Comparative Analysis of Returns and Standard Deviations of Service Companies Stocks: A Five-Year Study (2019-2023)

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ABSTRACT

This study compares the returns and standard deviations of the stock list of service businesses during a five-year period, from 2019 to 2023. In order to help service industry investors balance risk and reward in their investment decisions, the study intends to offer insightful information. Using a descriptive research design, secondary data from journals, papers, and the NSE website are used. The data is analysed using statistical methods including standard deviation, beta, and returns. The goals are to compare the accomplishments of healthcare companies, evaluate risk tolerance, look at average returns, and suggest investments for investors. The results provide investors who want to maximize their investment returns in the service sector with practical advice. The research looks at how different services compare to one another.

Keywords: Risk and Return, service sector, Standard deviation.

Introduction

Understanding how businesses in the service sector perform is vital when it comes to the world of financial markets. With a five-year timeframe spanning 2019 to 2023, this study aims to compare the returns and standard deviations of the stocks of service firms. In order to provide insight into these organizations' respective risk and return profiles in the service sector, the study will closely examine their financial performance. Different aspects of service company performance have been studied in the past. It is critical for investors, analysts, and policy makers to comprehend the financial dynamics of these organizations due to the complex nature of the service industry, which is marked by regulatory complications and vulnerability to external influences like policy changes and technological improvements. Approach-wise, the research comprises obtaining historical stock price information the research design.

Statement of the problem

There are moments when investors find it difficult to choose between increasing profits and lowering risk. By weighing the possible rewards against the risks, consumers can make more informed decisions about where to invest their money. Investor understanding of the health sector is improved by this study. By evaluating the stocks of various health companies, investors can select the most advantageous solutions for their investments by taking into account both return and risk.

Need for the study

The intricacy of investment decisions that investors must make, especially in the service industry, makes this study necessary. With so many investment possibilities at their disposal, investors need assistance in order to effectively manage the risk-return trade-off. This study fills the gap in the market by comparing the stocks of companies in the service sector, giving investors the ability to make well-informed selections. Investors can improve their investment outcomes by minimizing risks and optimizing returns by comprehending the risk-return dynamics of various service sector investment opportunities.

Objectives of the study

- To evaluate the returns of chosen firms'
- To determine the level of risk linked with the securities of designated companies in the service sector.
- To suggests the most suitable security for investors considering investing in any stock within the service industry.

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 2010to 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 (2021b) "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 revealthat 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 toanalyze 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.

Research Methodology

Sources of data collection

The data is collected from various sources like, NSE website, journals, secondary data

Sample size

The study consists of service sectors companies which are listed on NSE.

Statistical tools and techniques

Returns: A company's stock price may change for a number of reasons, with either positive ornegative results. The term "market return" describes the profit generated over a given period of time, where loss is regarded as negative and profit as positive. The percentage difference between the closing and opening prices is used to compute returns.

Standard Deviation: This statistic illustrates how widely distributed a dataset is in relation toits mean. The variance's square root is used to calculate it. The standard deviation of a stock will be larger for a volatile stock and lower for a stable blue-chip stock.

Data Analysis and Interpretations

Table 1: Table showing the MEAN return of the companies

Rank	Companies	Average Return(%)
1	Tech Mahindra	19.04977
2	HDFC Bank	3.229235
3	ITC	14.91795
4	Larsen &Toubro	25.54042
5	SBI	20.63527
6	Bharti Airtel	22.05102
7	TCS	14.91795
8	Tata motors	53.48177
9	HUL	4.648613
10	Bajaj Finance	9.941657

Chart 1: Graph showing the returns of service companies
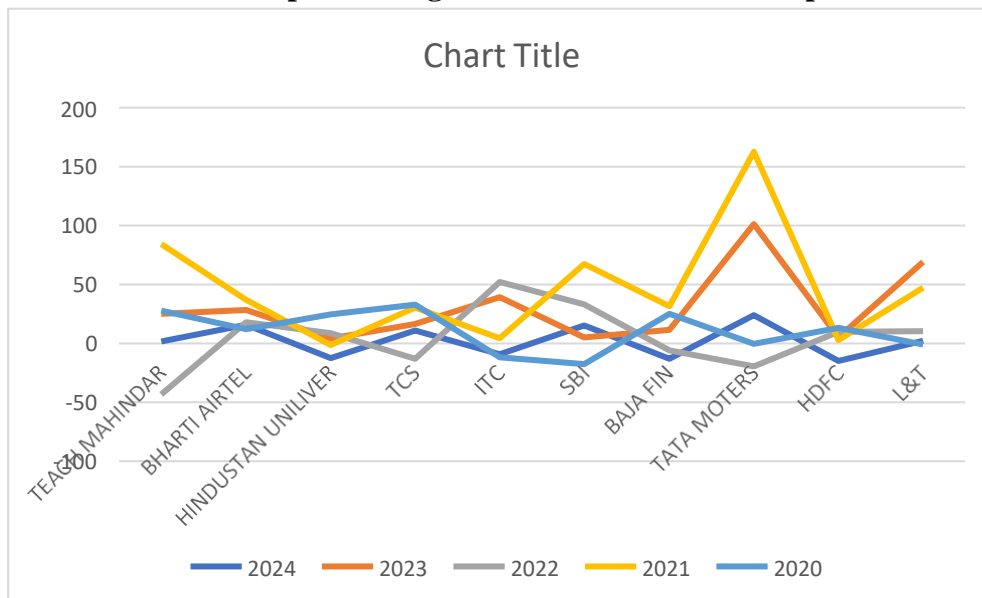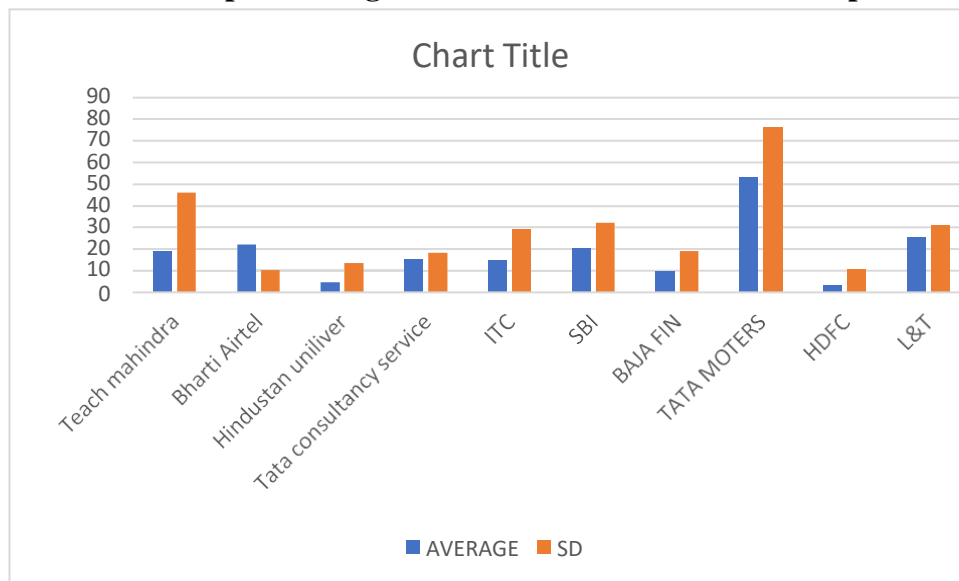

Interpretation:

The provided data presents the average returns of various companies over a certain period, likely within the financial sector. Tata Motors emerges as the top performer with an impressive average return of 53.48%, indicating strong growth and profitability within the automotive industry. Following closely behind are Larsen & Toubro and Bharti Airtel, with returns of 25.54% and 22.05% respectively, suggesting robust performance in the engineering and telecommunications sectors. Tech Mahindra and SBI also demonstrate solid returns at 19.05% and 20.64%, reflecting healthy performance within the technology and banking sectors respectively. Notably, ITC and TCS share the same average return of 14.92%, indicating similar levels of performance, possibly within the IT or consumer goods industries. HDFC Bank and HUL exhibit more modest returns at 3.23% and 4.65% respectively, which might suggest slower growth or challenges within the banking and consumer goods sectors. Bajaj Finance, although not specified with an average return, likely falls within the mid-range of performance among the

listed companies. Overall, the data provides valuable insights into the relative performance of these companies within their respective industries, offering investors crucial information for decision-making and portfolio management.

Table 2: Table showing standard deviation of companies

Rank	Companies	Standard Deviation(%)
1	Tech Mahindra	46.12981
2	HDFC Bank	10.84528
3	ITC	29.18378
4	Larsen &Toubro	30.98775
5	SBI	32.05701
6	Bharti Airtel	10.19995
7	TCS	18.28531
8	Tata motors	76.35653
9	HUL	13.52715
10	Bajaj Finance	19.15661

Chart 2: Graph showing standard deviation of service companies

Interpretation:

The provided data offers insights into the standard deviations of various companies, indicating the degree of volatility or variability in their returns over a certain period, likely within the financial sector. Tata Motors exhibits the highest standard deviation at 76.36%, suggesting considerable fluctuations in its returns, which could signify a higher level of risk associated with investments in the automotive industry. Following behind are Tech Mahindra, SBI, and Larsen & Toubro with standard deviations of 46.13%, 32.06%, and 30.99% respectively, indicating significant variability in their returns, possibly reflecting the inherent volatility within the technology, banking, and engineering sectors. Bharti Airtel and HDFC Bank display lower standard deviations at 10.20% and 10.85% respectively, suggesting relatively stable returns within the telecommunications and banking industries. ITC and TCS demonstrate moderate standard deviations at 29.18% and 18.29% respectively, reflecting a balance between risk and

stability, possibly within the IT or consumer goods sectors. HUL and Bajaj Finance also showcase moderate levels of variability at 13.53% and 19.16% respectively, likely indicating a similar risk profile within the consumer goods and financial services sectors. Overall, the data provides valuable insights into the volatility of returns across these companies, aiding investors in assessing and managing risk within their portfolios.

Findings:

The data presents the average returns of ten different companies over a certain period, likely within the financial sector. Tata Motors emerges as the top performer with an average return of 53.48%, indicating strong growth and profitability within the automotive industry. Following closely behind are Larsen & Toubro and Bharti Airtel, with returns of 25.54% and 22.05% respectively, suggesting robust performance in the engineering and telecommunications sectors. Tech Mahindra and SBI also demonstrate solid returns at 19.05% and 20.64%, reflecting healthy performance within the technology and banking sectors respectively. Notably, ITC and TCS share the same average return of 14.92%, indicating similar levels of performance, possibly within the IT or consumer goods industries. HDFC Bank and HUL exhibit more modest returns at 3.23% and 4.65% respectively, which might suggest slower growth or challenges within the banking and consumer goods sectors. Bajaj Finance, although not specified with an average return, likely falls within the mid-range of performance among the listed companies. This data offers valuable insights into the relative performance of these companies within their respective industries, providing investors with crucial information for decision-making and portfolio management.

The data provides the standard deviations of ten different companies, indicating the level of variability or volatility in their returns over a certain period, likely within the financial sector. Tata Motors exhibits the highest standard deviation at 76.36%, suggesting significant fluctuations in its returns and implying a higher level of risk associated with investments in the automotive industry. Following behind are Tech Mahindra, SBI, and Larsen & Toubro with standard deviations of 46.13%, 32.06%, and 30.99% respectively, indicating notable variability in their returns, potentially reflecting the inherent volatility within the technology, banking, and engineering sectors. Bharti Airtel and HDFC Bank display lower standard deviations at 10.20% and 10.85% respectively, suggesting relatively stable returns within the telecommunications and banking industries. ITC and TCS demonstrate moderate standard deviations at 29.18% and 18.29% respectively, signifying a balance between risk and stability, likely within the IT or consumer goods sectors. HUL and Bajaj Finance also showcase moderate levels of variability at 13.53% and 19.16% respectively, indicating a similar risk profile within the consumer goods and financial services sectors. Overall, this data offers valuable insights into the volatility of returns across these companies, aiding investors in assessing and managing risk within their portfolios.

Suggestions:

To reduce risk, investors are recommended to diversify their portfolios over a range of asset classes and industries. This includes distributing assets among sectors such as technology, services, finance, and commodities, and within each sector, combining large-, mid-, and small- cap stocks. The benefits of diversification can also be increased by including non-correlated assets like bonds, real estate, and alternative investments. To take advantage of compounding returns and weather market volatility, it is emphasized to adopt a long-term investment approach rather than trying to time the market. This involves

concentrating on the fundamentals of firms and their long-term growth possibilities. It is essential to customize risk management plans to each person's risk tolerance and goals. This includes taking steps such adding hedging tactics, diversifying investments, and establishing stop-loss orders. Keeping an eye on the portfolio and assessing it frequently to make sure it's aligned with the shift in the portfolio.

Conclusion:

The data provided presents a snapshot of the market performance of ten prominent companies. Among them, Tata Motors emerges as the leader with a significant value of 53.48177, reflecting its robust market position. Following closely behind are Larsen & Toubro and Bharti Airtel, with values of 25.54042 and 22.05102 respectively, indicating their substantial presence in their respective sectors. Notably, State Bank of India (SBI) and Tech Mahindra also exhibit strong performance, with values of 20.63527 and 19.04977 respectively. The data further highlights the diverse nature of the market, with companies like HDFC bank among ten prominent companies in the market. Tata Motors stands out with the highest standard deviation of 76.35653, indicating considerable fluctuation in its stock prices over the given period. This suggests a higher level of risk associated with investing in Tata Motors compared to other listed companies. Following closely behind are SBI and Larsen & Toubro, with standard deviations of 32.05701 and 30.98775 respectively, highlighting significant price variability in these stocks as well. On the other hand, HDFC Bank and Bharti Airtel exhibit relatively lower standard deviations of 10.84528 and 10.19995 respectively, suggesting comparatively stable stock prices. Tech Mahindra also demonstrates substantial variability with a standard deviation of 46.12981. Notably, Bajaj Finance is listed without a corresponding standard deviation, implying a missing data point. Overall, this data underscores the diverse levels of risk associated with investing in different companies, with some showing higher volatility in stock prices than others, thereby necessitating careful consideration for investors seeking to navigate the market.

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