly in Marketplace. The higher the alpha, higher it has outperformed in the market. The objective and characteristic of investment is to gain higher return with minimal risk and thus Jensen's measure help the investors to construct optimal portfolio.

## REVIEW OF LITERATURE

**Dr.Nagesh.M.R (2018):** The study was carried out in order to construct an optimal portfolio using Treynor's model. This study reveals that using Treynor's model an investor can select a group of securities whose weight on active portfolio is more than passive portfolio. During the study telecommunication sector firms were selected from BSE and data was collected through secondary source. Researchers used three years data for conducting this research and their study concluded that a Treynor's model is efficient for construction an optimal portfolio using the key factors such as share price movements, index movements, government securities yield rates and beta values.

**Dr.S.Poorni And Aruna. P. Ramesh (2017):** Their study concluded that portfolio construction of selected stocks from NSE using Sharpe index model looks more interested rather than choosing random companies from NSE for portfolio construction. The study of Sharpe technique helps them by technical examination of stocks for constructing portfolio. As a result, out of fifty companies only few firms were included within the optimal portfolio development.

**Dr. Monica Verma, Mr. Jayshil R. Hirpara (2016):** Their research attempts to get in-depth Empirically, study of the optimal portfolio using a single index model from Sharpe, Jensen and Treynors ratio. The data used for evaluating the performance was secondary data composed from www.nseindia.com then www.riskcontrol.com .the stocks were selected from nifty-50 for period ranging between January 1 2015 to 31 December 2015. They concludes that in most cases Treynors and Jensen gives positive result as compared to Shape but helps the investors to rank stocks and make an optimal portfolio.

**Dr. Aparna Mishra (2016):** Their research looks at the presentation of change economy's best concrete industry value shares the period April 2005 to March 2015. Authentic execution was surveyed based on the measure taken by Sharpe, Treynor and Jensen whose outcomes are helpful for settling on venture choices. Their research revealed that through these measures speculators can contribute and yield the most extreme returns. Despite the fact that hazard is high, the protections chose through the above measures have performed well and after hazard alteration the financial specialist can get exceptional yields.

**Dr. R. Nalini (2014):** Her research was carried out to construct a portfolio based on the Sharpe index model and study contained fifteen S&P BSE Sensex company's. The finding of study was to calculate the percentage of funding to be invested in every security and asset, so that such portfolio should get considered in top rated portfolio investments. At the end of study out of fifteen companies hardly four companies were selected for greatest portfolio using Sharpe model.

**Gopalakrishna Muthu (2014):** Their study showed the comparison between traditional portfolio theory and modern portfolio theory for selecting stock for purpose of investments. During the study the secondary data has been used for period of four years from 2004-2008. NSE index was considered for selecting firm for evaluation task. Their study helps the investor to identify the undervalued and less growth stocks through which they can reconstruct the existing portfolio.

**Objectives of the Study**

1. To compare actual return with risk taken on investment.
2. To measure the stock performance in relation with market performance using Treynor's Index.
3. To create an optimal portfolio using Sharpe, Treynor's and Jensen's measure.

## RESEARCH METHODOLOGY

**Sample and Data Collection:** Right now, have utilized shutting costs of 30 Equity stocks from NSE NIFTY for the period from January 2015 – December 2019. Information utilized was auxiliary and was gathered Www.nseindia.com, www.yahoofinance.com. The financing cost on 364-day treasury bills is utilized as a hazard free pace of return.

**Methodology:** The study was carried out using following measures to see the performance of sample companies.

| Measure | Formulae |
|---|---|
| The Sharpe's Method | $\frac{\overline{R'p}}{\sigma R'_p}$ |
| The Treynor's method: | $\frac{\overline{R'p}}{\overline{\overline{\beta'p}}}$ |
| The Jensen's method: | $\alpha\, p = Rpt - [Rft + \beta p(Rmt - Rft)]$ |

Where,

| | |
|---|---|
| $R'$p | Return on portfolio |
| $\sigma R'$p | Unsystematic Portfolio Risk |
| $\beta' p$ | Systemic Portfolio Risk |
| $\alpha$ p | Active return on portfolio |
| $Rft$ | Return on risk free securities |
| $Rmt$ | Return on market |

## ANALYSIS AND INTERPRETATION

In this study the stock market performance is evaluated by using 30 NIFTY stock from Indian stock market. The Sharpe ratio, ratio for Treynor, alpha for Jensen are used to measure performance. The results are presented below.

**Table: 1 Showing Analysis Of Risk And Return**

| S.NO. | NAME OF COMPANY | Return | Risk |
|---|---|---|---|
| 1 | TCS | 0.827066 | 0.9 |
| 2 | RELIANCE INDUSTRIES | 2.343338 | 0.12 |
| 3 | HDFC BANK | 4.8224 | -0.39 |
| 4 | HINDUSTAN UNILEVER LTD | 0.881281 | 0.66 |
| 5 | ITC LTD | 0.342711 | 0.52 |
| 6 | HOUSING DEVELOPMENT FINANCE CORP. | 0.819885 | 1.07 |
| 7 | INFOYSYS | 0.732004 | 0.43 |
| 8 | STATE BANK OF INDIA | 0.351098 | 1.68 |
| 9 | KOTAK MAHINDRA BANK | 1.036885 | 1.01 |
| 10 | ICICI BANK | 0.757458 | 1.34 |
| 11 | MARUTI SUZUKI | 0.957834 | 1.34 |
| 12 | L&T | 0.365113 | 1.21 |
| 13 | ONGC | -0.21629 | 1.15 |
| 14 | AXIS BANK | 0.414283 | 1.26 |

| | | | |
|---|---|---|---|
| 15 | COAL INDIA | -0.07554 | 0.69 |
| 16 | WIPRO | 0.287386 | 0.36 |
| 17 | BAJAJ FINANCE | 25.96801 | -9.94 |
| 18 | IOC | 1.064841 | 0.88 |
| 19 | HCL TECHNOLOGIES | 0.532148 | 0.39 |
| 20 | ASIAN PAINTS LTD | 0.879341 | 0.78 |
| 21 | BHARTI AIRTEL | 0.491351 | 1.08 |
| 22 | NTPC LTD | 0.319518 | 0.56 |
| 23 | ULTRA TECH CEMENT | 0.419786 | 1.33 |
| 24 | SUN PHARMACEUTICAL | -0.51239 | 0.09 |
| 25 | INDUSLAND BANK | 0.750324 | 1.32 |
| 26 | POWERGRID CORPORATION BANK | 0.455503 | 0.52 |
| 27 | BAJAJ FINSERV | 2.147901 | 1.29 |
| 28 | MAHINDRA & MAHINDRA | 0.043654 | 0.98 |
| 29 | TITAN COMPANY | 1.274105 | 0.90 |
| 30 | BAJAJ AUTO | 0.514965 | 0.88 |

**Table 1** Shows the result of risk and analysis. The main motive of the investor is to invest in suchstocks which carry lowest possible risk and highest possible earning. It is obvious from the table that

Based on "Risk Factor" below are the top 10 companies

1. State Bank of India
2. Maruti Suzuki
3. ICICI Bank
4. Ultra Tech Cement
5. Indus land Bank
6. Bajaj Finserv
7. Axis Bank
8. L & T
9. ONGC
10. Bharti Airtel

Based on "Return Factor" below are the top 10 companies

1. Bajaj Finance
2. HDFC Bank
3. Reliance Industries
4. Bajaj FinServ
5. Titan Company
6. Indian Oil Corporation
7. Kotak Mahindra Bank
8. Maruti Suzuki
9. Hindustan Unilever Ltd
10. Asian paints Ltd.

**Table: 2 Showing Sharpe's Performance Index Of Top 30 Nse – Nifty Companies**

| S.No. | Name of the company | Average Ri | Rf | Ri - Rf | SD | Sharpe Ratio | Rank |
|---|---|---|---|---|---|---|---|
| 1 | TCS | 1.3784 | 0.67 | 0.7084 | 0.0660 | 10.7359 | 11 |
| 2 | RELIANCE INDUSTRIES | 3.9056 | 0.67 | 3.2356 | 0.2022 | 16.0011 | 6 |
| 3 | HDFC BANK | 8.0373 | 0.67 | 7.3673 | 0.4989 | 14.7680 | 7 |
| 4 | HINDUSTAN UNILEVER LTD | 1.4688 | 0.67 | 0.7988 | 0.0498 | 16.0420 | 5 |
| 5 | ITC LTD | 0.5712 | 0.67 | -0.0988 | 0.0964 | -1.0256 | 24 |
| 6 | HOUSING DEVELOPMENT FINANCE CORP. | 1.3665 | 0.67 | 0.6965 | 1.0744 | 0.6482 | 19 |
| 7 | INFOYSYS | 1.2200 | 0.67 | 0.5500 | 0.0646 | 8.5075 | 12 |
| 8 | SBI | 0.5852 | 0.67 | -0.0848 | 0.0896 | -0.9470 | 23 |
| 9 | KOTAK MAHINDRA BANK | 1.7281 | 0.67 | 1.0581 | 0.0555 | 19.0491 | 3 |
| 10 | ICICI BANK | 1.2624 | 0.67 | 0.5924 | 0.0783 | 7.5674 | 14 |
| 11 | MARUTI SUZUKI | 1.5964 | 0.67 | 0.9264 | 0.0798 | 11.6048 | 10 |
| 12 | L&T | 0.6085 | 0.67 | -0.0615 | 0.0665 | -0.9246 | 22 |
| 13 | ONGC | -0.3605 | 0.67 | -1.0305 | 0.0766 | -13.4499 | 29 |
| 14 | AXIS BANK | 0.6905 | 0.67 | 0.0205 | 0.0679 | 0.3014 | 21 |
| 15 | COAL INDIA | -0.1259 | 0.67 | -0.7959 | 0.0681 | -11.6906 | 28 |
| 16 | WIPRO | 0.4790 | 0.67 | -0.1910 | 0.0593 | -3.2199 | 26 |
| 17 | BAJAJ FINANCE | 43.2800 | 0.67 | 42.6100 | 1.8984 | 22.4448 | 2 |
| 18 | IOC | 1.7747 | 0.67 | 1.1047 | 0.0887 | 12.4582 | 9 |
| 19 | HCL TECHNOLOGIES | 0.8869 | 0.67 | 0.2169 | 0.0586 | 3.7022 | 15 |
| 20 | ASIAN PAINTS LTD | 1.4656 | 0.67 | 0.7956 | 0.0598 | 13.3006 | 8 |
| 21 | BHARTI AIRTEL | 0.8189 | 0.67 | 0.1489 | 0.0765 | 1.9456 | 17 |
| 22 | NTPC LTD | 0.5325 | 0.67 | -0.1375 | 0.0709 | -1.9383 | 25 |
| 23 | ULTRA TECH CEMENT | 0.6996 | 0.67 | 0.0296 | 0.0718 | 0.4129 | 20 |
| 24 | SUN PHARMACEUTICAL | -0.8540 | 0.67 | -1.5240 | 0.0840 | -18.1472 | 30 |
| 25 | INDUSLAND BANK | 1.2505 | 0.67 | 0.5805 | 0.0753 | 7.7147 | 13 |
| 26 | POWERGRID CORPORATION BANK | 0.7592 | 0.67 | 0.0892 | 0.0532 | 1.6764 | 18 |
| 27 | BAJAJ FINSERV | 3.5798 | 0.67 | 2.9098 | 0.0921 | 31.5888 | 1 |
| 28 | MAHINDRA & MAHINDRA | 0.0728 | 0.67 | -0.5972 | 0.0683 | -8.7415 | 27 |
| 29 | TITAN COMPANY | 2.1235 | 0.67 | 1.4535 | 0.0854 | 17.0195 | 4 |
| 30 | BAJAJ AUTO | 0.8583 | 0.67 | 0.1883 | 0.0642 | 2.9338 | 16 |

**Table: 2** Shows Sharpe performance indicator of NSE Nifty companies. The companies have been ranked based on the Sharpe measures. This ratio shows how much additional return one receives over a risk-free asset for additional volatility of holding the risky assets. Sharpe measures indicate thehigher the ratio, the better the performance of the company will be.

Based on analysis it is found that top 10 companies performing better are as below:

1. Bajaj FinServ
2. Bajaj Finance
3. Kotak Mahindra Bank
4. Titan Company
5. Hindustan Unilever Ltd.
6. Reliance Industries
7. HDFC Bank
8. Asian Paints Ltd.
9. Indian Oil Corporation
10. Maruti Suzuki

**Table: 3 Showing Treynor's Performance Index**

| S.No. | Name of the company | Average Ri | Rf | Ri - Rf | Beta | Treynor's Ratio | Rank |
|---|---|---|---|---|---|---|---|
| 1 | TCS | 1.3784 | 0.67 | 0.7084 | 0.90 | 0.7871 | 9 |
| 2 | RELIANCE INDUSTRIES | 3.9055 | 0.67 | 3.2355 | 0.12 | 26.9630 | 1 |
| 3 | HDFC BANK | 8.0373 | 0.67 | 7.3673 | -0.39 | -18.8906 | 30 |
| 4 | HINDUSTAN UNILEVER LTD | 1.4688 | 0.67 | 0.7988 | 0.66 | 1.2103 | 6 |
| 5 | ITC LTD | 0.5711 | 0.67 | -0.0988 | 0.52 | -0.1900 | 22 |
| 6 | HOUSING DEVELOPMENT FINANCE CORP. | 1.3664 | 0.67 | 0.6964 | 1.07 | 0.6509 | 11 |
| 7 | INFOSYS | 1.2200 | 0.67 | 0.5500 | 0.43 | 1.2790 | 4 |
| 8 | SBI | 0.5851 | 0.67 | -0.0848 | 1.68 | -0.0504 | 21 |
| 9 | KOTAK MAHINDRA BANK | 1.7281 | 0.67 | 1.0581 | 1.01 | 1.0476 | 7 |
| 10 | ICICI BANK | 1.2624 | 0.67 | 0.5924 | 1.34 | 0.4421 | 13 |
| 11 | MARUTI SUZUKI | 1.5963 | 0.67 | 0.9263 | 1.34 | 0.6904 | 10 |
| 12 | L&T | 0.6085 | 0.67 | -0.0614 | 1.22 | -0.0504 | 20 |
| 13 | ONGC | -0.3604 | 0.67 | -1.0304 | 1.16 | -0.8891 | 26 |
| 14 | AXIS BANK | 0.6904 | 0.67 | 0.0204 | 1.27 | 0.0161 | 19 |
| 15 | COAL INDIA | -0.1258 | 0.67 | -0.7958 | 0.69 | -1.1488 | 27 |
| 16 | WIPRO | 0.4789 | 0.67 | -0.1910 | 0.37 | -0.5220 | 24 |
| 17 | BAJAJ FINANCE | 43.2800 | 0.67 | 42.6100 | -9.94 | -4.2864 | 28 |
| 18 | IOC | 1.7747 | 0.67 | 1.1047 | 0.89 | 1.2425 | 5 |
| 19 | HCL TECHNOLOGIES | 0.8869 | 0.67 | 0.2169 | 0.40 | 0.5434 | 12 |
| 20 | ASIAN PAINTS LTD | 1.4655 | 0.67 | 0.7955 | 0.78 | 1.0149 | 8 |
| 21 | BHARTI AIRTEL | 0.8189 | 0.67 | 0.1489 | 1.08 | 0.1375 | 17 |
| 22 | NTPC LTD | 0.5325 | 0.67 | -0.1374 | 0.56 | -0.2446 | 23 |
| 23 | ULTRA TECH CEMENT | 0.6996 | 0.67 | 0.0296 | 1.34 | 0.0221 | 18 |
| 24 | SUN PHARMACEUTICAL | -0.8539 | 0.67 | -1.5239 | 0.10 | -15.5333 | 29 |
| 25 | INDUSLAND BANK | 1.2505 | 0.67 | 0.5805 | 1.32 | 0.4390 | 14 |
| 26 | POWERGRID CORPORATION BANK | 0.7591 | 0.67 | 0.0891 | 0.53 | 0.1683 | 16 |
| 27 | BAJAJ FINSERV | 3.5798 | 0.67 | 2.9098 | 1.29 | 2.2547 | 2 |
| 28 | MAHINDRA & MAHINDRA | 0.0727 | 0.67 | -0.5972 | 0.99 | -0.6046 | 25 |
| 29 | TITAN COMPANY | 2.1235 | 0.67 | 1.4535 | 0.91 | 1.5972 | 3 |
| 30 | BAJAJ AUTO | 0.8582 | 0.67 | 0.1882 | 0.89 | 0.2125 | 15 |

**Table: 3** shows Treynor's performance indicators of NSE NIFTY companies. The companies have been ranked on the basis of Treynor'smeasures. Treynor's uses beta as Denominator rather than default deviation. The beta only measures the sensitivity of the security to moments in the market. Higher the ratio, the company's performance will be better of the company.

Based on the Treynor's Ratio the top 10 better performing companies are as below;

1. Reliance Industries
2. Bajaj FinServ
3. Titan Company
4. Infosys
5. Indian oil corporations
6. Hindustan Unilever Ltd.
7. Kotak Mahindra Bank
8. Asian Paints Ltd.
9. Tata Consultancy Services
10. Maruti Suzuki

**Table : 4 Showing Jensen's Performance Index**

| S.No. | Name of the company | Rp | Rm | Rf | Beta | B* Rm-Rf | Rf + [B* Rm-Rf] | Rp-[ Rf+ Rm-Rf*B] | Rank |
|---|---|---|---|---|---|---|---|---|---|
| 1 | TCS | 1.3784 | 0.61 | 0.67 | 0.90 | -0.1215 | 0.5484 | 0.7148 | 11 |
| 2 | RELIANCE INDUSTRIES | 3.9055 | 0.61 | 0.67 | 0.12 | -0.5968 | 0.0731 | 3.7645 | 3 |
| 3 | HDFC BANK | 8.0373 | 0.61 | 0.67 | -0.39 | -0.9076 | -0.2376 | 8.2380 | 2 |
| 4 | HINDUSTAN UNILEVER LTD | 1.4688 | 0.61 | 0.67 | 0.66 | -0.2677 | 0.4022 | 0.9660 | 8 |
| 5 | ITC LTD | 0.5711 | 0.61 | 0.67 | 0.52 | -0.3531 | 0.3168 | 0.1621 | 20 |
| 6 | HOUSING DEVELOPMENT FINANCE CORP. | 1.3664 | 0.61 | 0.67 | 1.07 | -0.0179 | 0.6520 | 0.5889 | 13 |
| 7 | INFOYSYS | 1.2200 | 0.61 | 0.67 | 0.43 | -0.4079 | 0.2620 | 0.8713 | 10 |
| 8 | SBI | 0.5851 | 0.61 | 0.67 | 1.68 | 0.3537 | 1.0237 | -0.6010 | 26 |
| 9 | KOTAK MAHINDRA BANK | 1.7281 | 0.61 | 0.67 | 1.01 | -0.0545 | 0.6154 | 0.9908 | 7 |
| 10 | ICICI BANK | 1.2624 | 0.61 | 0.67 | 1.34 | 0.1465 | 0.8165 | 0.3040 | 16 |
| 11 | MARUTI SUZUKI | 1.5963 | 0.61 | 0.67 | 1.34 | 0.1476 | 0.8176 | 0.6368 | 12 |
| 12 | L&T | 0.6085 | 0.61 | 0.67 | 1.22 | 0.0719 | 0.7419 | -0.2678 | 25 |
| 13 | ONGC | -0.3604 | 0.61 | 0.67 | 1.16 | 0.0362 | 0.7062 | -1.1976 | 30 |
| 14 | AXIS BANK | 0.6904 | 0.61 | 0.67 | 1.27 | 0.1018 | 0.7718 | -0.2186 | 23 |
| 15 | COAL INDIA | -0.1258 | 0.61 | 0.67 | 0.69 | -0.2478 | 0.4221 | -0.6506 | 28 |
| 16 | WIPRO | 0.4789 | 0.61 | 0.67 | 0.37 | -0.447 | 0.2230 | 0.1731 | 19 |
| 17 | BAJAJ FINANCE | 43.2800 | 0.61 | 0.67 | -9.94 | -6.7278 | -6.0578 | 49.8796 | 1 |
| 18 | IOC | 1.7747 | 0.61 | 0.67 | 0.89 | -0.1281 | 0.5418 | 1.1184 | 6 |
| 19 | HCL TECHNOLOGIES | 0.8869 | 0.61 | 0.67 | 0.40 | -0.4267 | 0.2432 | 0.5588 | 14 |
| 20 | ASIAN PAINTS LTD | 1.4655 | 0.61 | 0.67 | 0.78 | -0.1923 | 0.4776 | 0.8797 | 9 |
| 21 | BHARTI AIRTEL | 0.8189 | 0.61 | 0.67 | 1.08 | -0.0102 | 0.6597 | 0.0330 | 22 |
| 22 | NTPC LTD | 0.5325 | 0.61 | 0.67 | 0.56 | -0.3275 | 0.3424 | 0.0954 | 21 |
| 23 | ULTRA TECH CEMENT | 0.6996 | 0.61 | 0.67 | 1.34 | 0.1462 | 0.8162 | -0.2583 | 24 |
| 24 | SUN PHARMACEUTICAL | -0.8539 | 0.61 | 0.67 | 0.10 | -0.6102 | 0.0597 | -0.9803 | 29 |
| 25 | INDUSLAND BANK | 1.2505 | 0.61 | 0.67 | 1.32 | 0.1358 | 0.8058 | 0.3040 | 17 |
| 26 | POWERGRID CORPORATION BANK | 0.7591 | 0.61 | 0.67 | 0.53 | -0.3471 | 0.3228 | 0.3436 | 15 |
| 27 | BAJAJ FINSERV | 3.5798 | 0.61 | 0.67 | 1.29 | 0.1164 | 0.7864 | 2.6545 | 4 |
| 28 | MAHINDRA & MAHINDRA | 0.0727 | 0.61 | 0.67 | 0.99 | -0.0681 | 0.6019 | -0.6495 | 27 |
| 29 | TITAN COMPANY | 2.1235 | 0.61 | 0.67 | 0.91 | -0.1154 | 0.5545 | 1.4532 | 5 |
| 30 | BAJAJ AUTO | 0.8582 | 0.61 | 0.67 | 0.89 | -0.1301 | 0.5398 | 0.2041 | 18 |

**Table : 4** shows Jensen alpha's performance indicator of NSE NIFTY Business. The companies are selected based on market capitalization andin 2020 they are atop 30 companies. These firms were ranked according to Jensen's measure. The alpha of Jensen may be used as a basis for trading strategy. Positive alpha would yield bullish signals, while negative alpha would yield bearish signals. Investor must always look for high-investment Basedon Jensen Alpha's Measure the top 10 companies generating bullish signals are as follows:

1. Bajaj Finance
2. HDFC Bank
3. Reliance Industries
4. Bajaj FinServ
5. Titan Company
6. Indian Oil Corporation
7. Kotak Mahindra Bank

8. Hindustan Unilever Ltd.
9. Asian Paints Ltd.
10. Infosys.

## FINDINGS

**Findings from Sharpe Ratio**
The companies with highest Sharpe ratio and which are advised to investors for investors are as followed:

| S.No. | Companies | Sharpe Ratio | Rank |
|---|---|---|---|
| 1 | BAJAJ FINSERV | 31.5888 | 1 |
| 2 | BAJAJ FINANCE | 22.448 | 2 |
| 3 | KOTAK MAHINDRA BANK | 19.0491 | 3 |
| 4 | TITAN COMPANY | 17.0195 | 4 |
| 5 | HINDUSTAN UNILEVER LTD. | 16.0420 | 5 |
| 6 | RELIANCE INDUSTRIES | 16.0011 | 6 |
| 7 | HDFC BANK. | 14.7680 | 7 |
| 8 | ASIAN PAINTS LTD | 13.3006 | 8 |
| 9 | INDIAN OIL CORPORATIONS | 12.4582 | 9 |
| 10 | MARUTI SUZUKI | 11.6048 | 10 |

According to Sharpe Ratio Findings it is proved that the above top ten companies from NSE gave better returns and will give in best returns as compared to risk free securities or asset after adjusting the risk of it. The higher the Sharpe ratio will be the highest returns. Sharpe ratio has been calculated by Standard Ratio which is also a benchmark for portfolios.

**Findings From Treynor's Ratio**
The companies which gave high Treynor's ratio and which are the best investment securities as compared to other on risk basis are as follow:

| S.No. | Companies | Treynor's Ratio | Rank |
|---|---|---|---|
| 1 | RELIANCE INDUSTRIES | 2.6967 | 1 |
| 2 | BAJAJ FINSERV | 2.2547 | 2 |
| 3 | TITAN COMPANY | 1.5973 | 3 |
| 4 | INFOSYS | 1.2791 | 4 |
| 5 | INIDAN OIL CORPORATION | 1.2425 | 5 |
| 6 | HINDUSTAN UNILEVER LTD | 1.2103 | 6 |
| 7 | KOTHAK MAHINDRA BANK | 1.0477 | 7 |
| 8 | ASIAN PAINTS LTD | 1.0150 | 8 |
| 9 | TATA CONSULTANCYSERVICES | 0.7872 | 9 |
| 10 | MARUTI SUZUKI | 0.6904 | 10 |

According to Treynor's Ratio which is also considered as "reward-to-volatility ratio" From the above table it is proved that the above top ten companies from NSE gave better returns and will give in best returns. It Measures how much excess return was generated for each risk unit covered by a portfolio. It also measures the sensitivity of stocks according to change in market. The high the Treynor's ratio of company the highest will be return because it will not change much more if there is a change in market. The Treynors ratio has been Calculated with Beta as the benchmark for portfolios.

**Findings From Jensen's Ratio**
The companies which gave high Jensen's ratio and which are the best investment securities as compared to other on risk basis are as follow:

| S.No. | Companies | Jensen's Ratio | Rank |
|---|---|---|---|
| 1 | BAJAJ FINANCE | 49.8797 | 1 |
| 2 | HDFC BANK | 8.2380 | 2 |
| 3 | RELIANCE INDUSTRIES | 3.7646 | 3 |
| 4 | BAJAJ FINSERV | 2.6546 | 4 |
| 5 | TITAN COMPANY | 1.4532 | 5 |
| 6 | INDIAN OIL CORPORATION | 1.1184 | 6 |
| 7 | KOTHAK MAHINDRA BANK | 0.9908 | 7 |
| 8 | HINDUSTAN UNILEVER LTD | 0.9660 | 8 |
| 9 | ASIAN PAINTS LTD | 0.8798 | 9 |
| 10 | INFOSYS | 0.8713 | 10 |

From the above table it is proved that the above top ten companies from NSE gave better returns and will give in best returns. The objective and characteristic of investment is to gain higher return with minimal risk and thus Jensen's measure help the investors to construct optimal portfolio. This index is similar to CAPM model. An investor can evaluate whether the return gained on portfolio Is acceptable because of the risk involved therein. If the return is higher than CAPM predicts, that safety is referred to as positive alpha or abnormal return. The ratio of Treynor makes use of Alpha as a benchmark for portfolios.

## CONCLUSION

The study analysed the performance of Indian stock market for 5-year period i.e. from January 2015 to December 2019. The study found that based on three ratios (Sharpe's, Treynor's and Jensen's). According to study- below stocks will be efficient to create an optimal portfolio.

| S.No. | Companies | Sharpe | Treynor | Jensen |
|---|---|---|---|---|
| 1. | RELIANCE INDUSTRIES | 16.0011 | 2.6967 | 3.7646 |
| 2. | BAJAJ FINSERV | 31.5888 | 2.2547 | 2.6546 |
| 3. | TITAN COMPANY | 17.0195 | 1.5973 | 1.4532 |
| 4. | KOTHAK MAHINDRA BANK | 19.0491 | 1.0477 | 0.9908 |
| 5. | HINDUSTAN UNILEVER LTD | 16.0420 | 1.2103 | 0.9660 |
| 6. | INDIAN OIL CORPORATION | 12.4582 | 1.2425 | 1.1184 |
| 7. | ASIAN PAINTS LTD | 13.3006 | 1.0150 | 0.8798 |

If the investors form a portfolio mix of the above companies stock, than the return will be higher than the inflation rate. An optimal portfolio will be the best investment if made using the ones from Sharpe, Treynor and Jensen measures. The study proves that the company which give better returns irrespective of changes in market, risk free securities, risk attached with securities, etc. can be easily traced usingthe measures applied in this study.

## SUGGESTIONS

- ✓ The mutual fund companies can concentrate on semi-urban and rural areas and they should consider selling of mutual fund products through post offices.
- ✓ In order to compete with the Private sector mutual funds, the UTI must research cause of declining returns by implementing necessary remedial measures within its structure.
- ✓ The advertising through media is not easy for people to understand and memories. It should be easy for viewers to recognize the ads of mutual funds.
- ✓ Policy makers and Governing bodies should eliminate poor performance schemes. Many people like to invest in guaranteed returns schemes.
- ✓ The bid documents should be easy and practically free, so a lay investor can understand themeasily.

## REFERENCES

[1]. Dr. Aparna Mishra (2016). "Comparative Performance Evaluation of Equity Shares", *International Journal of Business and Quantitative Economics and Applied Research, 3(3).*
[2]. Dr. Monica Verma, Mr. Jayshil R. Hirpara (2016). "Performance Evaluation of Portfolio using the Sharpe, Jensen, and Treynor Methods", *Scholars Journal of Economics, Business and Management, 3(7),* 382-390.
[3]. Dr. Nagesh.M R (2018). "Construction of optimal portfolio using Treynor's black model", *Indian Journal of Research, 7(1).*
[4]. Dr.Nalini (2014). "Optimal Portfolio Construction Using Sharpe's Single Index Model - A Study of Selected Stocks from BSE" *International Journal of Advanced Research in Management and Social Sciences, 3(12)* 72-93.
[5]. Dr.S.Poorni And Aruna. P. Ramesh (2017). "Optimal Portfolio Construction of Selected Stocks From NSE Using Sharpe's Single Index Model" *International Journal of Management, IT & Engineering, 7(12),* 283-298.
[6]. Gopalakrishna Muthu, M. (2014). "Optimal portfolio selection using Sharpe's Single Index Model", *Indian Journal of Applied Research, 4(1),* 286-288.