



# RISK AND RETURN ANALYSIS ON EQUITY STOCKS OF SELECTED "IT" COMPANIES

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## ABSTRACT

The analysis of equity in the IT industry reveals a significant correlation between individual IT sectors and the industry overall. This understanding aids in making well-informed decisions about stock investments. Investing inherently involves assessing both risk and potential return, which directly impacts investor behavior. The IT sector is renowned for its rapid growth, making it an attractive option for investors seeking high returns. This study seeks to compare the risk and return characteristics of different IT stocks, helping investors identify specific investment prospects within the IT sector.

**KEYWORDS:** Risk And Return, Average & Standard Deviation.

## 1. Introduction

The stock market is constantly evolving, and forecasts play a significant role in how investors make decisions. The success of an investment hinges on striking a balance between risk and return. This entails comprehending risk to optimize rewards. Analyzing both return and risk impacts how individuals choose where to allocate their investments.

Having a deep understanding of the market is crucial for conducting risk analysis, guiding decision-making, and formulating risk management strategies. Risk assessment involves evaluating volatility and the variance between anticipated and actual returns. Evaluating risk and return is essential for gauging the potential returns of an investment relative to its risk. Diversification can mitigate portfolio risk, although it may constrain potential returns. For example, concentrating solely on a single market sector could generate substantial returns if that sector performs well, but it could also result in losses if the sector underperforms. However, the advantages of diversification diminish if the returns of two assets are highly correlated.

## 2. Statement Of The Problem

Risk and return are closely linked in investing, with risk representing the chance that an investment might not deliver expected returns, while return is the actual profit generated. Analyzing risk and return helps identify portfolios that offer the highest return for a given level of risk, aiding investors in evaluating opportunities effectively. With numerous investment options available, this analysis helps investors understand the risks involved and make informed decisions based on their risk tolerance and expected returns. This study aims to provide investors with the information they need to select their investments wisely.

## 3. Need Of Study

The study intends to assess the risk and return of chosen equity stocks and IT firms in India's volatile stock market. The aim is to pinpoint investment opportunities and analyze the risk-return profiles of specific Indian IT businesses listed on the NSE's IT Index, with the goal of maximizing returns while minimizing risk.

## 4. OBJECTIVE OF THE STUDY

To calculate the return and standard deviation of the "IT industry" with ten selected companies.

## 5. LITERATURE REVIEW

(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 behavioural 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 2010 to 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 (2021) "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 reveal that 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 to analyse 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.

## 6. METHODOLOGY OF RESEARCH

The study utilized secondary data sourced from various outlets such as the NSE website, publications, and journals. Its research design is descriptive in nature.

**7. SAMPLE SIZE:** The study consists of NIFTY IT companies which are listed on NSE

## 8. Statistical tools and techniques

### I. Returns

A company's stock price can fluctuate due to various factors, and market returns represent the gains or losses over a given period. These returns can be either positive, indicating profit, or negative, indicating a loss

## II. Standard deviation

The standard deviation of a dataset indicates how spread out the data points are around the mean. It is calculated as the square root of the variance. A stock with high volatility typically exhibits a high standard deviation, while a stable blue-chip stock tends to have a low standard deviation.

## III. DATA ANALYSIS AND INTERPRETATION

### Formula for calculating the returns

$$\text{Return}_i = \frac{\text{Ending price}_i - \text{Beginning price}_i}{\text{Beginning price}_i}$$

### Formula for calculating the standard deviation

$$SD_i = \sqrt{\text{Variance}_i}$$

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

### Formula for getting average returns of the stocks.

$$\text{Average return for } i; \text{ Stock} = \frac{\sum \text{Stock Returns}_i}{n}$$

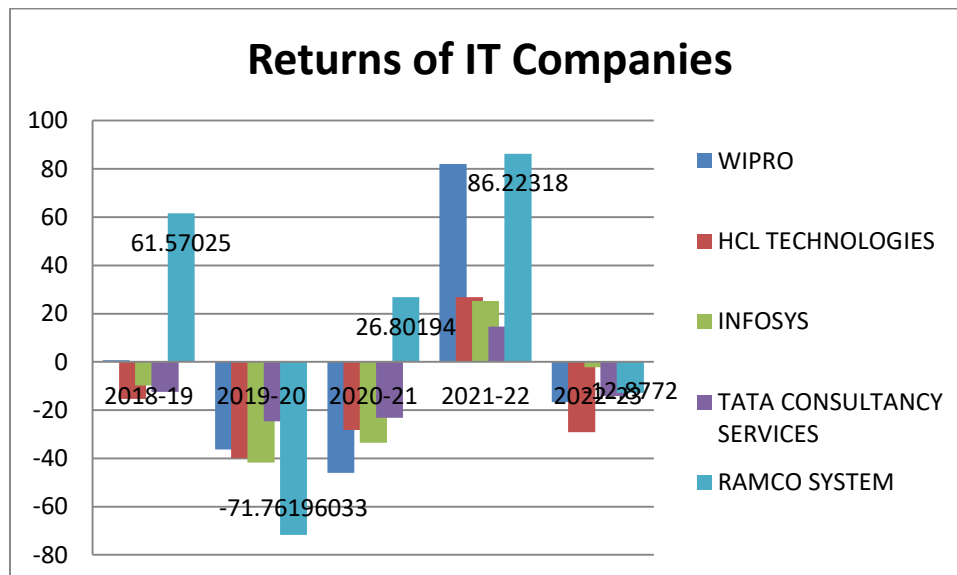
Note: n = Number stocks

## 9.Data Analysis And Interpretation

**TBALE NO 1 : The Returns Of 'IT' Companies**

Name of company	2018-19	2019-20	2020-21	2021-22	2022-23
WIPRO	0.707461	-36.3236246	-45.9941	82.07739	-16.7267
HCL TECHNOLOGIES	-15.3049	-39.92811459	-28.2502	26.89124	-29.1317
INFOSYS	-9.82576	-41.73269101	-33.5406	25.25022	-2.21344
TATA CONSULTANCY SERVICES	-12.3884	-24.69862727	-23.192	14.65368	-14.1161
RAMCO SYSTEM	61.57025	-71.76196033	26.80194	86.22318	-12.8772

**CHART NO 1 : The chart of Return 'IT' Companies**

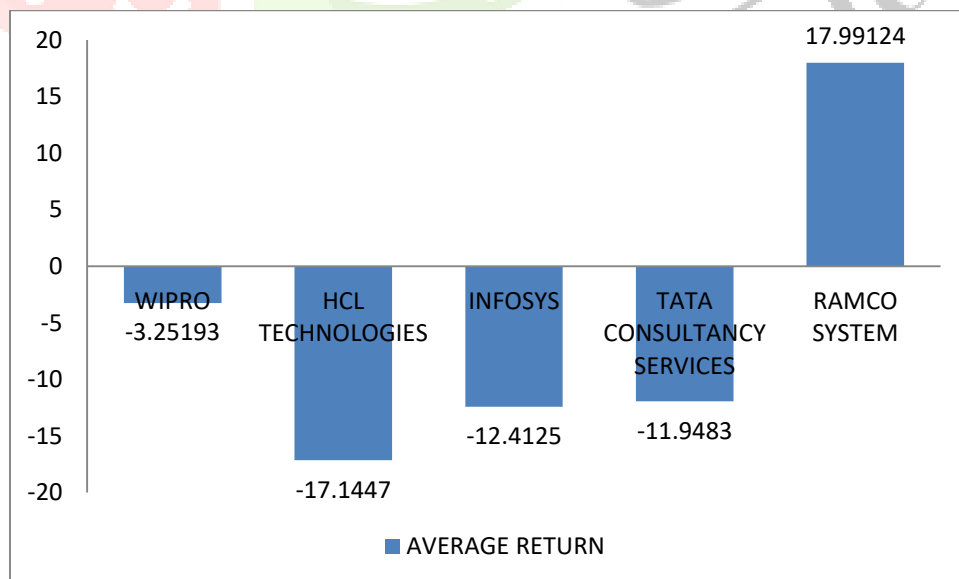


**INTERPRETATION :**

The data provided showcases the financial performance of several prominent IT companies over a span of five years. Among them, WIPRO displayed a rollercoaster ride with fluctuations in profits, experiencing a significant downturn in 2019-20 and 2020-21 followed by a notable rebound in 2021-22 but then a subsequent decrease in 2022-23. Conversely, HCL Technologies and Infosys demonstrated consistently negative performance trends, enduring declines in revenue or profits across the years. Tata Consultancy Services faced challenges as well, albeit with a relatively milder decrease compared to its counterparts. On the other hand, Ramco System exhibited significant volatility, witnessing a surge in 2018-19 and 2021-22 but sharp declines in 2019-20 and 2022-23. Overall, the data paints a picture of a sector grappling with various economic and industry-specific challenges, each company navigating its own course amidst the turbulence.

**TABLE NO : 2 THE AVERAGE RETURN OF ‘IT COMPANIES’**

COMPANY	AVERAGE RETURN
WIPRO	-3.25193
HCL TECHNOLOGIES	-17.1447
INFOSYS	-12.4125
TATA CONSULTANCY SERVICES	-11.9483
RAMCO SYSTEM	17.99124

**CHART NO 2 : The chart of average return****INTERPRETATION :**

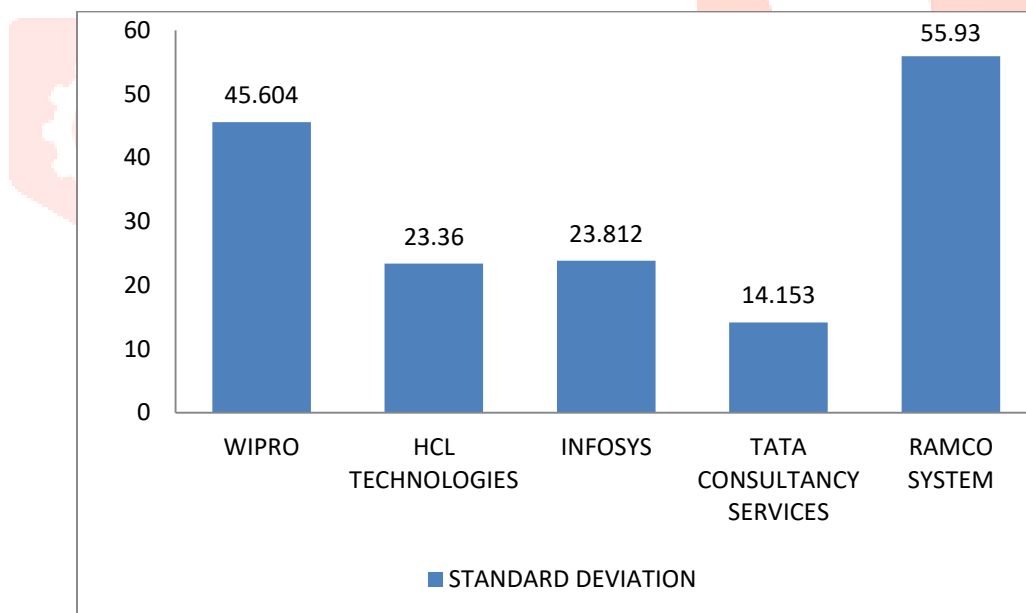
The analysis of the average returns reveals contrasting performances among the listed companies. Wipro recorded a marginal decrease with a return of -3.25%, indicating relative stability compared to others. In stark contrast, HCL Technologies saw a significant decline with a return of -17.14%, suggesting potential challenges or market pressures. Similarly, Infosys and Tata Consultancy Services experienced notable downturns, with returns of -12.41% and -11.95% respectively, pointing to broader industry trends or

company-specific issues. However, amidst the predominantly negative returns, Ramco Systems emerged as a standout performer with a positive return of 17.99%, suggesting strong market demand or successful strategic initiatives. This diverse range of returns underscores the variability and competitiveness within the technology sector.

**TABLE NO 3 : THE STANDARD DEVIATION OF "IT COMPANY"**

COMPANY	STANDARD DEVIATION
WIPRO	45.604
HCL TECHNOLOGIES	23.36
INFOSYS	23.812
TATA CONSULTANCY SERVICES	14.153
RAMCO SYSTEM	55.93

**CHART NO 3 : The chart of standard deviation**



### INTERPRETATION :

The standard deviation values provided offer insights into the variability among the financial performance metrics of different companies. Wipro and Ramco Systems stand out with notably higher standard deviations, indicating greater fluctuations in their data points compared to the others. Conversely, Tata Consultancy Services demonstrates the least variability, as reflected by its significantly lower standard deviation. HCL Technologies and Infosys fall somewhere in between, exhibiting moderate levels of variability in their respective data sets. These standard deviation values serve as useful tools for understanding the relative stability or volatility within the financial performance of these companies.

## **FINDING:**

The data analysis highlights the financial trajectories of various IT companies over a five-year period. WIPRO's performance fluctuated significantly, experiencing a downturn in 2019-20 and 2020-21 followed by a rebound in 2021-22 but then a subsequent decrease in 2022-23. Conversely, HCL Technologies and Infosys consistently showed negative trends, enduring declines in revenue or profits. Tata Consultancy Services faced challenges with a milder decrease. Meanwhile, Ramco System exhibited volatility, witnessing surges in 2018-19 and 2021-22 but sharp declines in 2019-20 and 2022-23. The sector appears to be navigating economic and industry-specific challenges, each company responding differently. Additionally, the analysis of average returns demonstrates varying performances, with WIPRO showing marginal decrease, HCL Technologies experiencing a significant decline, and Ramco Systems emerging as a standout performer with positive returns. The standard deviation values shed light on the variability among companies' financial metrics, with WIPRO and Ramco Systems showing higher fluctuations, Tata Consultancy Services displaying the least variability, and HCL Technologies and Infosys falling in between. These insights highlight the dynamic nature of the technology sector.

## **SUGGESTION:**

The data analysis unveils distinct financial trajectories among the IT companies over the five-year period. WIPRO showcased a rollercoaster ride with noticeable fluctuations, marked by a downturn in 2019-20 and 2020-21, followed by a rebound in 2021-22 but then a subsequent dip in 2022-23. Conversely, HCL Technologies and Infosys exhibited consistent negative trends, while Tata Consultancy Services faced challenges with a relatively milder decline. Meanwhile, Ramco System displayed notable volatility, experiencing peaks in 2018-19 and 2021-22 but sharp drops in 2019-20 and 2022-23. These findings underscore the sector's resilience amidst economic and industry-specific challenges, with each company navigating its unique course. Furthermore, analyzing average returns and standard deviation values sheds light on the variability and competitiveness within the technology landscape, offering insights for strategic decision-making.

## **CONCLUSION:**

In conclusion, the analysis of financial performance among the IT companies reveals a dynamic landscape characterized by fluctuations, challenges, and resilience. While some companies like WIPRO and Ramco System experienced significant ups and downs, others like HCL Technologies and Infosys faced consistent negative trends. Tata Consultancy Services navigated challenges with relative stability. These findings underscore the need for adaptive strategies in response to economic and industry-specific factors. Moving forward, understanding and leveraging these insights will be crucial for companies to thrive in the ever-evolving technology sector.



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