

# Exploring Risk and Return Dynamics in Equity Stocks of Chosen 10 Companies: A Five-Year Investigation

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## **Abstract:**

This research paper titled “Exploring Risk and Return Dynamics in Equity Stocks of Chosen 10 Companies: A Five-Year Investigation (2019-2023)” delves into the complex interplay between risk and return within equity markets. Over a five-year period, the study meticulously examines the performance of equity stocks from ten selected companies, offering valuable insights into the correlation between risk and return. Leveraging a diverse methodological approach, including historical data analysis and quantitative techniques, the research provides empirical evidence and fresh perspectives to aid investors and financial analysts in making informed investment decisions. The findings underscore the importance of understanding the risk-return tradeoff and the necessity of diversification to construct well-balanced investment portfolios. By offering actionable insights and recommendations, this study contributes to the broader understanding of risk and return analysis in financial markets, empowering stakeholders to navigate dynamic market conditions effectively.

## **1. Introduction:**

The research titled "Exploring Risk and Return Dynamics in Equity Stocks of Chosen 10 Companies: A Five-Year Investigation (2019-2023)" delves into the intricacies of risk and return within equity markets. Over five years, from 2019 to 2023, it examines the performance of equity stocks from ten selected companies. The primary objective is to furnish investors and financial analysts with valuable insights into the correlation between risk and return, aiding in well-informed investment decisions. Leveraging existing literature, the study builds upon foundational knowledge while offering fresh empirical evidence and perspectives. With market volatility prevailing, the study aims to empower stakeholders with evidence-based insights to optimize portfolio performance and manage risks effectively. Methodologically, the research employs a diverse approach, including criteria-based company selection, historical data analysis, and quantitative techniques such as statistical measures and financial ratios. The study's scope is limited to analyzing equity stocks from the chosen ten companies over the specified period, utilizing variance and standard deviation as key statistical measures to quantify return dispersion and volatility. Through meticulous data analysis and interpretation, the research seeks to provide actionable insights for navigating equity investments amidst dynamic market conditions, contributing to the broader understanding of risk and return analysis in financial markets and aiding stakeholders in informed decision-making.

## 2. Problem Statement:

The central focus is on elucidating the crucial relationship between risk and return within investment strategies. It underscores that risk encapsulates the uncertainty surrounding expected profits in a specific investment endeavor. The overarching objective of a thorough risk and return analysis is to identify optimal portfolios that maximize returns relative to the level of risk taken. In today's diverse investment landscape, investors face a myriad of choices, leading to uncertainty about prioritizing higher returns or lower risk. Through the application of risk and return analysis, investors can methodically assess their investment options, achieving a balance between potential returns and associated risks.

## 3. Need for the Study:

The research aims to provide clarity and guidance to investors grappling with the complexities of investment decision-making. By conducting a comprehensive risk and return analysis, it seeks to offer insights into the interaction between risk and return, enabling investors to make informed choices aligned with their financial objectives and risk tolerance levels. Moreover, the study addresses the prevalent ambiguity among investors regarding the trade-off between higher returns and lower risk. Through empirical analysis and data-driven insights, the research aims to elucidate optimal investment strategies that effectively balance risk and return considerations.

## 4. Objectives of the study

- To examine the mean returns of chosen firms' stocks which are listed under NSE.
- To ascertain the level of risk linked with the securities of designated companies.
- To recommend the most suitable security for investors considering investing in 10 selected companies.

## 5. Review of Literature

(Horne & James, 2001) argued that although beta may not be a good indicator of the realized returns, it remains a reasonable measure of risk (Horne & James, 2001). Study of the Meric et al (2010) in the stock market of US shows a positive risk-return relationship between Industries listed in US stock market. There are many controversial results have been revealed in empirical literature; therefore, this study reviews Capital Asset Pricing Model (CAPM) to explore the relationship between expected return and systematic risk. The COMPUSTAT database, a major corporate financial data base widely used in both academia and businesses, provides market beta estimates for individual firms. Investment services firms also provide beta estimates as "risk attributes" or "volatility measures" of their bond and stock funds. No other theoretically well-founded model alternative to the CAPM has been implemented for the estimation of the cost of equity capital (Kaplan & Peterson, 1998). (Awalakki & Archanna, 2021) The study examines the relationship between economic and financial indicators and stock returns for 28 selected firms listed on the National Stock Exchange over an eight-year period (2010-2017). Utilizing panel data regression, the results indicate that Return on Equity (ROE) and Price to Book Value (PB) exert a positive and significant impact on stock returns. The findings suggest that managers can enhance stock valuation by understanding and effectively utilizing key resources, emphasizing the importance of informed decision-making for investment strategies and market predictions. (Awalakki & Archanna, 2021). The research paper investigates the impact of key accounting ratios, including ROE, ROA, P/E, P/B, P/S, and P/C, on stock prices of the National Stock Exchange over a 15-year period (2005-2020). The study aims to analyze how these financial indicators influence stock returns, emphasizing their importance for investors, creditors,

and stakeholders in evaluating the financial condition and profitability of companies listed on the exchange. (Markowitz, , 1952) Portfolio investment theory was the first modern theory proposed by Markowitz (1952). Assumed that the rates of return of individual assets covariance with one another, and there is a rather stable covariance, or correlation coefficient, between the rates of return of every two assets. Thus, he stated that it is theoretically possible to construct a variance-covariance matrix of all risky assets. (Awalakki & Archanna,2023) This non-empirical research paper delves into the interplay between investor attention and financial market volatility, leveraging insights from behavioral finance. It explores the determinants of investor attention, including cognitive biases and social factors, and analyses their impact on market dynamics, offering a thorough review of existing literature and theoretical frameworks to enhance comprehension of this intricate relationship. (Abedi, Dargiri, &Rasiah, 2012). This study emphasizes the importance of the risk-return relationship in aiding investors and organizations in decision-making. By reviewing theories, empirical studies, and performance measures like Treynor, Sharpe, and Jansen Indices derived from the Capital Asset Pricing Model (CAPM), it aims to enhance the understanding of industry sectors' risk-return constructs for improved decision support. (Awalakki & Archanna,2023). This study explores the impact of overconfidence biases on investment portfolios, examining cognitive and emotional mechanisms such as illusion of knowledge and emotional attachment. Rooted in behavioral finance literature, it highlights consequences like excessive trading and loss aversion, proposing mitigation strategies like diversification, passive investing, and behavioral coaching for more informed and rational portfolio decisions. (Subramanyam, Nalla, &Kalyan, 2018). The study aims to educate investors on mutual funds, emphasizing the potential for maximizing returns amidst India's growing capital market. It sheds light on investor awareness, risk tolerance, and preferences, showcasing the role of mutual funds in diversifying investments for optimal returns and risk mitigation. (Awalakki,2022). This article explores the interplay between neurotransmitters (dopamine, serotonin, and norepinephrine), emotions, and investment outcomes, unraveling their role in shaping investor behavior and decision-making. It emphasizes the neural mechanisms driving decision diversification and addresses biases, underscoring the significance of education for cognitive function and bias mitigation in managing investor behavior within the finance domain. (Moolbharathi & Sugandi,2021). This study analyzes the Risk and Return of stocks in the Auto, Banking, Finance, FMCG, and IT sectors from 2017-2021, using statistical tools like Standard Deviation, Beta, and Regression Analysis. It guides investors by assessing sector-wise performance against benchmark indices, aiding in informed investment decisions based on risk and return considerations. (Awalakki S. M., 2015). The study in Kalaburagi, Karnataka, reveals that salaried employees predominantly consider investments for retirement, and recent survey results indicate a lack of significant increase in their investment levels compared to businesspersons. Despite a historical focus on retirement, the growing awareness of investment options suggests an evolving landscape with increased choices for salaried individuals. (AWALAKKI, 2015)This study examines the capital structures of five prominent cement companies (ACC, Ultratech, Ambuja, J.K., Chettinad) from 2008-09 to 2013-14, assessing the impact of these structures on investment patterns and emphasizing the importance of debt-equity mix in effective financing decisions. The intra-company analysis aims to provide insights into the financial dynamics of these firms. Mr. Pandya and Mr. Bhargav (2017), "Total Shareholder Return and Excess Return: An Analysis of Nifty Pharma Index Companies." The paper examines the total shareholder return (TSR) and excess return of pharmaceutical companies in the NIFTY pharma index from 2010 to 2016. Using financial data from the CMIE PROWESS database and risk-free rates from the Reserve Bank of India website, the study finds statistically significant positive TSR and excess return, indicating wealth

creation for shareholders. Additionally, there is a positive association between return on net worth (RONW) and both TSR and excess return, suggesting that increasing RONW can enhance TSR and excess return, offering implications for managerial decision-making. Abhishek. V (2018) “A Study on Risk and Return Analysis of Selected Stocks In Bse Sensex”. The aim of this study is to assess the risk and return associated with specific stocks and determine the optimal investment options. Standard deviation and beta values are utilized to gauge the risk of the chosen stocks within the Sensex index. Additionally, the research proposes that opting for short-term securities over long-term investments can help mitigate risk. The Sharpe’s index model, developed by William Sharpe, is highlighted as an effective investment strategy. Consequently, investors can diversify their risk by investing in a portfolio of securities. (Rohit&Bhavna, 2018), “The Effect of Risk Return Analysis Of Pharmaceutical Companies On Indian Stock Market”. The study examines the risk-return relationship of selected pharmaceutical companies in the Indian stock market from 2013 to 2018. With India’s pharmaceutical industry ranking third globally in volume and fourteenth in value, it is an attractive sector for investors. Using MS Excel for data analysis, the research highlights that while Sun Pharmaceutical Industries Ltd offers exceptional returns, its shares carry high market risk. Conversely, Divi’s Laboratories Ltd presents a more favorable option due to its combination of high returns and lower associated risk. This analysis aids potential investors in making informed investment decisions within the pharmaceutical sector. Rahul Moolbharathi and TukaramSugandi (2021) “A Comparison Study On Risk And Return Analysis Of Selected Companies With Benchmark Index In Nse”. The research provides investors with insights into various statistical methods for assessing stock risk and return, with a focus on comparing index performance to benchmark indices. Additionally, it aims to determine the most favorable sector for risk and return investments. The primary goal is to analyze the statistical variation of stocks and indices using regression analysis. Findings reveal that HDFC Bank exhibits higher risk and returns compared to other stocks. Notably, all equities in the portfolio have a beta of one, indicating efficiency in terms of risk and return among the selected market stocks. Mr. S. Sathish, Ms. A. Nagarathinam (2021) “A Study On Risk And Return Analysis Of FMCG Companies In Indian Stock Market”. This article was undertaken to analyse the risk and return of the selected NIFTY FMCG sectors. This research examines the optimal security for an investor seeking a high return with minimal risk. Descriptive research is been adopted and based on this it is highlighted that ITC Ltd. Has the lowest return among FMCG companies. They suggest that if an investor expects high returns then he has to face high risk. A stock with a higher beta value is not suggested since it has a significant market risk that cannot be diversified.

## **6. Research Methodology**

### **6.1. Sources of data collection**

The research utilized secondary data obtained from various sources such as the NSE website, publications, and journals. The study employs a descriptive research design.

### **6.2. Sample size**

The study consists of NIFTY health sector companies which are listed on NSE.

### **6.3. Statistical tools and techniques**

Returns: A company’s stock price can fluctuate due to various factors, resulting in positive or negative outcomes. Market return refers to the profit earned over a period of time, where profit is considered positive and loss negative. Returns are calculated as the percentage change between the closing and opening prices.

PE-PB/PB\*100

Standard Deviation: Standard deviation measures the extent of dispersion of a dataset relative to its mean. It is determined by taking the square root of the variance. A stock with high volatility will have a higher standard deviation, while a stable blue-chip stock will have a lower standard deviation.

$$\sigma = \sqrt{\frac{\sum (X - \bar{X})^2}{n - 1}}$$

Average: Average, in financial terms, refers to a statistical measure that represents a central tendency or typical value of a set of data points. It is calculated by summing up all the values and dividing them by the total number of observations.

Data Analysis and Interpretation

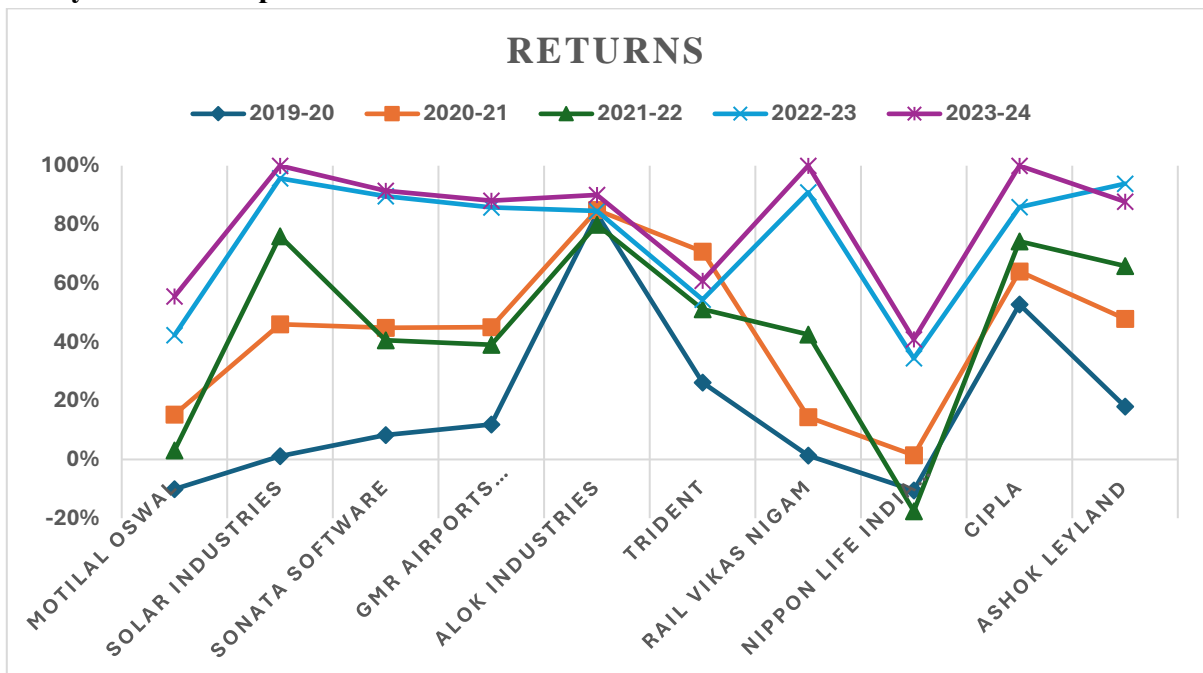


Table showing the five years data returns of the companies

COMPANIES	2019-20	2020-21	2021-22	2022-23	2023-24
MOTILAL OSWAL	-20.844	52.31639	-25.0423	80.78968	27.33207
SOLAR INDUSTRIES	3.168765	121.3584	81.06378	53.4365	11.67744
SONATA SOFTWARE	27.60673	121.9722	-14.1826	163.5267	6.233591
GMR AIRPORTS INFRASTRUCTURE	26.19048	72.64151	-13.1148	102.6415	4.903786
ALOK INDUSTRIES	663.9344	10.51502	-39.6117	37.29904	42.85714
TRIDENT	47.76119	81.4433	-35.8013	5.985401	11.70799
RAIL VIKAS NIGAM	4.575163	44.79167	96.40288	166.0073	31.06582
NIPPON LIFE INDIA ASSET MANAGEMENT	-16.10719	18.30868	-29.1886	79.75115	9.902869
CIPLA	71.46591	15.14117	13.96568	15.83252	19.00425
ASHOK LEYLAND	17.11656	28.28706	17.10902	26.60391	-5.78353

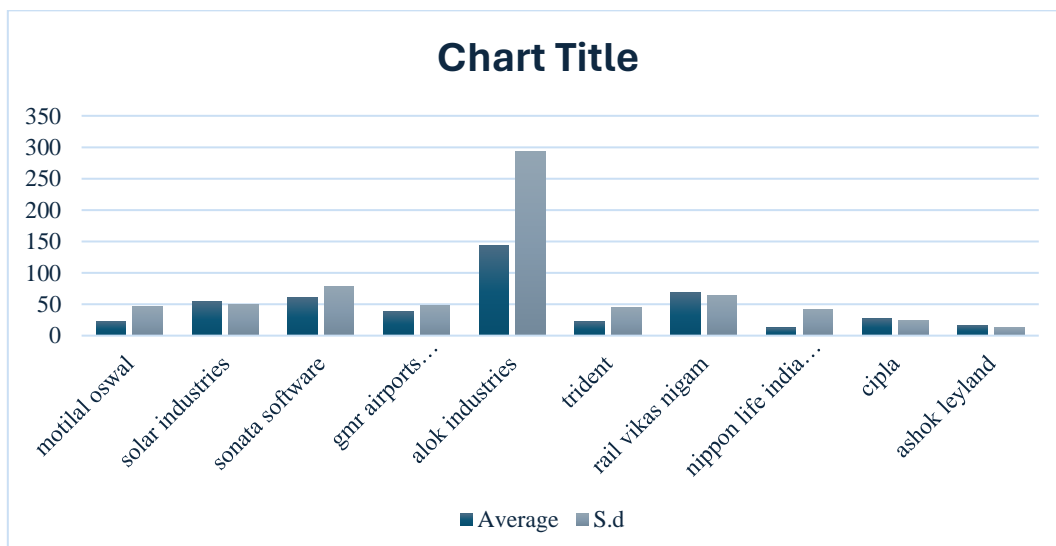


### Interpretation:

The financial performance of various companies from the fiscal years 2019-20 to 2023-24 reflects a diverse range of outcomes. Motilal Oswal experienced fluctuations, with negative growth in 2019-20 and 2021-22 but significant positive growth in 2020-21 and 2022-23, followed by a moderate increase in 2023-24. Solar Industries showed steady growth throughout the period, with notable increases in 2020-21 and 2021-22. Sonata Software displayed mixed results, with substantial growth in 2020-21 and 2022-23 but a decline in 2021-22. GMR Airports Infrastructure demonstrated growth in most years, particularly in 2022-23, albeit with a slight decline in 2021-22. Alok Industries saw a remarkable surge in 2019-20 followed by a downturn in the subsequent years, although there was a modest recovery in 2023-24. Trident experienced growth in 2019-20 and 2020-21, followed by declines in the subsequent years, albeit with a slight increase in 2023-24. Rail Vikas Nigam showcased consistent growth throughout the period, with particularly significant increases in 2021-22 and 2022-23. Nippon Life India Asset Management faced challenges in 2019-20 and 2021-22 but exhibited substantial growth in 2022-23. Cipla demonstrated varying degrees of growth each year, with the highest increase in 2019-20. Ashok Leyland experienced growth in most years except for a slight decline in 2023-24. These trends illustrate the dynamic nature of the companies' performances over the five-year period.

**Table showing standard deviation and average of companies.**

COMPANIES	Average	S.d
MOTILAL OSWAL	22.91036	45.95701
SOLAR INDUSTRIES	54.14097	49.10405
SONATA SOFTWARE	61.03131	77.45357
GMR AIRPORTS INFRASTRUCTURE	38.65251	48.02076
ALOK INDUSTRIES	142.9988	293.033
TRIDENT	22.21931	44.44178
RAIL VIKAS NIGAM	68.56857	63.90621
NIPPON LIFE INDIA ASSET MANAGEMENT	12.53339	42.18858
CIPLA	27.08191	24.88149
ASHOK LEYLAND	16.6666	13.58484



**Interpretation:**

The provided data showcases the average annual growth rates and standard deviations of various companies over a period. Motilal Oswal displayed an average growth rate of 22.91% with a standard deviation of 45.96%, indicating significant fluctuations in its yearly performance. Solar Industries exhibited a higher average growth rate of 54.14%, although its standard deviation of 49.10% suggests notable volatility in its earnings. Sonata Software showed an average growth rate of 61.03% with a substantial standard deviation of 77.45%, indicating a wide range of fluctuations in its yearly returns. GMR Airports Infrastructure demonstrated a moderate average growth rate of 38.65% with a standard deviation of 48.02%, indicating relatively stable performance compared to some other companies. Alok Industries had the highest average growth rate of 142.99%, but its staggering standard deviation of 293.03% reflects extreme variability in its annual performance. Trident showcased an average growth rate of 22.22% with a standard deviation of 44.44%, indicating moderate fluctuations in its earnings. Rail Vikas Nigam displayed a robust average growth rate of 68.57% with a standard deviation of 63.91%, suggesting significant variability in its yearly returns. Nippon Life India Asset Management exhibited a modest average growth rate of 12.53% with a standard deviation of 42.19%, indicating relatively stable performance compared to some other companies. Cipla showed an average growth rate of 27.08% with a standard deviation of 24.88%, indicating moderate fluctuations in its earnings. Ashok Leyland had the lowest average growth rate of 16.67% with a standard deviation of 13.58%, suggesting relatively stable performance compared to the other companies analyzed. Overall, these statistics provide insights into the varying levels of stability and volatility in the financial performance of the companies examined.

**Findings:**

Analyzing the financial data of the ten companies from fiscal years 2019-20 to 2023-24 reveals diverse trends in their performances. Motilal Oswal experienced fluctuating growth rates, with negative growth in 2019-20 and 2021-22 followed by substantial positive growth in 2020-21 and 2022-23. Solar Industries demonstrated consistent growth over the period, with a notable spike in 2020-21. Sonata Software exhibited mixed results, with significant growth in 2020-21 and 2022-23 but a decline in 2021-22. GMR Airports Infrastructure displayed overall growth, particularly in 2022-23, despite a slight decline in 2021-22. Alok Industries showed exceptional growth in 2019-20, followed by a downturn in subsequent years with a slight recovery in 2023-24. Trident experienced growth in 2019-20 and 2020-21 but declined in the following years with a minor increase in 2023-24. Rail Vikas Nigam showcased consistent growth throughout the period, with significant increases in 2021-22 and 2022-23. Nippon Life India Asset Management faced challenges in 2019-20 and 2021-22 but exhibited substantial growth in 2022-23. Cipla demonstrated varying degrees of growth each year, with the highest increase in 2019-20. Ashok Leyland experienced growth in most years except for a slight decline in 2023-24. Additionally, examining the average growth rates and standard deviations of these companies provides insights into their stability and volatility in performance over the five-year period.

**Suggestions:**

Analyzing the financial data of the ten companies reveals several potential suggestions for further research and analysis. The data indicates varying levels of performance and volatility across different sectors. Motilal Oswal, for instance, demonstrates a pattern of fluctuating growth rates, indicating potential research into the underlying factors influencing such volatility in the financial services sector. Solar

Industries showcases consistent growth over the period, suggesting research into the factors contributing to its stability in the renewable energy sector. Sonata Software displays mixed results, indicating potential research into the impacts of market dynamics on technology companies' performance. GMR Airports Infrastructure exhibits overall growth despite fluctuations, suggesting research into the resilience of infrastructure companies amidst market uncertainties. Alok Industries' exceptional growth in 2019-20 followed by a downturn highlights the importance of exploring factors contributing to such extreme fluctuations in the textile sector. Trident and Rail Vikas Nigam demonstrate varying levels of growth, suggesting research into the factors driving growth and stability in the manufacturing and railway infrastructure sectors, respectively. Nippon Life India Asset Management's performance indicates potential research into the impacts of market volatility on asset management companies. Additionally, Cipla and Ashok Leyland display moderate growth with relatively stable performance, suggesting research into the strategies adopted by pharmaceutical and automotive companies to maintain stability in dynamic market conditions. Overall, further research into these companies could provide valuable insights into sector-specific challenges, growth strategies, and market dynamics.

### Conclusion:

In conclusion, this research paper has shed light on the intricate relationship between risk and return within equity markets through a comprehensive analysis of ten selected companies over a five-year period. The findings reveal that while higher average returns are appealing, they often come with increased volatility and risk. It is crucial for investors to carefully weigh potential returns against their risk tolerance levels when constructing investment portfolios. Diversification emerges as a key strategy to spread risk across various companies, combining stable performers with higher-risk, higher-return options. Additionally, maintaining a long-term perspective and regularly monitoring portfolio performance are essential practices for sustainable growth and success in the dynamic landscape of financial markets. By providing evidence-based insights and actionable recommendations, this study aims to empower investors and financial analysts to make well-informed decisions, ultimately optimizing portfolio performance and managing risks effectively in pursuit of their financial objectives.

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