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

Sushma Patil[1], Ramlingayya[2]

[1,2]Final Year student, Department of Management Studies, Visvesvaraya Technological University, Kalburgi, Karnataka. INDIA

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 Tukaram Sugandi (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.

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

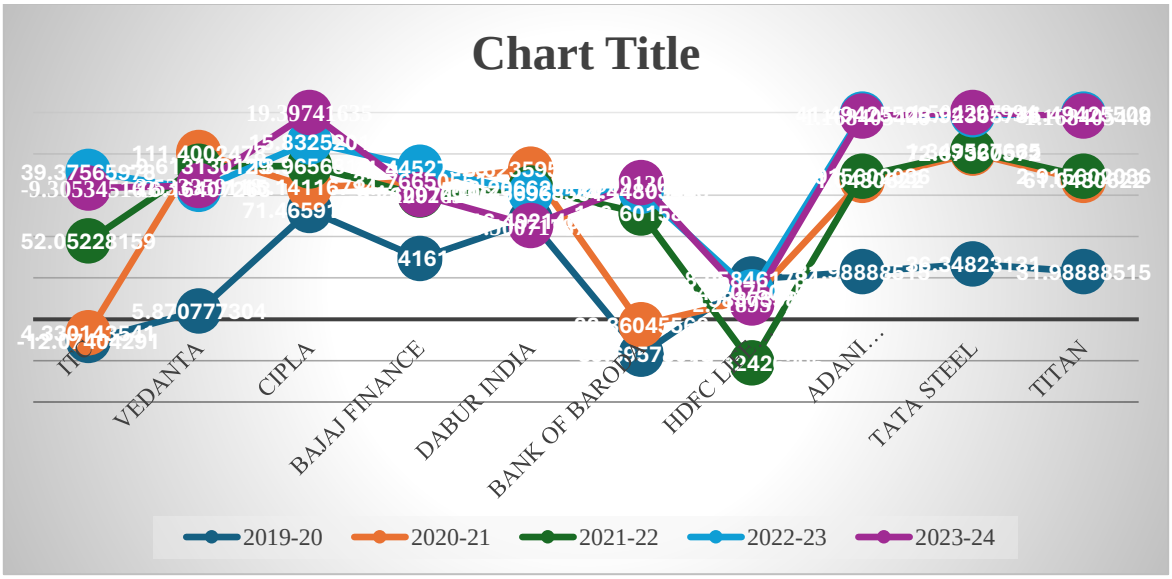
Variance: variance refers to a statistical measure that quantifies the dispersion of returns or outcomes from their mean value. It assesses the degree of deviation or volatility of a set of financial data points from the average or expected value. Variance is calculated by taking the average of the squared differences between each data point and the mean.

$$\sigma^2 = \frac{\Sigma(xi - \bar{x})^2}{N}$$

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
ITC	-12.074	4.330143541	52.0523	39.3757	-9.3053
VEDANTA	5.87078	111.4002478	-9.6131	-16.164	2.53336
CIPLA	71.4659	15.14116714	13.9657	15.8325	19.3974
BAJAJ FINANCE	25.0416	31.76650551	-5.763	11.4453	-11.1
DABUR INDIA	16.4921	8.623595506	-3.2066	-0.757	-5.5007
BANK OF BARODA	-39.696	33.36045566	126.602	24.448	9.90913
HDFC LIFE INSURANCE	8.05846	-3.983739837	-12.824	14.2075	-2.219
ADANI ENTERPRISES	31.9889	61.0430622	2.9156	41.4943	-1.1684
TATA STEEL	36.3482	72.67360572	1.34953	23.9237	1.5043
TITAN	31.9889	61.0430622	2.9156	41.4943	-1.1684

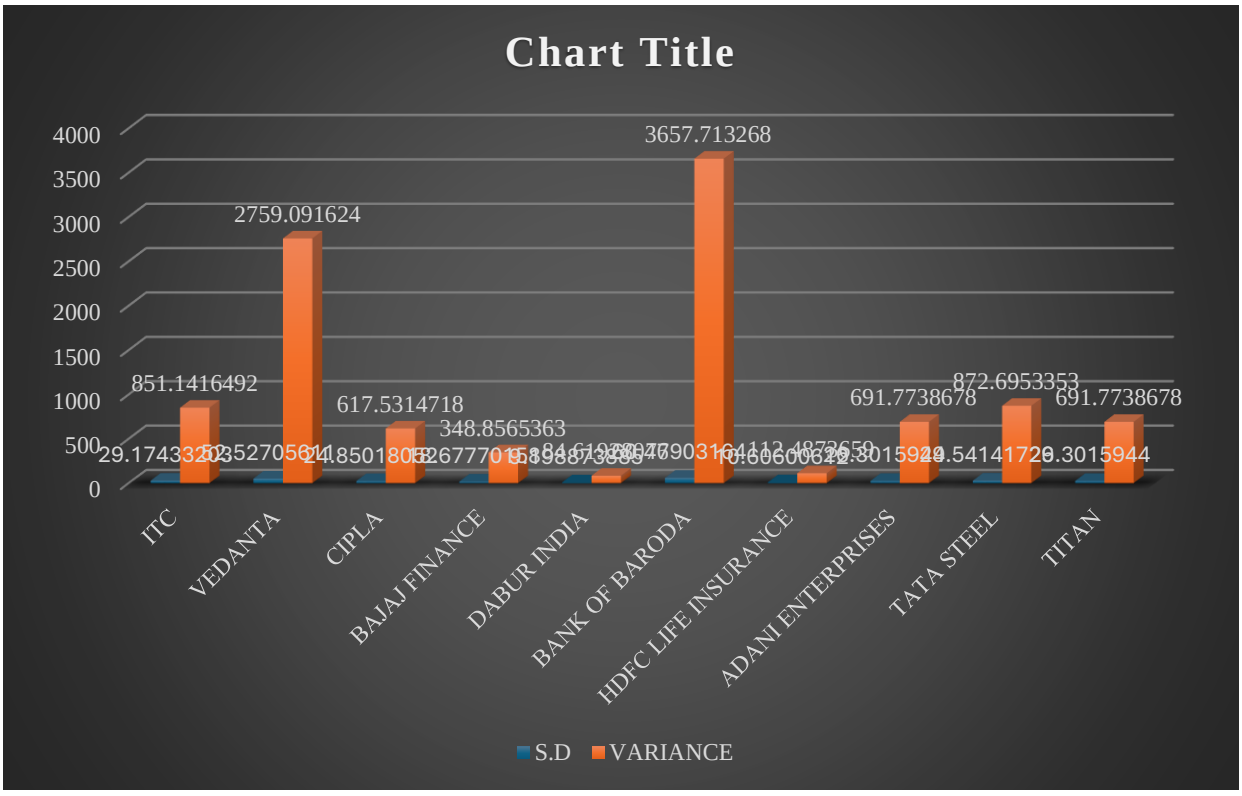


Interpretation:

The financial performance of various companies over the past five years exhibits a mix of growth and decline. ITC started with a downturn in 2019-20 but rebounded significantly in 2021-22, followed by a slight dip in 2023-24. Vedanta saw substantial growth in 2020-21, but encountered negative returns in subsequent years. Cipla demonstrated consistent growth over the period. Bajaj Finance had fluctuating returns, experiencing growth in some years but declines in others. Dabur India experienced moderate growth initially but faced challenges in later years. Bank of Baroda exhibited a volatile trend with significant growth in 2021-22. HDFC Life Insurance showed mixed results with both gains and losses. Adani Enterprises saw substantial growth in 2020-21 and 2022-23. Tata Steel exhibited overall growth, while Titan experienced growth initially but ended with a decline in 2023-24.

Table showing standard deviation and average of companies.

COMPANIES	S.D	VARIANCE
ITC	29.1743	851.1416492
VEDANTA	52.5271	2759.091624
CIPLA	24.8502	617.5314718
BAJAJ FINANCE	18.6777	348.8565363
DABUR INDIA	9.19887	84.61928076
BANK OF BARODA	60.479	3657.713268
HDFC LIFE INSURANCE	10.606	112.4873659
ADANI ENTERPRISES	26.3016	691.7738678
TATA STEEL	29.5414	872.6953353
TITAN	26.3016	691.7738678



Interpretation:

The data on standard deviation (S.D) and variance for various companies reveals varying degrees of volatility in their returns over the given period. Bank of Baroda exhibits the highest standard deviation and variance, indicating significant fluctuations in its returns compared to other companies. Vedanta also shows high volatility in its returns, with substantial standard deviation and variance figures. Meanwhile, companies like Dabur India, HDFC Life Insurance, and Bajaj Finance demonstrate relatively lower levels of volatility, as evidenced by their lower standard deviation and variance values. Cipla, Adani Enterprises, Tata Steel, and Titan show moderate levels of volatility, with standard deviation and variance figures falling between the extremes observed in Bank of Baroda and Dabur India. This analysis highlights the diverse risk profiles among these companies, suggesting varying levels of stability and uncertainty in their financial performances.

Findings:

The analysis of the provided data reveals distinct patterns in the financial performance of the ten companies over the period. Bank of Baroda exhibited the highest level of volatility, with substantial fluctuations in its returns across the years, as evidenced by its large standard deviation and variance figures. Vedanta also demonstrated considerable volatility, experiencing both significant gains and losses over the years. On the other hand, companies like Dabur India and HDFC Life Insurance displayed relatively lower levels of volatility, indicating more stable returns. Cipla, Adani Enterprises, Tata Steel, and Titan showed moderate levels of volatility, with fluctuations falling between the extremes observed in Bank of Baroda and Dabur India. Interestingly, despite fluctuations, some companies like ITC and Bajaj Finance showcased periods of growth interspersed with occasional declines. This analysis underscores the diverse risk profiles and performance trajectories among these companies, reflecting varying market conditions and strategic decisions influencing their financial outcomes.

Suggestions:

Based on the provided data, here are some suggestions for the ten companies. For ITC, efforts should focus on stabilizing performance and addressing the fluctuations witnessed, possibly through diversification or efficiency improvements. Vedanta needs to mitigate its high volatility by enhancing risk management strategies and exploring avenues for steadier revenue streams. Cipla could capitalize on its consistent growth by further investing in research and development to strengthen its product portfolio. Bajaj Finance may benefit from reviewing its risk assessment practices to navigate through periods of negative returns more effectively. Dabur India should continue to focus on its stable growth trajectory and explore opportunities for expansion in emerging markets. Bank of Baroda needs to address its high volatility by implementing more robust risk management protocols and diversifying its revenue sources. HDFC Life Insurance should seek to improve its performance by enhancing customer engagement and product innovation. Adani Enterprises could focus on maintaining its growth momentum by strategically expanding into new markets or sectors. Tata Steel might consider enhancing operational efficiency to maximize profitability amidst fluctuations in the steel industry. Titan should evaluate its strategies to counterbalance periods of decline with sustainable growth initiatives, potentially by diversifying its product offerings or expanding its market reach. Overall, each company should tailor its strategies based on its specific strengths, weaknesses, and market conditions to achieve sustained growth and mitigate risks.

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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