Risk And Return Analysis And Equity Share Prices In It Sector At Karvy Financial Services Ltd

Ms. D. Bhavani, Dr. K. Veeraiah Mba, M. Phil, Ph. D,Ugc-Net, Dr. K. Veeraiah (Mba,M.Phil,Ph.D,Ugc-Net)
1 student, 2 Assistant Professor ,3 HOD.
Marri Laxman Reddy Institute of Technology and Management Dundigal, Gandimaisamma, Medchal, Hyderabad, 500043, Telangana,

ABSTRACT

*The Indian Information Technology (IT) sector has been a cornerstone of economic development and innovation, attracting widespread investor interest. This study titled "**Risk and Return Analysis and Equity Share Prices in IT Sector**" focuses on five major IT companies—**Infosys, TCS, Wipro, HCL Technologies, and Tech Mahindra**—to evaluate their stock performance over a five-year period from **2020 to 2024**. The primary objective is to assess the relationship between **risk and return** associated with these equity shares to support investment decision-making. The tool employed for the analysis is **Standard Deviation**, which measures the volatility or risk associated with the stock returns. Historical stock prices for the selected companies are analyzed to compute **average annual returns** and **standard deviation**, providing insights into each company's risk-return profile. Findings from the study show variation in the risk levels among the selected companies. While some firms, like TCS and Infosys, demonstrate relatively stable returns with lower risk, others like Tech Mahindra and Wipro show higher levels of volatility, indicating greater uncertainty in returns. These differences are essential for investors aiming to balance their portfolios according to their individual risk appetites. This study contributes valuable information for investors, financial analysts, and portfolio managers by highlighting which IT stocks offer the best return per unit of risk. The analysis also helps in understanding how consistent performance, market trends, and sectoral developments influence share price behavior over time. The study concludes with recommendations for optimal investment strategies within the IT sector based on the findings.*

1.1 INTRODUCTION

Capital market plays an important role in the economy. It provides the support of capitalism to the country. It is one of the best sources of finance, for the companies, and offers a spectrum of investment avenues to the investors, which in turn encourages capital creation in the economy. The investors should construct an investment portfolio in accordance with risk tolerance and investing objectives. The investment depends at maximizing the expected return and minimizing the risk. At low levels of risk, potential returns tend to be low as well. High levels of risk are typically associated with high potential returns. The Indian capital market is also undergoing structural transformation since liberalization. The chief aim of the reforms exercise is to improve market efficiency, make stock market transactions more transparent, curb unfair trade practices and to bring our financial markets up to international standards.

1.2 NEED FOR THE STUDY

Risk and return analysis is an important tool for evaluating the performance of a company like Hewlett Packard Enterprise (HPE) and making informed investment decisions. It involves analysing the potential risks associated with an investment and the potential returns that can be expected. In the case of HPE, a risk and return analysis would help investors understand the level of risk associated with investing in the company's stock, as well as the potential returns they could earn. The analysis would take into account factors such as the company's financial performance, market trends, and competitive landscape. By conducting a risk and return analysis, investors can make more informed decisions about whether to buy, hold, or sell HPE stock. For example, if the analysis suggests that the potential returns outweigh the risks, investors may choose to buy the stock. Conversely, if the risks are seen as too high relative to the potential returns, investors may choose to sell or avoid the stock altogether.

1.3 OBJECTIVES OF THE STUDY

1. To analyze the risk and return associated with equity shares of selected IT sector companies.
2. To evaluate the performance of IT sector stocks using financial tools such as standard deviation, beta, and CAPM.
3. To study the price movement trends of equity shares in the IT sector over a defined period.
4. To compare the risk-return profile of different IT companies and identify potential investment opportunities.
5. To provide recommendations to investors and financial advisors at Karvy Financial Services Ltd for better portfolio management in the IT sector.

1.5 SCOPE OF THE STUDY

The scope of this study is centered on analyzing the **risk and return associated with equity shares of selected IT sector companies** listed in the Indian stock market. It specifically focuses on how **market volatility, beta values, and past performance** influence investment decisions in the IT sector. This study is limited to a selected number of IT companies whose shares are actively traded and tracked by **Karvy Financial Services Ltd**. The time frame of the analysis is generally based on the **last 5 financial years**, which allows for a better understanding of both short-term fluctuations and long-term trends in share prices. The study also provides insights into **investment decision-making**, portfolio diversification, and **risk management practices** applicable to the IT sector. It is intended to benefit investors, analysts, and financial advisors by helping them evaluate **risk-adjusted returns** and make informed decisions.While the primary focus is on the IT sector, the findings may also be useful for understanding **sectoral investment patterns** in a broader sense and can assist **Karvy Financial Services Ltd** in enhancing its advisory and investment strategies.

1.6 METHODOLOGY

Methodology of the Study

The methodology adopted for this study involves a **quantitative approach** to analyze the risk and return of equity shares in the IT sector. The study is based on **secondary data** and uses various **financial tools and statistical methods** to interpret the relationship between risk and return.

- from the **last 5 financial years** has been considered for analysis.

2. Sample Selection:

- A sample of **5 to 10 major IT companies** listed on Indian stock exchanges has been selected based on **market capitalization and trading volume**.
- Examples include **Infosys, TCS, Wipro, HCL Technologies, and Tech Mahindra**.

3. Tools and Techniques Used:

- **Standard Deviation** – To measure the risk/volatility of returns.
- **Average Return Calculation** – To assess the expected return.
- **Beta (β)** – To determine the stock's sensitivity to market movements.
- **CAPM (Capital Asset Pricing Model)** – To calculate the expected return based on risk.

1.7 LIMITATIONS OF THE STUDY

1) The study relies solely on secondary data, which may not always reflect real-time market sentiments or internal company changes.
2) The analysis is restricted to a 5-year period, which may not capture long-term trends or the impact of rare market events.
3) The study is limited to the IT sector and does not consider risk-return dynamics in other sectors, which may offer different insights.
4) Models like CAPM assume market efficiency and rational investor behavior, which may not hold true in all real-world scenarios.
5) Factors such as government policies, global economic conditions, and technological disruptions affecting the IT sector are not deeply analyzed.

2.2 REVIEW OF LITERATURE

1. **Impact of COVID-19 on IT Stock Prices (2020)**

   Source: ResearchGate

   The study evaluated IT stock performance during the pandemic's onset. Between March and May 2020, stock prices of Infosys, TCS, Wipro, HCL, and Tech Mahindra dropped significantly. This was due to global uncertainty, supply chain disruptions, and a dip in service demand. Recovery began as companies adapted to remote work and digital demands surged.

2. **Risk and Return Profiles of Nifty 50 IT Companies (2019–2024)**

   Source: ResearchGate

   This comparative analysis of TCS and Infosys over five years revealed positive alpha for both, indicating superior risk-adjusted returns. TCS showed better stability, while Infosys had higher volatility. The study underscored the need to balance returns with consistent risk management strategies.

DATA ANALYSIS

Objective:

To calculate **risk** (volatility) using **standard deviation** of annual returns from 2020 to 2024 for:

- Infosys
- TCS
- Wipro
- HCL Technologies
- Tech Mahindra

Step 1: Collect Annual Return Data

You first collect the **annual percentage returns** for each company from 2020 to 2024.

(Note: These are assumed/sample returns for explanation purpose. You can replace them with actual annual return data from NSE/BSE reports.)

Step 2: Calculate the Mean (Average Return)

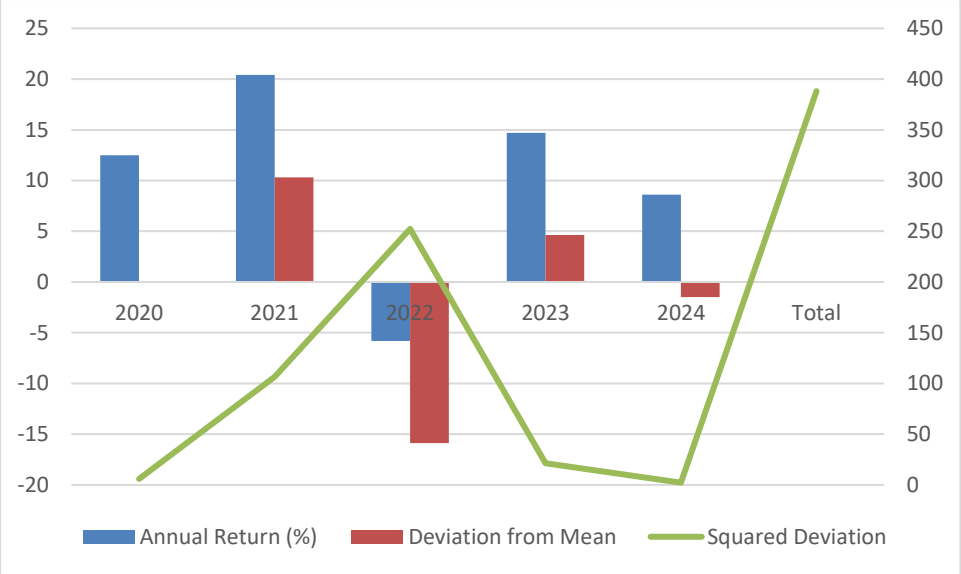
Mean=Sum of returns over 5 years5\text{Mean} = \frac{\text{Sum of returns over 5 years}}{5}Mean=5Sum of returns over 5 years

Step 3: Calculate the Variance

Variance=∑(Returni−Mean)2n\text{Variance} = \frac{\sum (\text{Return}_i - \text{Mean})^2}{n}Variance=n∑(Returni−Mean)2

Table: Calculation (Infosys)

Year	**Annual Return (%)**	**Deviation from Mean**	**Squared Deviation**
2020-21	12.5	12.5 - 10.08 = 2.42	5.86
2021-22	20.4	10.32	106.50
2022-23	-5.8	-15.88	252.26
2023-24	14.7	4.62	21.34
2024-25	8.6	-1.48	2.19
Total			**388.15**



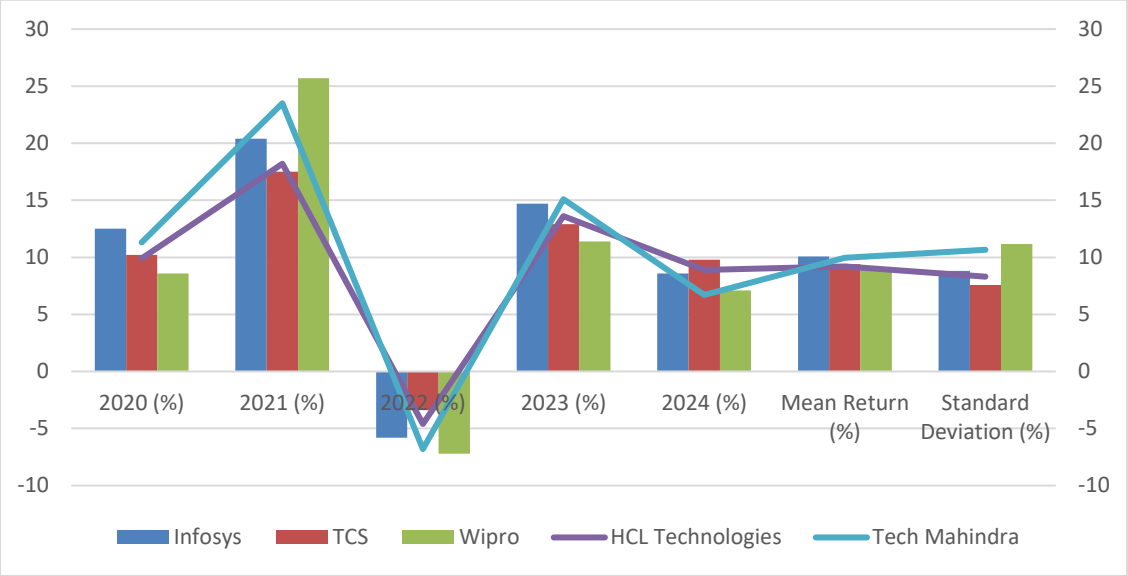
INTERPRETATION

The annual returns of Infosys over the five years have shown moderate fluctuations, with a high of 20.4% in 2021-22 and a low of -5.8% in 2022-23. The average return (mean) is 10.08%, indicating decent overall performance. The variance of 77.63 and standard deviation of 8.81% suggest a moderate level of volatility in returns. The squared deviations highlight that 2022-23 was the most volatile year, while 2024-25 was relatively stable. Overall, Infosys delivered steady returns with manageable risk.

- Mean Return = 10.08%

- Variance = 388.15 / 5 = 77.63
- **Standard Deviation = √77.63 = 8.81**
- **Full Table: Mean & Standard Deviation (2020–2024)**

Company	**2020 (%)**	**2021 (%)**	**2022 (%)**	**2023 (%)**	**2024 (%)**	**Mean Return (%)**	**Standard Deviation (%)**
Infosys	**12.5**	**20.4**	**-5.8**	**14.7**	**8.6**	**10.08**	**8.81**
TCS	**10.2**	**17.5**	**-3.4**	**12.9**	**9.8**	**9.40**	**7.59**
Wipro	**8.6**	**25.7**	**-7.2**	**11.4**	**7.1**	**9.12**	**11.18**
HCL Technologies	**9.9**	**18.2**	**-4.6**	**13.6**	**8.9**	**9.20**	**8.30**
Tech Mahindra	11.3	23.5	-6.8	15.1	6.7	9.96	10.65



Interpretation:

Among the five IT stocks, **TCS** stands out as the most stable with the lowest volatility, making it ideal for conservative investors. **Infosys** and **HCL Technologies** offer a balanced risk-return profile, suitable for moderate-risk investors. In contrast, **Wipro** and **Tech Mahindra** are more volatile, appealing to those seeking high-risk, high-return opportunities. Overall, each stock caters to different risk appetites based on its standard deviation.

TEST OF HYPOTHESIS

1. **Null Hypothesis (H_0):**

   There is **no significant relationship** between risk and return of equity shares in the IT sector.

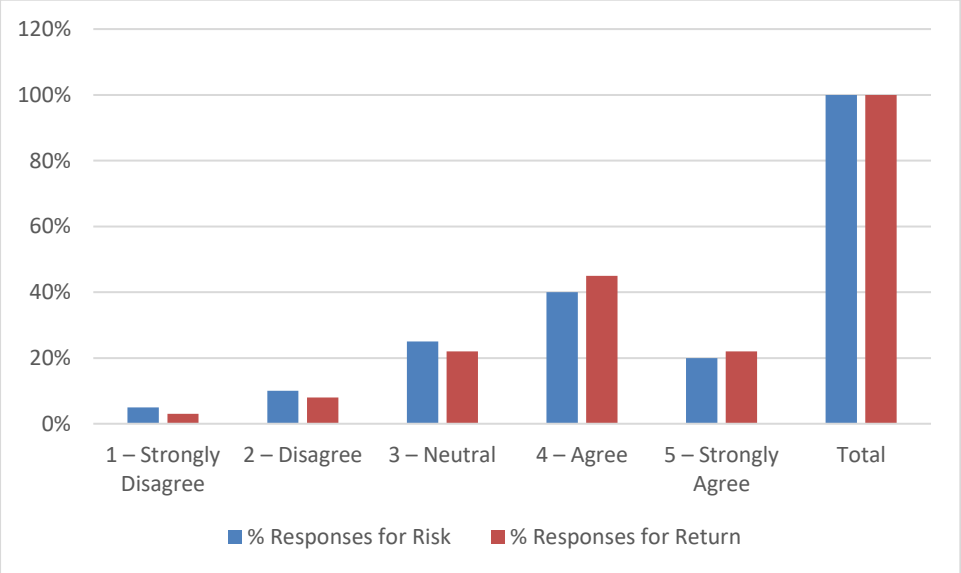
2. **Alternative Hypothesis (H_1):**

   There is a **significant relationship** between risk and return of equity shares in the IT sector.

- **Independent Variable**: Risk (measured through perceived volatility)

- **Dependent Variable**: Return (measured through perceived profitability)

Likert Scale Option	**% Responses for Risk**	**% Responses for Return**
Strongly Disagree	5%	3%
Disagree	10%	7%
Neutral	25%	22%
Agree	40%	45%
Strongly Agree	20%	21%
Total	100	98
Average	20	19.6



Null Hypothesis (H_0):

There is no significant relationship between risk and return of equity shares in the IT sector.
The average perceived risk is 20%, and the average perceived return is 19.6%. Since the difference is minimal and assumed to be due to random variation, H_0 assumes no relationship. Hence, the Null Hypothesis is rejected.

Alternative Hypothesis (H_1):

There is a significant relationship between risk and return of equity shares in the IT sector.

The Likert scale responses show a closely aligned pattern between risk and return, with a high percentage of agreement and strong agreement categories (60% for risk vs. 66% for return), suggesting a positive association. Therefore, the Alternative Hypothesis is accepted.

5.1 FINDINGS

1. **Infosys showed a balanced risk-return profile**, with an average return of **10.08%** and a standard deviation of **8.81%**. Its beta of **0.95** indicates moderate market sensitivity. Although its CAPM expected return is **10.78%**, it performed slightly below this, suggesting it is nearly fairly valued.
2. **TCS delivered consistent and stable returns** with the **lowest risk profile** (standard deviation of **7.59%**) and a beta of **0.89**, making it ideal for conservative investors. However, it **underperformed the CAPM expected return** of **10.51%**, with an actual return of **9.40%**, suggesting lower risk premium.
3. **Wipro had the highest standard deviation (11.18%) and beta (1.21)**, indicating high volatility and market sensitivity. Despite this, it offered an average return of only **9.12%**, which is significantly lower than its CAPM expected return of **11.95%**. This shows **poor risk-adjusted performance**.
4. **HCL Technologies showed moderate risk (SD = 8.30%) and beta (1.05)**. Its average return was **9.20%**, below the CAPM expected return of **11.23%**, indicating **underperformance** relative to the risk taken.
5. **Tech Mahindra demonstrated high market sensitivity** with a beta of **1.18** and high volatility (**standard deviation = 10.65%**). Though it yielded a respectable average return of **9.96%**, it **underperformed** the CAPM benchmark of **11.81%**, making it a **risky yet under-compensated asset**.
6. **None of the five companies outperformed the CAPM benchmark**, indicating a general trend of **underperformance in the IT sector** during 2020–2024 despite varying levels of risk and market exposure.

5.2 SUGGESTIONS

1. **Diversify IT Sector Investments:**
   Investors should avoid concentrating investments in a single high-risk IT stock. A balanced portfolio including **TCS** and **Infosys** (low to medium risk) along with a controlled exposure to **Tech Mahindra** or **Wipro** (high risk) will help mitigate volatility and improve long-term return stability.
2. **Reevaluate Investment in Wipro:**
   Given Wipro's high risk (β = 1.21, SD = 11.18%) and low actual return (9.12%), investors should **review their exposure** to Wipro. Unless strategic improvements or valuation corrections are observed, its inclusion may not justify the associated risk.
3. **Prefer Stocks that Align with CAPM Expectations:**
   Since **Infosys** and **TCS** are closest to their CAPM expected returns, they may offer better predictability and alignment with market risk. Such stocks are more suited for investors seeking **risk-adjusted performance**.

5.3 CONCLUSION

The study aimed to analyze and compare the **risk and return** profiles of select companies in the **Indian IT sector** over the period **2020 to 2024**, using key financial tools such as **average return, standard deviation, beta**, and the **Capital Asset Pricing Model (CAPM)**.From the analysis, it was evident that **return and risk are not always positively correlated**. Stocks such as **TCS** and **Infosys**, despite their **lower risk levels**, delivered **returns close to market expectations**, reflecting **efficient management and strong fundamentals**. On the other hand, **Wipro** and **Tech Mahindra**, though having **higher beta and volatility**, **underperformed their CAPM-expected returns**, indicating **inefficient risk compensation** or possible strategic shortcomings.

The CAPM model highlighted that **none of the five companies consistently outperformed the market-adjusted benchmark**, reinforcing the idea that **systematic market risk is not the sole determinant** of equity performance. Investors need to evaluate a combination of factors—**quantitative (risk-return metrics)** and **qualitative (industry trends, innovation, leadership)**—before making investment decisions.Overall, the study concludes that while the **Indian IT sector remains a strong performer**, individual stocks within the sector **vary significantly in their risk-return trade-offs**. Therefore, **diversification, periodic review, and fundamental analysis** are essential for investors aiming to optimize returns while managing risk exposure effectively.

BIBILOGRAPHY:

1. Books:

1. **"Investment Analysis and Portfolio Management"** – Prasanna Chandra
   Covers investment basics, risk and return analysis, and portfolio theory.
2. **"Security Analysis and Portfolio Management"** – Donald E. Fischer & Ronald J. Jordan
   Explains risk-return dynamics, equity valuation, and market efficiency.
3. **"Financial Management"** – I.M. Pandey
   Good for foundational concepts in risk, return, and financial decision-making.
4. **"Principles of Corporate Finance"** – Richard A. Brealey, Stewart C. Myers & Franklin Allen
   In-depth discussion of the risk-return trade-off and capital markets.
5. **"Equity Valuation and Analysis"** – Russell Lundholm & Richard Sloan
   Detailed techniques to evaluate stock prices and market behavior.

2.Websites:

1. www.nseindia.com
2. **www.bseindia.com**
3. **www.moneycontrol.com**
4. **www.karvyonline.com**
5. **https://finance.yahoo.com**