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# ANALYSING RISK AND RETURN PROFILES OF SELECTED COMPANIES IN NIFTY

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## ABSTRACT
*This study aims to analyse the risk and return profiles of selected companies in the Nifty 50 index, a benchmark of the Indian equity market. The research focuses on evaluating the performance of these companies through key financial metrics such as returns, standard deviation, beta, and Sharpe ratio, with the goal of understanding their risk-adjusted returns over a specified period. A quantitative approach is employed using historical price data, allowing for the assessment of both systematic and unsystematic risks. The relationship between risk and return is examined through various statistical tools. The findings provide insights into the volatility of individual companies compared to the broader market index, offering investors valuable information for portfolio diversification and risk management strategies. Ultimately, the study contributes to understanding how market fluctuations impact the risk-return trade-off in the Indian equity market.*

**KEYWORDS:** *Risk and Return Profiles, Sharpe Ratio, Standard deviation, Beta, Systematic and Unsystematic risk.*

## INTRODUCTION
In today's dynamic financial markets, investors face the critical challenge of balancing risk and return in their investment portfolios. The Nifty 50, representing a diverse range of sectors in the Indian economy, serves as a benchmark for understanding market trends and evaluating individual company performance. This study aims to analyse the risk and return profiles of selected companies within the Nifty framework, providing insights into their financial health and investment viability.

By employing quantitative methods to assess historical data, we will examine key metrics such as volatility, beta, and Sharpe ratio, alongside return performance over specified periods. This analysis will not only shed light on individual company characteristics but also reveal broader market dynamics influencing risk perception. Ultimately, the findings of this study will equip investors with a deeper understanding of the trade-offs between risk and return, aiding in informed decision-making within the context of the Indian equity market.

## NEED FOR THE STUDY
Investors, financial analysts, and portfolio managers must all have a basic understanding of the risk and return characteristics of firms. The firms included in the Nifty50 index, which is a representation of the top 50 corporations on the Indian National Stock Exchange, are the subject of this research. Making educated judgments, maximizing portfolio performance, and successfully managing risk are all aided by the analysis of these profiles.

## OBJECTIVES OF THE STUDY
- To impose historical performance of top10 Nifty firms in relations of stock price appreciation and dividend payouts.
- To analyze volatility of the top10 Nifty companies by calculating standard deviation and Beta.

## HYPOTHESES
- **Null Hypothesis (H0):** There is no significant relationship between the risk and return profiles of selected firms in the Nifty index.
- **Alternative Hypothesis (H1):** There is a significant relationship between the risk and return profiles of nominated firms in the Nifty index.
- **Null Hypothesis (H0):** There is no important change in the mean returns of organizations crosswise numerous areas within the Nifty index.
- **Alternative Hypothesis (H1):** There is a significant difference in the mean returns of organizations crosswise numerous areas within the Nifty index.

## REVIEW OF LITERATURE
1. Talwar and Gopinathan (2022), For assessing stock returns, one of the most broadly utilized techniques is the Capital Resource Estimating Model (CAPM). Understanding the connection among hazard and return as well as how unsafe protections are valued is helpful. The principal objective is to comprehend how to oversee portfolio risk utilizing CAPM to get the most extreme return at a similar degree of hazard. This study's fundamental goal was to figure out which stocks were underestimated and exaggerated, as well as which beat different portfolios. The outcomes showed that the Capital Resource Estimating Model (CAPM) was a useful model for making sense of protections returns and 11 assisting financial backers with settling on more educated venture choices. It likewise upheld a straight design.

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2. Bedanta Bora (2021) " Connection among Danger and Return As proven by "An extraordinary Exact Review Business BSE in India," ventures made in the stock business place face a critical level of chance. A monetary sponsor's genuine return from a substance may likewise vary from the return that is expressed, and both the chance and the assortment of the return are uncovered. This must be understood in terms of the rate of return as well as their awareness of the risk. This specific examination takes a gander at the beta feeling of equilibrium for 30 BSE Sensex social events and attempts to decide the relationship between securities results and business focus returns. For illustrative bits of knowledge, one could do a couple of beta assessments and relationship investigations.
3. Roni Bhowmik (2020) " Unpredictability and Currency markets Analysis Bali" proposes writing-based compositions. This essay offers a thorough analysis with a foundational understanding of the volatility of stock substitution outcomes and the application of effective examination strategies in many finance-related business domains across the globe. This specific determination is also made by searching for the most current and practical writing school on volatility and marketable centre outcomes.

**RESEARCH GAP:** There is a some of research gaps in the paper "Analyzing Risk and Return Profiles of Selected Companies in Nifty." First off, a sector-specific study that would offer more in-depth understanding of sector performance is lacking and does not compare the risk-return profiles of the various sectors included in the Nifty index. Furthermore, the brunt of macroeconomic volatiles on these profiles is frequently ignored in current research, highlighting the necessity for investigations that take these elements into account. There are too minute lengthwise analyses available, and the popular research only looks at brief periods of time, omitting the effects of several market cycles. Moreover, there hasn't been much research depleted on the behavioural.

## LIMITATIONS

• Data Availability
• Time Frame Limitations

## TYPE OF RESEARCH

A quantitative research method is usually used to analyse the risk and return characteristics of particular Nifty index companies. The specific kinds of study that can be used are as follows Descriptive Research

## SCOPE OF THE STUDY

The scope of this study encompasses a comprehensive analysis of the risk and return profiles of selected companies listed in the Nifty index, which represents a standard for the Indian stock market. The study will explore how different sectors within the Nifty index impact the risk and return profiles of the companies. By analyzing sector-specific trends and economic factors, the study will provide visions into how sectoral dynamics influence individual company performance. The study will also consider systematic and unsystematic risk components to provide a holistic view of each company's risk profile.

## SOURCES OF DATA COLLECTION

To conduct a comprehensive analysis of risk and return profiles for Nifty companies, you'll primarily rely on secondary data. Here are the primary sources: **Financial Databases**, **Stock Exchanges, Financial Websites, Academic Research Papers and Company Reports.**

**Population**: In this context, the population would be all the companies included in the Nifty index. This represents the complete set of entities that you are interested in studying.

**Sampling Unit**: The sampling unit is the individual element or member of the population that is selected for inclusion in the sample. In this case, the sampling unit would be each individual company of 10 sectors selected.

**Sampling method:** Convenient sampling is indeed a suitable method for analyzing risk and return profiles of Nifty companies. By selecting the Nifty index sectors which are convenient based on specific criteria, you can ensure adequate representation of different segments within your sample.

**Table showing Mean Returns of 10 companies**

| Company Name | Mean Value |
|---|---|
| TCS | 0.9 |
| HDFC Bank | 0.14 |
| Hindustan Unilever Limited | 0.34 |
| Maruti Suzuki | 1.41 |
| Sun Pharmaceutical Industries Ltd | 1.82 |
| Reliance Industries Limited | 1.10 |
| Tata Steel | -2.97 |
| ONGC | 2.82 |
| UltraTech Cement | 0.46 |
| Avenue Supermarts Ltd (DMart) | 0.80 |

**ANALYSIS:** The table presents the mean returns for 10 companies. ONGC has the highest mean return at 2.82, indicating strong performance, while Tata Steel shows a negative return of -2.97, suggesting potential underperformance. Sun Pharmaceutical Industries Ltd also

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stands out with a high return of 1.82, while HDFC Bank has a relatively low return of 0.14.

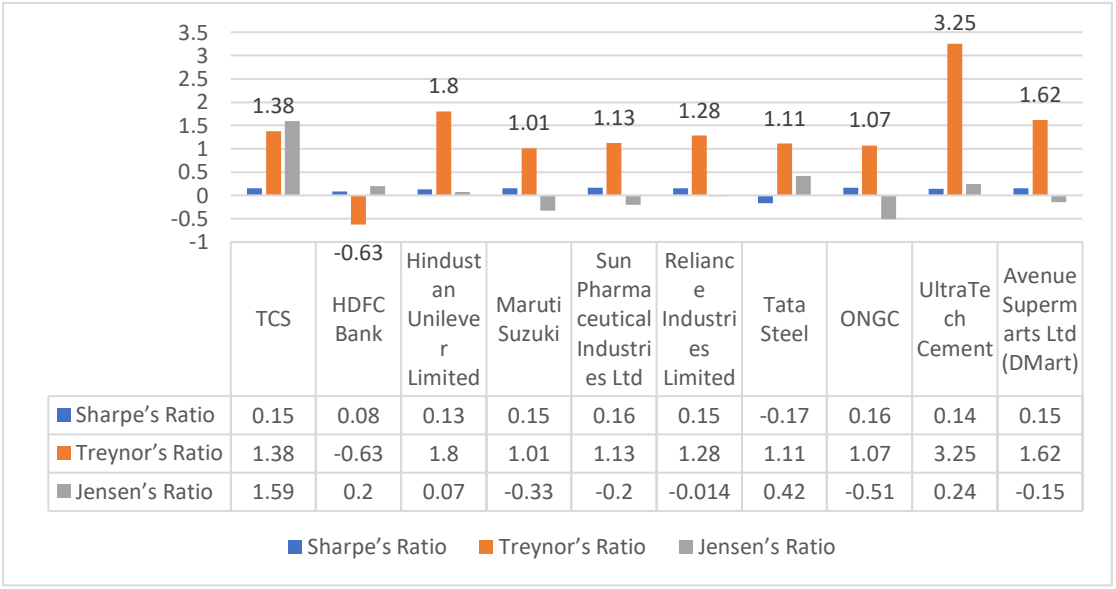
**Comparing standard deviation for Fund Returns**

| Company Name | Standard Deviation Value |
|---|---|
| TCS | 5.34 |
| HDFC Bank | 0.85 |
| Hindustan Unilever Limited | 2.01 |
| Maruti Suzuki | 8.39 |
| Sun Pharmaceutical Industries Ltd | 10.78 |
| Reliance Industries Limited | 6.53 |
| Tata Steel | 17.59 |
| ONGC | 16.73 |
| UltraTech Cement | 2.76 |
| Avenue Supermarts Ltd (DMart) | 4.77 |

**ANALYSIS:** The table shows the standard deviation of fund returns for 10 companies, which measures the volatility of their returns. Tata Steel 17.59 and ONGC 16.73 have the highest standard deviations, indicating high risk and variability in their returns. In contrast, HDFC Bank 0.85 and Hindustan Unilever 2.01 have the lowest, suggesting they are more stable and less volatile. Sun Pharmaceutical Industries 10.78 and Maruti Suzuki 8.39 exhibit moderate risk levels.

**Comparison between Sharpe's ratio, Treynor's ratio and Jensen's ratio**

| COMPANY NAME | Sharpe's Ratio | Treynor's Ratio | Jensen's Ratio |
|---|---|---|---|
| **TCS** | 0.15 | 1.38 | 1.59 |
| **HDFC Bank** | 0.08 | -0.63 | 0.2 |
| **Hindustan Unilever Limited** | 0.13 | 1.8 | 0.07 |
| **Maruti Suzuki** | 0.15 | 1.01 | -0.33 |
| **Sun Pharmaceutical Industries Ltd** | 0.16 | 1.13 | -0.2 |
| **Reliance Industries Limited** | 0.15 | 1.28 | -0.014 |
| **Tata Steel** | -0.17 | 1.11 | 0.42 |
| **ONGC** | 0.16 | 1.07 | -0.51 |
| **UltraTech Cement** | 0.14 | 3.25 | 0.24 |
| **Avenue Supermarts Ltd (DMart)** | 0.15 | 1.62 | -0.15 |



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**INTERPRETATION:** The data represents the returns (first column) and two different performance metrics (second and third columns) for various companies. TCS, Maruti Suzuki, Sun Pharmaceuticals, Reliance, ONGC, UltraTech Cement, and DMart show moderate positive returns around 0.15–0.16, suggesting stable gains. HDFC Bank and Tata Steel are outliers with HDFC showing weaker returns (0.08) and Tata Steel having negative returns (-0.17). In terms of the second column (likely volatility or risk), UltraTech Cement stands out with the highest value (3.25), indicating greater price fluctuations, while others range around 1.1 to 1.8, signaling moderate risk. The third column reflects the performance momentum, with most companies showing mild positive or negative values. Maruti Suzuki, ONGC, and Sun Pharma have negative momentum, which may indicate recent underperformance, while Tata Steel and others show a mild positive trend.

## FINDINGS

- TCS Sharpe ratio of 0.15%, generated a moderate risk-adjusted return.
- TCS Treynor ratio of 1.38% indicates strong performance by the company related to its market risk.
- HDFC Bank's Sharpe ratio of 0.08% suggests that HDFC Bank generated a low risk-adjusted return.
- HDFC Bank's negative Treynor ratio of -0.63% underlines underperformance in respect to the risk from the market.
- HUL's Sharpe ratio stands at 0.13%, which is the risk-adjusted return at a fair stage of moderateness.
- HUL company has a Treynor ratio of 1.80%, reflecting very good management of systematic risk.
- Maruti Suzuki's Sharpe Ratio is 0.15%. It shows it falls in the category of a moderate risk adjusted return.
- Maruti Suzuki Treynor ratio of 1.01% indicates that the performance, against the systematic risk, is good.
- Sun Pharma led the peers in details of Sharpe Ratio with a value of 0.16% because of its strong returns relative to its risks.
- Sun Pharma's Treynor Ratio is 1.13%, indicating good results on the back of market risk.
- Reliance Industries Sharpe ratio of 0.15% is indicative of its moderate risk-adjusted return.
- Reliance industries holds good management of systematic risk was underlined by the Treynor ratio at 1.28%.
- Based on the Sharpe ratio, Tata Steel had very poor risk-adjusted returns with a negative Sharpe ratio of -0.17%.
- Tata Steel earned a Treynor ratio of 1.11%, reflecting average performance concerning market risk.
- ONGC has a Sharpe ratio of 0.16%, which is strong in terms of risk-adjusted return similar to that of Sun Pharma.
- ONGC Treynor ratio of 1.07% shows that the precise risk has been well managed.
- UltraTech Cement has a Sharpe ratio of 0.14%, showing its risk-adjusted return to be moderate.
- UltraTech Cement's Treynor ratio is 3.25% and is the highest among its peers. Thus, this is considered to reflect superior performance relative to market risk.
- DMart has posted a Sharpe Ratio of 0.15%, reflecting a moderate risk-adjusted return.
- DMart's Treynor ratio of 1.62% has performed well against systemic risk.

## CONCLUSION

Analysis of financial performance across firms, such key metrics being the Sharpe Ratio, Treynor Ratio, and Jensen's Alpha, undoubtedly provides an excellent insight into how well firms bear up when it comes to managing risk versus return. Each one of these alternative measures adds another dimension to performance-from the risk-adjusted return to the management of systematic risk and the efficiency of active portfolio management. The results are well within the multidimensional nature of any assessment of investment success.

## SUGGESTIONS

- **Risk management:** A better-focused approach towards risk management may be initiated through either diversification or better forecasting techniques to ward off the risks emanating from these factors.
- **Enhance Active Portfolio Management:** This would, therefore, possibly suggest that firms like Maruti Suzuki and ONGC, with negative Jensen's Alpha, will need to look back at their active management practices.
- **Systematic Risk Optimization:** The firm should focus on understanding the dynamics of the market and the specific factors of the company that set the amount of the systematic risk. This can either be achieved by hedging strategies that may reduce the exposure to the systematic risks or by investing into the investment centers with low market correlation, that may help in improving their Treynor ratios.
- **Continuous Performance Evaluation:** The investment portfolio has to be measured against its performance periodically and valued. Each firm should institutionalize periodic performance evaluation situated on a set of evaluations such as Sharpe ratio, Treynor's ratio, and Jensen's ratio.

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