https://doi.org/10.58419/GBS.v8i1.812203

A COMPARATIVE EVALUATION OF PERFORMANCE OF NIFTY IT COMPANIES IN RELATION WITH NIFTY IT INDEX

P Pavan Kumar
Research Scholar, Department of Studies in Business Administration
Vijayanagara Sri Krishnadevaraya University, Ballari 583105, Karnataka, India
Corresponding Email: prof.pa1mba@gmail.com

Dr. Archana H N
Associate Professor, Department of Studies in Business Administration
Vijayanagara Sri Krishnadevaraya University, Ballari 583105, Karnataka, India
Email: archana.hn@gmail.com, archana@vskub.ac.in

ABSTRACT: The Information Technology sector is central to the nation's security, economy and public health. It is one of the fastest growing sectors in Indian Stock Market. This paper evaluated the performance of companies listed in Nifty IT index with an objective to find out the significance level of each company with Nifty IT index with the help of paired sample T-test. The study covered five years starting from 1s January 2017 to 31 December 2021. Mean returns and standard deviation is calculated to analyze and compare the risk return characteristics of the companies listed in Nifty IT index. Correlation is also calculated to know the relationship of each company with Nifty IT index. The result of the study revealed that L&T Infotech, Mindtree, Mphasis, Coforge and TCS are statistically significant. HCLTech, Infosys, Tech Mahindra, Wipro and L&T Services are not statistically significant. This paper has suggested the investors to invest in those companies which are in consistent with the broader indices. Large cap companies are safe to invest than compared to mid and small cap companies.

Key words: Nifty IT index, Risk, Return.

1. INTRODUCTION

Every investor is required to analyze the stock market fluctuations and based on this analysis he should decide which stock to buy and when to buy or sell (Suresh A.S, 2019). Stock market investments are always associated with certain risks (systematic and unsystematic) and mitigating the same becomes necessary. Warren Buffett rightly says that "Risk comes from not knowing what you are doing." So, the knowledge of investments is prerequisite to become successful and intelligent investors. There are number of investment alternatives available to investors such as bullion market, commodity market, currency market, debt market, real estate, insurance, banks, stock markets and such others. All the markets are associated with some risk and return factors. Stock market is not an exception.

This paper aims to evaluate the performance of companies listed in Nifty IT and compare with Nifty IT index in order to know the significance level of each company with Nifty IT. It is always suggested to investors to invest in those stocks which are in consistent with the broader index. Majority of the researchers conducted the risk return analysis on banking sector. Research on other sectors such as information technology, media and entertainment, automobile, pharmaceutical is very less.

All the ten companies listed in Nifty IT index are selected. Compounded Annual Growth Rate of return of each company including Nifty IT index is calculated for a period of five years i.e., from 1st January 2017 to 31st December 2021. Paired sample t-test is used to test the significance level of each company with Nifty IT index. Mean returns and standard deviation is used to understand the risk return characteristics of each company in comparison with Nifty IT index. Correlation is also calculated to know the relationship of each company with Nifty IT index. SPSS v.20 and Microsoft Exel is used for calculations, tabulations and charting.

2. LITERATURE REVIEW

Dr. Praveen Choudhary and Dr. Bhanu Sahu (2020), analyzed the risk and return of public sector banks and private sector banks and compared it with Bank Nifty. Their study gave a clear idea to investors on how to create a portfolio by analyzing the risk and return of each stock and comparing it with bank nifty. The study concluded that private sector banks can give better returns with lesser risk than compared to public sector banks.

Mehta Vani Joghee, Kanagatharani, Gayathri S, Yazini Devi (2021), analyzed the risk and return on seven selected banks with an objective to identify the best investment from selected banking stocks. It has suggested the investors to create a portfolio which can give maximum return with minimum loss. The study concluded that among all seven selected banks Kotak Bank has high returns with less risk.

Prof. Jitendra Patoliya, Raxit V. Hirani and Ashish H. Ajani (2020), evaluated the performance of ten listed banking stocks and compared it with Nifty. The study aims to find out the significance level of each banking stock with Nifty. It also aimed to evaluate the performance of private sector banks and public sector banks to find out which one can give more returns with less risk. The study concluded that private sector banks can give more returns with less risk than compared to public sector banks. The study also concluded that there is no significant difference between returns of selected banks and Nifty returns.

Shobha C.V and Navaneeth K (2017), analyzed the risk and return of the five selected banking stocks by using the econometric model GARCH (1,1) which was developed by Tim Bollerslev. The result of the study revealed that all the selected bank stocks showed an ARCH (β) effect which means a period of high volatility is followed similar high volatility and a low volatility period is followed by a low volatility. In their study, the authors showed the importance of analyzing the daily volatility of bank stocks while constructing a profitable portfolio to investors. The GARCH term also showed persistence of volatility during the study period with high 'a' values. The study concluded that all the selected banks are risky as the sum of ARCH (β) and GARCH (a) is closer to 1.

Dr. Meda Srinivasa Rao, Dr. Venkateswara Row. Podile, Dr. Durga Prasad Navvula (2020), conducted research on twelve selected banking stocks which are part of Nifty index and compared its performance between UPA government and NDA government to know which government facilitate for the growth of the banking sector in India. The study concluded that under UPA government all the selected banking stocks created positive double digit rate of return whereas under NDA government only eight stocks created positive rate of return, remaining four stocks created negative rate of return.

Ms. Nikhitha MH and Dr. Satyendra P. Singh (2020), conducted a comparative study of risk and return of ten selected companies from two prominent sectors of Indian economy. They used beta factors, systematic risk, unsystematic risk and Sharpe's ratio for a comprehensive analysis. The main purpose of this study is to assess the risk and returns of automobile and pharmaceutical companies and compare them with Nifty 50 returns. The study concluded that pharmaceutical companies can generate higher returns than compared to automobile companies. They have also found that pharmaceutical companies despite of generating higher returns consist of lower risk than compared to automobile companies. The average returns of both these sectors offered better returns than compared to selected market index.

Mr. Suresh A.S (2019), conducted an organized analysis of the risk and return of selected Media and Entertainment stocks listed in BSE and compare with the benchmark index. The study has ranked the selected stocks based on average returns, standard deviation, variance, beta and alpha to identify which among them has more returns with less risk. The result showed that Inox Leisure Ltd., has highest average returns with less beta and standard deviation.

Ms. Nagarathinam and Mr. S Sathish (2021), analyzed the risk and return of top ten companies listed in Nifty FMCG index. The study used average returns and beta as measuring tools of risk and return. The study compared the return and risk of each FMCG companies with Nifty FMCG index. It has concluded that Nestle India Ltd., can give high returns with less returns. They have not recommended investing in ITC, Britannia, Godrej, P&J and USL as these stocks have high risk and negative returns.

3. PROBLEM STATEMENT

Risk is inevitable in stock market investments. Investors have very wide choices of investments in stock market as there are many companies available for investments with varied risk return characteristics. Investors should equip with the skill of evaluating the risk and return of each company. Most of the investors are good at analyzing the risk and return of each individual company but they ignore comparing it with the concerned sectoral indices. This paper intends to give an idea to novice investors how performance of each IT company can be evaluated in comparison with Nifty IT index.

4. OBJECTIVES

1. To study how each company's return moves along with Nifty IT.
2. To understand the correlation of each companies with Nifty IT.
3. To analyze the risk return characteristics of large cap, mid cap and small cap companies in Nifty IT.

5. NEED OF THE STUDY

This study is conducted to evaluate the performance of Nifty IT companies and compared it with Nifty IT index to find out the significance level of each company with Nifty IT. This study is conducted to give a clear outlook to the novice investors how to pick the right companies with better returns with less risk.

6. METHODOLOGICAL FRAMEWORK

a. **Research Design:** Analytical research design is used for the purpose of the study.
b. Time period: The data is collected for a period of 5 years starting from 01/01/2017 to 31/12/2021.
c. Sample size: Nifty IT index is selected among eighteen sectoral indices of NSE. All the companies listed in Nifty IT index are selected. These are, HCL Technologies, Infosys, Tata Consultancy Services, Tech Mahindra, Wipro, L&T Services, L&T Infotech, Mindtree, Mphasis and Coforge.
d. Source of Data: The complete study is based on secondary data which is collected from various financial websites and journal articles.
e. Data analysis tools: The data analysis tools used for the study are:

i. Paired sample T-test
ii. Mean returns
iii. Standard deviation
iv. Correlation

7. THEORETICAL FRAMEWORK OF NIFTY IT INDEX

Nifty IT is a sectoral index of NSE. Nifty IT index is calculated on the basis of Periodic Capped Free Float methodology. There are ten IT companies listed in it. These are HCL Technologies, Infosys, Tata Consultancy Services, Tech Mahindra, Wipro, L&T Services, L&T Infotech, Mindtree, Mphasis and Coforge. Among these, large cap companies are HCL Technologies, Infosys, Tata Consultancy Services, Tech Mahindra, Wipro, mid cap companies are L&T Services, L&T Infotech, Mindtree, Mphasis and small cap company is Coforge.

8. HYPOTHESIS

H_{01} – There is no significant difference between HCL Tech’s return and Nifty IT’s return.

H_{02} - There is no significant difference between Infosys’ return and Nifty IT’s return.

H_{03} - There is no significant difference between TCS’ return and Nifty IT’s return.

H_{04} - There is no significant difference between Tech Mahindra’s return and Nifty IT’s return.

H_{05} - There is no significant difference between Wipro’s return and Nifty IT’s return.

H_{06} - There is no significant difference between L&T Services’ return and Nifty IT’s return.

H_{07} - There is no significant difference between L&T infotech’s return and Nifty IT’s return.

H_{08} - There is no significant difference between Mind tree’s return and Nifty IT’s return.

H_{09} - There is no significant difference between Mphasis’ return and Nifty IT’s return.

H_{10} - There is no significant difference between Coforge’s return and Nifty IT’s return.

9. DATA ANALYSIS AND INTERPRETATION

Table 1 show the stock price CAGR of companies listed in Nifty IT.

Nifty IT constituents	Stock price CAGR				
	2017	2018	2019	2020	2021
HCL Technologies	25.89	30.96	39.52	51.81	38.37
Infosys	30.18	37.94	42.03	60.71	50.32
Tata Consultancy Services	25.87	28.97	25.46	31.49	30.56
Tech mahindra	29.63	37.28	35.28	53.27	83.97
Wipro	32.06	31.93	42.14	70.48	85.23
L&T Services	48.02	11.65	48.55	95.3	139.27
L&T Infotech	60.9	60	61.8	104.7	100.38
Mindtree	55.72	67.17	76.86	144	187.95
Mphasis	43.16	47.08	49.43	91.95	120.58
Coforge	69.18	73.84	72.42	92.47	117.74

Source: Compiled and calculated

Table 2 show the index price CAGR of Nifty IT.

Nifty IT CAGR				
2017	**2018**	**2019**	**2020**	**2021**
30.06	34.96	38.91	57.24	59.59

Source: Compiled and calculated

Table 3 show the calculated values of Significance level (2 tailed) through Paired Sample T-test using SPSS.

Pairs		Sig (2 tailed)
Pair 1	Nifty_IT - HCLTech	.141
Pair 2	Nifty_IT - Infosys	.974
Pair 3	Nifty_IT - TCS	.036
Pair 4	Nifty_IT - Tech_Mahindra	.519
Pair 5	Nifty_IT - Wipro	.182
Pair 6	Nifty_IT - LT_Services	.224
Pair 7	Nifty_IT - LT_Infotech	.002
Pair 8	Nifty_IT - Mindtree	.035
Pair 9	Nifty_IT - Mphasis	.035
Pair 10	Nifty_IT - Coforge	.001

Source: Compiled and calculated

Interpretation

L&T Infotech, Mindtree, Mphasis, Coforge and TCS are statistically significant as its p value is less than 0.05. HCLTech, Infosys, Tech Mahindra, Wipro and L&T Services are not statistically significant as its p value is more than 0.05. Hence H_{07}, H_{08}, H_{09}, H_{010} and H_{03} are rejected and H_{01}, H_{02}, H_{04}, H_{05} and H_{06} are accepted.

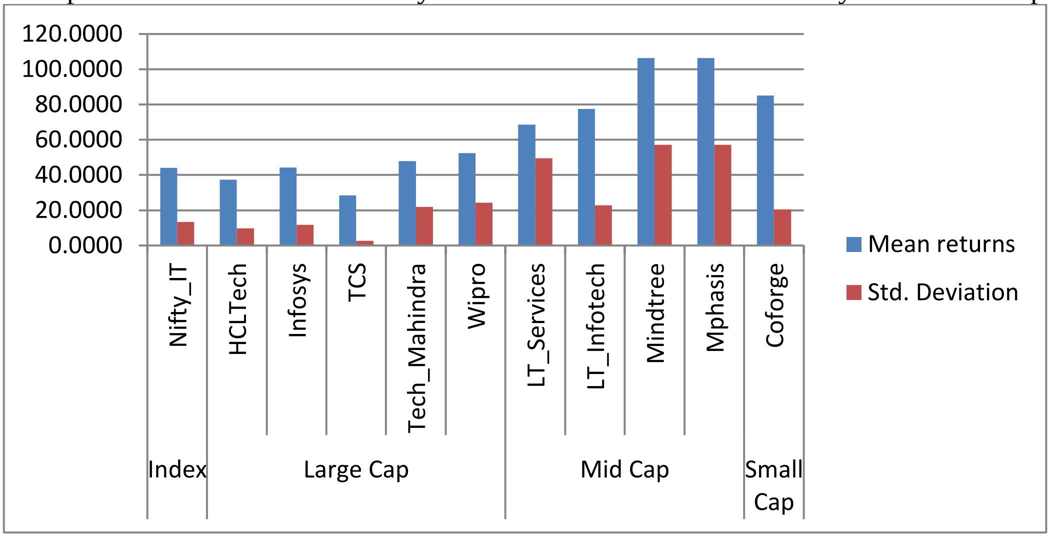
Table 4 shows mean returns and standard deviation of five years of companies listed in Nifty IT and Nifty IT index.

	Mean returns	Std. Deviation
Nifty IT	44.1520	13.41812
HCLTech	37.3100	9.83611
Infosys	44.2360	11.73121
TCS	28.4700	2.71839
Tech Mahindra	47.8860	21.99842
Wipro	52.3680	24.20069
L&T Services	68.5580	49.43676
L&T Infotech	77.5540	22.86414
Mindtree	106.3400	57.10563
Mphasis	106.3400	57.10563

Coforge	85.1300	20.37583

Source: Compiled and calculated

Chart 1 depicts the mean returns of five years and standard deviation of Nifty IT and its companies



Interpretation

It is clear from the above chart that mid cap and small cap companies are able to give more returns. But these companies consist of more risk too. Mind tree and Mphasis are top performers in returns. But these companies have high risk than compared to other companies. Infosys is in line with Nifty IT. Aggressive investors who can take more risk can invest in Mind tree and Mphasis for more returns. Moderate investors who can take moderate risk can invest in Tech Mahindra, Wipro, L&T Services. Conservative investors can invest in Infosys and TCS. It is also observed from the above chart that Coforge has high return with comparatively less risk.

Table 5 show the Correlation coefficient of companies listed in Nifty IT with Nifty IT index

Companies listed in Nifty IT	Nifty IT index
HCLTech	0.784 Strong
Infosys	0.916 Very strong
TCS	0.820 Very strong
Tech Mahindra	0.888 Very strong
Wipro	0.979 Very strong
L&T Services	0.889 Very strong
L&T Infotech	0.967 Very strong
Mindtree	0.972 Very strong
Mphasis	0.972 Very strong
Coforge	0.910 Very strong

Source: Compiled and calculated

Interpretation

All the companies listed in Nifty IT are very strongly correlated with Nifty IT index. Among them Infosys, Tech Mahindra, L&T Services and Coforge are significant at five percent level of significance and Wipro, L&T Infotech, Mindtree and Mphasis are significant at one percent level of significance.

10. FINDINGS

1. All large cap companies (except L&T Services) are not statistically significant. It means the returns earned by these companies are in consistent with Nifty IT.
2. All mid cap and small cap companies (except TCS) are statistically significant. It means the returns earned by these companies are not in consistent with Nifty IT.
3. Infosys return is almost equal to Nifty IT and its risk is comparatively less than Nifty IT.
4. Both risk and return of TCS is very less than compared to all the other companies including Nifty IT.
5. Mindtree and Mphasis have high risk and high returns than compared to all.
6. All the companies are strongly correlated with Nifty IT.

11. LIMITATIONS OF THE STUDY

1. The time period of the research was limited only to 5 years.
2. The study is restricted only to Nifty IT and the companies listed in it. Investors would get better clarity if the performance of various sectoral indices is compared with each other.
3. Only stock price CAGR is considered for the study. There are other CAGRs such as revenue CAGR, profit CAGR, return on equity CAGR and such others are not considered for the study.
4. Income earned during the study period in the form of dividends is not considered.

12. CONCLUSION

Risk return analysis of securities is a very important skill. Investors who aspire to invest in stock market avenues must equip with the skill of evaluating the risk and return characteristics of securities. Risk return analysis of securities helps the investors to pick the right companies with better returns with less risk. Majority of the investors focus on analyzing the risk and return of each individual company and overlook comparing these companies with the concerned sectoral indices. Investors will get the clarity of understanding and take better decisions if the risk and return of the companies are compared with the concerned sectoral indices.

In this paper we calculated the returns of all the listed companies in Nifty IT and compared it with Nifty IT index to understand the significance level of these companies with Nifty IT by using paired sample T-test. The result showed that all large cap companies (except L&T Services) are not statistically significant and all mid cap and small cap companies (except TCS) are statistically significant. It means there is no significant difference of returns of large cap companies with Nifty IT index and there is significant difference of returns of mid and small cap companies with Nifty IT index. It is always suggested to investors to invest in those companies which are in consistent with the broader indices. Large cap companies are safe to invest as it has less risk but can give consistent profits over a long period of time. Aggressive investors who can take more risk for better returns can invest in mid and small cap companies.

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