EQUITY ANALYSIS:CALCULATING MEAN RETURN AND STANDARD DEVIATION OF VARIOUS SELECTED COMPANIES FROM DIFFERENT INDUSTRIES AND CORRELATING INDIVIDUAL RETURN WITH INDEX RETURN.

Mr.Premchand Kaila[1]
Assistant Professor
Department of Management Studies
Eluru College of Engineering and Technology,
Andhra Pradesh, India.

Dr. E. Lokanadha Reddy[2]
Professor
Department of Management Studies
Sri Venkateswara College of Engineering & Technology (Autonomous),
Andhra Pradesh, India.

Dr.C.Rajanikanth[3]
Associate Professor
Department of Management Studies
Sri Venkateswara College of Engineering & Technology (Autonomous),
Andhra Pradesh, India.

Abstract-Industries are considered to be a major sector in developing economies. The fastest growing sectors have witnessed with high competition and sustainability management, due to this industry has to look over several factors to achieve greater market share. The risk and return analysis linked with any industry reveals the intricacies involved with the articular industry. A close watch on these values throws light on a clear understanding and facilitates in decision making about the investment in securities. While making the decisions regarding investment and financing, one seeks to achieve the right balance between risk and return, in order to optimize the value of the firm. Risk and return go together in investments. Everything an investor (be it the firm or the investor in the firm) does is tied directly or indirectly to return and risk. The objective of any investor is to maximize expected returns from his investments, subject to various constraints, primary risk. Return is the motivating force, inspiring the investor in the form of rewards, for undertaking the investment. The importance of returns in any investment decision can be traced to the factors: it enables investors to compare alternative investments in terms of what they have to offer the investor, it helps in measuring of historical returns which enables the investors to assess how well they have done, it facilitates in measuring of the historical returns also helps in estimation of future returns.

Keywords: Risk and return, Stock market, Equity, Indices, and Correlation.

I.   Introduction

Investors are assigned with great task in their daily life , i.e earning more return with less risk. But the expectations go in adverse movement in some times.Especially stock market have abnormal return and investors think that stock market works on the basis of speculation. Most of them are expecting more than average return without taking risk. But actual scenario is entirely difficult from their illusions. Risk-Return analysis gives the investors a clear view of their returns and risk underlying the investments. Returns are the gains or the losses from a security or a stock for a period usually in percentage. Risk is the deviations of actual return from their expectations of returns. The return is in the form of capital yield. But the realised return shows the deviations. Risk comprises of two components systematic and unsystematic. Systematic risk is caused by external factors to the particular company and uncontrollable by the company. It affects the whole market where as unsystematic risk is particular to company which the factors are specific to that company.The study deals with analysis of risk and return and correlating individual return with index returns to see what happanes when index returns moves.

II.   Review of Literature

K Rajath, Preethimol Gopi,According to his opinion, the risk–return relationship analysis the returns and risk values of the companies from FMCG and Pharmaceutical Industry in India. Both the sectors are providing good returns to the investors. It is found that the high risk gives higher returns. But the investors expect lower risk and higher returns. Risk and Return Analysis based on the historical stock prices helps them to assess the risk before investing. The study found

that stock market is not place for speculative investments and returns from stock market depend upon the risk bearing capacity of the investor. It is proved that return and risk are interrelated.

S.Praveena and Dr. K. Mahendran, It is assumed that investment in common stocks provide more returns than any other financial assets. There is a positive relationship between the stocks holding period and the measures of dispersion with the market return. Longer holding period increase the return of the stocks, invest in negatively skewed stocks also increases the return of the stocks. Negative skewness indicates the put option and the positive skewness indicates the call option of stocks.

Dr. Prasanth B, Ashurkar, Abdhuleah Mahmood A, Abazi (2015) conducted study on 'An Evaluation and Analysis of the Risk/Return profile of selected Banks'. The study was to analyse the economic condition of Indian Banks and to find out the credit exposure that the top five Banks in the country have in the market. They studied the NPA level as against the total assets of the bank. It found that there is a need to manage the risk and maximise the return in all five Banks.

Dr. S Krishnaprabha Mr. M Vijayakumar (2015) had conducted 'a study on risk return analysis of selected stocks in India'. The study conducted to analyse the risk and return of investing in various companies like banking, IT, FMCG, Automobiles, pharmaceuticals etc. The results of the study states that there is less fluctuations in the shares when compared to the market as well as prices. The long term investors are able to predict the about the variations in the share prices. Majority of IT, FMCG, pharmaceutical sectors gives more return compared to banking and automobiles.

Bedanta Bora, Anindita Adhikary (2015) has conducted a study on' Risk and Return Relationship – an Empirical Study of BSE Sensex Companies in India'. The basic framework of the study was analysis of relationship between risk and returns on the basis of beta of 30 companies listed at BSE Sensex. It concluded that 99% of variation in the Sensex is explained by variation in scripts.

III.   Need of the Study

- To know about the risk and return associated with various industries
- To know which is the best company to put investments.
- To know how index returns affect stock returns of individual companies

IV.   Scope of the Study

A better understanding of the stock market trend will facilitate allocation of financial sources to the most profitable investment opportunity. The behavior of stock returns will enable the investors to make appropriate investment decisions. The fluctuations of stock returns are due to several economic and non-economic factors. The study is aimed at ascertaining the behavior of share returns.

The study on fluctuations in equity market helps in understanding the behavior of equity market. It helps the investors to be aware about deviations in the returns of the stocks and enable them to take good decisions when investing in equity shares. The study also helps the customers to ascertain the risk and return of the stocks. This will help the investors viz, individuals, Files in identifying the stocks which would yield them higher return and lesser risk

V.   Objective of the Study

- To calculate mean returns and standard deviation of various selected companies from different industries and correlating them with index return.

VI.   Limitations of the Study

- Since the sample unit comprises only top 5 different industries and 10 companies there is likelihood for differences in the stock price movement trends in other companies.
- The inferences may not be generalized.
- This study is limited to a period of 13 years only (2005 to 2017) and hence the results of the study may not be true for the period before and after the study.
- Volatility in stock market is always subject to change

VII.   Research Methodology

Research Design

This paper analyses the equity share fluctuations in India Selected Industry. It also measures the return and risk involved in stocks and applied for selected companies which would give the information to the investor whether to buy or sell. It correlates individual returns with index and helps the investor to understand it level of impact.

Data and Sources of Data

Secondary data was used for the analysis, has been collected form National Stock Exchange website. For the purpose of this study the yearly closing prices of 5 Sectorial indices and 10 companies included in National stock exchange were taken and their price movement are computed and studied. The sectors selected are as follows:

- Automobile
    - Tata Motors Ltd.
    - Ashok Leyland Limited
- Banking
    - State Bank of India
    - Axis Bank Limited.
- Fast Moving Consumer Goods
    - ITC Limited
    - United Spirits Limited
- Pharma
    - Glenmark Pharmaceuticals Limited
    - Vivimed Labs Ltd
- Tele communication
    - Bharati Airtel Ltd
    - Tata Communications Ltd.

Time Period Covered

The yearly share prices of above mentioned companies were taken for a period from 2005 to 2017. The closing prices of share were taken to analyse the risk and return, and which is used to know the price movements.

Method of Sampling

Since for the purpose of this analysis five sectors are taken and from the five sectors two companies are taken in each sector. Therefore the sampling used for selection of the sectors is judgmental sampling based on the contribution of each sector to the GOP of the country.

Tools used for analysis

- Mean: The mean is the average of the numbers a calculated "central" value of a set of stock returns.
- Variance: Variance ($\sigma 2$) is a measure of the dispersion of a set of data points around their mean value. In other words, variance is a mathematical expectation of the average squared deviations from the mean. It is computed by finding the probability-weighted average of squared deviations from the expected value. Variance measures the variability from an average (volatility). Volatility is a measure of risk, so this statistic can help determine the risk an investor might take on when purchasing a specific security.
- Standard Deviation: A measure of the dispersion of a set of data from its mean. The more spread apart the data, the higher the deviation. Standard deviation is calculated as the square root of variance. Standard deviation is a statistical measurement that sheds light on historical volatility.
- Correlation: The correlation coefficient is a measure that determines the degree to which two variables' movements are associated. The range of values for the correlation coefficient is -1.0 to 1.0. If a calculated correlation is greater than 1.0 or less than -1.0, a mistake has been made. A correlation of -1.0 indicates a perfect negative correlation, while a correlation of 1.0 indicates a perfect positive correlation.

Hypothesis:

- H_1= There is negative relationship between Automobile index returns and returns of Tata Motors Ltd and Ashok Leyland Limited.

- H_2= There is negative relationship between Banking index returns and returns of State Bank of India and Axis Bank Limited

- **H_3=** There is negative relationship between Fast Moving Consumer Goods index returns and returns of ITC Limited and United Spirits Limited

- **H_4=** There is negative relationship between Pharma index returns and returns of Glenmark Pharmaceuticals Limited and Vivimed Labs Ltd

- **H_5=** There is negative relationship between Tele communication index returns and returns of Bharati Airtel Ltd and Tata Communications Ltd.

VIII.   Data Analysis and Interpretation

Automobile Industry

Table no: 1 Calculation of mean and standard deviation of Automobile Industry

Descriptive Statistics			
	Mean	Std. Deviation	N
Auto Index	17.3230	58.56364	12
Tata Motors	38.1433	123.96921	12
Ashok Leyland Limited	36.8685	93.02836	12

From the above table it was observed that the mean return for Ashok Leyland Limited is 36.8685 with standard deviation of 93.02836 and Tata Motors mean return is 38.1433 with standard deviation of 123.96921.

Table no: 2 Correlation between Automobile Industry and company

Correlations		Auto Index	Tata Motors	Ashock Laylond
Auto Index	Pearson Correlation	1	.440	.835
	Sig. (2-tailed)		.153	.001
	N	12	12	12
Tata Motors	Pearson Correlation	.440	1	.744
	Sig. (2-tailed)	.153		.005
	N	12	12	12
Ashock Laylond	Pearson Correlation	.835	.744	1
	Sig. (2-tailed)	.001	.005	
	N	12	12	12

The Pearson correlation measures the relationship between the stock market index return and the stock return in a particular period. Correlation should lies between -1 to +1. On an overall the Tata Motors Ltd and Ashok Leyland Limited shows more positive correlation. Thus, Auto index return and Tata Motors Ltd and Ashok Leyland Limited stock have positive co-relation. So Hypothesis 1 is rejected.

Banking Industry

Table no: 3 Calculation of mean and standard deviation of Banking Industry

Descriptive Statistics			
	Mean	Std. Deviation	N
Bank_Index_Return	21.3683	42.14469	12
Axis_Bank_Return	18.0849	56.00550	12
SBI_Return	5.9979	52.19057	12

From the above table it was observed that the mean return for Axis bank is 18.0849 with standard deviation of 56.00550 and State bank of India mean return is 5.9979 with standard deviation of 52.19057

Table no: 4 Correlation between Banking Industry and company

Correlations		Bank_Index_Return	Axis_Bank_Return	SBI_Return
Bank_Index_Return	Pearson Correlation	1	.676	.595
	Sig. (2-tailed)		.016	.041
	N	12	12	12
Axis_Bank_Return	Pearson Correlation	.676	1	.980
	Sig. (2-tailed)	.016		.000
	N	12	12	12
SBI_Return	Pearson Correlation	.595	.980	1
	Sig. (2-tailed)	.041	.000	
	N	12	12	12

The Pearson correlation measures the relationship between the stock market index return and the stock return in a particular period. Correlation should lies between -1 to +1. On an overall the State Bank of India and Axis Bank Limited shows more positive correlation. Thus, Bank index return and State Bank of India and Axis Bank Limited stock have positive co-relation. So Hypothesis 2 is rejected.

FMCG Industry

Table no: 5 Calculation of mean and standard deviation of FMCG Industry

Descriptive Statistics	Mean	Std. Deviation	N
FMCG_Index_Returns	16.3268	17.07271	12
ITC_Company_Return	8.5448	25.09355	12
United_Spirits_Return	38.3446	95.13084	12

From the above table it was observed that the mean return for ITC is 8.5448 with standard deviation of 25.09355 and United Spirits mean return is 38.3446 with standard deviation of 95.13084.

Table no: 6 Correlation between FMCG Industry and company.

Correlations		FMCG_Index_Returns	ITC_Company_Return	United_Spirits_Return
FMCG_Index_Returns	Pearson Correlation	1	.610	.712
	Sig. (2-tailed)		.035	.009
	N	12	12	12
ITC_Company_Return	Pearson Correlation	.610	1	.596
	Sig. (2-tailed)	.035		.041
	N	12	12	12
United_Spirits_Return	Pearson Correlation	.712	.596	1
	Sig. (2-tailed)	.009	.041	

Correlations		FMCG_Index_Returns	ITC_Company_Return	United_Spirits_Return
FMCG_Index_Returns	Pearson Correlation	1	.610	.712
	Sig. (2-tailed)		.035	.009
	N	12	12	12
ITC_Company_Return	Pearson Correlation	.610	1	.596
	Sig. (2-tailed)	.035		.041
	N	12	12	12
United_Spirits_Return	Pearson Correlation	.712	.596	1
	Sig. (2-tailed)	.009	.041	
	N	12	12	12

The Pearson correlation measures the relationship between the stock market index return and the stock return in a particular period. Correlation should lies between -1 to +1. On an overall the ITC Limited and United Spirits Limited shows more positive correlation. Thus, FMCG index return and ITC Limited and United Spirits Limited stock have positive co-relation. So Hypothesis 3 is rejected.

Pharma Industy

Table no: 7 Calculation of mean and standard deviation of Pharma Industry

Descriptive Statistics	Mean	Std. Deviation	N
Pharma Index	17.6273	28.40703	12
Glenmark Return	16.3221	40.57327	12
Vivimed Labs Ltd Return	25.9266	90.81354	12

From the above table it was observed that the mean return for Glenmark Return is 16.3221 with standard deviation of 40.57327 and Vivimed Labs Ltd mean return is 25.9266 with standard deviation of 90.81354.

Table no: 8 Correlation between Pharma Industry and company

Correlations		Pharma_Index_Return	Glenmark_Return	Vivimed Labs Ltd_Return
Pharma_Index_Return	Pearson Correlation	1	.528	.869
	Sig. (2-tailed)		.078	.000
	N	12	12	12
Glenmark Pharmaceuticals Limited _Return	Pearson Correlation	.528	1	.303
	Sig. (2-tailed)	.078		.338
	N	12	12	12
Vivimed Labs Ltd_Return	Pearson Correlation	.869	.303	1
	Sig. (2-tailed)	.000	.338	
	N	12	12	12

The Pearson correlation measures the relationship between the stock market index return and the stock return in a particular period. Correlation should lies between -1 to +1. On an overall the Glenmark Pharmaceuticals Limited and

Vivimed Labs Ltd shows more positive correlation. Thus, Pharma index return and Glenmark Pharmaceuticals Limited and Vivimed Labs Ltd stock have positive co-relation. So Hypothesis 4 is rejected.

Telecom Industry

Table no: 9 Calculation of mean and standard deviation of Telecom Industry

Descriptive Statistics			
	Mean	Std. Deviation	N
Telecom Index Returns	7.2688	34.28637	12
Airtel Returns	5.6991	35.68497	12
TATA COMMUNICATION Return	10.7017	34.92167	12

From the above table it was observed that the mean return for Airtel is 5.6991 with standard deviation of 35.68497 and Tata Communication mean return is 10.7017 with standard deviation of 34.92167.

Table no: 10 Correlation between Telecom Industry and company

Correlations		Telecom_Index Returns	Airtel_Returns	TATA_COMMUNICATIO_Return
Telecom_IndexReturns	Pearson Correlation	1	.837	.648
	Sig. (2-tailed)		.001	.023
	N	12	12	12
Airtel_Returns	Pearson Correlation	.837	1	.554
	Sig. (2-tailed)	.001		.061
	N	12	12	12
TATA_COMMUNICATIO_Return	Pearson Correlation	.648	.554	1
	Sig. (2-tailed)	.023	.061	
	N	12	12	12

The Pearson correlation measures the relationship between the stock market index return and the stock return in a particular period. Correlation should lies between -1 to +1. On an overall the Bharati Airtel Ltd and Tata Communications Ltd shows more positive correlation. Thus, Telecom index return and Bharati Airtel Ltd and Tata Communications Ltd stock have positive co-relation. So Hypothesis 5 is rejected.

IX.   Findings
- It is found through the mean and standard deviation of following ten companies namely Tata Motors Ltd, Ashok Leyland Limited, Axis Bank Limited, State Bank of India, ITC Limited, United Spirits Limited, Glenmark Pharmaceuticals Limited, Vivimed Labs Ltd, Bharati Airtel Ltd and Tata Communications Ltd comparatively different.
- It is clear that the NSE auto index is performing better when compared to individual companies.
- It was observed that there is a high speculation in Tata Motors Company when compared to all other.
- It was analyzed that the Tata communication is best is earning are best adjusted with risk
- In all cases it leads to positive correlation it means that there is relationship between index return and individual company return.

X.   Suggestions
- It may be suggested that the sample companies shall concentrate on improving the company margins rather than depending on market index.
- ITC may issue the shares separately on its diversified units in order to increase returns on market stocks.
- Investors should go for long-term investment.
- Speculators and traders can take advantage of market volatility.

- Before investing, shareholders should use the variables like fundamental analysis, technical analysis, to determine the stock price effectively.

XI.   Conclusion

In the security market the prices of securities have more fluctuating over the 12 years, some of the securities are bullish and others are bearish in trend. The share of some companies are favorable, during the study period. While taking decision, the investor should take relevant information. The analysis like fundamental and technical are very important to take better decision of buying and selling of shares. To conclude, investing in the stock market is very risky. Short-term investment in the equity may be unfavorable but long-term investment will always favorable. So, investor has to prefer the long-term investment like equity stocks. Equity stocks are considered as risky securities but they give a very good return.

XII.   References

Journals-Articles

1. Ashturkar, D. P. (2015). An Evaluation and Analysis of the Risk/Return Profile of Selected Banks. International Journal of Enhanced Research in Science, Technology & Engineering , 4 (8), 37-43.
2. Bedanta Bora, A. A. (2015). Risk and Return Relationship -An Empirical Study of BSE Sensex Companies in India. Universal Journal of Accounting and Finance , 45-51.
3. Dr. S. Krishnaprabha, M. (2015). A Study on Risk and Return Analysis of Selected Stocks in India. International Journal of scientific research and management , 3 (4).
4. K Rajath, P. G. (2016). A Study On Risk-Return Relationship Of Top 10 Companies From Fast Moving Consumergoods (Fmcg) And Pharmaceuticals Sector Listed At Nse India. IJRCM , 6 (7).
5. S.Praveena, D. K. (2012). Role of risk and return in investment decisions among automobile and bank stocks and portfolio selection. Ijrcm , 3 (3).

Books
1. Donald E. Fischer and Ronald. J. Jordan, Security Analysis and Portfolio Management, New Delhi: PHI Private Limited.1998.
2. Prassana Chandran, Investment analysis and Portfolio Management, New Delhi: Tata Mc Graw- Hill Publishin Company Limited 2002.
3. S. Kevin (2015), "Security Analysis and Portfolio Management." PHI Learning Private Limited, Delhi.
4. P. Pandian, Security Analysis and Portfolio Management, Vikas Publishing House Pvt Limited, 01-Nov-2009.
5. By Sudhindra Bhat, Security Analysis & Portfolio Management,Excel books.
6. Ritu Ahuja, Security Analysis and Portfolio Management, Atlantic, 2007.
7. Samuel Thomas, Security Analysis and Portfolio Management,PHI,2014.

Websites

1. www.economictimes.com
2. www.investopedia.com
3. www.moneycontrol.com
4. www.nseindia.com
5. www.bseindia.com