



Comparative Analysis Of Risk And Return Of IT Companies: A Five-Year Study-(2019-2023)

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ABSTRACT

The study focuses on evaluating the historical performance of selected IT companies in terms of risk-adjusted returns, utilizing both quantitative and qualitative research methods. Various financial metrics, including stock price volatility, beta coefficients, and return on investment (ROI), are examined to assess the risk and return profiles of IT companies. Additionally, the study explores the relationship between economic and financial indicators and stock returns to provide insights for investors, financial analysts, and policymakers. The research methodology involves data collection from primary and secondary sources, selection of IT companies based on specific criteria, and statistical analysis techniques such as regression analysis and correlation analysis. The findings highlight the diversity in financial performance and risk profiles among IT companies, emphasizing the importance of informed decision-making for investment strategies and market predictions in the dynamic landscape of the IT sector. The findings offer actionable insights for investors seeking to optimize their investment outcomes within the IT Companies.

Key words: Risk and Return, IT sector, Beta .

1. Introduction

In the dynamic landscape of the financial market, investors continuously seek avenues for maximizing returns while managing risks effectively. Within this context, the Information Technology (IT) sector stands out as a hub of innovation and growth, attracting significant investor interest. However, investing in IT companies presents a unique set of challenges and opportunities due to the inherent volatility and rapid technological advancements characterizing the industry. The stock market conditions are dynamic in nature in which predictions play a major role in investing for an investor. An investment is impacted by both risk and return, which are two sides of the same coin. To optimise rewards, one must thus comprehend risk. The analysis of return and risk with regards to investment has an impression on the individual's decision-making process. Every investment has some risk, but the best investments are those that offer the highest returns with the lowest amount of risk. Market knowledge is required for risk analysis which helps in making appropriate judgements and to take preventive measures. Risk is calculated using the degree of volatility and the difference between actual and expected returns. The Risk and return analysis determine the amount of risk that an investment includes in connection to its potential rate of returns. Diversification reduces overall

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risk for investors' portfolios but also curbs potential returns. Only investing in one market sector may result in higher returns if that sector outperforms the overall market, but if that sector loses attractiveness, your returns may be lower than they would have been from a more broadly diversified portfolio. The benefits of diversification are reduced the more strongly two assets' returns correlate.

2. 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 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. (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 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. (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 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. (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 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, 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.

3. Objective of the Study

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

4. Scope of the Study:

Given the pivotal role of IT companies in driving global economic growth and innovation, there is a pressing need to conduct a comparative study of risk and return analysis within this sector. This study aims to bridge existing knowledge gaps by systematically examining the risk profiles and return potential of IT companies across different subdomains, market segments, and geographical regions. By doing so, it seeks to provide investors, financial analysts, and policymakers with actionable insights to enhance risk management practices, optimize investment strategies, and foster sustainable growth in the IT industry.

5. Research Methodology:

5.1.Data Collection: The study will rely on a combination of primary and secondary data sources. Primary data will be gathered through surveys and interviews with industry experts, financial analysts, and investors to gather qualitative insights into the risk and return factors specific to IT companies. Secondary data will be collected from publicly available sources such as financial reports, company websites, and academic journals.

5.2.Selection of Companies: A carefully curated sample of IT companies will be selected for the comparative analysis based on criteria such as market capitalization, geographical presence, diversity of services/products, and historical financial performance.

5.3.Risk Assessment: Various metrics will be employed to assess the risk profiles of selected IT companies, including but not limited to beta coefficients, volatility measures, debt-to-equity ratios, and liquidity ratios. Additionally, qualitative factors such as industry regulations, technological disruptions, and competitive landscape will be considered.

5.4.Return Analysis: Return on Investment (ROI), Return on Equity (ROE), and other relevant financial metrics will be utilized to analyze the return potential of the selected IT companies. Long-term historical performance, growth prospects, and market expectations will be taken into account to assess the attractiveness of investing in these firms.

6. Research Design

6.1.Comparative Analysis: The research design will employ a comparative approach to evaluate the risk and return profiles of multiple IT companies simultaneously. This comparative framework will allow for a comprehensive understanding of how different firms within the same industry segment vary in terms of risk exposure and return potential.

6.2.Quantitative Analysis: Statistical techniques such as regression analysis, correlation analysis, and variance analysis will be utilized to quantify the relationship between risk and return variables. This quantitative analysis will provide empirical evidence to support the findings of the study.

6.3.Qualitative Insights: In addition to quantitative analysis, qualitative insights from industry experts and stakeholders will be integrated to provide a holistic view of the risk-return dynamics within the

IT sector. These qualitative inputs will enrich the analysis by capturing nuanced factors that may not be captured solely through quantitative methods.

6.4. Time Horizon: The research design will encompass both historical analysis of past performance as well as forward-looking projections to assess future risk and return expectations. This longitudinal approach will enable a comprehensive evaluation of the evolving nature of risk and return within the IT industry.

6.5. Sources of data collection:

The study was conducted using secondary data. The information was gathered from a number of sources, including the NSE website, publications, and journals, among others. This study's research design is a descriptive one.

6.5.1.1. Sample size

The study consists of NIFTY IT companies which are listed on NSE.

7. Statistical tools and techniques

7.1. Returns

A company's share price may increase or decrease based on multiple factors. A market return is the profit earned over the period of time. The returns can resemble as positive or negative outcomes. Profit can be considered as positive and loss can be considered as negative.

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

- **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.

7.2. 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 : This 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 .

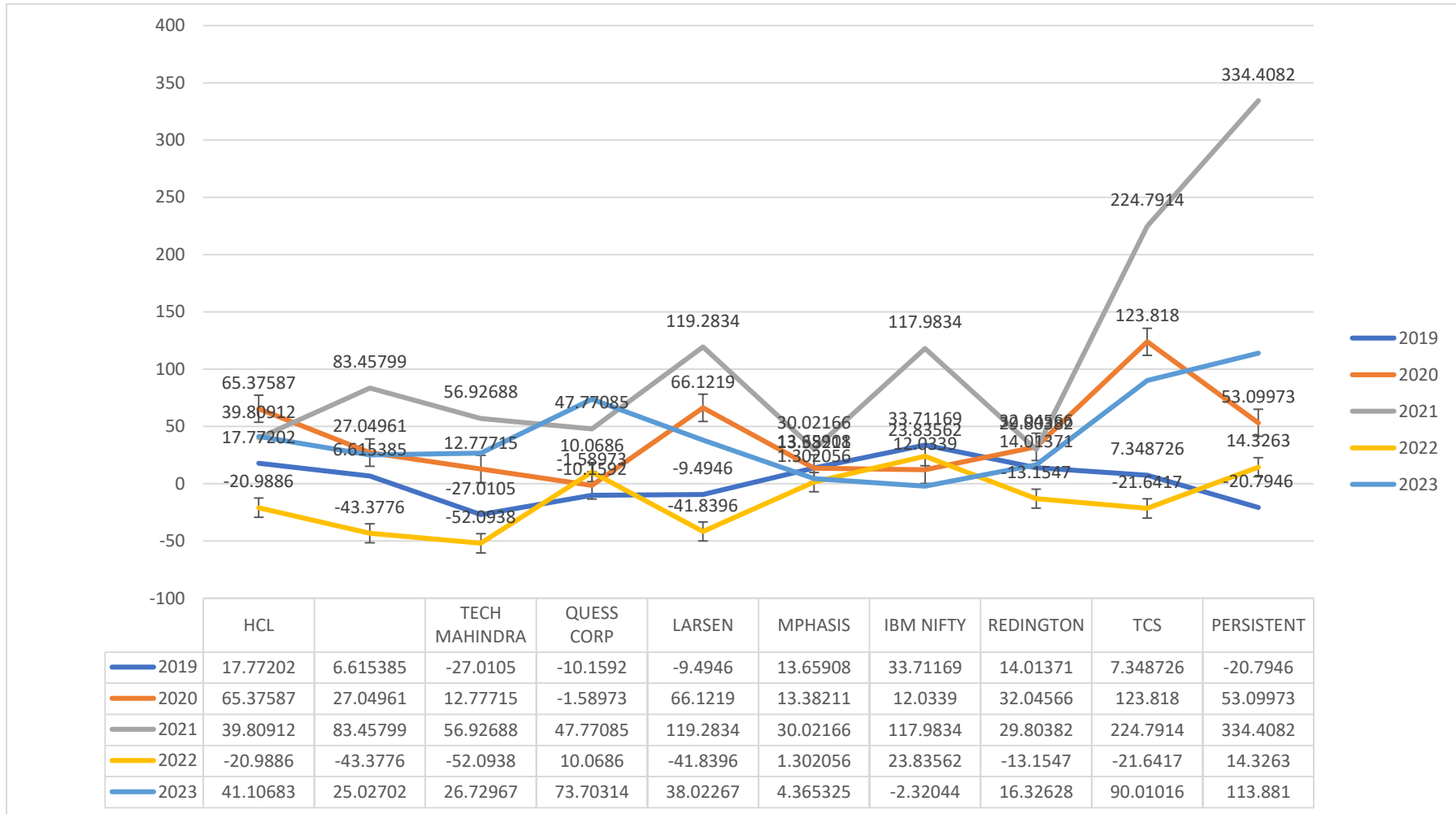
Data Analysis and Interpretation

Table: 1; Table showing the Returns of IT companies

	2019	2020	2021	2022	2023
HCL	17.77202	65.37587	39.80912	-20.9886	41.10683
TECH MAHINDRA	6.615385	27.04961	83.45799	-43.3776	25.02702
QUESS CORP	-27.0105	12.77715	56.92688	-52.0938	26.72967
LARSEN & TOUBRO	-10.1592	-1.58973	47.77085	10.0686	73.70314
MPHASIS	-9.4946	66.1219	119.2834	-41.8396	38.02267
IBM INDIA	13.65908	13.38211	30.02166	1.302056	4.365325
REDINGTON	33.71169	12.0339	117.9834	23.83562	-2.32044
TCS	14.01371	32.04566	29.80382	-13.1547	16.32628
PERSISTENT	7.348726	123.818	224.7914	-21.6417	90.01016
KPIT TECH	-20.7946	53.09973	334.4082	14.3263	113.881



Chart: 1; Graph showing the Returns of IT companies



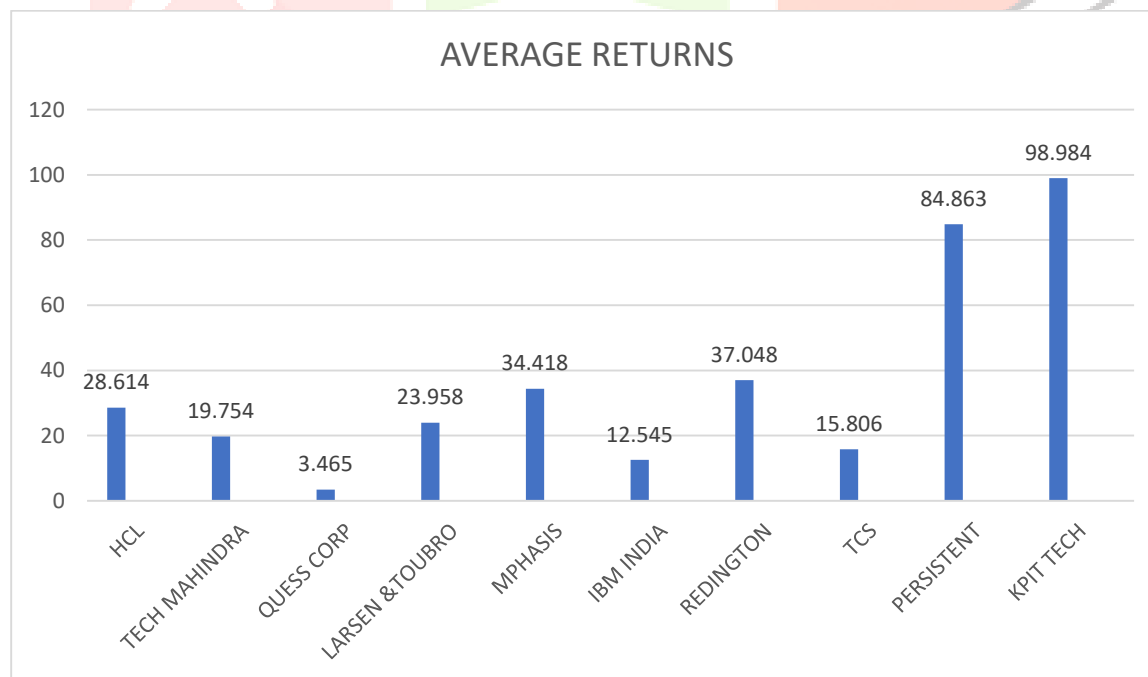
Interpretation

The table presents the yearly returns of various IT companies from 2019 to 2023. The returns vary significantly across companies and time periods, with some experiencing positive returns while others show negative returns. For example, Persistent and KPIT TECH had notably high returns in 2021 and 2022, while Quess Corp and Tech Mahindra experienced negative returns in certain years. Overall, the data reflects the volatility and diversity within the IT sector in terms of financial performance over the specified time period.

Table:2 Table showing the Average Returns of IT companies

COMPANIES	AVERAGE RETURNS
HCL	28.614
TECH MAHINDRA	19.754
QUESS CORP	3.465
LARSEN & TOUBRO	23.958
MPHASIS	34.418
IBM INDIA	12.545
REDINGTON	37.048
TCS	15.806
PERSISTENT	84.863
KPIT TECH	98.984

Chart 2: Graph showing the Average Returns of IT companies

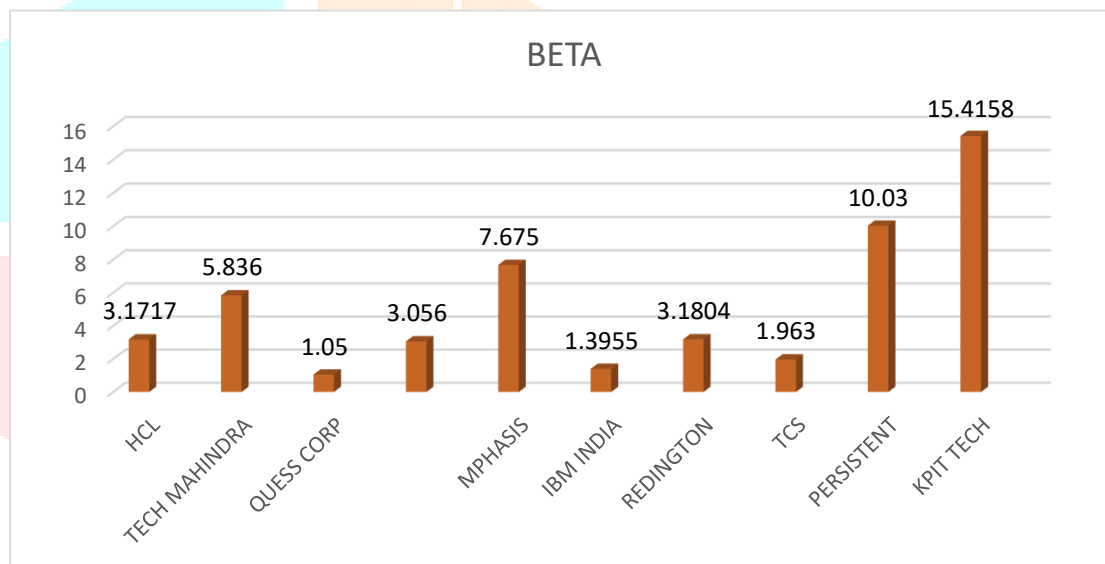


Interpretation

The table presents the average returns of various IT companies. Companies like Persistent and KPIT TECH have significantly high average returns of 84.863% and 98.984%, respectively. On the other hand, Quess Corp has the lowest average return of 3.465%. Overall, the data indicates a wide range of average returns among IT companies, reflecting the diversity in their financial performance

Table: 3 Table showing the Beta of IT Companies

COMPANY	BETA
HCL	3.1717
TECH MAHINDRA	5.836
QUESS CORP	1.0500
LARSEN & TOUBRO	3.056
MPHASIS	7.675
IBM INDIA	1.3955
REDINGTON	3.1804
TCS	1.963
PERSISTENT	10.03
KPIT TECH	15.4158

Chart: 3 Graph showing the Beta of IT Companies**Interpretation:**

The table lists the beta values of various IT companies, indicating their volatility relative to the market. Companies like Persistent and KPIT TECH exhibit high beta values of 10.03 and 15.4158, respectively, suggesting greater sensitivity to market fluctuations. Conversely, Quess Corp has the lowest beta value at 1.0500, indicating relatively lower volatility. Overall, the data highlights the diverse risk profiles among IT companies, with some being more sensitive to market movements than others.

9.Findings:

- 9.1 Persistent and KPIT TECH stand out with exceptionally high average returns of 84.863% and 98.984%, respectively, indicating strong performance over the specified period.
- 9.2 Quess Corp has the lowest average return among the listed companies, reflecting comparatively weaker financial performance with an average return of 3.465%.
- 9.3 KPIT TECH has the highest beta value of 15.4158, indicating significantly higher volatility compared to other IT companies, while Quess Corp has the lowest beta value of 1.0500, 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 HCL, TECH MAHINDRA, and TCS exhibit moderate average returns and beta values, indicating relatively stable performance compared to companies like Persistent and KPIT TECH.

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 Persistent and KPIT TECH exhibit high average returns and beta values, indicating greater potential for returns but also higher sensitivity to market fluctuations. On the other hand, companies like Qess Corp have lower average returns and beta values, suggesting relatively lower volatility. Overall, investors need to carefully consider the risk-return characteristics of individual IT companies before making investment decisions, taking into account factors such as historical performance, market expectations, and industry trends.

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