COMPARITIVE STUDY ON RISK AND RETURN ANALYSIS OF IT COMPANIES OF FIVE YEAR STUDY (2019 – 2023)

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ABSTRACT:

This study conducts a comprehensive analysis of the risk and return profiles of Information Technology (IT) companies over a five-year period from 2019 to 2023. The IT sector is renowned for its dynamism and innovation, yet it is also subject to significant market volatility and risk factors. This research aims to provide investors, analysts, and policymakers with valuable insights into the performance and stability of IT companies, thereby facilitating informed decision-making. The findings of this research contribute to the existing body of knowledge on financial analysis and investment management within the IT sector. They also offer practical implications for investors seeking to optimize their portfolios and mitigate risk exposure in the rapidly evolving landscape of technology-driven industries.Overall, this study underscores the importance of conducting thorough comparative analyses to assess the risk and return characteristics of IT companies, thereby assisting stakeholders in making informed decisions in the pursuit of their financial objectives.

KEY WORDS: Risk and Return of it sector Beta

1. INTRODUCTION:

The Information Technology (IT) sector has long been at the forefront of innovation and disruption, driving profound changes across industries and economies worldwide. Amidst this landscape of rapid technological advancement, investors, analysts, and policymakers face the critical task of navigating the inherent risks and opportunities associated with investing in IT companies. Understanding the risk and return dynamics of this dynamic sector is essential for informed decision-making and portfolio optimization. Against this backdrop, this study presents a comprehensive analysis of the risk and return profiles of IT companies over a five-year period from 2019 to 2023. By examining financial data and performance metrics, the research aims to shed light on the relative riskiness and profitability of investing in IT firms, offering valuable insights for stakeholders in the financial markets. The rationale for focusing on IT companies lies in their pivotal role in shaping the modern economy and driving technological innovation. From software development and cloud computing to artificial intelligence and cybersecurity, IT companies operate in diverse and rapidly evolving subsectors, each presenting unique challenges and opportunities. Consequently, assessing the risk and return characteristics of these firms requires a nuanced understanding of their business models, competitive positioning, and external market forces. Over the past five years, the IT sector has witnessed both remarkable growth and heightened volatility,

reflecting the interplay of various macroeconomic, technological, and regulatory factors. Against this backdrop, understanding the risk-return trade-offs inherent in investing in IT companies becomes paramount for stakeholders seeking to navigate market uncertainties and capitalize on emerging opportunities.

2. LITERATURE REVIEW:

(Awalakki M. , 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, A Comparison Study on Risk and Return Analysis of selected companies with Benchmark Index in NSE., 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. (Awalakki M. & 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. (Awalakki M. & 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. (Dr. P. Karthikeyan, 2010) Investors can find the best use of the beta ratio in short-term decision-making, where price volatility is important. If you are planning to buy and sell within a short period, beta is a good measure of risk. However, as a single predictor of risk for a long-term investor, the beta has too many flaws. Careful consideration of a company's fundamentals will give you a much better picture of the potential long-term risk. The stocks may not be a safe but for a risk adverse investor and for a risk taker the reward may he heavy in the short run, than in the long run. (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.(Awalakki M. & 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 M. & 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. (Naveen & Mallikarjunappa, 2016) conducted a study on Comparative Analysis of Risk and Return with Reference to Stocks of CNX Bank Nifty. This study analyses the risk and returns in the banking sector. They compare the performance of the 12 listed banks in the Nifty Bank Index. The study also analyses the performance of banking stocks mainly to understand the required rate of return and risk of a particular stock based on different risk elements prevailing in the market and other economic factors. (Sharma, 2019) study on, "Portfolio Analysis of Commercial Banks of Nepal" in 2017. He has taken eight banks as sample. The samples of the studies were Nepal Arab bank Ltd. (NABIL), Nepal Investment Bank Ltd. (NIBL), Standard Chartered Bank Nepal Ltd. (SCBNL, Kumari Bank Ltd. (KBL), Nepal SBI Bank Ltd. (SBI), Nepal Bangladesh Banks Ltd. (NBBL), Everest Bank Ltd. (EBL) and Kumari Limited. The study used secondary data. (Kandel, 2018) This paper analyses the risk and return on common stock investment of Nepalese stock market and it is focused on common stock of two commercial banks listed in Nepal stock exchange Limited. Investors have varying perception towards risk and enterprising activities. They invest in those opportunities which have certain degree of risk associated with it. This research study found that there is a positive relationship between risk and return.

3. OBJECTIVE OF THE STUDY:

The primary objective of this comparative study is to analyze the risk and return of IT companies within the broader financial market context.

4. SCOPE OF THE STUDY:

This study's scope includes a five-year, 2019–2023 comparative analysis of the risk and return profiles of IT companies operating in several subsectors. In order to determine the relative risk and profitability of investing in IT companies, it entails looking at financial data and performance measurements. The study also looks at how external factors like competitive dynamics, regulatory changes, and technology improvements affect the risk-return trade-offs in the IT industry. In the dynamic landscape of technology-driven industries, this research strives to provide stakeholders important insights for informed decision-making and portfolio optimization by focusing on a wide range of organizations and taking both internal and external aspects into consideration.

5. RESEARCH METHODOLOGY:

5.1 Gathering of Data

5.1.1 Financial Information: From 2019 to 2023, a five-year period, IT companies' financial information will be gathered for the study. Acquired from reliable financial databases, yearly reports, and regulatory filings, this data will comprise income statements, balance sheets, and cash flow statements.

5.1.2 Market Data: In order to evaluate the success of IT companies in comparison to more general market benchmarks, market data will be collected, such as stock prices, trading volumes, and market indexes.

5.1.3 Risk Factors: By a thorough analysis of industry literature and news sources, a number of risk factors that affect IT organizations will be identified, including technology disruptions, regulatory changes, and competitive dynamics.

5.2 Choice of Sample:
Purposive sampling will be used in the study to choose a representative sample of IT companies from various subsectors, market capitalizations, and geographic areas. Factors like industry classification, firm size, and the availability of reliable financial data throughout the study period are examples of criteria for selecting a sample.

5.3 Compute Risk and Return Measures:

5.3.1 Risk Metrics: To analyze the volatility and sensitivity of IT businesses' stock returns in relation to market swings, the study will compute risk metrics such as beta coefficients, standard deviations, and systematic risk measures.

5.3.2 Return measures: To evaluate the risk-adjusted performance of IT companies in comparison to market benchmarks, a range of return measures, such as average yearly returns, Sharpe ratios, and Jensen's alpha, will be calculated.

6.RESEARCH DESIGN:

Comparative Analysis: To assess the risk and return profiles of several IT organizations at once, the research methodology will use a comparative approach. A thorough comprehension of the variations in risk exposure and return potential among various enterprises operating within the same industry segment will be made possible by this comparative framework.6.1. Comparative Analysis: To assess the risk and return profiles of several IT organizations at once, the research methodology will use a comparative approach. A thorough comprehension of the variations in risk exposure and return potential among various enterprises operating within the same industry segment will be made possible by this comparative framework.

Quantitative Analysis: To measure the link between risk and return factors, statistical methods including regression analysis, correlation analysis, and variance analysis will be applied. The results of the investigation will be empirically supported by this quantitative analysis.

Qualitative Insights: To give a comprehensive picture of the risk-return dynamics within the IT sector, qualitative insights from stakeholders and industry experts will be combined with quantitative analysis. By capturing subtle elements that may not be captured by using only quantitative methods, these qualitative inputs will enhance the analysis.

Time Horizon: To evaluate future risk and return expectations, the study design will combine historical analysis of past performance with forward-looking estimates. This long-term strategy will make it possible to conduct a thorough assessment of how risk and return are changing in the IT sector.

Data collecting sources: Secondary data were used in the investigation. The NSE website, publications, journals, and other sources were some of the places from which the data was collected. The type of research design used in this study is descriptive.

Sample magnitude: The NIFTY IT companies that are listed on the NSE make up the study.

7.STATISTICAL TOOLS AND TECHNIQUES:

RETURN: Return is the fundamental inspiring power that drives a rumours. It is really an acclaim for financing. Since the venture game is prepared returns (After contemplating danger), the estimation of uncovered returns is basic to evaluate how appropriately a rumours has executed. Furthermore, noteworthy returns are often utilized as a contribution for looking forward to the future (candidates).

$$\text{Stock Return}_i = \frac{(\text{Closing price}_i - \text{Opening price}_i)}{\text{Opening price}_i} \times 100$$

- Stock Return: This represents the return of the stock for a specific period i. It's expressed as a percentage.
- Closing price: This is the price of the stock at the end of the period i, usually at the end of the trading day.
- Opening price : This is the price of the stock at the beginning of the period i typically at the opening of the trading day.

BETA : A measure of how an individual asset moves (on average) when the stock market as a whole rises or falls is called the beta. Beta becomes a useful indicator of an asset's contribution to the risk of a market portfolio when a little quantity of the asset is included.

$$\beta_i = \frac{\sum xy - \frac{(\sum x)(\sum y)}{N}}{\sum x^2 - \frac{(\sum x)^2}{N}}$$
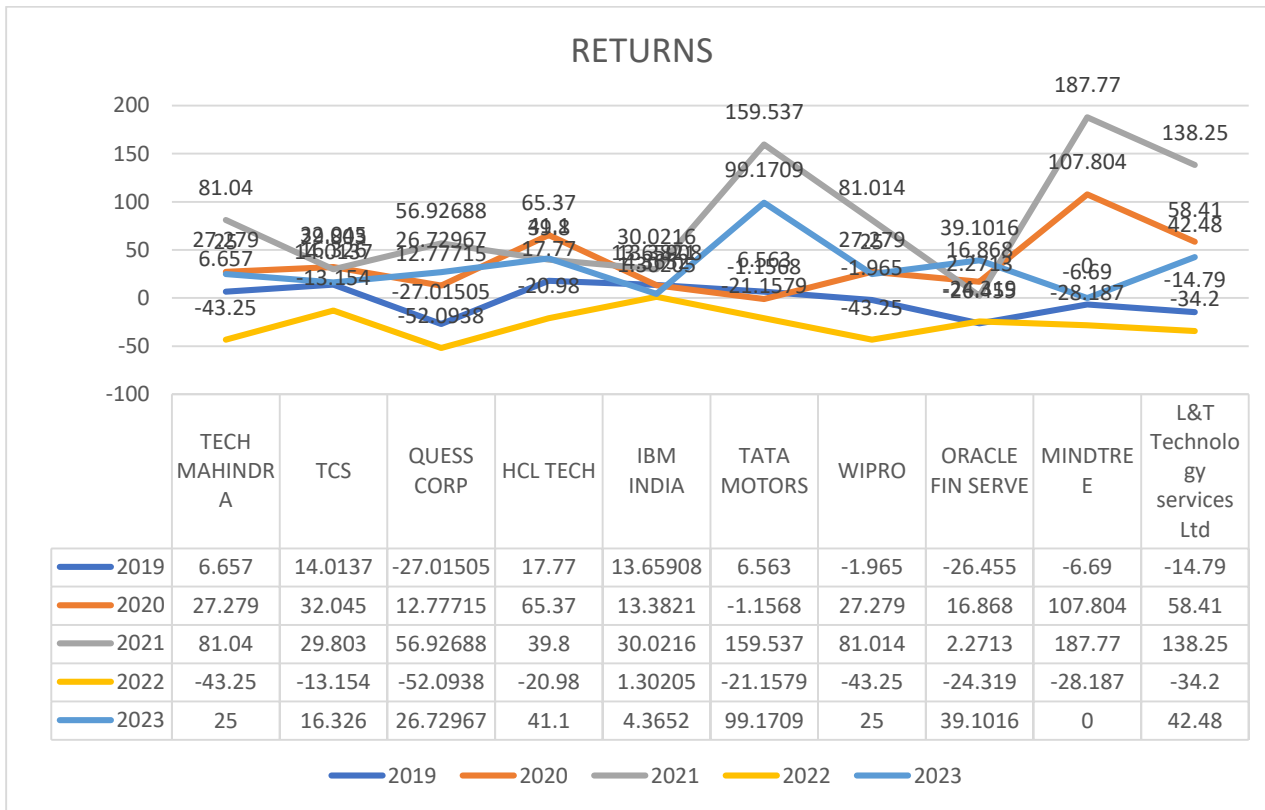
- β_i: This represents the beta of the stock i.
- $\sum xy$: This term represents the sum of the products of the corresponding values of two variables x and y. In finance, x typically represents the returns of the market index and y represents the returns of the stock.
- $\sum x$ and $\sum y$: These terms represent the sum of all values of variables x and y respectively.
- N: N represents the number of observations (i.e., data points) in the dataset.
- $\sum x^2$: This term represents the sum of the squares of all values of variable x.

8. Data Analysis and Interpretation

Table: 1: Table showing the Returns of IT companies

Sl no.	Company/Years	2019	2020	2021	2022	2023
1.	TECH MAHINDRA	6.657	27.279	81.04	-43.25	25.00
2.	TCS	14.0137	32.045	29.803	-13.154	16.326
3.	QUESS CORP	27.01505	12.77715	56.92688	-52.0938	26.72967
4.	HCL TECH	17.77	65.37	39.80	-20.98	41.10
5.	IBM INDIA	13.65908	13.3821	30.0216	1.30205	4.3652
6.	TATA MOTORS	6.5630	-1.1568	159.537	-21.1579	99.1709
7.	WIPRO	-1.965	27.279	81.014	-43.25	25.00
8.	ORACLE FIN SERVE	-26.4550	16.868	2.2713	-24.319	39.1016
9.	MINDTREE	-0.472	108.21	100.16	-41.11	43.77
10.	L&T Technology services Ltd	-14.79	58.41	138.25	-34.20	42.48

Chart: 1 Graph showing the Returns of IT companies

RETURNS

|	TECH MAHINDRA	TCS	QUESS CORP	HCL TECH	IBM INDIA	TATA MOTORS	WIPRO	ORACLE FIN SERVE	MINDTREE	L&T Technology services Ltd
2019	6.657	14.0137	-27.01505	17.77	13.65908	6.563	-1.965	-26.455	-6.69	-14.79
2020	27.279	32.045	12.77715	65.37	13.3821	-1.1568	27.279	16.868	107.804	58.41
2021	81.04	29.803	56.92688	39.8	30.0216	159.537	81.014	2.2713	187.77	138.25
2022	-43.25	-13.154	-52.0938	-20.98	1.30205	-21.1579	-43.25	-24.319	-28.187	-34.2
2023	25	16.326	26.72967	41.1	4.3652	99.1709	25	39.1016	0	42.48

2019 2020 2021 2022 2023

INTERPRETATION:

The financial performance of various companies over the past five years exhibits a diverse range of trajectories. While some firms like Tech Mahindra, TCS, and HCL Technologies saw fluctuations in their growth rates, others like Quess Corp and Oracle Financial Services experienced significant volatility, with both positive and negative swings. Notably, Tata Motors witnessed a substantial recovery after a decline in 2022, demonstrating resilience in the face of challenges. Additionally, companies such as IBM India, Mindtree, and L&T Technology Services Ltd displayed varying degrees of stability and growth throughout the period. Overall, this data underscores the dynamic nature of the market and highlights the importance of adaptability and strategic decision-making for sustained success in the corporate landscape. Overall, the data highlights the dynamic nature of the business environment and the importance of agility in navigating market uncertainties.

Table 2 : TABLE SHOWING THE AVERAGE RETURN OF IT COMPANIES.

COMPANIES	Average Returns
TECH MAHINDRA	14.271
TCS	15.806
QUESS CORP	14.27
HCL TECH	28.612
IBM INDIA	12.546
TATA MOTORS	48.591
WIPRO	17.615
ORACLE FIN SERVE	1.4933
MINDTREE	42.116
L&T Technology services Ltd	38.03

Chart 2: Graph Showing the Average return of IT Companies
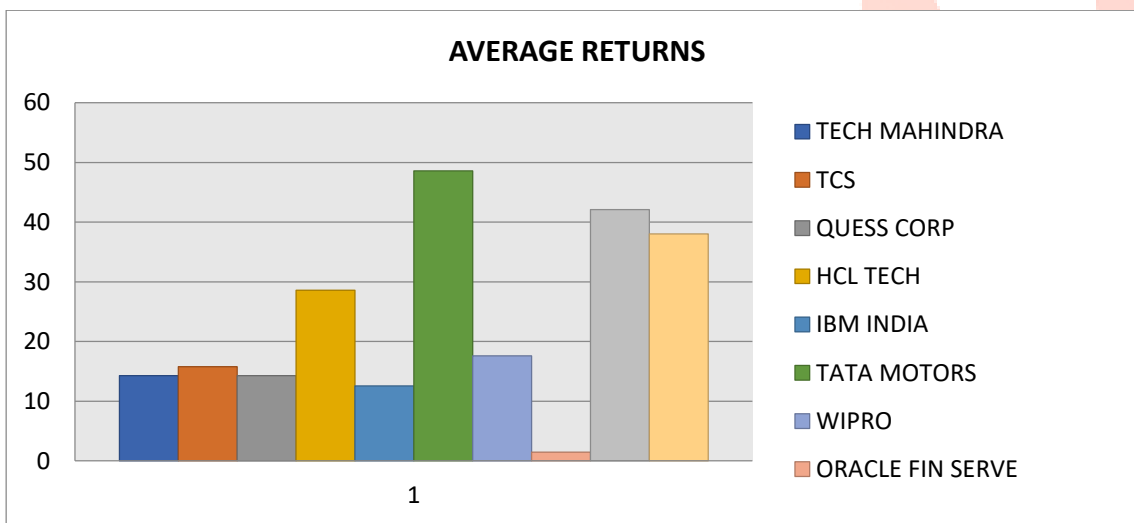
INTERPRETATION :

The average returns of various companies across different sectors. These returns can be interpreted in the context of their performance, market positioning, and the specific industries. These returns reflect the companies' performance and market positioning within their respective sectors. Companies with higher returns are generally considered to be performing better, either due to strong financial performance, market leadership, or innovative products and services. The average returns of IT companies listed vary significantly, reflecting their different performance levels over a specified period. Here's a brief interpretation:

- TATA MOTORS with an average return of 48.591% stands out as the highest performer, indicating significant growth or investment returns.
- HCL TECH and MINDTREE also show high average returns, suggesting strong performance in their respective sectors.
- WIPRO and TCS have average returns above 15%, indicating solid growth and investment returns.
- TECH MAHINDRA and QUESS CORP have average returns around 14%, indicating moderate growth.

- IBM INDIA and ORACLE FIN SERVE have lower average returns, suggesting less significant growth or investment returns.
- L&T Technology services Ltd has the lowest average return, indicating the least significant growth or investment returns among the listed companies.

These returns are calculated as the simple mathematical average of a series of returns generated over a specified period of time, providing a snapshot of past performance. However, it's important to note that the average return does not account for compounding, which can significantly affect the actual returns over time. For a more accurate understanding of a company's performance, investors might consider using the geometric mean or the money-weighted rate of return.

TABLE 3: Table Showing The Beta Value of IT Companies

Sl no	COMPANIES	Beta
01	TECH MAHINDRA	5.836
02	TCS	1.963
03	QUESS CORP	1.0500
04	HCL TECH	3.170
05	IBM INDIA	1.3955
06	TATA MOTORS	3.249
07	WIPRO	1.177
08	ORACLE FIN SERVE	0.0997
09	MINDTREE	6.850
10	L&T Technology services Ltd	3.056

Chart:3 Graph Showing the Beta value of IT Companies
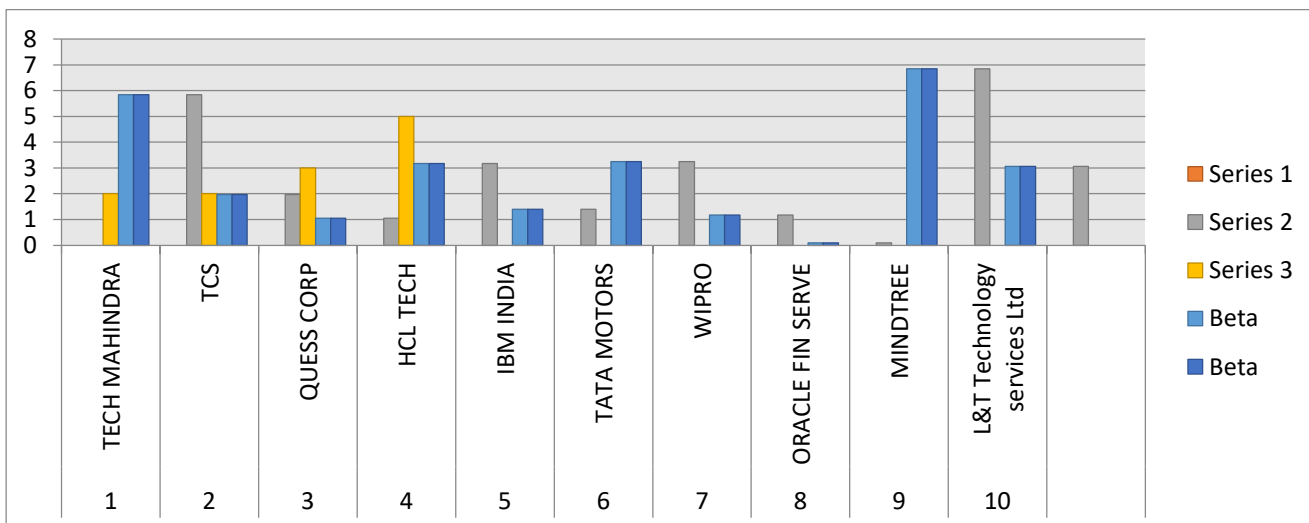
INTERPRETATION :

Here's an interpretation of these companies' risk profiles based on their beta values:

Tech Mahindra (Beta: 5.836) and Mindtree (Beta: 6.850): These companies exhibit extremely high volatility compared to the market. Investors considering these stocks should be prepared for significant fluctuations in their prices.

TCS (Beta: 1.963), Quess Corp (Beta: 1.0500), IBM India (Beta: 1.3955), and Wipro (Beta: 1.177): These companies have beta values close to or slightly higher than 1, indicating moderate volatility compared to the market.

HCL Tech (Beta: 3.170), Tata Motors (Beta: 3.249), and L&T Technology Services Ltd (Beta: 3.056): These companies demonstrate above-average volatility, significantly higher than the market. Investors in these stocks should expect higher risk.

Oracle Financial Services (Beta: 0.0997): With a beta value significantly below 1, Oracle Financial Services' stock exhibits very low volatility compared to the market. This suggests it may be a safer investment in terms of market risk.

Investors should consider beta values along with other factors such as company fundamentals, industry trends, and market conditions when making investment decisions. Higher beta stocks may offer higher potential returns but also come with increased risk, while lower beta stocks may provide more stability but potentially lower returns. Diversification across stocks with different risk profiles can help manage overall portfolio risk.

9. Findings:

9.1 Tata motors, Mind tree and L&T Technology services ltd. stand out with exceptionally high average returns of 48.591% and 42.116%, respectively, indicating strong performance over the specified period.

9.2 Oracle fin serve has the lowest average return among the listed companies, reflecting comparatively weaker financial performance with an average return of 1.4933%

9.3 Mind Tree has the highest beta value of 6.850, indicating significantly higher volatility compared to other IT companies, while Oracle fin serve has the lowest beta value of 0.0997 suggesting relatively lower volatility.

9.4 The IT sector demonstrates diverse financial performance and risk profiles, with some companies experiencing significant fluctuations in returns and beta values over the years.

9.5 Tech Mahindra, Quess corp, TCS exhibit moderate average returns and beta values, indicating relatively stable performance compared to companies like Tata Motors and Mind Tree.

9.6 Overall, the data underscores the variability in financial performance and risk among IT companies, with some showing strong growth potential but also higher volatility.

Conclusion:

Based on the analysis of risk and return profiles of selected IT companies it is evident that there is significant diversity within the sector in terms of financial performance and volatility. Companies like Mind tree and Tech Mahindra exhibit high Average returns and beta values, indicating greater potential for returns but also higher sensitivity to market fluctuation. on the other hand, companies like Oracle fin serve have lower average return and beta values, suggesting relatively lower volatility. overall investors need to carefully consider the risk return characteristics of individual IT companies before making investment decision, taking into account factors such as historical performance, market expectations, and industry trends.

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