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

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ABSTRACT

The "Risk and Return Analysis on Selected 10 Companies: A Five-Year Study (2018-2022)" delves into the intricate dynamics of risk and return within the equity market landscape over a significant period. Through meticulous examination spanning five years, this study aims to unravel the performance metrics of ten carefully chosen companies, providing investors and financial analysts with invaluable insights into optimizing portfolio strategies and maximizing returns. Employing contemporary methodologies and empirical data, the study contributes to the ongoing discourse surrounding risk-return dynamics, addressing the escalating need for evidence-based decision-making in financial markets amidst increasing complexity and volatility. Methodologically, the study employs a multifaceted approach, including the meticulous selection of ten companies based on predefined criteria, comprehensive data collection, and the application of various quantitative techniques to evaluate risk and return metrics. The analysis focuses on equity stocks over the specified five-year period, utilizing variance and standard deviation as fundamental statistical measures to quantify dispersion and volatility of stock returns. The study aims to furnish stakeholders with actionable insights to optimize investment decisions and mitigate potential risks effectively, ultimately aiding stakeholders in making well-informed investment decisions aligned with their financial objectives and risk tolerance levels.

Keywords: Risk and Return, Standard deviation

1. Introduction

The "Risk and Return Analysis on Selected 10 Companies: A Five-Year Study (2018-2022)" delves into the intricate dynamics of risk and return within the equity market landscape over a significant period. With a meticulous examination spanning five years, from 2018 to 2022, this study aims to unravel the performance metrics of ten carefully chosen companies. By scrutinizing their risk and return profiles, the research endeavors to provide investors and financial analysts with invaluable insights into optimizing portfolio strategies and maximizing returns. Acknowledging prior research in finance and investment, the study builds upon existing literature to enhance the understanding of risk-return dynamics. It seeks to contribute to the ongoing discourse by leveraging contemporary methodologies and empirical data. The rationale for this study lies in the escalating need for evidence-based decision-making in financial markets, amid the increasing complexity and volatility of the investment landscape. the methodology employs a

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multifaceted approach, beginning with the meticulous selection of ten companies based on predefined criteria such as market capitalization, sectoral representation, and historical performance. Comprehensive data encompassing stock prices, financial statements, and market trends were collected and analyzed. Various quantitative techniques, including statistical measures and financial ratios, were employed to evaluate risk and return metrics, providing a holistic assessment of the selected companies' equity stocks. The study's scope is delimited to the analysis of equity stocks from the ten selected 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 these metrics, the study aims to furnish stakeholders with actionable insights to optimize investment decisions and mitigate potential risks effectively. In conclusion, this study seeks to contribute to the body of knowledge surrounding risk and return analysis in equity markets, ultimately aiding stakeholders in making well-informed investment decisions aligned with their financial objectives and risk tolerance levels.

2. Problem Statement

The problem statement underscores the crucial connection between risk and return in investment strategies, emphasizing how risk embodies the uncertainty surrounding achieving expected profits in investments. A thorough risk and return analysis aims to identify portfolios that optimize returns relative to the assumed level of risk. In today's diverse investment landscape, investors often grapple with prioritizing between higher returns and lower risk, leading to confusion. By leveraging risk and return analysis, investors can methodically assess their choices, achieving a balance between potential returns and associated risks.

3. Justification for the Study

The study's justification lies in the necessity for investors to navigate the intricate investment landscape with clarity amidst market volatility and uncertainty. It aims to provide empirical insights into the risk-return relationship, enabling informed decision-making. By systematically analyzing risk and return, investors can align their strategies with financial goals and risk tolerance levels, mitigating ambiguity in investment choices. Furthermore, the research offers practical insights into optimal investment strategies that balance risk and return effectively, empowering investors to optimize portfolio performance and manage risks proactively. Ultimately, the study aims to enhance investor understanding and promote informed investment practices in dynamic market conditions.

4. Study Objectives

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

5. 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.

6. 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

Standard Deviation: The standard deviation of a dataset measures its dispersion relative to its mean. It is computed as the square root of the variance. A stock exhibiting high volatility tends to have a higher standard deviation, whereas a stable blue-chip stock typically has a lower standard deviation.

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

$$Return_i = \frac{Ending\ price_i - Begining\ price_i}{Begining\ price_i}$$

Formula for calculating the standard deviation

$$SD_i = \sqrt{Variance_i}$$

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

Formula for getting average returns of the stocks.

$$Average\ return\ for\ i; Stock = \frac{\sum Stock\ Returns_i}{n}$$

Note: n = Number stocks

7. Data Analysis and Interpretation

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

Rank	Company	Mean return
1	JK tyre ltd	119.166
2	Ajanta Pharma	42.626
3	Dabar India	9.942
4	Indian Bank	56.754
5	Godrej Industries	54.3
6	Bata India	38.01
7	MRF Tyre	17.118
8	CEAT Tyre	25.802
9	Zee Entertainment Enterprise	29.104
10	Punjab National Bank	40.022

Chart: 1; Showing the Mean Returns of the Companies:
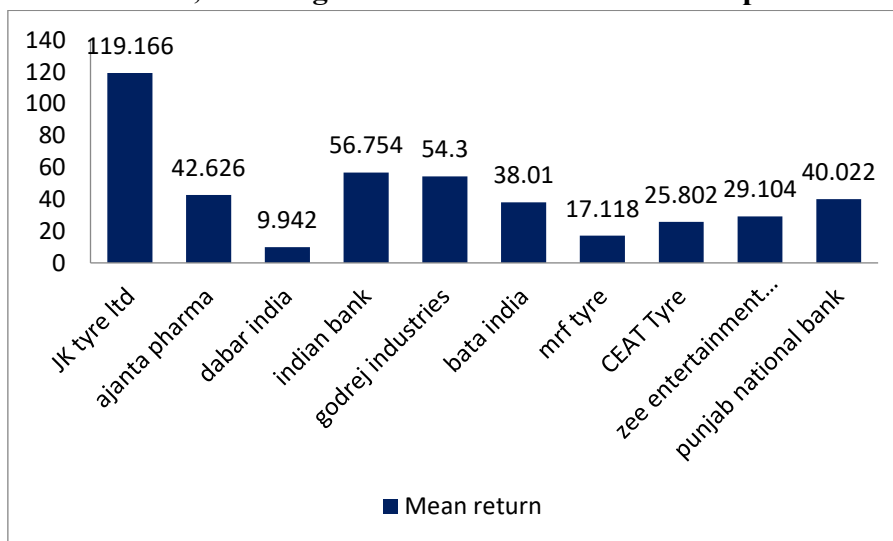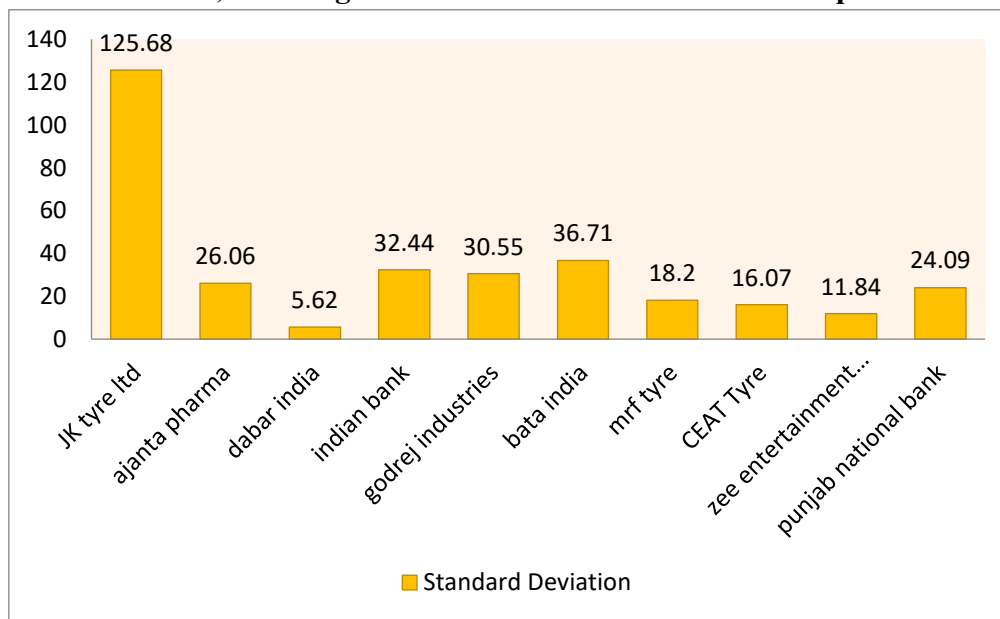

Interpretation

The provided data outlines the mean returns of ten companies over a specified period. JK Tyre Ltd emerges as the top performer with a mean return of 119.166, followed by Ajanta Pharma at 42.626.Dabur India ranks third but exhibits a comparatively lower mean return of 9.942. The rankings offer valuable insights into the historical performance of these companies, aiding investors in assessing profitability and making informed investment decisions.

Table: 2; Table showing standard deviation of companies:

Rank	Company	Standard Deviation
1	JK Tyre Ltd	**125.68**

2	Ajanta Pharma	**26.06**
3	Dabar India	**5.62**
4	Indian Bank	**32.44**
5	Godrej Industries	**30.55**
6	Bata India	**36.71**
7	MRF Tyre	**18.20**
8	CEAT Tyre	**16.07**
9	Zee Entertainment Enterprise	**11.84**
10	Punjab National Bank	**24.09**

Chart: 2; Showing the Standard Deviation of the Companies

Interpretation

The standard deviation data indicates the volatility of returns among the listed companies. JK Tyre Ltd exhibits the highest standard deviation, suggesting significant fluctuations in returns and potential higher risk. In contrast, Dabur India demonstrates the lowest standard deviation, implying relatively stable returns. Bata India and Indian Bank display notable volatility in their returns. Zee Entertainment Enterprises and CEAT Tyre show comparatively lower standard deviations, suggesting more stable returns. Investors can utilize this information to gauge the level of risk associated with each company's stock and make informed investment decisions.

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

Rank	company	Variance
1	JK Tyre Ltd	21.21774
2	Ajanta Pharma	137.0576
3	Dabar India	9.308178
4	Indian Bank	295.4325
5	Godrej Industries	281.9681

6	Bata India	0.838712
7	MRF Tyre	0.596063
8	CEAT Tyre	47.35035
9	Zee Entertainment Enterprise	305.83
10	Punjab National Bank	136.6

Interpretation

The variance data highlights the volatility of returns among the listed companies. Indian Bank and Zee Entertainment Enterprises exhibit the highest variances, indicating significant fluctuations in their returns. Conversely, Bata India and MRF Tyre demonstrate notably low variances, suggesting more stable returns. Companies like Ajanta Pharma, Godrej Industries, and Punjab National Bank display substantial variances, implying considerable volatility. Dabar India shows a comparatively lower variance, indicating relatively steadier performance. Investors can use this information to assess risk and make informed investment decisions

8. Findings

The provided data offers investors a comprehensive insight into the performance and volatility metrics of ten companies over a specified period, enabling informed decision-making. Leading the pack is JK Tyre Ltd with a robust mean return of 119.166, followed closely by Ajanta Pharma at 42.626, indicating strong performance and investor confidence. Conversely, Indian Bank and Zee Entertainment Enterprises exhibit the highest variances, indicating significant fluctuations in returns, while Bata India and MRF Tyre display lower variances, reflecting stability and resilience. JK Tyre Ltd presents the highest standard deviation, suggesting pronounced fluctuations and potential higher risk, while Dabur India exhibits the lowest standard deviation, signaling steadiness and reliability.This comprehensive analysis equips investors with vital insights to assess risk and tailor investment strategies accordingly. Understanding the performance and volatility of these companies empowers investors to navigate market dynamics effectively, optimizing portfolio management and enhancing long-term wealth creation. The data underscores the importance of considering both mean returns and volatility metrics in investment decision-making, enabling investors to mitigate risk and maximize returns in diverse market conditions. By utilizing this data, investors can make informed decisions aligned with their financial goals and risk tolerance levels, thereby fostering prudent and informed investment practices. It highlights the significance of conducting thorough research and analysis before making investment decisions, emphasizing the need for a disciplined and strategic approach to investing. Overall, the data provides a valuable tool for investors to evaluate opportunities and manage risk effectively in an ever-changing market environment, ultimately contributing to long-term financial success and wealth accumulation.

9. Suggestions

Investing wisely involves a combination of research, strategy, and discipline. Diversification across various asset classes and industries can help spread risk and optimize returns. Thoroughly researching potential investments, including analyzing financial health, growth potential, and competitive landscape, is crucial before making any investment decisions. Setting clear investment goals aligned with your risk tolerance and investment horizon provides a roadmap for your investment journey. Staying informed about

market trends, economic indicators, and geopolitical events enables you to make informed decisions and adapt to changing market conditions. It's essential to remain disciplined and avoid emotional reactions to short-term market fluctuations, sticking to your long-term investment plan. Regularly reviewing your portfolio's performance and making adjustments as needed ensures it stays aligned with your financial objectives. Seeking professional advice when necessary can provide valuable insights and guidance tailored to your specific financial situation and goals. By following these principles and maintaining a strategic approach to investing, you can work towards achieving long-term financial success and building wealth.

10. Conclusions

In conclusion, the provided data offers investors valuable insights into the historical performance and volatility metrics of ten companies, aiding in informed decision-making. JK Tyre Ltd emerges as the top performer with a robust mean return, indicating strong investor confidence, while Dabur India demonstrates stability with the lowest variance and standard deviation. Understanding the performance and volatility of these companies enables investors to assess risk effectively and tailor investment strategies accordingly. Diversification, thorough research, clear investment goals, discipline, and staying informed are key principles for prudent investment practices. By adhering to these principles, investors can navigate market dynamics and work towards achieving long-term financial success while minimizing risk. This approach emphasizes the importance of making informed decisions based on comprehensive analysis and strategic planning, ultimately contributing to wealth accumulation and financial well-being.

References

1. Awalakki , M., & Archanna. (2023). OVERCONFIDENCE BIAS AND ITS EFFECTS ON PORTFOLIO DECISIONS. International journal of Creative Research Thoughts (IJCRT), 11(8), g74-g83. Retrieved from https://www.ijcrt.org/papers/IJCRT2308664.pdf

2. Awalakki, M. (2022). Neurotransmitters Impact on Emotional Responses and Decision-Making in Investment: A comprehensive Exploration. International Journal of Food and Nutritional Sciences, 11(5), 690-708. Retrieved from https://www.ijfans.org/uploads/paper/fb4237bf576c3b3020696d18585588f8.pdf

3. Awalakki, M., & Archanna. (2023). Exploring the Dynamics of Investor Attention and Market Volatility: A Behavioral Finance Perspective. International Journal of Science and Research (IJSR), 12(8), 2245-2251. doi:Doi:10.21275/SR238223155339

4. Awalakki, S. M. (2015). A Study on Investment and Awareness of Salaried Class Investors. INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH, 4(8), 348-350. Retrieved from http://www.worldwidejournals.com/international-journal-of-scientific-research-(IJSR)/fileview.php?val=August_2015_1441174222_112.pdf

5. Abedi , H. S., Dargiri, M. N., &Rasiah, D. (2012). A Review Study of Risk-Return Relationship and performance Measures Comparing Different Industry Sectors. Australian Journal of Basic and Applied Sciences, 6(12), 14-22. Retrieved from https://www.ajbaswes.com/ajbas/2012/Nov%202012/14-22.pdf

6. Awalakki, M., & Archanna . (2021). Impact of Economic and Financial Performance Indicators ratios on Determination of Stock Returne-A Study with reference to National Stock Exchange.

PSYCHOLOGY AND EDUCATION, 58(5 (2021)), 6665-6685. Retrieved from http://psychologyandeducation.net/pae/index.php.pae/article/view/6706

7. Awalakki, M., & Archanna. (2021). A Study on Accounting Ratios And Stock Returns With Reference to National Stock Exchange of India. Turkish Online Journal of Qualitative Inquiry, 12(7), 6858-6888. Retrieved from https://www.tojqi.net/index.php/journal/article/view/4940

8. AWALAKKI, S. M. (2015). FINANCING DECISIONS: A CASE STUDY OF SELECTED CEMENT COMPANIES OF INDIA.International Journal of Advanced Research, 3(8). Retrieved from http://www.journalijar.com/uploads/701_IJAR-6789,pdf

9. Horne , V., &james , C. (2001). Financial Management and policy. Hall Publishing.

10. Markowitz, , H. (1952). Portfolio selection. Journal of Finance, 7(1), 77-91. Doi:https://doi.org/1002307/2975974