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A Study on Risk and Return Analysis of selected Sectors in NSE under Different Phases of Economy

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Abstract: *The security market is incredibly dynamic and volatile in nature, where prediction plays a pivotal role for an investor to speculate during this market. Risk and return are two sides of a same coin, where both the aspects influence one another for an investment. Hence, understanding the danger involved within the investment helps to maximise returns. This study helps the investors to look at and compare the assessments together with the market and to spot the corporate which might be preferable to take a position supported their risk-taking ability. The first objective of the study was to assess the chance and return of the 14 NSE listed companies in three sectors together with a secondary objective to check individual company stock volatility during different phases of economy. The tools and techniques used for analysis were Mean, variance, Beta, variance and ANOVA test. Analysis was done by using the closing prices of every day for all the chosen companies for a specified period. The study suggested that investors should be able to face any unforeseen events. To get on a safer side and to reduce the severity of loss during such events, various preventive measures like assessing the danger and return should be done well beforehand.*

Keywords: Risk, Return, Beta, Economic Phases, Volatility

INTRODUCTION

The securities market refers to the gathering of markets and exchanges where regular activities of shopping for, selling and issuance of shares of publicly-held companies occur. Most of the trading within the Indian exchange takes place on its two stock exchanges: the Bombay securities market (BSE) and therefore the National stock market (NSE). Two most significant factors for investment are return and risk. The term return refers to income from a security after an outlined period, either within the sort of interest, dividend, or market appreciation in security value. On the opposite hand, risk refers to uncertainty over the long run to urge this return. There's no fixed return within the stock exchange so, trading available market is extremely risky for investors. Investors generally monitor up and down on index to urge the emotions of the market. Indices within the exchange are considered as a barometer to evaluate the sentiment of the market. Many investors invest in various sectors like automobile, pharma, FMCG, IT, banking, and infrastructure etc., supported their knowledge and take a look at their luck. But these sectors performance depends on the expansion of the economy. If economy is doing well, it's assumed that some sectors also will perform well similarly, if the economy is in recession or having down fall some sectors may have down-wards movement while some sectors give good returns even in fall period.

The present world is technology world; especially it's a computer world. With enormous growth potential Indian information technology industry provides lucrative investment opportunities to the Indian and foreign investors. However with sizable amount companies operating in India, investors always remains in dilemma on which company/companies they ought to invest in? The financial services industry includes several varieties of companies related to the feature of coping with money and managing them, and it plays an important role for any country's economy. The financial services industry as an entire consists of organizations engaged in activities which has making an investment, lending, securities trading and issuance, insuring, asset management, advising, forex, accounting, and lots of more. Energy is among the foremost critical component of infrastructure, crucial for the economic process and welfare of countries. India's energy sector is one amongst the foremost diversified within the world. Sources of power generation range from conventional sources like coal, lignite, gas, oil, hydro and atomic power to viable non-conventional sources like wind, solar, and agricultural and domestic waste.

The present study is a shot to assess the potential investment opportunities and to diagnose the chance return profile of selected sector companies listed in NSE. The risk return profile of selected companies has been examined on various parameters including absolutely the return, volatility of return, unsystematic risk and systematic risk.

LITERATURE REVIEW

Dr. Pramod Kumar Patjoshi & Dr. Girija Nandini (2020) has done an enquiry on Comparative Risk and Return Analysis of Bombay Stock Exchanges and Steel Sector in India. The target was to check the risks and returns, comprise of Sensex and sample Steel companies in India. They demonstrated the link between risk and return of Sensex and sample Steel businesses in India. The mean, kurtosis, skewness were measured. The analysis discloses that Sensex's average daily returns were positive, but all of the sample steel businesses had negative returns.

Ashok Bantwa & Faizan Ulhaqq Ansari (2019) has done an enquiry on Risk Return Analysis of Equity Stocks: A Study of Selected Indian IT Companies. the target of this study is geared toward evaluating the financial performance of selected IT companies on the parameters of absolute return, abnormal return, expected rate of return as per CAPM model, volatility of return, systematic risk and risk adjusted return, the study is further geared toward comparing the performance of selected IT companies on above parameters. The yearly absolute return and volatility of absolute return were calculated.

Dr. Janet Jyothi Dsouza & Ravinarayana K. S. (2018) has done a groundwork on Empirical Study on Risk and Return Analysis of Mining Sector. The target was to work out the link between the safety return and market return, to look at the soundness of beta for the chosen mining companies, to look at the parametric statistic of mining stocks with SENSEX. The author examined the connection between the safety return and market return & Sensex is employed as market proxy. Author found positive relationship between the protection & market return and also the beta are unstable during the study period.

Dr. R. Narayanasamy and Ms. R. Thirugnanasoundari (2016) has done a probe on Risk and Return Analysis of Equity Shares with Special Reference it Companies (NSE) indicant. The target was to entrap IT sector stocks, the amount of expected return and risk and to check the Variability between Variables, like variance of returns, co-relations, and variance. From the study it had been ready to ascertain the market value and trading of the stocks and to work out the correct choice of a security it rely upon the extent of risk and return factor. It knows exactly to predict price behaviour of market and measure of trading whether it's going to me high or low cost of the stock.

Dr. Rajamohan and M. Muthukamu (2014) has done research on Bank Nifty Index and Other Sectoral Indices of NSE- a Comparative Study. The target was to search out the character and extent of relationship between the performance of Bank Nifty Index and performance of other sectoral indices of National exchange. They compared the performance of the sectoral indices of NSE. Their main objective was to live the influence of banking sector vis-à-vis the opposite sectors. They concluded that there's a direct correlation of influence of the banking sector with other sectors.

OBJECTIVES OF THE STUDY

- To analyses and compare the return and risk assessments of selected sector stocks listed on the National stock market
- To study comparison of risk and returns of selected companies in numerous state of Economy (Rise, fall and stagnant phase).

RESEARCH HYPOTHESIS

1. **H0:** There's no significant difference within the variance of return of nifty in several time phase of economy.
   H1: There's a big difference within the variance of return of nifty in several time phase of economy.
2. **H0:** There's no significant difference in returns in several phase of economy
   There's no significant difference reciprocally of all companies in selected sectors.
   H1: There's significant difference in returns in several phase of economy.
   There's significant difference reciprocally of all companies in selected sectors.

RESEARCH METHODOLOGY

A descriptive research design has been adopted for the study of risks and returns of the chosen sectors. The study is predicated on the secondary data which is being collected from the National exchange official website. The information referring to the stock movements and therefore the other sectoral indices were collected for 4years from 1st Jan 2018 to 31st Dec 2021. June 2020 – December2021 for the analysis of rise phase market movement, January 2020 – May2020 for the analysis of fall phase market movement, January 2018 – December 2019 for the analysis of stagnant phase market movement. Judgmental sampling technique is getting used to pick the sectors and corporations for the study. Sampling frame of this research includes top three sectors whose weightage is highest in Nifty 50 index. The sample consists of 12 companies listed in NSE, four companies in each sector selected on the premise of top corp and Mid cap companies, for the aim of performing the comparison analysis. The study only includes 3 sectors from NSE and is restricted to data collected from 12 companies listed under NSE. This study helps investors to require better decisions regarding their investments. And guides investors to travel for securities on the premise of their risk handling capacity. Researcher wanted to aware people or investors about importance of risk and return analysis for investment point of view. Through this study investors can know that which sector stock give high or low return & which stock has high or low risk in current market.

Sample Size

Sector	Large cap Companies	Mid cap Companies
Financial Sevices	Bajaj finance HDFC AMC	L&T Finance Manappuram Finance
IT Sector	Infosys HCL Tech	Coforge Ltd. Mindtree Ltd.
Energy Sector	Power Grid corp NTPC	Tata Power Torrent Power

DATA ANALYSIS

Table1: Comparative Analysis of Stock Returns and Risk

Particulars	Mean	Std. Deviation	Skewness	Kurtosis	Beta
Nifty	0.00059	0.01254	-1.308	19.561	1
Bajaj Finance	0.00178	0.02677	-0.653	8.631	1.46361
HDFC AMC	0.00061	0.02115	-0.388	6.211	0.79835
L&T Finance	-0.0003	0.02906	-0.34	4.679	1.56927
Manappuram Finance	0.00072	0.02852	-0.126	8.533	1.36851
Infosys	0.00148	0.01831	-0.427	11.64	0.74388
HCL Tech	0.00128	0.01861	0.251	4.53	0.69331
Coforge	0.00266	0.02953	0.424	12.478	0.6224
Mindtree	0.00239	0.02443	-0.175	8.482	0.80387
Power Grid corp.	0.00046	0.01705	0.039	3.482	0.57604
NTPC	-1.00E-5	0.01775	0.104	2.561	0.68243
Tata Power	0.00117	0.02622	0.525	4.27	1.06153
Torrent Power	0.00089	0.02117	0.45	4.841	0.70984
Financial services Index	0.00082	0.02067	4.709	91.74	1
IT Index	0.00133	0.01445	-0.398	7.493	1
Energy Index	0.00059	0.01484	-0.522	7.061	1

The above table shows the typical daily return, of the chosen companies where Coforge Ltd and Mindtree Ltd. has the best returns with lower risk during the study period. Bajaj Finance had a high beta level i.e. 1.46361, but the corporate was earning excellent returns. So, if an investor is prepared to require high risk levels to urge good returns, it's preferable to speculate in Bajaj Finance. The skewness of the daily return is found to be negative for 7 companies in addition because the Nifty. The negatively skewed implies that the return distribution of the businesses traded within the market have a lower probability of earning positive return than positively skewed. The kurtosis of the daily mean return for all companies is excessive, thus suggesting the presence of leptokurtosis (can experience broader fluctuations leading to greater potential for terribly low or high returns). Companies like L&T Finance, Tata Power and Manappuram Finance had high levels of beta, and therefore the returns were low, and for L&T Finance and NTPC it clothed to be negative returns. in step with the results obtained IT Sector has performed better than all other sectors haunted for the analysis.

Table2: Comparative Analysis of Stock Returns and Risk in Rise period

Particulars	Mean	Std. Deviation	Skewness	Kurtosis	Beta
Bajaj	0.00324	0.02409	0.443	1.325	1.57375
HDFC	-8E-05	0.01606	0.58	3.438	0.81528
L&T	0.00127	0.02545	0.142	1.24	1.51724
Manappuram	0.00086	0.02406	-0.441	3.465	1.11145
Infosys	0.00262	0.01553	0.995	4.102	0.71531

HCL Tech	0.00231	0.01773	0.503	2.686	0.70995
Coforge	0.00384	0.02695	0.833	4.619	0.81476
Mindtree	0.00446	0.0219	0.119	1.959	0.86843
Power Grid	0.00153	0.01854	0.596	1.213	0.73982
NTPC	0.00078	0.01893	0.581	1.706	0.8308
Tata	0.00474	0.02854	0.52	4.31	1.39722
Torrent	0.00155	0.01903	0.508	2.979	0.63317

During rise period IT sector performed better with lower risk, in financial service sector Bajaj Finance had good returns with high beta and energy sector performed well with moderate risk.

Table3: Comparative Analysis of Stock Returns and Risk in Fall period

Particulars	Mean	Std. Deviation	Skewness	Kurtosis	Beta
Bajaj	-0.0064	0.04933	-1.211	3.899	1.36557
HDFC	-0.0017	0.03286	-1.363	5.6	0.79901
L&T	-0.0064	0.05117	-0.563	2.429	1.46675
Manappuram	-0.0019	0.05546	-0.035	3.77	1.49286
Infosys	-0.0001	0.03257	0.1	2.949	0.89735
HCL Tech	0.00009	0.0312	0.398	2.713	0.81461
Coforge	0.00079	0.05725	0.25	6.096	1.34281
Mindtree	0.00178	0.04038	0.23	4.079	0.83245
Power Grid	-0.0018	0.02607	-0.834	3.09	0.56164
NTPC	-0.0018	0.02771	-0.431	0.863	0.66141
Tata	-0.0039	0.03465	0.112	1.5	0.74843
Torrent	0.00146	0.02718	-0.962	5.823	0.5814

During fall period IT sector and torrent power had positive returns while other companies had negative return but all the businesses had higher risk

Table4: Comparative Analysis of Stock Returns and Risk in Stagnant period

Particulars	Mean	Std. Deviation	Skewness	Kurtosis	Beta
Bajaj	0.00205	0.02117	0.635	4.711	1.48588
HDFC	0.00198	0.02186	0.239	1.784	0.76701
L&T	-0.0005	0.02522	0.213	1.634	1.83915
Manappuram	0.00104	0.02338	0.331	1.045	1.37895
Infosys	0.00084	0.01628	-1.892	20.693	0.41936
HCL Tech	0.00064	0.01568	-0.266	2.231	0.39065
Coforge	0.00207	0.02256	0.182	3.402	0.8303
Mindtree	0.00081	0.02193	-0.83	12.744	0.67406
Power Grid	-2E-05	0.01293	0.226	0.998	0.41542
NTPC	-0.0003	0.01373	0.041	1.347	0.57235
Tata	-0.0009	0.02129	0.716	4.505	1.3232
Torrent	0.00022	0.02149	0.985	4.756	1.12017

During Stagnant period Financial service and IT sector had good returns with Financial service companies having comparatively higher risk than IT sector and Energy sector had negative returns.

HYPOTHESIS TESTING

H0: There's no significant difference within the variance of return of nifty in several phase of economy.

H1: There's a major difference within the variance of return of nifty in numerous phase of economy.

Table5: One Way ANOVA for Nifty Returns

	SS	df	MS	F	P-value	H0
Between Groups	0.00101	2	0.00050	3.22369	0.04023	Rejected
Within Groups	0.15399	985	0.00016			
Total	0.155	987				

The results of a technique ANOVA indicates that at five percent significance level there's a big difference within the variance of return of nifty in several phase of economy.

H0: There's no significant difference in returns in numerous phase of economy
There's no significant difference reciprocally of economic service companies.

H1: There's significant difference in returns in numerous phase of economy.
There's significant difference reciprocally of monetary service companies.

Table5: Two way ANOVA for Financial Service companies Returns

Source of Variation	SS	df	MS	F	P-value	H0
Rows	7.67	2	3.84	9.72566	0.013102	Rejected
Columns	7.2	3	2.4	0.608466	0.633581	Accepted
Error	2.37	6	3.94			
Total	0.000108	11				

The results of two way ANOVA indicates that at 5 percent significance level there's significant difference in returns in several phase of economy, because the p-value is 0.013102 which is under 0.05 thus, H0 is rejected. While there's no significant difference reciprocally of monetary service companies because the p-value is 0.608466 which is bigger than 0.05 thus, H0-accepted.

H0: There's no significant difference in returns in numerous time phase of economy
There’s no significant difference reciprocally of IT companies.

H1: There's significant difference in returns in numerous time phase of economy.
There's significant difference reciprocally of IT companies.

Table6: Two way ANOVA for IT companies Returns

Source of Variation	SS	df	MS	F	P-value	H0
Rows	1.64	2	8.18	24.17172	0.001346	Rejected
Columns	4.56	3	1.52	4.495083	0.055969	Accepted
Error	2.03	6	3.38			
Total	2.29	11				

The results of two way ANOVA indicates that at 5 percent significance level there's significant difference in returns in several phase of economy, because the p-value is 0.001346 which is less than 0.05 thus, H0 is rejected. While there's no significant difference reciprocally of IT companies because the p-value is 0.055969 which is bigger than 0.05 thus, H0 accepted.

H0: There's no significant difference in returns in several time phase of economy

There's no significant difference reciprocally of Energy companies.

H1: There's significant difference in returns in several time phase of economy.

There's significant difference reciprocally of Energy companies.

Table8: Two way ANOVA for Energy companies Returns

Source of Variation	SS	df	MS	F	P-value	H0
Rows	2.78	2	1.39	3.963801	0.079951	Accepted
Columns	3.92	3	1.31	0.37331	0.775693	Accepted
Error	2.1	6	3.5			
Total	5.27	11				

The results of two way ANOVA indicates that at 5 percent significance level there's no significant difference in returns in numerous phase of economy, because the p-value is 0.079951 which is under 0.05 thus, H0 is rejected. Also there's no significant difference reciprocally of Energy companies because the p-value is 0.775693 which is bigger than 0.05 thus, H0 accepted.

CONCLUSION

Based on detailed data analysis it's concluded that Coforge Ltd. and Mindtree Ltd. have offered highest rate of return to the investors during the study period. The returns of L&T Finance, Tata Power and Manappuram Finance are highly volatile during the study period indicating higher degree of risk in these companies. IT sector had performed with positive returns during the various phase of economy. Financial service sector had good returns with higher risk. supported ANOVA test it's concluded that the returns of stock of all selected companies doesn't differ significantly. Returns of companies differ significantly during different phases of economy for Financial service and IT sector while Energy sector had no significant difference in returns in phases of economy.

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