Risk and Return Analysis on Equity Stocks of Selected 10 Companies: A Five-Year Study (2018-2022)

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ABSTRACT
The study titled "Risk and Return Analysis on Equity Stocks of Selected 10 Companies: A Five-Year Study (2018-2022)" examines the interplay between risk and return in equity markets. Over five years, it evaluates the performance of stocks from ten companies to offer insights for investment decisions. Through quantitative analysis and established criteria, the study aims to empower stakeholders with actionable intelligence for portfolio enhancement and risk mitigation. It addresses the correlation between risk and return, clarifying the complexities of investment decision-making. By providing clarity and direction, the study seeks to equip investors with the tools to navigate market uncertainties and optimize returns while managing risks effectively.

Keywords: Risk and Return, Standard deviation

I.   INTRODUCTION

The study titled "Risk and Return Analysis on Equity Stocks of Selected 10 Companies: A Five-Year Study (2018-2022)" is a comprehensive investigation into the dynamics of risk and return in equity markets. Over the course of five years, from 2018 to 2022, the research scrutinizes the performance of equity stocks from ten carefully chosen companies. The primary aim is to provide investors and financial analysts with valuable insights into the relationship between risk and return, thereby facilitating informed investment decisions.Drawing upon prior research in the field, the study acknowledges the foundational understanding established by scholars and practitioners. It builds upon existing literature while seeking to contribute new empirical evidence and insights. The rationale for the study lies in the increasing need for evidence-based decision-making in financial markets, particularly amidst volatility and uncertainty. By conducting a detailed risk and return analysis, the research endeavours to empower investors with actionable intelligence to enhance portfolio performance and mitigate potential risks.The methodology employed in the study encompasses a multifaceted approach. Initially, ten companies were selected based on predefined criteria such as market capitalization, sectoral representation, and historical performance. Subsequently, historical stock prices and financial data spanning the period from 2018 to 2022 were collected and analyzed. Various quantitative techniques, including statistical measures and financial ratios, were utilized to assess risk and return metrics, facilitating a comprehensive evaluation of the selected equity stocks.The scope of the study is delimited to the analysis of equity stocks from the selected ten companies over the specified five-year period. Variance and standard deviation serve as fundamental statistical measures employed to quantify the dispersion and volatility of stock returns. Through rigorous analysis and interpretation of the data, the study aims to furnish stakeholders with actionable insights to navigate the intricacies of equity investments amidst dynamic market conditions. Overall, the research endeavours to contribute to the body of knowledge surrounding risk and return analysis in equity markets, ultimately aiding stakeholders in making informed investment decisions.

II.   PROBLEM STATEMENT

The focal point of the text lies in highlighting the essential correlation between risk and return within investment strategies. It emphasizes that risk embodies the uncertainty surrounding the attainment of anticipated profits in a specific investment venture. The primary goal of a comprehensive risk and return analysis is to pinpoint efficient portfolios that maximize returns relative to the level of risk assumed. In today's investment landscape, investors encounter a plethora of options, leading to uncertainty about whether to prioritize higher returns or lower risk. Through the utilization of risk and return analysis,

investors can systematically evaluate their investment choices, facilitating the attainment of a balance between potential returns and associated risks.

III. JUSTIFICATION FOR THE STUDY

The study endeavours to offer clarity and direction to investors grappling with the intricate decision-making process involved in selecting investments. Through a thorough risk and return analysis, it aims to provide insights into the interplay between risk and return, enabling investors to make informed decisions in accordance with their financial goals and risk tolerance levels. Additionally, the study aims to tackle the prevalent ambiguity among investors regarding the trade-off between higher returns and lower risk. By employing empirical analysis and data-driven insights, the study seeks to elucidate optimal investment strategies that effectively balance risk and return considerations.

IV. STUDY OBJECTIVES

To study the relationship between risk and returns of the sample stocks using the Standard Deviations and average returns of the stocks.

V. REVIEW OF LITERATURE

(Horne & James , 2001)argued that although beta may not be a good indicator of the realized returns, itremains a reasonable measure of risk (Horne & James, 2001).Study of the Meric et al (2010) in thestock market of USshowsa positive risk-return relationship between Industries listed in US stock market.There are manycontroversial results have been revealed in empirical literature; therefore, this studyreviews Capital AssetPricing Model (CAPM) to explore the relationship between expected return and systematic risk. The COMPUSTATdatabase, a major corporate financial data base widely used in bothacademia and businesses, provides market beta estimates for individual firms. Investment services firms alsoprovide beta estimates as "risk attributes" or "volatility measures" of their bond and stock funds. No othertheoretically well-founded model alternative to the CAPM has been implemented for the estimation of the costof 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)Portfolioinvestment theory wasthe 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 avariance-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.

VI. RESEARCH METHODOLOGY
6.1.Data Collection Sources

The study relied on secondary data sources, drawn from various outlets such as the NSE website, publications, journals, and other relevant repositories. The research design adopted for this study is descriptive in nature.

6.2. Sample Size
The study encompasses companies listed on the NSE.

6.3. Statistical Tools and ways:
6.3. 1. Returns
A company's stock price may change due to various factors, performing in either positive or negative issues. Market returns de note the profit accrued over a specific period. Positive issues reflect profit, while negative issues indicate losses.

6.3. 2. Standard Deviation
The standard divagation of a dataset measures its dispersion relative to its mean. It's reckoned as the square root of the disunion. A stock exhibiting high volatility tends to have a advanced standard divagation, whereas a stable blue- chip stock generally has a lower standard divagation.

VII. DATA ANALYSIS AND INTERPRETATION:-
- First returns of five stocks will be calculated.
- Then find the standard deviation for every stocks.
- Average returns of both industries.

Formula for calculating the returns

$$\text{Return}_i = \frac{\text{Ending price}_i - \text{Begining price}_i}{\text{Begining price }_i}$$

Formula for calculating the standard deviation

$$\text{SD}_i = \sqrt{\text{Variance}_i}$$

$$\text{Variance } (\sigma) = \frac{\sum (R_i - R_j)^2}{n - 1}$$

Formula for getting average returns of the stocks.

Average return for i; Stock

$$= \frac{\sum \text{Stock Returns}_i}{n}$$

Note: n = Number stocks

7. Data Analysis and Interpretation

Table: 1; Showing the MEAN return of the companies:

Rank	Company	Mean return
1	Suzlon energy ltd	102.676
2	Trident	101.526
3	Urja Global	92.172
4	JSW Energy	76.81

5	Indian energy exchange	51.98
6	Tata steel ltd	47.1
7	Surana Telecom	33.302
8	Steel Authority of India	26.894
9	Power Grid Corp Ltd	25.126
10	KCP Sugar	17.628

**Chart: 1; Showing theMean Returns of the Companies**

Interpretation

The average returns of various companies over the specified period indicate distinct levels of performance and investor interest. Suzlon Energy Ltd and Trident lead with strong returns, followed by Urja Global and JSW Energy, reflecting healthy and moderate performance respectively. Endian Energy, Tata Steel Ltd, and Surana Telecom exhibit relatively lower returns, suggesting more modest performance. Steel Authority of India and KCP Sugar Ltd show lower returns compared to their counterparts. The absence of Power Grid Corp Ltd's average return data hinders a complete assessment. Overall, the variations in returns across companies signify differing levels of financial health and investor confidence within the market.

Table: 2; Table showing standard deviation of companies:

Rank	Company	Standard Deviation
1	Steel Authority of India	196.71%
2	Urja Global	157.03%
3	Indian energy exchange	151.04%
4	suzlon energy ltd	145.55%
5	KCP Sugar	109.92%
6	Trident	57.03%
7	Tata steel ltd	42.49%
8	Power Grid Corp Ltd	39.39%
9	Surana Telecom	31.42%
10	JSW Energy	27.91%

Chart: 2; Showing the Standard Deviation of the Companies
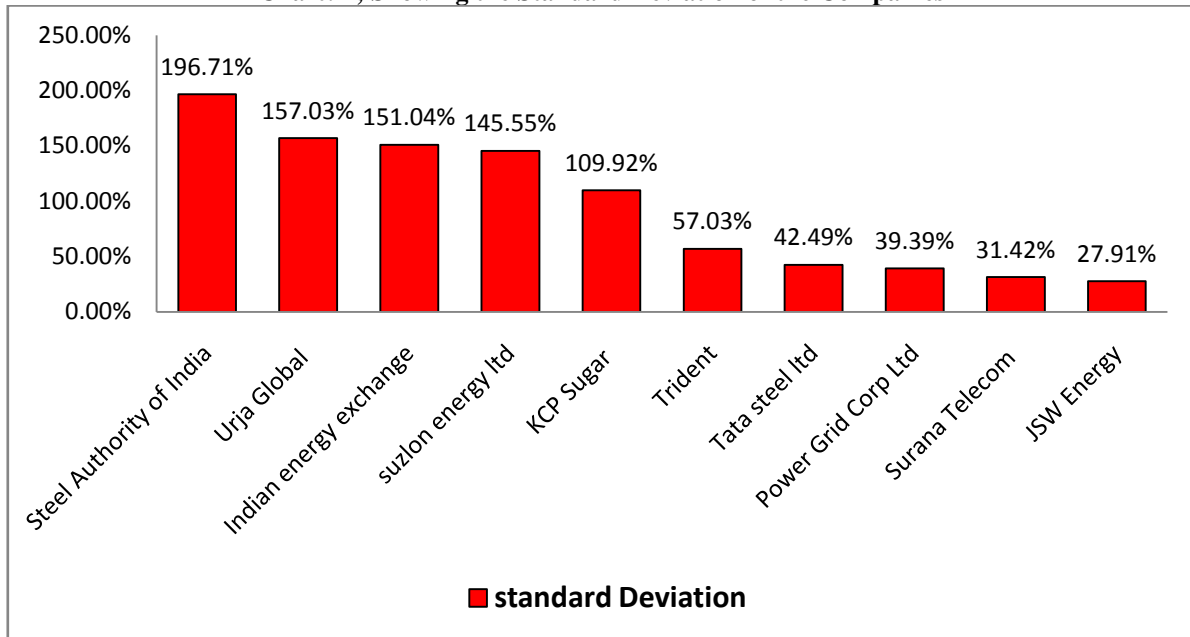
Interpretation

The standard deviation analysis reveals the volatility and associated risk levels across various companies' stock returns. Companies like Suzlon Energy Ltd, Urja Global, JSW Energy, and Trident exhibit high standard deviations, indicating significant volatility and higher associated risk. Conversely, companies such as Power Grid Corp Ltd, Surana Telecom, KCP Sugar Ltd, and Tata Steel Ltd demonstrate lower standard deviations, suggesting comparatively stable returns and lower risk levels. Steel Authority of India showcases a moderate standard deviation, reflecting a balanced level of volatility. Indian Energy Exchange falls within the high volatility range. Overall, understanding the standard deviation helps investors gauge the level of risk associated with each company's stock, aiding in making informed investment decisions tailored to their risk tolerance and investment objectives.

Table: 3; Table showing variance of companies in descending order:

rank	company	Variance
1	Suzlon energy ltd	5122.79
2	Trident	5096.02
3	Urja Global	4104.33
4	JSW Energy	2928.48
5	Indian energy exchange	1273.59
6	Tata steel ltd	1089.28
7	Surana Telecom	544.09
8	Steel Authority of India	310.67
9	Power Grid Corp Ltd	305.83
10	KCP Sugar	136.6

Interpretation

The variances of the listed companies sheds light on the volatility and risk associated with their returns. Suzlon Energy Ltd leads with the highest variance, indicating substantial fluctuations and increased risk in its returns. Following closely, Trident also demonstrates significant variability, necessitating careful consideration due to potential

price swings. Urja Global, while showing a high variance, exhibits relatively lower volatility compared to Suzlon Energy and Trident, suggesting comparatively less risk. JSW Energy displays a lower variance, offering investors a more stable investment option amidst the listed companies. Indian Energy Exchange showcases even lower variability in returns, presenting a promising opportunity with reduced investment risk. Tata Steel Ltd shows moderate variance, balancing risk and stability for potential investors. Overall, these variances serve as crucial indicators for investors, guiding their decisions and risk management strategies in the complex investment landscape.

VIII. FINDINGS

Based on the analysis of average returns and standard deviations across various companies over the specified period, it is evident that there are distinct differences in performance and associated risk levels within the market. Suzlon Energy Ltd and Trident emerge as top performers with strong average returns, indicating robust financial performance and high investor interest. Urja Global and JSW Energy follow closely behind, demonstrating healthy and moderate performance respectively. Conversely, Endian Energy, Tata Steel Ltd, and Surana Telecom exhibit relatively lower average returns, suggesting more modest performance levels. Steel Authority of India and KCP Sugar Ltd also show lower returns compared to their counterparts, reflecting varying degrees of financial health and investor confidence.

Furthermore, the analysis of standard deviations highlights the volatility and associated risk levels across the companies' stock returns. Companies like Suzlon Energy Ltd, Urja Global, JSW Energy, and Trident exhibit high standard deviations, indicating significant volatility and higher associated risk. In contrast, Power Grid Corp Ltd, Surana Telecom, KCP Sugar Ltd, and Tata Steel Ltd demonstrate lower standard deviations, suggesting comparatively stable returns and lower risk levels. Steel Authority of India falls within the moderate volatility range, reflecting a balanced level of volatility. Indian Energy Exchange showcases high volatility, posing higher risks for investors.

These findings underscore the importance of considering both average returns and standard deviations when evaluating investment opportunities. While high average returns may signal attractive investment prospects, accompanying high volatility levels could indicate increased risk. Conversely, companies with lower average returns but stable standard deviations may offer more predictable investment outcomes with lower associated risk. Understanding these variations in performance and risk levels across companies is essential for investors to make informed decisions aligned with their risk tolerance and investment objectives. Additionally, the absence of data for Power Grid Corp Ltd's average return hinders a complete assessment, emphasizing the importance of comprehensive data availability for thorough analysis and decision-making.

IX. SUGGESTIONS

Based on the analysis of average returns and standard deviations across companies like Suzlon Energy Ltd, Trident, Urja Global, JSW Energy, and Tata Steel Ltd, diversification emerges as key to mitigating portfolio risk. Investors should assess their risk tolerance and investment goals, conducting thorough due diligence on financials, industry dynamics, and competitive positioning. Staying informed about market trends aids in anticipating shifts in sentiment. Long-term perspective favours companies with strong fundamentals and growth potential, such as Suzlon Energy Ltd and Tata Steel Ltd. For those lacking expertise or time, seeking advice from financial advisors can provide tailored guidance. Following these suggestions can empower investors to make well-informed decisions aligned with their objectives.

X. CONCLUSIONS

In conclusion, the research seeks to enhance the understanding of risk and return dynamics in equity markets by conducting a thorough analysis of selected companies over a five-year period (2018-2022). It aims to empower investors and financial analysts with actionable insights derived from empirical evidence and quantitative techniques. By addressing the inherent uncertainty in investment decisions, the study endeavours to provide clarity and direction to stakeholders navigating the complexities of equity investments. Through a comprehensive evaluation of risk and return metrics, the research seeks to elucidate optimal investment strategies that balance risk and reward considerations. Ultimately, the study contributes to the body of knowledge in equity market analysis, enabling stakeholders to make well-informed investment decisions aligned with their financial objectives and risk tolerance levels.

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