# A STUDY ON RISK ANALYSIS OF SELECTED NSE LISTED COMPANIES

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**KUMARAGURU COLLEGE OF TECHNOLOGY**

COIMBATORE

## BONAFIDE CERTIFICATE

Certified that this project report titled **"A STUDY ON RISK ANALYSIS OF SELECTED NSE LISTED COMPANIES"** is the bonafide work of **Ms. RENU PRIYA.P (0720400033)** who carried out the research under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

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Faculty Guide

Prof. Dr. S.V. Devanathan
Director

**Evaluated and vice-voce conducted on** 1.11.08

**Examiner I**

**Examiner II**

# DECLARATION

I, hereby declare that this project report entitled as **"A STUDY ON RISK ANALYSIS OF SELECTED NSE LISTED COMPANIES"**, has undertaken for academic purpose submitted to Anna University, KCT Business School (Autonomous) in partial fulfillment of requirement for the award of the degree of Master of Business Administration. The project report is the record of the original work done by me under the guidance of Mr. A. Senthil Kumar , during the academic year 2007-2008.

I, also declare hereby, that the information given in this report is correct to the best of my knowledge and belief.

(RENU PRIYA.P)

Place: Coimbatore

Date: 19.09.2008

15-09-08

## PROJECT COMPLETION CERTIFICATE

This is to certify that **Renu Priya. P** (07 MBA 33) the student of MBA Kumaraguru College of Technology (KCT) business school, had undergone a project between 18-06-2008 to 19-07-2008, titled "Risk analysis on selected NSE listed companies"

During tenure her performance was good

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# Executive Summary

# EXECUTIVE SUMMARY

The past decade has witnessed multiple growths in the amount of International trade and business due to the wave of globalization and liberalization all over the world. As a result, the demand for the International money and financial instruments has increased significantly at the global level. In this aspect, the changes in the interest rates, exchange rates and stock market prices at the different financial markets have increased the financial risk to the corporate world. The very survival of the business world is threatened with the adverse changes occurring world wide. The securities market in India are facing a tough time with the ongoing fluctuations in currency, the increase in inflation rate and the political issues which has lead to a fall in the market. The investors feel threatened about the risks of the securities market.

Risk analysis is the technique sort by most of the corporate companies to identify the risk and assess factors that may jeopardize the success of a research or achieving a goal. The investors must be well aware of the possible returns as well as the risk involved in the securities market before they invest into these markets.

The main objective of this research is to analyze the risk and return of the companies in different sectors using the nifty index which are listed in NSE. A total of nine sectors were selected for the analysis and the selected companies were ranked within the sector in the first four places based on the market capitalization. The Risk and Return analysis were carried out for a total of thirty six companies with each sector containing four companies each. The Risk and

Return for these companies were measured in terms of beta and alpha calculated for all the thirty six companies. The companies showing low risk and high returns were considered and their values were selected for the further analysis. The values were then used to draw company correlation matrix from which the best combination was selected.

With the recent fall in the securities market the investors must proceed with some basic analysis such as fundamental analysis and technical analysis before entering in to a long term investment with the securities market. Risk analysis plays a very important role in the above analysis and thus this research entirely deals with the risk and returns of securities in nifty. The analysis could also help the investors for planning a perfect security analysis and bringing in an efficient and profit yielding portfolio construction. The analysis could also save the investors from a heavy loss before their investment in to the market.

# *Introduction*

# CHAPTER 1

# 1. INTRODUCTION

## 1.1 STOCK MARKETS IN INDIA

Stock exchanges intricately inter- woven in the fabric of a nation's economic life. Without a stock exchange, the saving in the community, the sinews of economic progress and productive efficiency would remain under utilized. Stock markets in India can be classified into two periods, securities market before the amendment of securities contract regulation act and after the amendment of act.

Before 1991 that is the period before the amendment of securities contract regulation act primary markets are not into the main stream of financial system. Investors faced lot of problems due to the poor disclosure in prospectus, where it is not made available to the investors. Securities market was fragmented no proper administration since there was a multiplicity of administration. After the amendment of securities act there is a liberal, regulated and developing market. Securities are issued at market determined rate. Online fully automated screen based trading system is introduced and trading rules are revised

## 1.2 NATIONAL STOCK EXCHANGE

NSE is incorporated in the year 1992, and was given recognition as a stock exchange in April 1993.NSE was setup with the following objectives:

- Establishing a national wide trading facility for all types of securities

- Ensuring equal access to all over the country through an appropriate communication network
- Providing a fair, efficient and transparent securities market using electronic trading system
- Enabling shorter settlement cycles and the book entry settlements and
- Meeting the international benchmarks and standards.

Within a short span of life, above objectives have been realized and the exchange has played a leading role as a change agent in transforming the Indian Capital Markets to its present form it was sponsored by the Industrial Development Bank of India (IDBI) and co-sponsored by other term leading institutions like Industrial Finance Corporation of India(IFCI) all insurance companies, selected commercial banks and Financial Institutions. NSE trading is split into two broad categories Wholesale dept market segment (WDMS) Capital Market Segment (CMS). NSE allows trading members to trade from their offices through a communication network called NSEAT (National Stock Exchange Automated Trading). It also enables Wire Free trading through Wireless Application Protocol (WAP) platform.

### 1.3 S&P CNX Nifty:

The S&P CNX Nifty index based upon solid economic research. It was designed not only as a barometer of market movement but also to be a foundation of the new world of financial products based on the index like Index Future, Index options and Index funds. A trillion calculations were expanded to evolve the rules inside this index. The results of this work are remarkably simple:

- The correct size to use is fifty,
- The stock considered for the S&P CNX Nifty must be liquid by the 'Impact Cost' criterion,
- The largest fifty stocks that meet the criterion go into the index.

The S&P CNX Nifty index is a contrast to the Adhoc method that have gone into index construction in the preceding years , where indexes were made out of intuitions and lack of scientific basis. The research that led up to S&P CNX Nifty is well respected internationally as a pioneering effort in better understanding how to make a stock market index.

## 1.4 RISK

Risk may be described as variability/fluctuation/deviation of actual return from expected return from a given asset/investment. Higher the variability, greater is the risk. In other words, the more certain the return from an asset, lesser is the variability and thereby lesser is the risk

### 1.4. a TYPES OF RISK

The risk of a security can be broadly classified into two types such as systematic risk and unsystematic risk. Standard deviation has been used as a proxy measure for total risk

### 1.4. a. i. SYSTEMATIC RISK

Systematic risk refers to that portion of total variability (/risk) in return caused by factors affecting the prices of all securities. Economic, political, and sociological changes are the main sources of systematic risk. Though it affects all the securities in the market, the extent to which it affects a security will vary from one security to another. Systematic risk can be measured in term of Beta (β), a statistical measure. The beta for market portfolio is equal to one by definition. Beta of one (β=1), indicates that volatility of return on the security is same as the market or index; beta more than one (β>1) indicates that the security has more unavoidable risk or is more volatile than market as a whole, and beta less than one (β<1) indicates that the security has less systematic risk or is less volatile than market.

### 1.4. a. ii. UNSYSTEMATIC RISK

Unsystematic risk refers to that portion of total risk that is unique or peculiar to a firm or an industry, above and beyond that affecting securities markets in general. Factors like consumer preference, labor strikes, management capacity etc. cause unsystematic risk (/variability of returns) for a company's stock. Total risk of a fully diversified portfolio equals to the market risk of the portfolio as its specific risk becomes zero.

## 1.5 STATEMENT OF THE PROBLEM

The investor who prefers to invest in the stock market resorts to fundamental or technical analysis as a criterion for investment decision making. However, the researcher prefers to radically differ from the conventional and time consuming process of arriving at the investment

decisions the researcher intense to use the alpha and beta measures as a proxy for the established investment criterion. Hence the risk-return profile done through alpha and beta is projected as a research problem to be studied upon.

## 1.6 OBJECTIVES OF THE STUDY

### PRIMARY OBJECTIVE

- To analyze the risk profile of selected companies which are listed in the NSE during 2004-08

### SECONDARY OBJECTIVE

- To analyze the risk of companies within the sector
- To provide information to the investor about less risk and more profitable company to invest.

## 1.7 NEED FOR THE STUDY

The fair value of a security or the market can be derived from the available information but it is rarely reflected in the price. Thus, risk analysis plays a vital role in identifying the embedded risk in the securities so that the investors and the shareholders may avoid such risky projects. Investment in equity has gained momentum among the investors as the returns are high when compared to other investment avenues. As investment in equity is subjected to several risk factors it is very essential to analyze such risk and construct a more risk diversified portfolio.

## 1.8 SCOPE OF THE STUDY

The current study provides a simple market analysis for new users of the share market. The scope of the study mainly deals with providing technical knowledge to the new investor in the share market. The Market analysis can be used to inform a firm's planning activities, promotional activities and many other aspects of the company. A large number of market analysis techniques are related to sales forecasting, others are more general techniques for analyzing markets.

The study can be used as a valuable tool by the new investor before his investment into the shares of a new company or a well known firm. The study is best suited for investors in the field helping them to analyze the better company which could provide a good profit for their investment.

## 1.9 LIMITATIONS

- Market often over – react thus making prediction fail.
- Time constraint
- Risk analysis alone is not enough to predict the future movement of the price.

## 1.10 COMPANY PROFILE

## ABOUT ANAND RATHI

Anand Rathi is a leading full service securities firm providing the entire gamut of financial services. The firm, founded in 1994 by Mr. AnandRathi, today has a pan India presence as well as an international presence through offices in Dubai and Bangkok. AR provides a breadth of financial and advisory

services including wealth management, investment banking, corporate advisory, brokerage & distribution of equities, commodities, mutual funds and insurance, structured products - all of which are supported by powerful research teams.

The firm's philosophy is entirely client centric, with a clear focus on providing long term value addition to clients, while maintaining the highest standards of excellence, ethics and professionalism. The entire firm activities are divided across distinct client groups: Individuals, Private Clients, Corporates and Institutions and was recently ranked by Asia Money 2006 poll amongst South Asia's top 5 wealth managers for the ultra-rich.

## ANAND RATHI CORE STRENGTHS

### BREADTH OF SERVICES

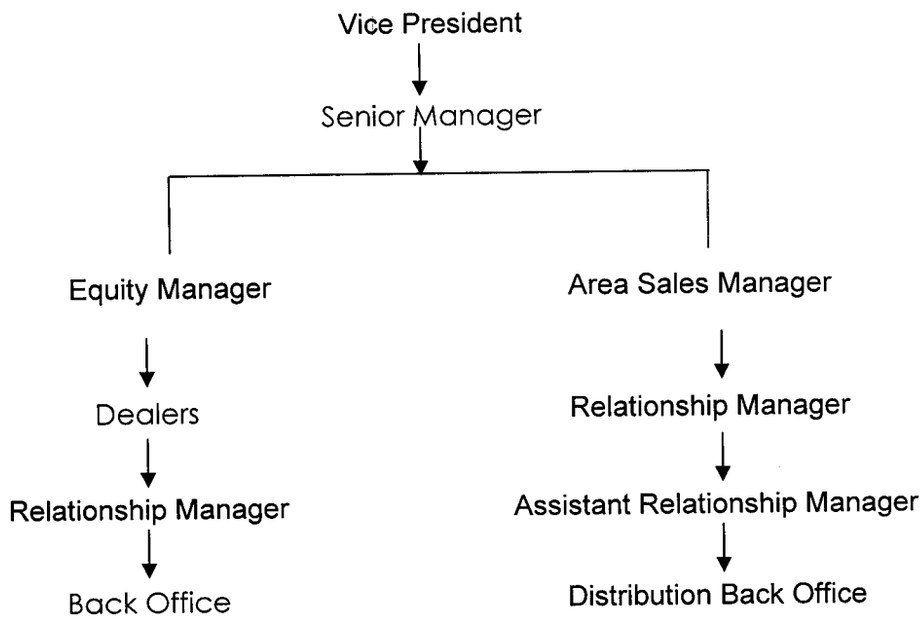
In line with its client-centric philosophy, the firm offers to its clients the entire spectrum of financial services ranging from brokerage services in equities and commodities, distribution of mutual funds, IPOs and insurance products, real estate, investment banking, merger and acquisitions, corporate finance and corporate advisory.

Clients deal with a relationship manager who leverages and brings together the product specialists from across the firm to create an optimum solution to the client needs.

### MANAGEMENT TEAM

AR brings together a highly professional core management team that comprises of individuals with extensive business as well as industry experience.

## ORGANIZATIONAL CHART




## IN-DEPTH RESEARCH

Research teams across the firm continuously track various markets and products. The aim is however common - to go far deeper than others, to deliver incisive insights and ideas and be accountable for results.

# Literature Review

## 1.11 REVIEW OF LITERATURE

*Rakesh kumar and Raj S Dhankar, (2008)*[1] the paper attempts to validate efficient market hypothesis in Indian stock market by examining the relation between risk and return. The return of well-diversified portfolio is composed of regular return plus risk weighted return. The portfolio risk is weighted average of market and non market risk of the constituent stocks the paper also examines the possibility f diversification effect on portfolio risk .the study relies on daily, weekly, monthly adjusted opening and closing prices of BSE100 composite portfolio for the period of June 1996 through may 2005. the findings suggests that the relationship between portfolio return and risk is very weak , based on daily return. It is moderate in the case of weekly return. However, portfolio risk and return exhibit a high degree of positive relationship when monthly return is used. Portfolio non-market risk shows a declining tendency with diversification

R. Prabahar, J. Dhinakaran and Punithavathi Pandian,(2008)[2], the Indian capital market has been witnessing an unprecedented growth with the back of soaring SENSEX and also the magnificent performance of India inc. stock market has become the most desirable investment option for both the Indian and foreign investors. Return and risk are inseparable in most of the investments, and its important to determine how much risk is appropriate to

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[1]Rakesh kumar and raj S Dhankar. (2008)," portfolio performance in relation to risk and return and effect of diversification: A Test of Market Efficiency", the icfai journal of applied finance, vol.14, no.4, 2008 pp.44-56

[2]R. Prabahar, J. Dhinakaran and punithavathi pandian, (2008), " Return and Risk analysis of Indian information technology sector stocks", The icfai journal of financial risk management, volume. V.No.1, 2008.pp.41-49.

attain the required rate of return from investing in any stock under consideration. In paper, an attempt has been made to study the return and risk element of investing in the shares of Indian information technology industry, the IT industry stocks constitutes around 14% of NIFTY, and play a vital role in the moment of the market indices. India is now emerging as a major credible information technology-outsourcing center creating huge opportunities as well as challenges to the investors. Although the stock markets are positive towards the IT stocks, they are also affected by the national and international events. The average daily returns of the six companies studied in this paper were lower than the daily mean return of the indices. The volatilities of the stocks returns over the study perid were much higher than that of the indices. The Beta value of the securities show that except CMC and Moser Baer , other fur securities are very aggressive . The unsystematic risks of the IT stocks were much higher than the systematic risk.

*Vanitha Tripathi and Shalini Gupta, (2008)*[3] over the past few years , value at risk (VaR) has became a standard measure of market risk embraced by banks, trading firms, mutual funds and others, including even the non financial firms. But any risk measure is useful and reliable only insofar as it can be verified for its accuracy. This paper evaluates the accuracy of VaR in estimating the risk in equity investment in India. Fr this purpose, the study uses the daily data for thirty securities comprising BSE-SENSEX and two major stock indices-BSE SESEX and NSE NIFTY for the period January 2006 to February 2007 and portfolio- normal methode for calculatin of VaR. the hypothesis regarding the accuracy of VaR estimates was tested using the chi square test. The results reveals that VaR estimate does not accurately

[3]Vanitha Tripathi and Shalini Gupta.(Estimating the Accuracy of Value-at-Risk in Measuring Risk in Equity Investment in India" The Icfai Journal of applied finance, Vol.14,No.7,2008 pp,15-35.

measure the risk in equity investment in India as VaR over estimates the loss in 24 out of 30 securities it is only in the case of 4 securities that the observed number of violations is exactly equal to the expected number. These results may be attributed through non-normal distribution of equity returns in Indian securities market as against the normally distributed returns assumed under portfolio normal method. All the securities showed excess kurtosis estimate, exhibiting the leptokurtic returns' distribution and also out of thirty securities,20 are showing negatively skewed returns and ten are showing positively skewed returns. Moreover the assumption of past representing the future is also not validated in the present case in the context of stock volatylati observed during the periode the study also observes thatn portfolio-normal methode of VaR computation is a better risk measure for estimating the portfolio risk as compared to risk on induvidual securities.

*Sanjiv Ranjan Das and Raman Uppal, (2004)*[4] Returns on international equities are characterized by jumps; moreover, these jumps tend to occur at the same time across countries leading to systemic risk. We capture these stylized facts using a multivariate system of jump-diffusion processes where the arrival of jumps is simultaneous across assets. We then determine an investor's optimal portfolio for this model of returns. Systemic risk has two effects: One, it reduces the gains from diversification and two, it penalizes investors for holding levered positions. We find that the loss resulting from diminished diversification is small, while that from holding very highly levered positions is large.

[4]Sanjiv Ranjan Das and Raman Uppal,(2004)," systemic risk and international portfolio choice" the journal of finance vol. lix, no. 6

*J. BERNY, (1989)*[5] This paper presents an alternative to the beta continuous probability distribution for risk analysis. Particular attention has been given to two major applications of distributions, namely project management risk and critical path analysis (PERT). In conjunction with the beta, the triangular and normal distributions are frequently employed in order to give sufficient robustness to risk analysis. The beta distribution, as used in PERT, has a major theoretical implementation flaw. The new distribution was developed to give a possible alternative method of assessing risk. It is shown that the requirement to estimate the most pessimistic variate may be replaced by the probability to exceed the mode. Proposals for other simplifications in Ask analysis are discussed. Practical means to validate the most appropriate distributions for risk analysis are outlined, and a cost-data case study is included.

*Peter J. Byrne* and Stephen Lee (2001)*[6] There is remarkably little empirical evidence of the advantages of increased size on risk levels in real estate portfolios based on actual portfolios. This paper improves this by examining the portfolio risk of a large sample of actual real estate data in the UK over the period from 1981 to 1996. The results show that real estate portfolios of larger sizes tend, on average, to have lower risks than smaller sized portfolios and, more importantly, that portfolios with only a few assets can have very high or very low risk. For fund managers to be confident that their portfolio will have a risk level like the average, they need to hold portfolios of a considerably greater size than they might expect, or can sensibly acquire. Previous studies suggesting that only 20-40 properties are

[5] BERNY, (1989)," A New Distribution Function for Risk Analysis" J. Opl Res. Soc. Vol. 40, No. 12, pp. 1121-1127,

[6] Peter J. Byrne* and Stephen Lee, (2001)," Risk Reduction and Real Estate PortfolioSize" Managerial and Decision Economics, Vol. 22, No. 7, Real Estate Economics and Finance, pp. 369-379

needed to reduce the risk of a property portfolio down to the market level are a significant underestimate. The actual figure is likely to be 400-500 properties, well above that of even the largest fund in the UK. Size alone does not necessarily lead to a reduction in portfolio risk. Other factors are of greater importance.

# Research Methodology

# CHAPTER 2

# 2. RESEARCH METHODOLOGY

## 2.1 RESEARCH DESIGN

The research is descriptive in nature as the study was done to give some suggestion to the existing problem and the researcher has no control over the variables and is independent of the state of affairs.

## 2.2 DATA COLLECTION METHOD

Secondary data was used to collect various data pertaining to the study. The secondary data was obtained in the form of share price of the companies and the NIFTY price for the Year 1st April 2004 to 31st March 2008 from the websites

## 2.3 SAMPLING DESIGN

The Sample is initially categorized under non-probabilistic sampling. Nine sectors are selected and based on the judgment sampling techniques four companies are selected in each sector.

### 2.3(a) SAMPLE SIZE

The sample size consist of 36 companies coming under Automobiles, Banking, Computers-Software, Electrical Equipment ,Pharmaceuticals ,Power ,Refineries & Oil Exploration ,Steel ,Metals & Cement ,Telecommunication

sectors as classified in NSE ,based on market capitalization value as on 30.05.2008.

## 2.4 TOOLS OF ANALYSIS

**Beta (β)** = $((n \times \Sigma XY) - (\Sigma X \times \Sigma Y)) / ((n \times \Sigma X^2) - (\Sigma X)^2)$

Where,

n – Number of days,

X – Return of market index,

Y – Return of stock index,

X = {(today's market price – yesterday's market price) / (yesterday's market price)} ×100

Y = {(today's stock price – yesterday's stock price) / (yesterday's stock price)} ×100

**Alpha (α)** = $\bar{Y} - \beta \bar{X}$

Where,

$\bar{X}$ - Average of X return

$\bar{Y}$ - Average of Y return

**Co efficient of correlation (ρ)** = COV(X, Y) / (std. deviation of X × std. deviation of Y)

# *Analysis & Interpretation*

# CHAPTER 3

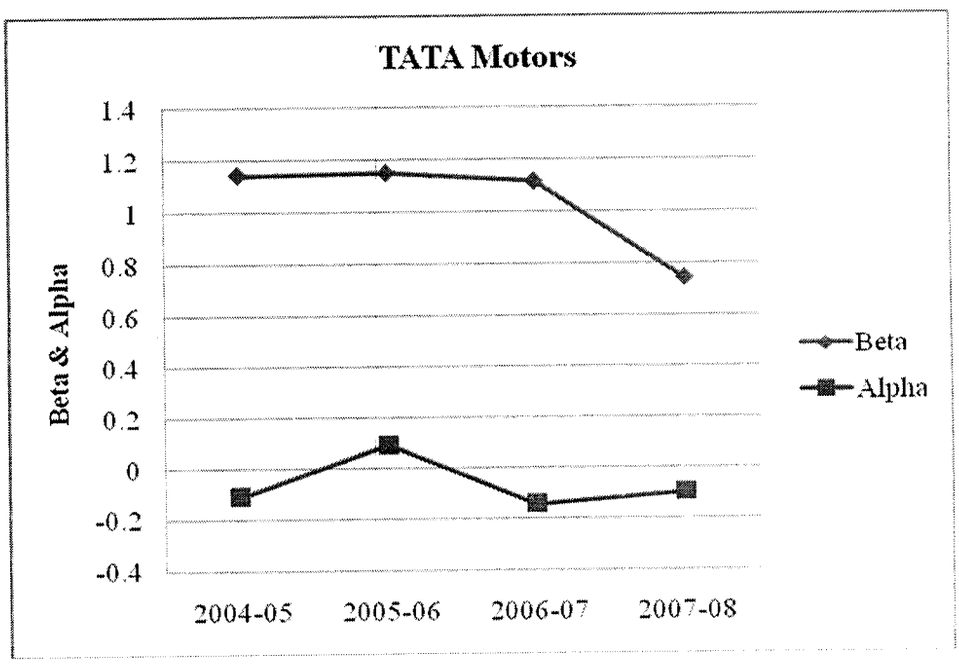
# 3. ANALYSIS & INTERPRETATION

## 3.1 RISK AND RETURN ANALYSIS OF AUTOMOBILE SECTOR TATA MOTORS

**Table 3.1.1 Risk and Return of TATA MOTORS**

| Year | Beta | Alpha |
|---|---|---|
| 2004-05 | 1.143005 | -0.10993 |
| 2005-06 | 1.151395 | 0.091982 |
| 2006-07 | 1.116083 | -0.1449 |
| 2007-08 | 0.745296 | -0.09875 |

**Chart 3.1.1**



## INTERPRETATION

### BETA

- If we analyze the above table & graph, from the year 2004 -2007 the beta is more than 1 for TATA MOTORS.
- From 2004-05 to 2005-06 Beta is increased by 0.008 times but by the next 2 year (i.e.2006-07 to 2007-08) Beta is reduced by 0.03 times & 0.37 times respectively
- As a whole from the year 2004 -08 beta is reduced by 0.40 times

### ALPHA

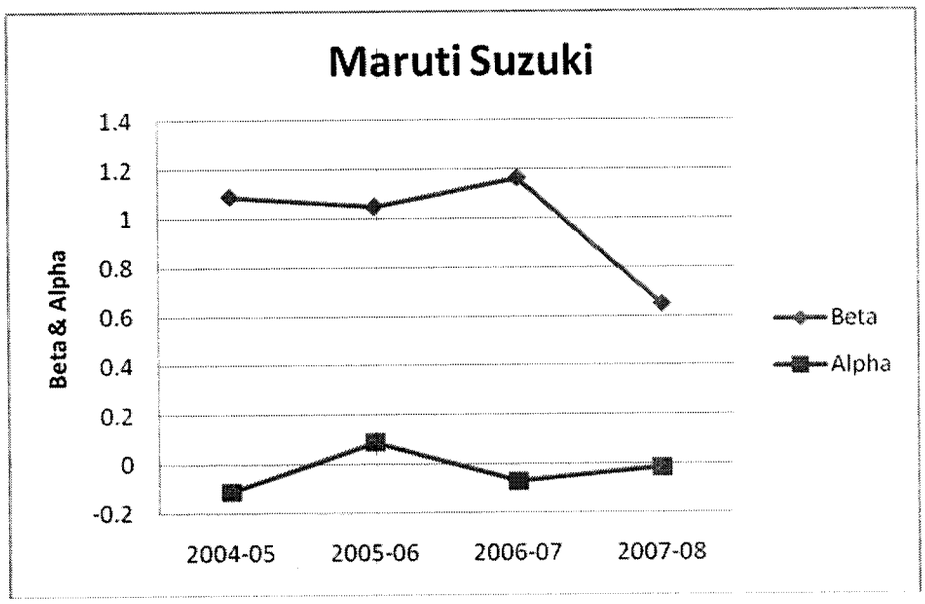
- If we analyze the alpha graph from the year 2004-06 alpha is increased by 0.02 times but in the next year alpha is decreased by 0.05 times and latter in 2007-08 it is increased by 0.05 times
- As the whole from the year 2004-08 alpha increased by 0.01 times

## MARUTI SUZUKI INDIA LTD

**Table 3.1.2 Risk and Return of MARUTI SUZUKI INDIA LTD**

| Year | Beta | Alpha |
|---|---|---|
| 2004-05 | 1.08875 | -0.11194 |
| 2005-06 | 1.048621 | 0.087796 |
| 2006-07 | 1.164128 | -0.07221 |
| 2007-08 | 0.649361 | -0.01633 |

**Chart 3.1.2**



## INTERPRETATION

### BETA

- In the above table & graph for MARUTI SUZUKI LTD beta is reduced to 0.04 times from the year 2004-05 to 2005-06
- From 2005-06 to 2006-07 beta is increased by 0.12 times and finally in the year 2007-08 beta is reduced by 0.51 times
- As a whole from the year 2004 -08 beta is reduced by 0.44 times

### ALPHA

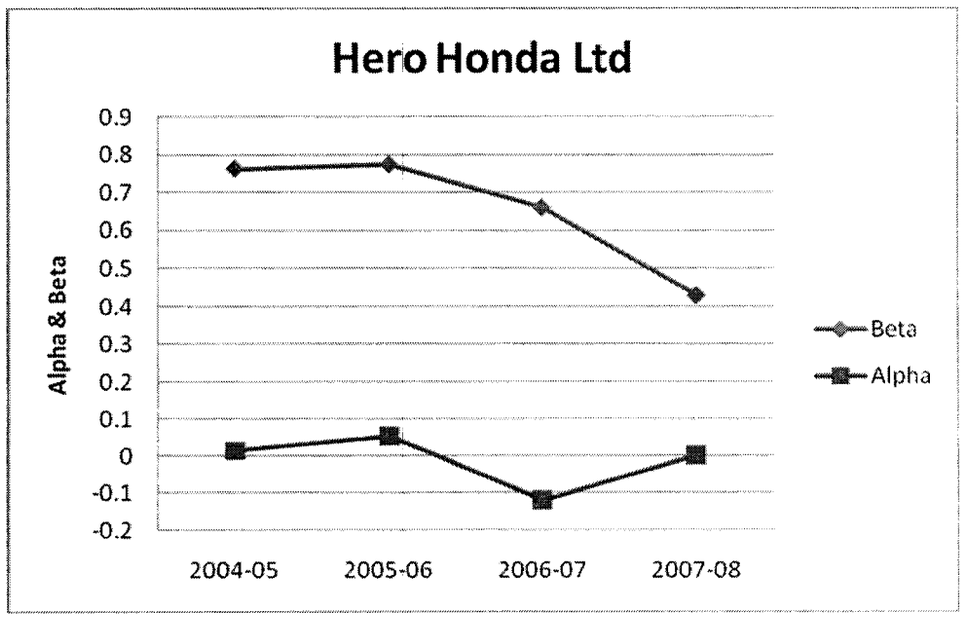
- In the alpha graph of SUZUKI INDIA LTD from the year 2004-05 to 2005-06 alpha is increased by 0.02 times
- From the year 2005-06 to 2006-07 alpha is decreased by 0.02 times and finally in the year 2006-07 to 2007-08 it is increased by 0.05 times
- As a whole from the year 2004-08 alpha is increased by 0.10 times

## HERO HONDA LTD

**Table 3.1.3 Risk and Return of Hero Honda Ltd**

| Year | Beta | Alpha |
|---|---|---|
| 2004-05 | 0.762005 | 0.014727 |
| 2005-06 | 0.773954 | 0.055828 |
| 2006-07 | 0.659948 | -0.11863 |
| 2007-08 | 0.429496 | 0.002099 |

**Chart 3.1.3**



## INTERPRETATION

### BETA

- In the above table & graph for HERO HONDA LTD, from the year 2004-05 to 2005-06 beta is increased by 0.01 times
- From 2005-06 to 2006-07 beta is reduced by 0.11 times and finally in the year 2006-07 to 2007-08 beta is reduced by 0.23 times
- As a whole beta of HERO HONDA LTD is reduced by 0.33 times from the year 2004 -08

### ALPHA

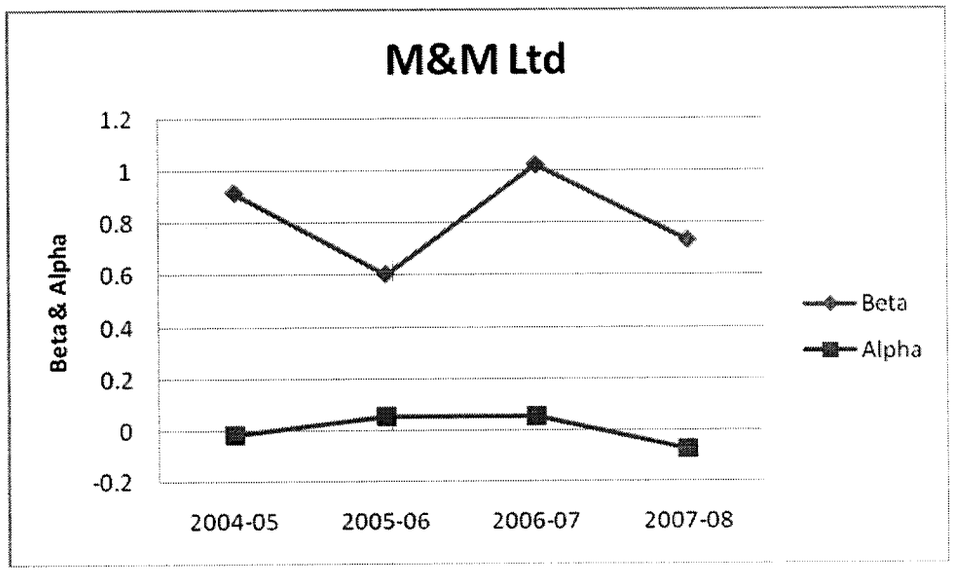
- In the alpha graph of HERO HONDA LTD from the year 2004-05 to 2005-06 alpha is increased by 0.04 times
- From the year 2005-06 to 2006-07 alpha is decreased by 0.06 times and finally in the year 2006-07 to 2007-08 it is increased by 0.12 times
- As a whole from the year 2004-08 alpha is decreased by 0.01 times

## MAHINDRA & MAHINDRA LTD

### Table 3.1.4 Risk and Return of MAHINDRA & MAHINDRA LTD

| Year | Beta | Alpha |
|---|---|---|
| 2004-05 | 0.915863 | -0.0145 |
| 2005-06 | 0.602968 | 0.054958 |
| 2006-07 | 1.021801 | 0.055947 |
| 2007-08 | 0.733332 | -0.07304 |

### Chart 3.1.4



## INTERPRETATION

### BETA

- In the beta graph of M & M the beta value from the year 2004-05 to 2005-06 decreased by .31 times
- From 2005-06 to 2006-07 beta is increased by 0.41 times and finally in the year 2006-07 to 2007-08 beta is reduced by 0.29 times
- As a whole beta of M & M LTD is reduced by 0.18 times from the year 2004 -08

### ALPHA

- In the alpha graph of M & M LTD from the year 2004-05 to 2005-06 alpha is increased by 0.04 times
- From the year 2005-06 to 2006-07 alpha is increased by 0.001 times and finally in the year 2006-07 to 2007-08 it is decreased by 0.02 times
- As a whole from the year 2004-08 alpha is decreased by 0.06 times

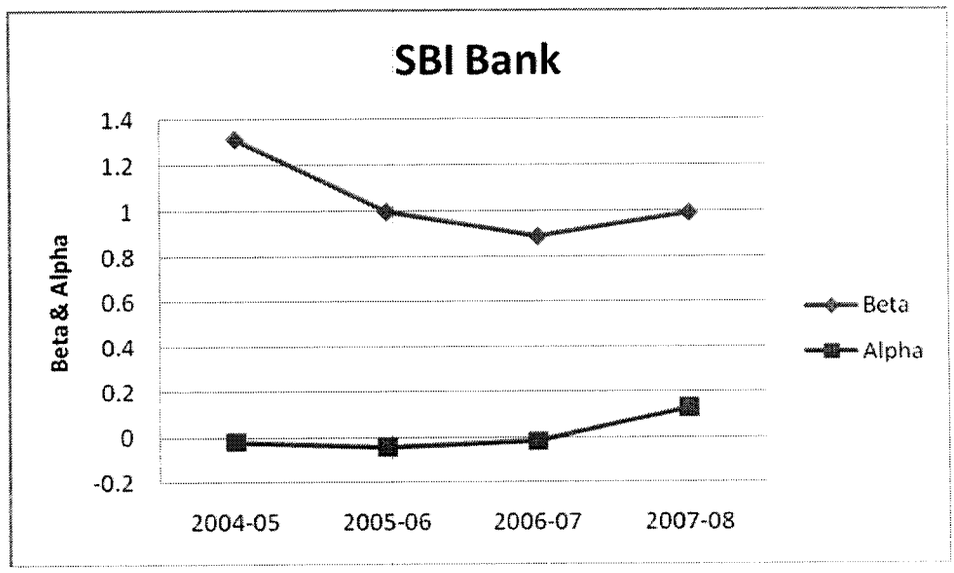
## 3.2 RISK AND RETURN ANALYSIS OF BANKING SECTOR

## STATE BANK OF INDIA:

**Table 3.2.1 Risk and Return of STATE BANK OF INDIA**

| Year | Beta | Alpha |
|---|---|---|
| 2004-05 | 1.311543 | -0.01921 |
| 2005-06 | 0.995825 | -0.04357 |
| 2006-07 | 0.886377 | -0.01802 |
| 2007-08 | 0.990861 | 0.129756 |

**Chart 3.2.1**



## INTERPRETATION

### BETA

- In the beta graph of SBI, beta value from the year 2004-05 to 2005-06 is decreased by 0.31 times
- From 2005-06 to 2006-07 beta is increased by 0.11 times and finally in the year 2006-07 to 2007-08 beta is increased by 0.10 times
- As a whole beta of SBI is reduced by 0.32 times from the year 2004 -08

### ALPHA

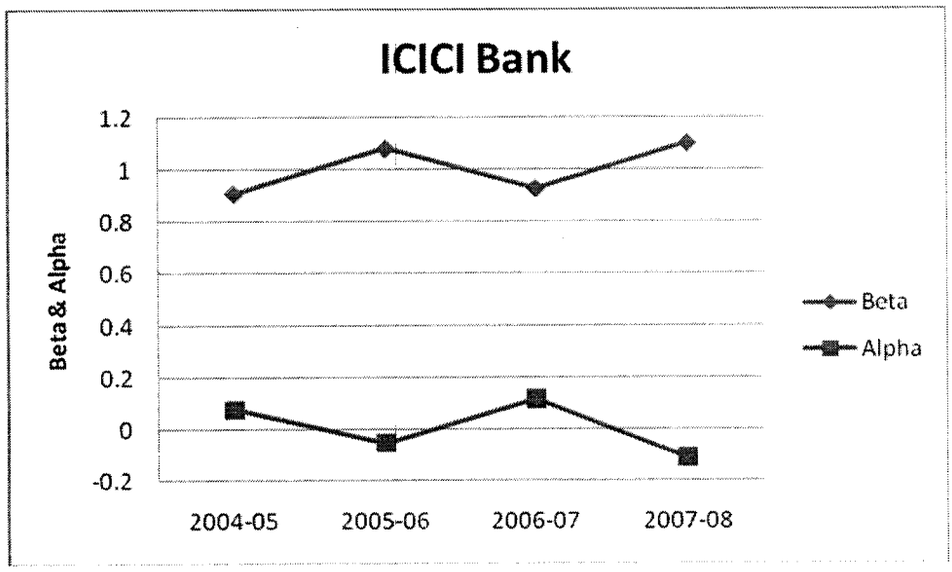
- In the alpha graph of SBI, from the year 2004-05 to 2005-06 alpha is decreased by 0.02 times
- From the year 2005-06 to 2006-07 alpha is increased by 0.02 times and finally in the year 2006-07 to 2007-08 it is decreased by 0.11 times
- As a whole from the year 2004-08 alpha is decreased by 0.11 times

## ICICI BANK

**Table 3.2.2 Risk and Return of ICICI BANK**

| Year | Beta | Alpha |
|---|---|---|
| 2004-05 | 0.907006 | 0.077734 |
| 2005-06 | 1.080546 | -0.05159 |
| 2006-07 | 0.927502 | 0.117989 |
| 2007-08 | 1.101684 | -0.11113 |

**Chart 3.2.2**



## INTERPRETATION

### BETA

- In the beta graph of ICICI bank, beta value from the year 2004-05 to 2005-06 is increased by 0.17 times
- From 2005-06 to 2006-07 beta is decreased by 0.15 times and finally in the year 2006-07 to 2007-08 beta is increased by 0.17 times
- As a whole beta of ICICI bank is reduced by 0.19 times from the year 2004 -08

### ALPHA

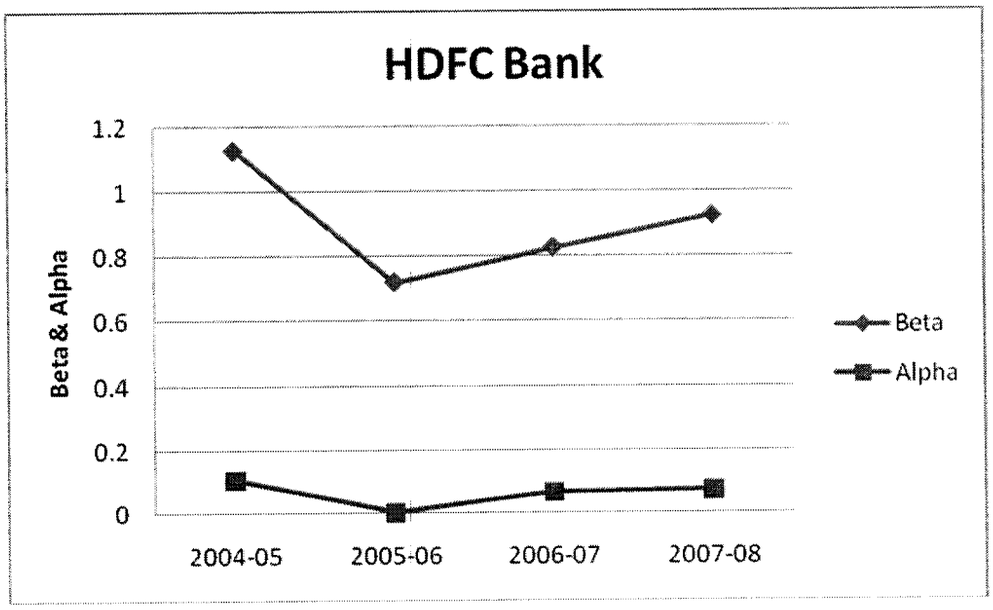
- In the alpha graph of ICICI bank, from the year 2004-05 to 2005-06 alpha is decreased by 0.02 times
- From the year 2005-06 to 2006-07 alpha is increased by 0.07 times and finally in the year 2006-07 to 2007-08 it is decreased by 0.007 times
- As a whole from the year 2004-08 alpha is decreased by 0.03 times

## HDFC BANK

**Table 3.2.3 Risk and Return of HDFC BANK**

| Year | Beta | Alpha |
|---|---|---|
| 2004-05 | 1.128142 | 0.10809 |
| 2005-06 | 0.720744 | 0.003067 |
| 2006-07 | 0.827269 | 0.067294 |
| 2007-08 | 0.925333 | 0.073844 |

**Chart 3.2.3**



## INTERPRETATION

### BETA

- In the beta graph of HDFC bank, beta value from the year 2004-05 to 2005-06 is decreased by 0.40 times
- From 2005-06 to 2006-07 beta is increased by 0.11 times and finally in the year 2006-07 to 2007-08 beta is increased by 0.10 times
- As a whole beta of HDFC bank is reduced by 0.20 times from the year 2004 -08

### ALPHA

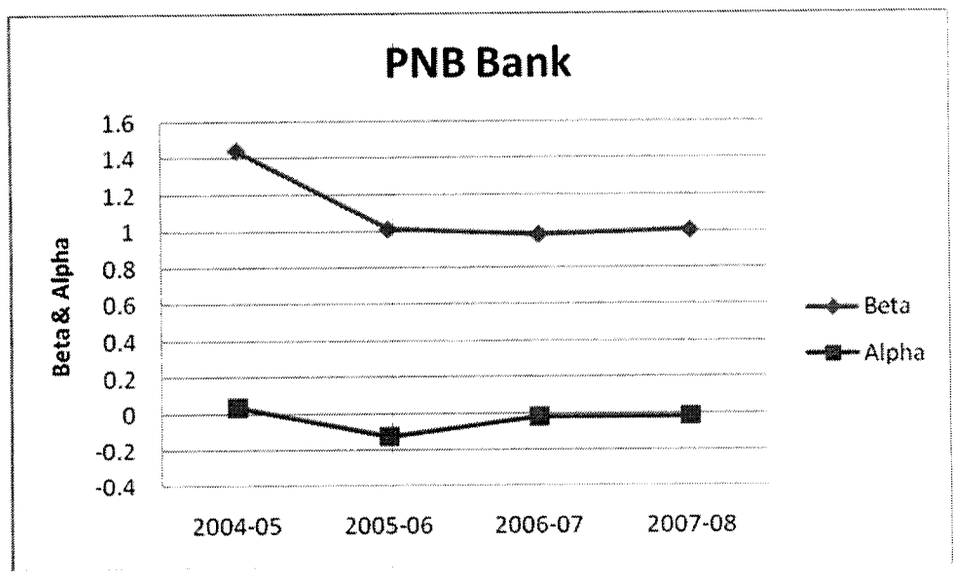
- In the alpha graph of HDFC bank, from the year 2004-05 to 2005-06 alpha is decreased by 0.10 times
- From the year 2005-06 to 2006-07 alpha is increased by 0.06 times and finally in the year 2006-07 to 2007-08 it is increased by 0.006 times
- As a whole from the year 2004-08 alpha is decreased by 0.03 times

## PNB

**Table 3.2.4 Risk and Return of PNB BANK**

| Year | Beta | Alpha |
|---|---|---|
| 2004-05 | 1.44351 | 0.03859 |
| 2005-06 | 1.010209 | -0.12298 |
| 2006-07 | 0.978871 | -0.01318 |
| 2007-08 | 1.005016 | -0.01251 |

**Chart 3.2.4**



## INTERPRETATION

### BETA

- In the beta graph of PNB bank, beta value is decreased by 0.43 times from the year 2004-05 to 2005-06
- From 2005-06 to 2006-07 beta is decreased by 0.03 times and finally in the year 2006-07 to 2007-08 beta is increased by 0.02 times
- As a whole beta of PNB bank is reduced by 0.44 times from the year 2004 -08

### ALPHA

- In the alpha graph of PNB bank, from the year 2004-05 to 2005-06 alpha is decreased by 0.80 times
- From the year 2005-06 to 2006-07 alpha is increased by 0.11 times and finally in the year 2006-07 to 2007-08 it is increased by 0.007 times
- As a whole from the year 2004-08 alpha is decrease by 0.03 times

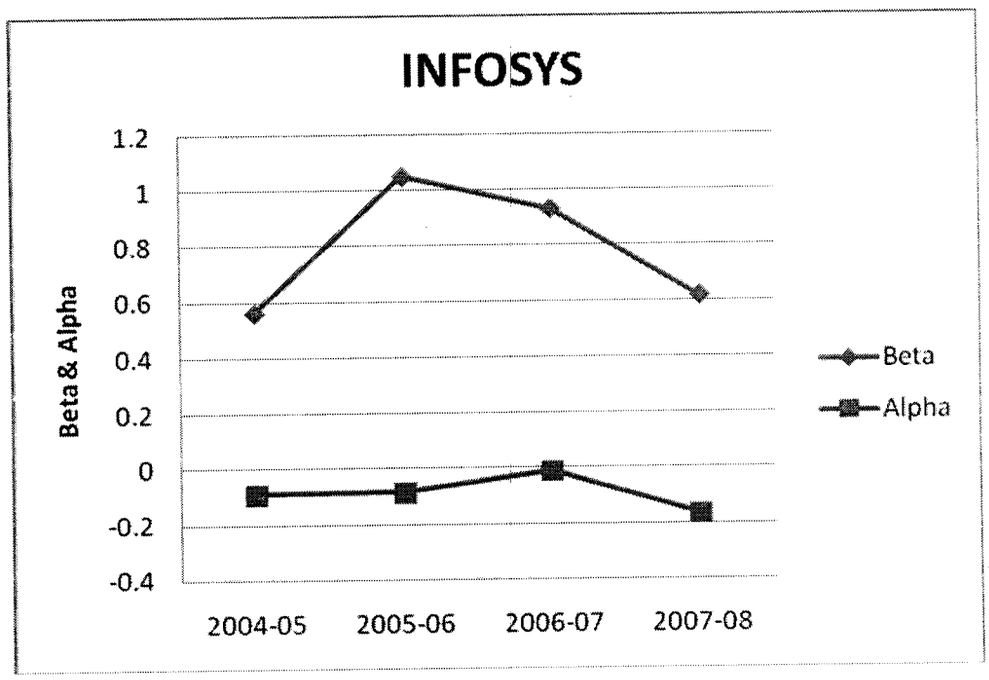
## 3.3 RISK AND RETURN ANALYSIS OF COMPUTER - SOFTWARE SECTOR

### INFOSYS

**Table 3.3.1 Risk and Return of INFOSYS**

| Year | Beta | Alpha |
|---|---|---|
| 2004-05 | 0.561663 | -0.09197 |
| 2005-06 | 1.05061 | -0.08643 |
| 2006-07 | 0.930525 | -0.01295 |
| 2007-08 | 0.616781 | -0.16713 |

**Chart 3.3.1**



## INTERPRETATION

### BETA

- In the beta graph of INFOSYS, beta value is increased by 0.49 times from the year 2004-05 to 2005-06
- From 2005-06 to 2006-07 beta is decreased by 0.12 times and finally in the year 2006-07 to 2007-08 beta is decreased by 0.31 times
- As a whole beta of INFOSYS is increased by 0.05 times from the year 2004 -08

### ALPHA

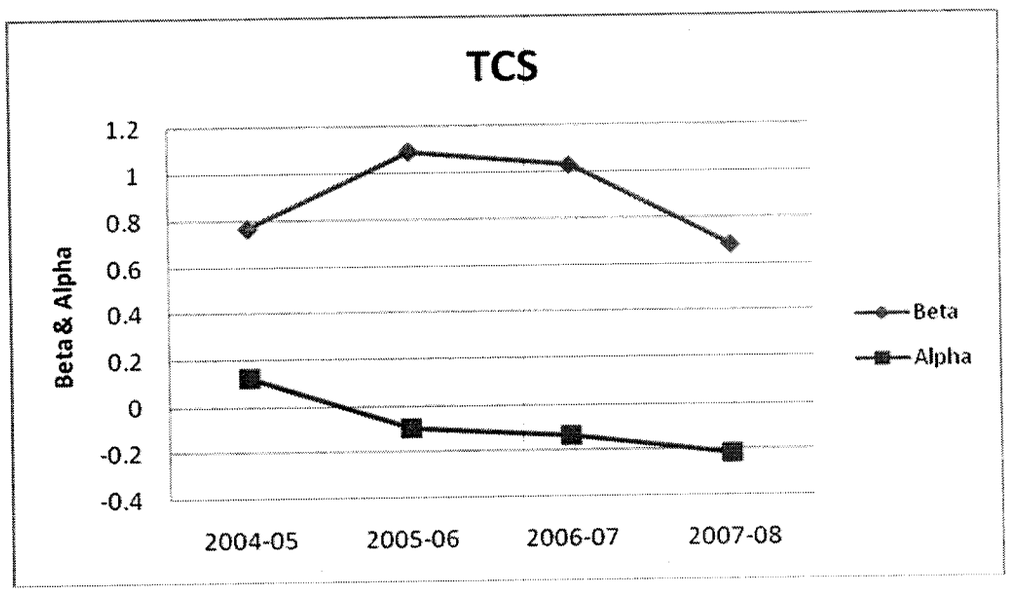
- In the alpha graph of INFOSYS, from the year 2004-05 to 2005-06 alpha is increased by 0.01 times
- From the year 2005-06 to 2006-07 alpha is increased by 0.07 times and finally in the year 2006-07 to 2007-08 it is decreased by 0.15 times
- As a whole from the year 2004-08 alpha is decreased by 0.07 times

**TCS**

**Table 3.3.2 Risk and Return of TCS**

| Year | Beta | Alpha |
|---|---|---|
| 2004-05 | 0.767961 | 0.127751 |
| 2005-06 | 1.088371 | -0.09603 |
| 2006-07 | 1.027256 | -0.1343 |
| 2007-08 | 0.684484 | -0.21537 |

**Chart 3.3.2**



## INTERPRETATION

### BETA

- In the beta graph of TCS, beta value is increased by 0.32 times from the year 2004-05 to 2005-06
- From 2005-06 to 2006-07 beta is decreased by 0.06 times and finally in the year 2006-07 to 2007-08 beta is decreased by 0.34 times
- As a whole beta of TCS is reduced by 0.08 times from the year 2004 -08

### ALPHA

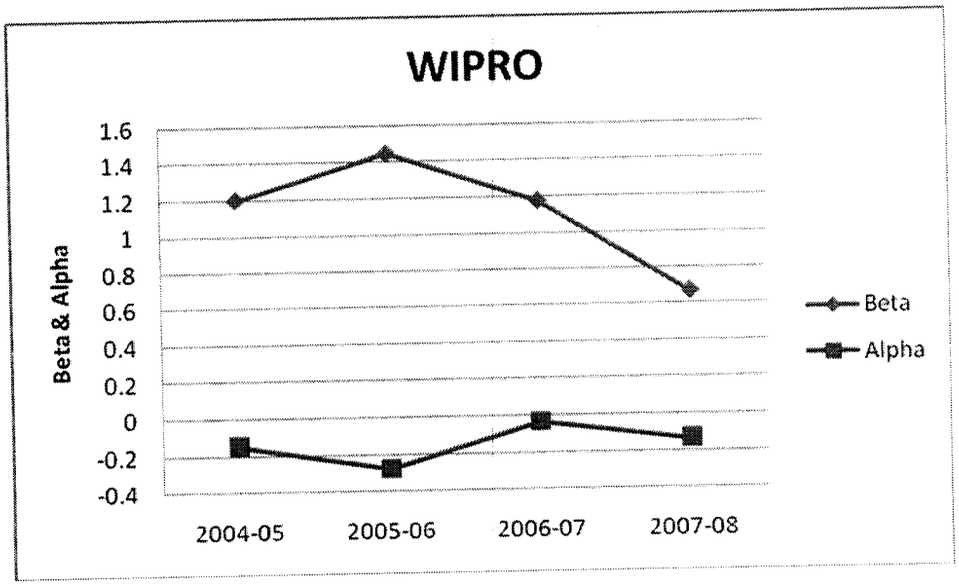
- In the alpha graph of TCS, from the year 2004-05 to 2005-06 alpha is decreased by 0.03 times
- From the year 2005-06 to 2006-07 alpha is decreased by 0.04 times and finally in the year 2006-07 to 2007-08 it is decreased by 0.08 times
- As a whole from the year 2004-08 alpha is decreased by 0.09 times

**WIPRO**

**Table 3.3.3 Risk and Return of WIPRO**

| Year | Beta | Alpha |
|---|---|---|
| 2004-05 | 1.202909 | -0.14392 |
| 2005-06 | 1.450073 | -0.27599 |
| 2006-07 | 1.179371 | -0.03122 |
| 2007-08 | 0.672796 | -0.13084 |

**Chart 3.3.3**



## INTERPRETATION

### BETA

- In the beta graph of WIPRO, beta value is increased by 0.25 times from the year 2004-05 to 2005-06
- From 2005-06 to 2006-07 beta is decreased by 0.27 times and finally in the year 2006-07 to 2007-08 beta is decreased by 0.50 times
- As a whole beta of WIPRO is reduced by 0.53 times from the year 2004 - 08

### ALPHA

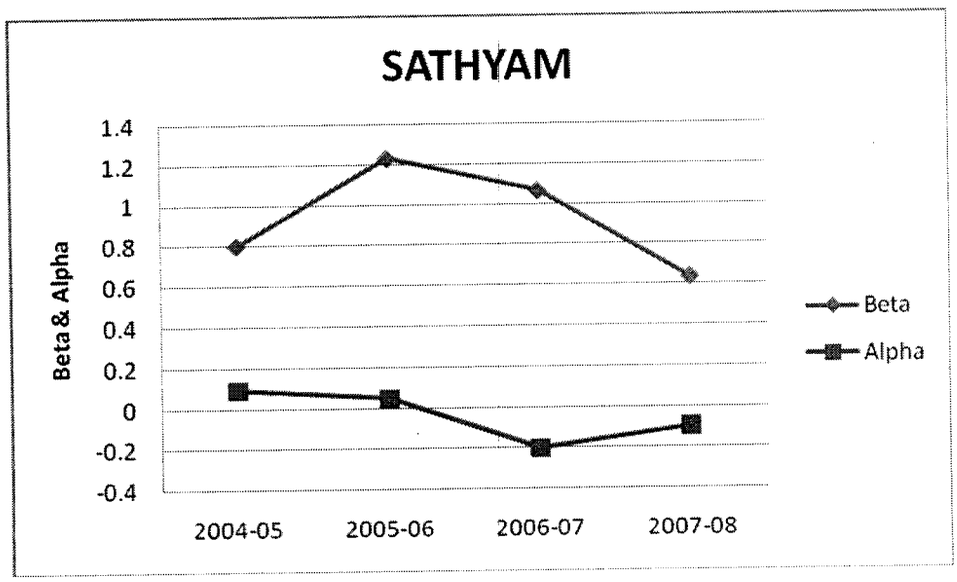
- In the alpha graph of WIPRO, from the year 2004-05 to 2005-06 alpha is decreased by 0.13 times
- From the year 2005-06 to 2006-07 alpha is increased by 0.24 times and finally in the year 2006-07 to 2007-08 it is decreased by 0.10 times
- As a whole from the year 2004-08 alpha is increased by 0.01 times

## SATYAM COMPUTER SERVICE

**Table 3.3.4 Risk and Return of SATYAM COMPUTER SERVICE**

| Year | Beta | Alpha |
|---|---|---|
| 2004-05 | 0.801887 | 0.091646 |
| 2005-06 | 1.231599 | 0.047913 |
| 2006-07 | 1.066684 | -0.20081 |
| 2007-08 | 0.634761 | -0.09471 |

**Chart 3.3.4**



## INTERPRETATION

### BETA

- In the beta graph of SATYAM, beta value is increased by 0.43 times from the year 2004-05 to 2005-06
- From 2005-06 to 2006-07 beta is decreased by 0.16 times and finally in the year 2006-07 to 2007-08 beta is decreased by 0.43 times
- As a whole beta of SATYAM is reduced by 0.17 times from the year 2004 -08

### ALPHA

- In the alpha graph of SATYAM, from the year 2004-05 to 2005-06 alpha is decreased by 0.04 times
- From the year 2005-06 to 2006-07 alpha is decreased by 0.15 times and finally in the year 2006-07 to 2007-08 it is increased by 0.11 times
- As a whole from the year 2004-08 alpha is decrease by 0.003 times

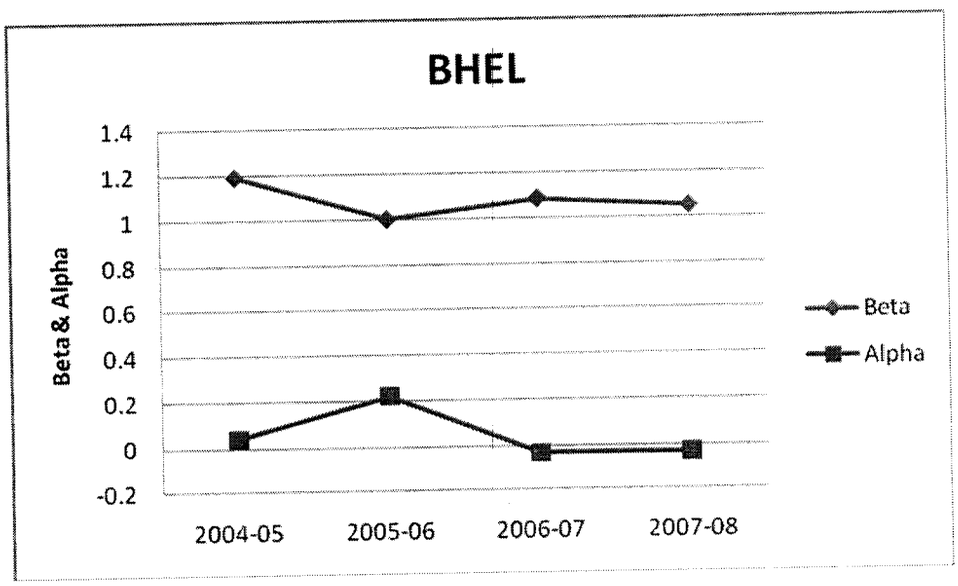
## 3.4 RISK AND RETURN ANALYSIS OF ELECTRICAL EQUIPMENT SECTOR

## BHEL

**Table 3.4.1 Risk and Return of BHEL**

| Year | Beta | Alpha |
|---|---|---|
| 2004-05 | 1.191719 | 0.042011 |
| 2005-06 | 1.004001 | 0.224851 |
| 2006-07 | 1.085701 | -0.03449 |
| 2007-08 | 1.053023 | -0.03316 |

**Chart 3.4.1**



## INTERPRETATION

### BETA

- In the beta graph of BHEL, beta value is decreased by 0.19 times from the year 2004-05 to 2005-06
- From 2005-06 to 2006-07 beta is increased by 0.08 times and finally in the year 2006-07 to 2007-08 beta is decreased by 0.03 times
- As a whole beta of BHEL is reduced by 0.14 times from the year 2004 - 08

### ALPHA

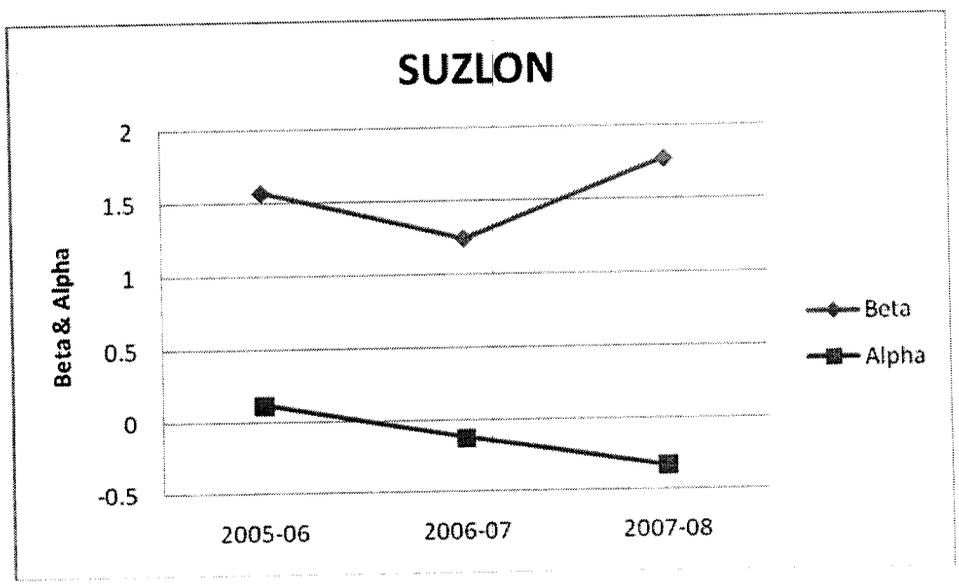
- In the alpha graph of BHEL, from the year 2004-05 to 2005-06 alpha is increased by 0.18 times
- From the year 2005-06 to 2006-07 alpha is decreased by 0.19 times and finally in the year 2006-07 to 2007-08 it is increased by 0.001 times
- As a whole from the year 2004-08 alpha is decrease by 0.01 times

**SUZLON**

**Table 3.4.2 Risk and Return of SUZLON**

| Year | Beta | Alpha |
|---|---|---|
| 2005-06 | 1.572452 | 0.122515 |
| 2006-07 | 1.245246 | -0.12406 |
| 2007-08 | 1.773273 | -0.33224 |

**Chart 3.4.2**



## INTERPRETATION

### BETA

- In the beta graph of SUZLON, beta value is decreased by 0.32 times from the year 2005-06 to 2006-07
- Finally in the year 2006-07 to 2007-08 beta is increased by 0.53 times
- As a whole beta of SUZLON is increased by 0.20 times from the year 2005 -08

### ALPHA

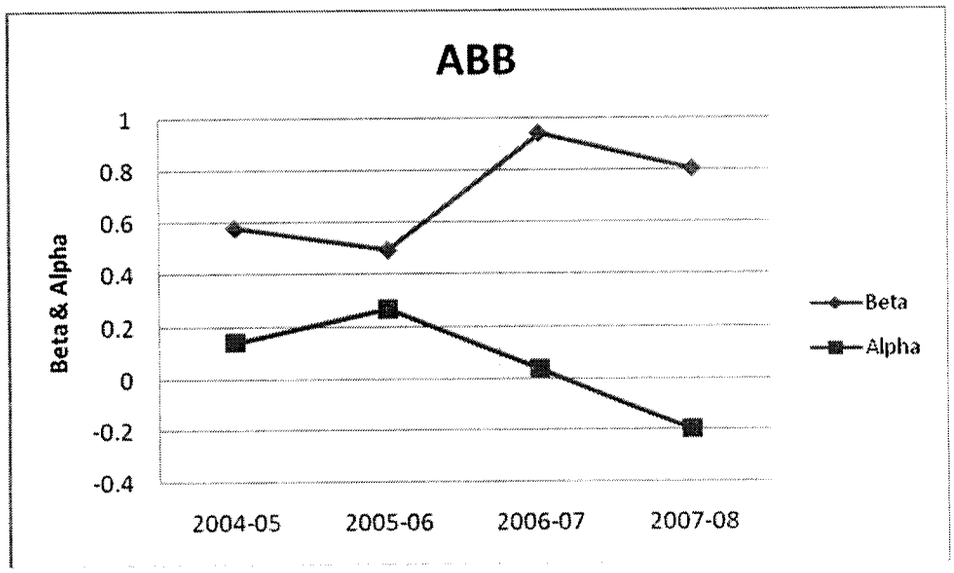
- In the alpha graph of SUZLON, from the year 2005-06 to 2006-07 alpha is decreased by 0.001 times
- Finally in the year 2006-07 to 2007-08 it is decreased by 0.21 times
- As a whole from the year 2005-08 alpha is decrease by 0.21 times

## ABB

**Table 3.4.3 Risk and Return of ABB**

| Year | Beta | Alpha |
|---|---|---|
| 2004-05 | 0.579417 | 0.14249 |
| 2005-06 | 0.495629 | 0.268892 |
| 2006-07 | 0.942783 | 0.037167 |
| 2007-08 | 0.804434 | -0.19869 |

**Chart 3.4.3**



## INTERPRETATION

### BETA

- In the beta graph of ABB, beta value is decreased by 0.08 times from the year 2004-05 to 2005-06
- From 2005-06 to 2006-07 beta is increased by 0.45 times and finally in the year 2006-07 to 2007-08 beta is decreased by 0.14 times
- As a whole beta of is increased by 0.22 times from the year 2004 -08

### ALPHA

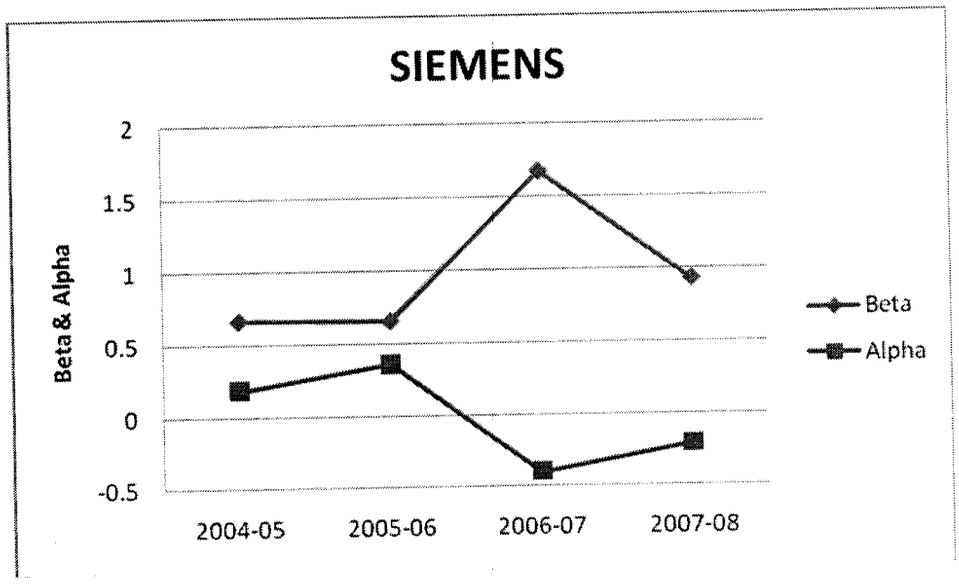
- In the alpha graph of ABB, from the year 2004-05 to 2005-06 alpha is increased by 0.13 times
- From the year 2005-06 to 2006-07 alpha is decreased by 0.23 times and finally in the year 2006-07 to 2007-08 it is decreased by 0.16 times
- As a whole from the year 2004-08 alpha is decrease by 0.06 times

**SIEMENS**

**Table 3.4.4 Risk and Return of SIMENS**

| Year | Beta | Alpha |
|---|---|---|
| 2004-05 | 0.670817 | 0.192315 |
| 2005-06 | 0.661475 | 0.366527 |
| 2006-07 | 1.673256 | -0.39446 |
| 2007-08 | 0.932265 | -0.19921 |

**Chart 3.4.4**



## INTERPRETATION

### BETA

- In the beta graph of SIMENS, beta value is decreased by 0.009 times from the year 2004-05 to 2005-06
- From 2005-06 to 2006-07 beta is increased by 1.01 times and finally in the year 2006-07 to 2007-08 beta is increased by 0.74 times
- As a whole beta of SIMENS is reduced by 0.26 times from the year 2004 -08

### ALPHA

- In the alpha graph of SIMENS, from the year 2004-05 to 2005-06 alpha is increased by 0.17 times
- From the year 2005-06 to 2006-07 alpha is decreased by 0.03 times and finally in the year 2006-07 to 2007-08 it is increased by 0.19 times
- As a whole from the year 2004-08 alpha is decrease by 0.007 times

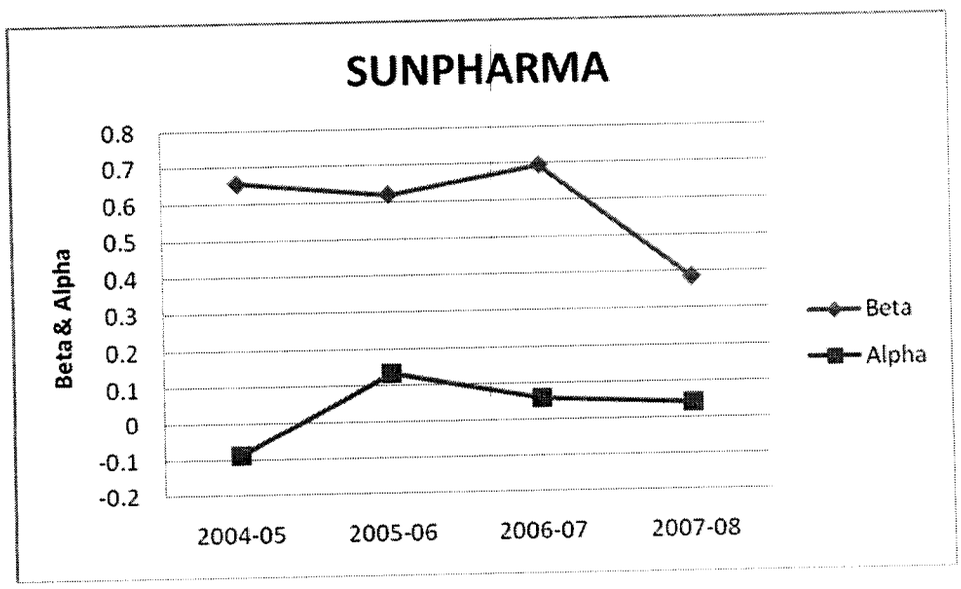
## 3.5 RISK AND RETURN ANALYSIS OF PHARMACUITICAL SECTOR

## SUNPHARMA

**Table 3.5.1 Risk and Return of SUNPHARMA**

| Year | Beta | Alpha |
|---|---|---|
| 2004-05 | 0.654973 | -0.08904 |
| 2005-06 | 0.619895 | 0.134604 |
| 2006-07 | 0.693201 | 0.059394 |
| 2007-08 | 0.386332 | 0.043678 |

**Chart 3.5.1**



## INTERPRETATION

### BETA

- In the beta graph of SUNPHARMA, beta value is decreased by 0.03 times from the year 2004-05 to 2005-06
- From 2005-06 to 2006-07 beta is increased by 0.07 times and finally in the year 2006-07 to 2007-08 beta is decreased by 0.30 times
- As a whole beta of SUNPHARMA is reduced by 0.27 times from the year 2004 -08

### ALPHA

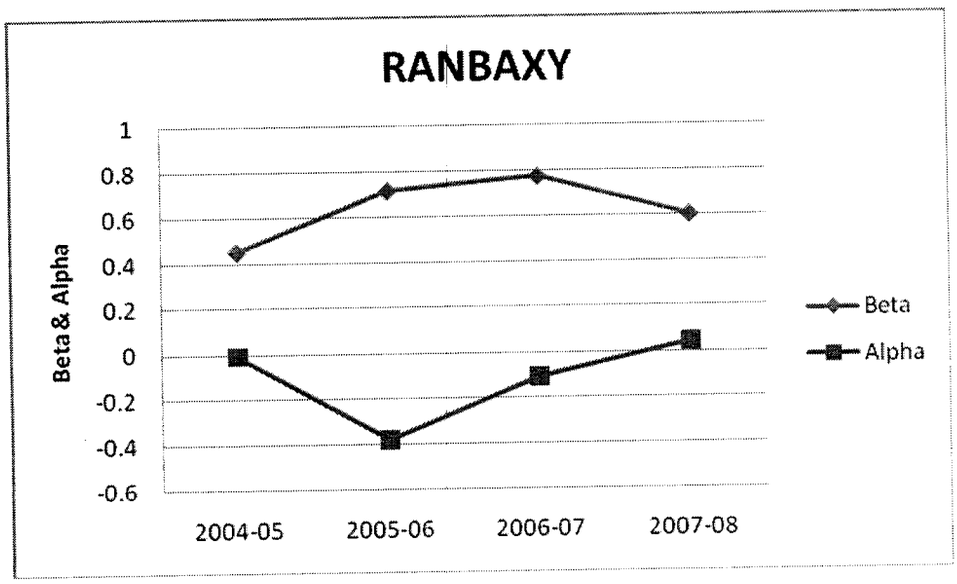
- In the alpha graph of SUNPHARMA, from the year 2004-05 to 2005-06 alpha is increased by 0.04 times
- From the year 2005-06 to 2006-07 alpha is decreased by 0.07 times and finally in the year 2006-07 to 2007-08 it is decreased by 0.02 times
- As a whole from the year 2004-08 alpha is increase by 0.04 times

**RANBAXY**

**Table 3.5.2 Risk and Return of RANBAXY**

| Year | Beta | Alpha |
|---|---|---|
| 2004-05 | 0.451801 | -0.00518 |
| 2005-06 | 0.714584 | -0.37786 |
| 2006-07 | 0.773895 | -0.10443 |
| 2007-08 | 0.602031 | 0.047332 |

**Chart 3.5.2**



## INTERPRETATION

### BETA

- In the beta graph of RANBAXY, beta value is increased by 0.26 times from the year 2004-05 to 2005-06
- From 2005-06 to 2006-07 beta is increased by 0.06 times and finally in the year 2006-07 to 2007-08 beta is decreased by 0.17 times
- As a whole beta of RANBAXY is increased by 0.15 times from the year 2004 -08

### ALPHA

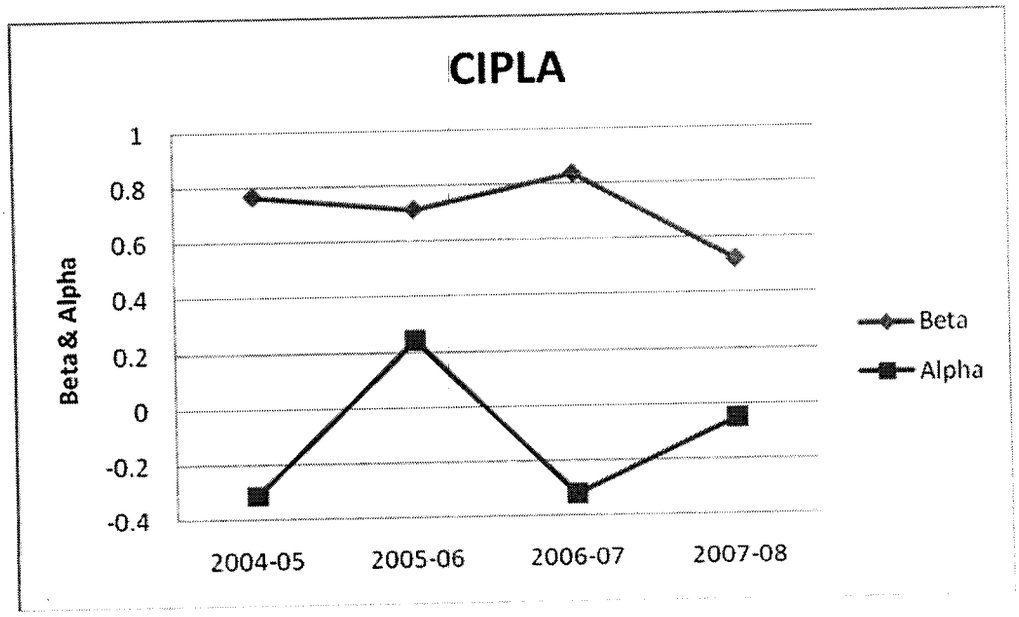
- In the alpha graph of RANBAXY, from the year 2004-05 to 2005-06 alpha is decreased by 0.37 times
- From the year 2005-06 to 2006-07 alpha is increased by 0.27 times and finally in the year 2006-07 to 2007-08 it is increased by 0.15 times
- As a whole from the year 2004-08 alpha is increased by 0.04 times

## CIPLA

**Table 3.5.3 Risk and Return of CIPLA**

| Year | Beta | Alpha |
|---|---|---|
| 2004-05 | 0.768619 | -0.31007 |
| 2005-06 | 0.716149 | 0.24688 |
| 2006-07 | 0.838617 | -0.31913 |
| 2007-08 | 0.523064 | -0.04798 |

**Chart 3.5.3**



## INTERPRETATION

### BETA

- In the beta graph of CIPLA , beta value is decreased by 0.05 times from the year 2004-05 to 2005-06
- From 2005-06 to 2006-07 beta is increased by 0.12 times and finally in the year 2006-07 to 2007-08 beta is decreased by 0.31 times
- As a whole beta of CIPLA is reduced by 0.24 times from the year 2004 - 08

### ALPHA

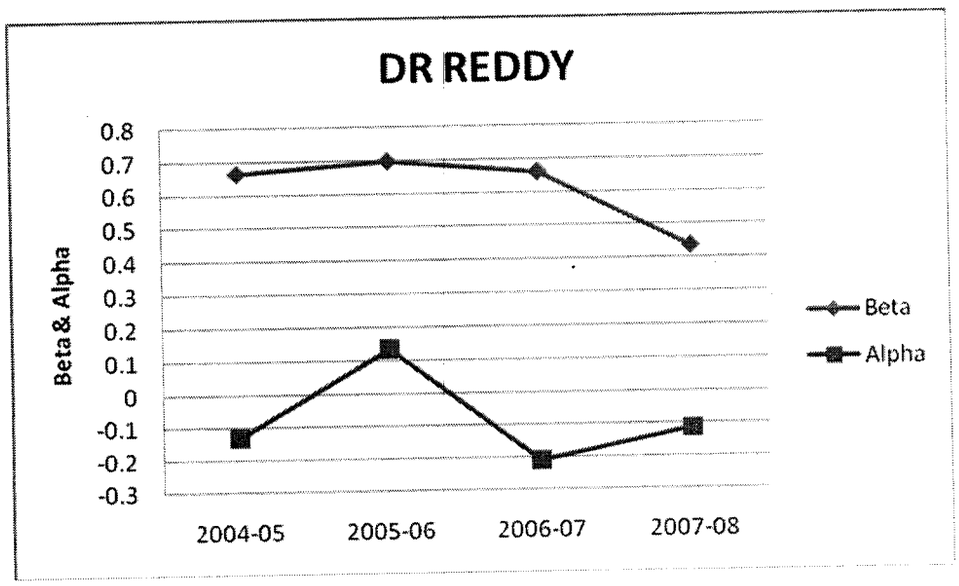
- In the alpha graph of CIPLA, from the year 2004-05 to 2005-06 alpha is increased by 0.06 times
- From the year 2005-06 to 2006-07 alpha is decreased by 0.07 times and finally in the year 2006-07 to 2007-08 it is increased by 0.27 times
- As a whole from the year 2004-08 alpha is increase by 0.26 times

## DRREDDY

**Table 3.5.4 Risk and Return of DRREDDY**

| Year | Beta | Alpha |
|---|---|---|
| 2004-05 | 0.664595 | -0.12974 |
| 2005-06 | 0.698474 | 0.135624 |
| 2006-07 | 0.661132 | -0.20771 |
| 2007-08 | 0.437027 | -0.11169 |

**Chart 3.5.4**



## INTERPRETATION

### BETA

- In the beta graph of DR REDDY, beta value is increased by 0.03 times from the year 2004-05 to 2005-06
- From 2005-06 to 2006-07 beta is decreased by 0.04 times and finally in the year 2006-07 to 2007-08 beta is decreased by 0.22 times
- As a whole beta of DR REDDY is reduced by 0.23 times from the year 2004 -08

### ALPHA

- In the alpha graph of DR REDDY, from the year 2004-05 to 2005-06 alpha is increased by 0.006
- From the year 2005-06 to 2006-07 alpha is decreased by 0.07 times and finally in the year 2006-07 to 2007-08 it is increased by 0.10 times
- As a whole from the year 2004-08 alpha is increase by 0.02 times

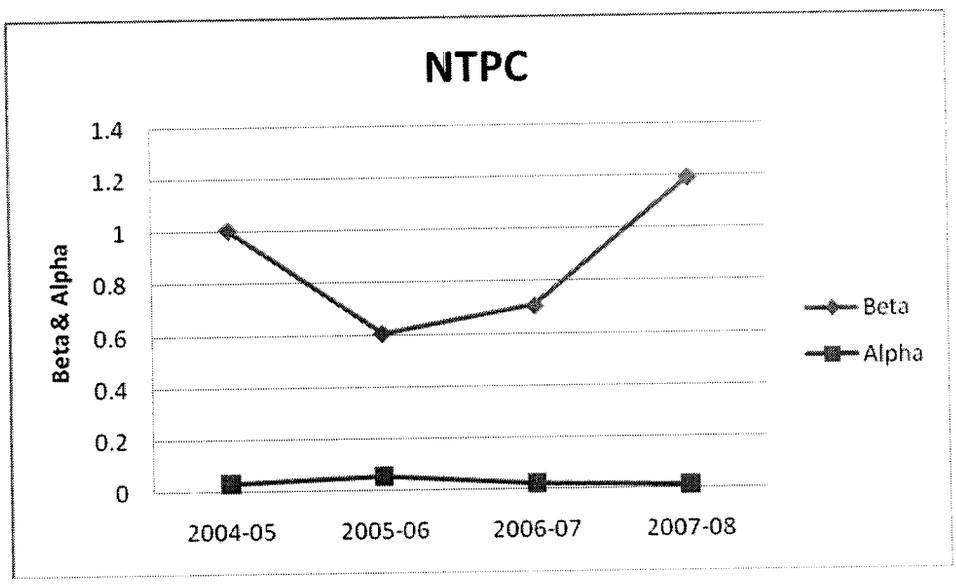
## 3.6 RISK AND RETURN ANALYSIS OF POWER SECTOR

### NTPC

**Table 3.6.1 Risk and Return of NTPC**

| Year | Beta | Alpha |
|---|---|---|
| 2004-05 | 1.00552 | 0.033451 |
| 2005-06 | 0.607925 | 0.058291 |
| 2006-07 | 0.709616 | 0.024646 |
| 2007-08 | 1.189352 | 0.014545 |

**Chart 3.6.1**



## INTERPRETATION

### BETA

- In the beta graph of NTPC, beta value is decreased by 0.40 times from the year 2004-05 to 2005-06
- From 2005-06 to 2006-07 beta is increased by 0.10 times and finally in the year 2006-07 to 2007-08 beta is increased by 0.48 times
- As a whole beta of NTPC is increased by 0.18 times from the year 2004 - 08

### ALPHA

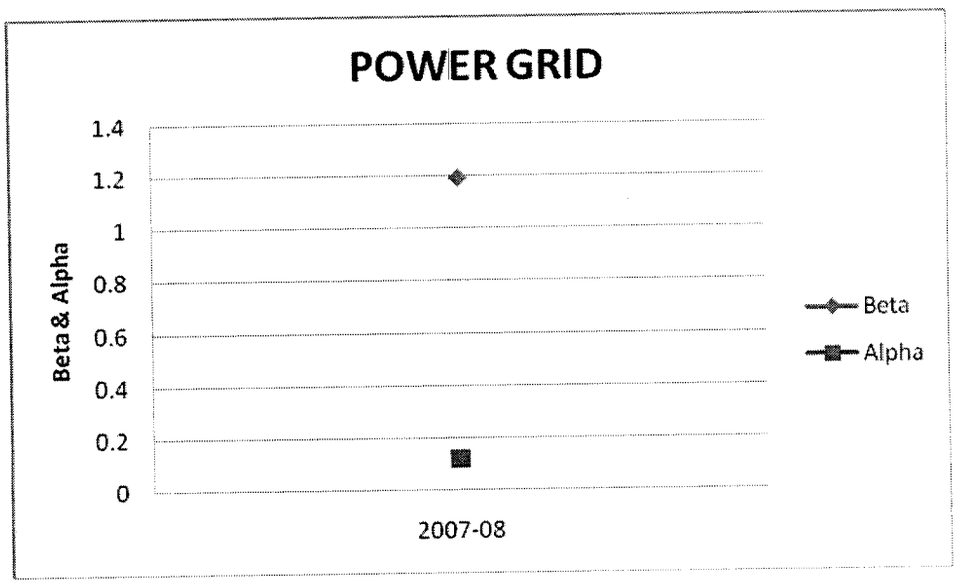
- In the alpha graph of NTPC, from the year 2004-05 to 2005-06 alpha is increased by 0.02 times
- From the year 2005-06 to 2006-07 alpha is decreased by 0.03 times and finally in the year 2006-07 to 2007-08 it is decreased by 0.01 times
- As a whole from the year 2004-08 alpha is decrease by 0.02 times

**POWER GRID**

**Table 3.6.2 Risk and Return of POWER GRID**

| Year | Beta | Alpha |
|---|---|---|
| 2007-08 | 1.19126 | 0.121243 |

**Chart 3.6.2**



## INTERPRETATION

### BETA

- From the above table beta is greater than 1 in the year 2007-08

### ALPHA

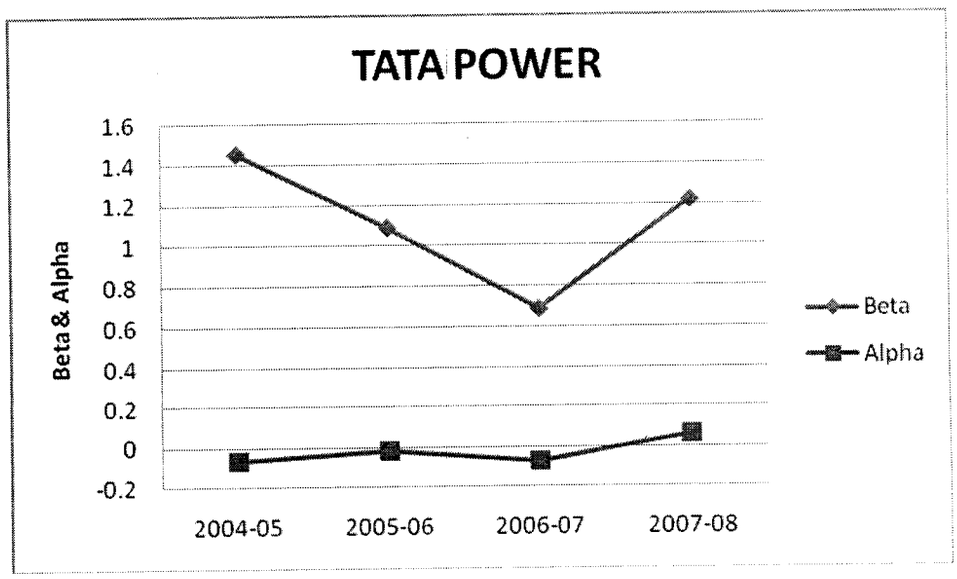
- From the above table alpha is positive in the year 2007-08

## TATA POWER

**Table 3.6.3 Risk and Return of TATA PPOWER**

| Year | Beta | Alpha |
|---|---|---|
| 2004-05 | 1.450002 | -0.06538 |
| 2005-06 | 1.086228 | -0.01471 |
| 2006-07 | 0.687947 | -0.07243 |
| 2007-08 | 1.218162 | 0.064421 |

**Chart 3.6.3**



## INTERPRETATION

### BETA

- In the beta graph of TATA POWER, beta value is decreased by 0.36 times from the year 2004-05 to 2005-06
- From 2005-06 to 2006-07 beta is decreased by 0.40 times and finally in the year 2006-07 to 2007-08 beta is increased by 0.53 times
- As a whole beta of NTPC is decreased by 0.23 times from the year 2004 -08

### ALPHA

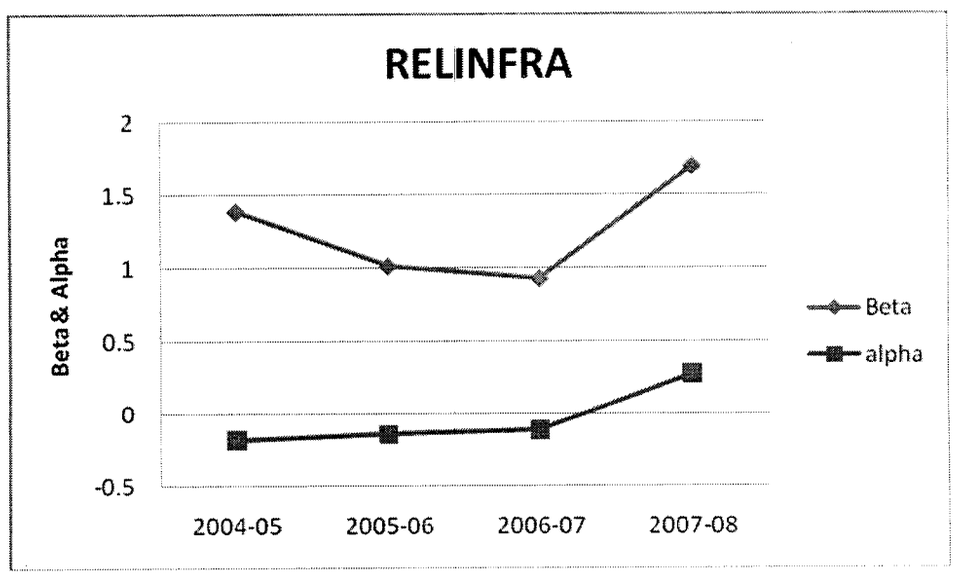
- In the alpha graph of TATA POWER, from the year 2004-05 to 2005-06 alpha is increased by 0.05 times
- From the year 2005-06 to 2006-07 alpha is decreased by 0.06 times and finally in the year 2006-07 to 2007-08 it is increased by 0.008 times
- As a whole from the year 2004-08 alpha is increase by 0.001 times

## RELIANCE INFRA STRUCTURE

**Table 3.6.4 Risk and Return of RELIANCE INFRASTRUCTURE**

| Year | Beta | Alpha |
|---|---|---|
| 2004-05 | 1.38832 | -0.17938 |
| 2005-06 | 1.01377 | -0.14123 |
| 2006-07 | 0.930693 | -0.10966 |
| 2007-08 | 1.696519 | 0.276992 |

**Chart 3.6.4**



## INTERPRETATION

### BETA

- In the beta graph of RELINFRA, beta value is decreased by 0.37 times from the year 2004-05 to 2005-06
- From 2005-06 to 2006-07 beta is decreased by 0.08 times and finally in the year 2006-07 to 2007-08 beta is increased by 0.76 times
- As a whole beta of NTPC is increased by 0.31 times from the year 2004 - 08

### ALPHA

- In the alpha graph of RELINFRA, from the year 2004-05 to 2005-06 alpha is increased by 0.40 times
- From the year 2005-06 to 2006-07 alpha is increased by 0.03 times and finally in the year 2006-07 to 2007-08 it is increased by 0.17 times
- As a whole from the year 2004-08 alpha is increase by 0.10 times

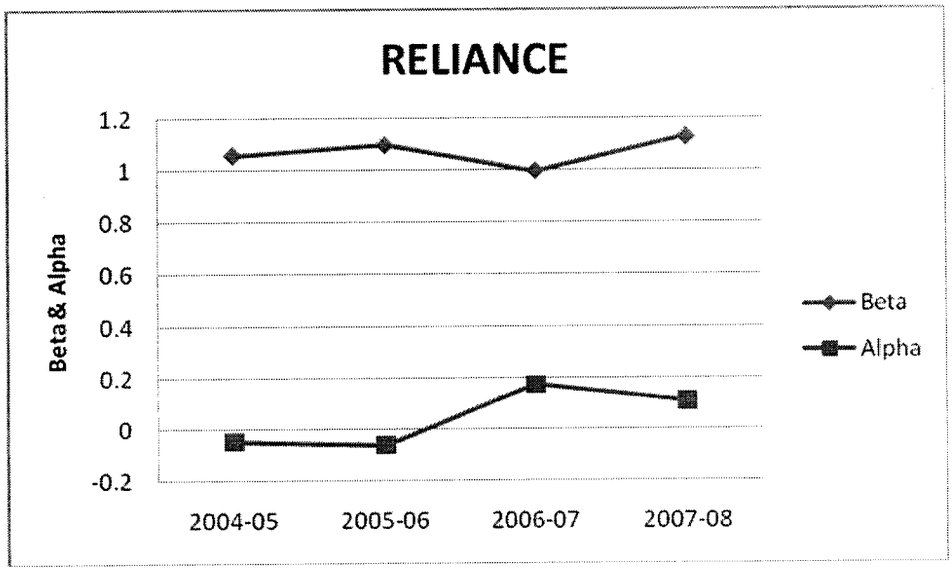
## 3.7 RISK AND RETURN ANALYSIS OF REFINARIES & OIL EXPLORATION SECTOR

### RELIANCE

**Table 3.7.1 Risk and Return of RELIANCE**

| Year | Beta | Alpha |
|---|---|---|
| 2004-05 | 1.058108 | -0.04595 |
| 2005-06 | 1.098039 | -0.06057 |
| 2006-07 | 0.996294 | 0.172592 |
| 2007-08 | 1.130286 | 0.108554 |

**Chart 3.7.1**



## INTERPRETATION

### BETA

- In the beta graph of RELIANCE, beta value is increased by 0.04 times from the year 2004-05 to 2005-06
- From 2005-06 to 2006-07 beta is decreased by 0.10 times and finally in the year 2006-07 to 2007-08 beta is increased by 0.13 times
- As a whole beta of NTPC is increased by 0.07 times from the year 2004 - 08

### ALPHA

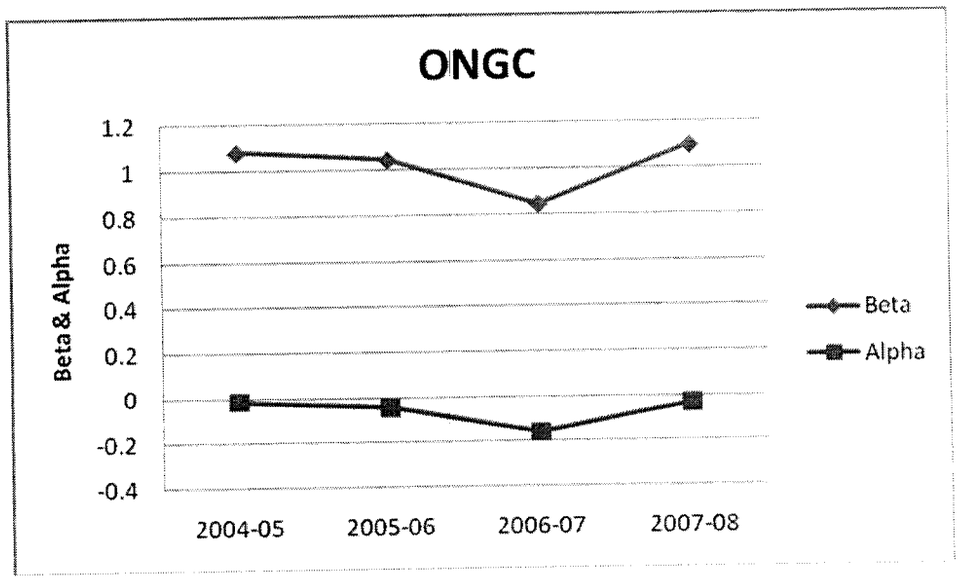
- In the alpha graph of NTPC, from the year 2004-05 to 2005-06 alpha is decreased by 0.01 times
- From the year 2005-06 to 2006-07 alpha is increased by 0.11 times and finally in the year 2006-07 to 2007-08 it is decreased by 0.06 times
- As a whole from the year 2004-08 alpha is increase by 0.06 times

**ONGC**

**Table 3.7.2 Risk and Return of ONGC**

| Year | Beta | Alpha |
|---|---|---|
| 2004-05 | 1.079847 | -0.01279 |
| 2005-06 | 1.043664 | -0.04105 |
| 2006-07 | 0.843637 | -0.1573 |
| 2007-08 | 1.098617 | -0.03157 |

**Chart 3.7.2**



## INTERPRETATION

### BETA

- In the beta graph of ONGC, beta value is decreased by 0.04 times from the year 2004-05 to 2005-06
- From 2005-06 to 2006-07 beta is decreased by 0.20 times and finally in the year 2006-07 to 2007-08 beta is increased by 0.25 times
- As a whole beta of ONGC is increased by 0.02 times from the year 2004 -08

### ALPHA

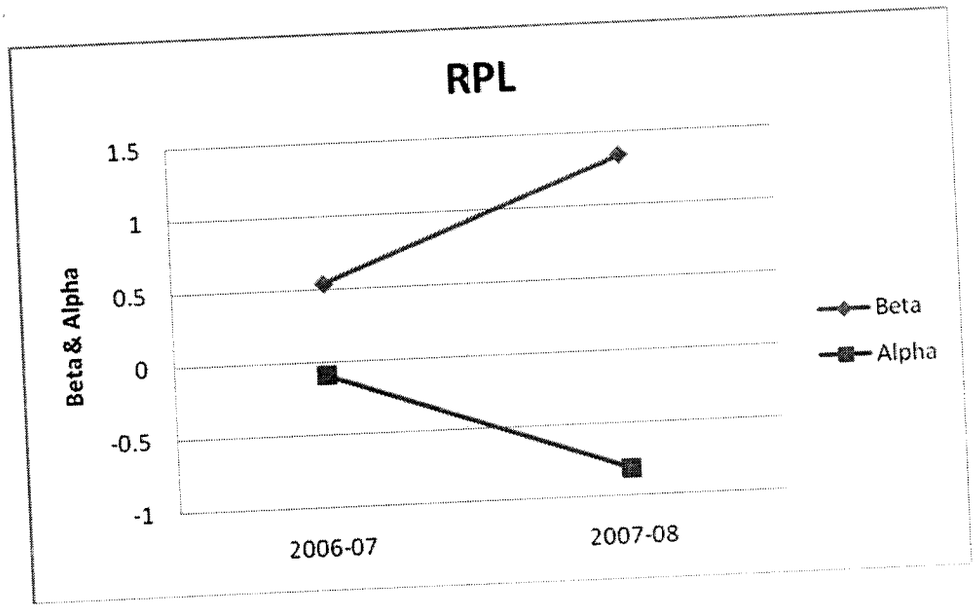
- In the alpha graph of ONGC, from the year 2004-05 to 2005-06 alpha is decreased by 0.03 times
- From the year 2005-06 to 2006-07 alpha is decreased by 0.12 times and finally in the year 2006-07 to 2007-08 it is increased by 0.12 times
- As a whole from the year 2004-08 alpha is decrease by 0.02 times

## RELIANCE PETROLEUM

**Table 3.7.3 Risk and Return of RPL**

| Year | Beta | Alpha |
|---|---|---|
| 2006-07 | 0.538716 | -0.08189 |
| 2007-08 | 1.338093 | -0.81641 |

**Chart 3.7.3**



## INTERPRETATION

### BETA

- In the beta graph of RPL, beta value is increased by 0.80 times from the year 2006-07 to 2007-08

### ALPHA

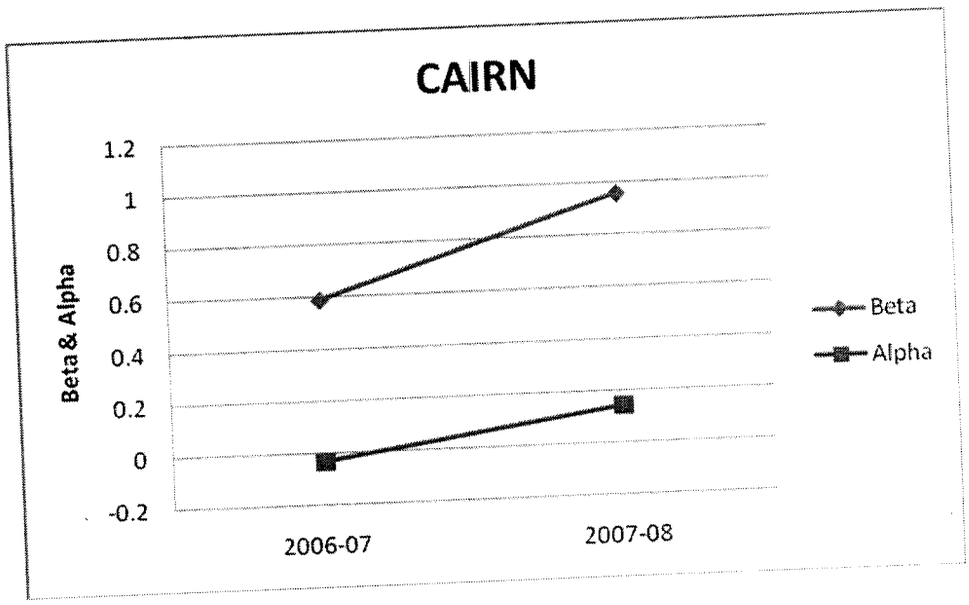
- In the alpha graph of RPL, from the year 2006-07 to 2007-08 alpha is decreased by 0.73 times

**CAIRN**

**Table 3.7.4 Risk and Return of CAIRN**

| Year | Beta | Alpha |
|---|---|---|
| 2006-07 | 0.589649 | -0.0297 |
| 2007-08 | 0.959662 | 0.144543 |

**Chart 3.7.4**



## INTERPRETATION

### BETA

- In the beta graph of CAIRN, beta value is increased by 0.37 times from the year 2006-07 to 2007-08

### ALPHA

- In the alpha graph of CAIRN, from the year 2006-07 to 2007-08 alpha is increased by 0.11 times

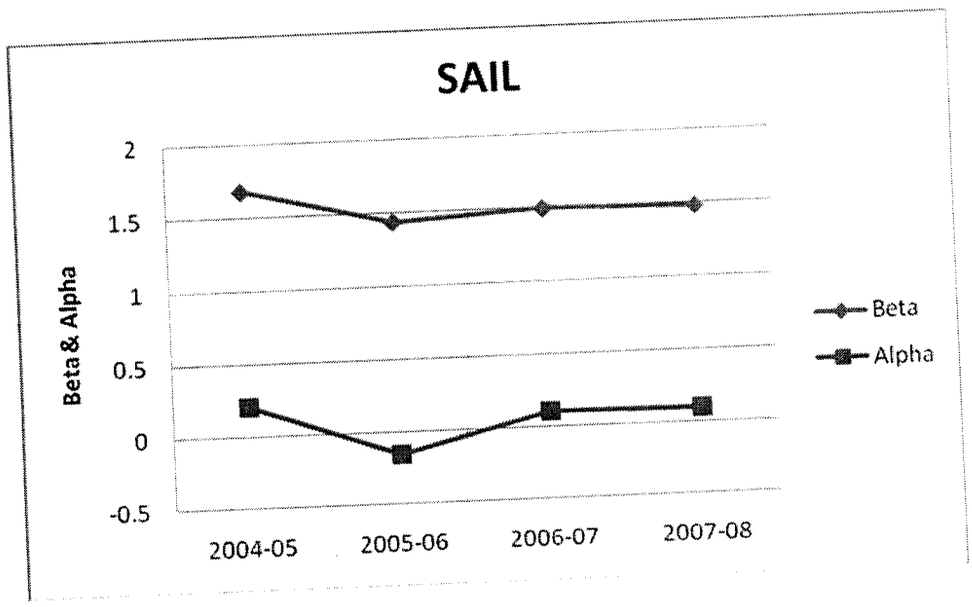
## 3.8 RISK AND RETURN ANALYSIS OF STEEL, METAL & CEMENT SECTOR

SAIL

**Table 3.8.1 Risk and Return of SAIL**

| Year | Beta | Alpha |
|---|---|---|
| 2004-05 | 1.680957 | 0.20886 |
| 2005-06 | 1.434835 | -0.15528 |
| 2006-07 | 1.491098 | 0.106061 |
| 2007-08 | 1.479672 | 0.098093 |

**Chart 3.8.1**



## INTERPRETATION

### BETA

- In the beta graph of SAIL, beta value is decreased by 0.25 times from the year 2004-05 to 2005-06
- From 2005-06 to 2006-07 beta is increased by 0.06 times and finally in the year 2006-07 to 2007-08 beta is decreased by 0.01 times
- As a whole beta of SAIL is decreased by 0.20 times from the year 2004 - 08

### ALPHA

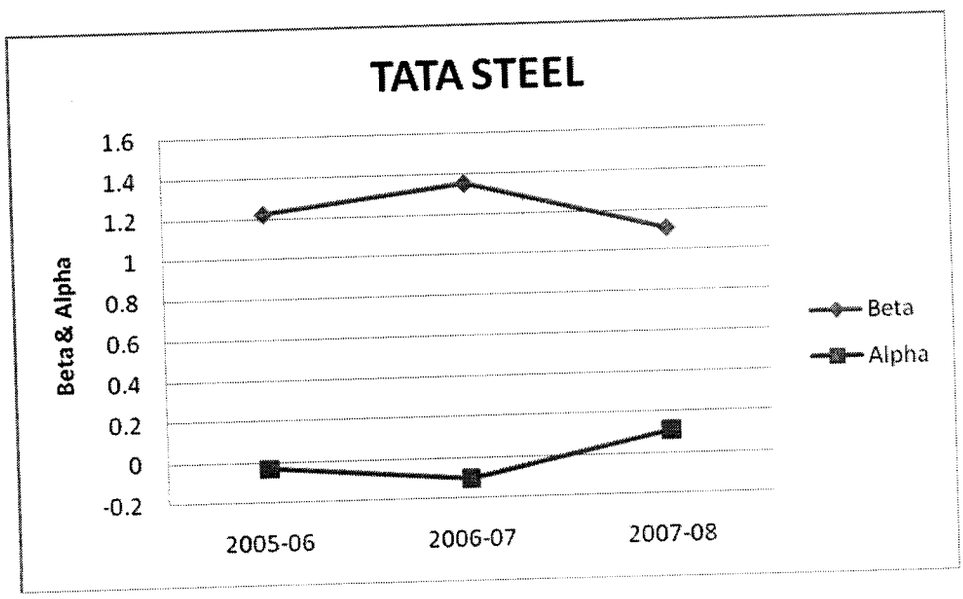
- In the alpha graph of SAIL, from the year 2004-05 to 2005-06 alpha is decreased by 0.05 times
- From the year 2005-06 to 2006-07 alpha is increased by 0.05 times and finally in the year 2006-07 to 2007-08 it is decreased by 0.008 times
- As a whole from the year 2004-08 alpha is decrease by 0.11 times

## TATA STEEL

**Table 3.8.2 Risk and Return of TATA STEEL**

| Year | Beta | Alpha |
|---|---|---|
| 2005-06 | 1.224413 | -0.03142 |
| 2006-07 | 1.351489 | -0.10162 |
| 2007-08 | 1.107652 | 0.111118 |

**Chart 3.8.2**



## INTERPRETATION

### BETA

- In the beta graph of TATA STEEL, beta value is increased by 0.13 times from the year 2005-06 to 2006-07
- Finally in the year 2006-07 to 2007-08 beta is decreased by 0.24 times
- As a whole beta of TATA STEEL is decreased by 0.12 times from the year 2005 -08

### ALPHA

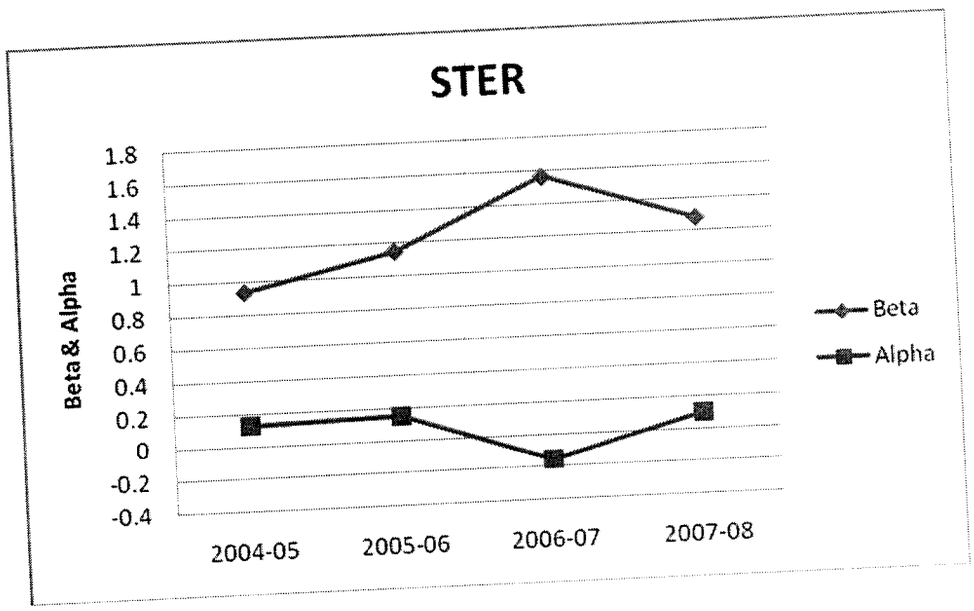
- In the alpha graph of TATA STEEL, from the year 2005-06 to 2006-07 alpha is decreased by 0.07 times
- Finally in the year 2006-07 to 2007-08 it is increased by 0.009 times
- As a whole from the year 2005-08 alpha is increased by 0.08 times

**STERLITE**

**Table 3.8.3 Risk and Return of STERLITE**

| Year | Beta | Alpha |
|---|---|---|
| 2004-05 | 0.937522 | 0.126741 |
| 2005-06 | 1.149505 | 0.150807 |
| 2006-07 | 1.563512 | -0.1568 |
| 2007-08 | 1.281201 | 0.095492 |

**Chart 3.8.3**



## INTERPRETATION

### BETA

- In the beta graph of STER, beta value is increased by 0.21 times from the year 2004-05 to 2005-06
- From 2005-06 to 2006-07 beta is increased by 0.41 times and finally in the year 2006-07 to 2007-08 beta is decreased by 0.28 times
- As a whole beta of STER increased by 0.34 times from the year 2004 - 08

### ALPHA

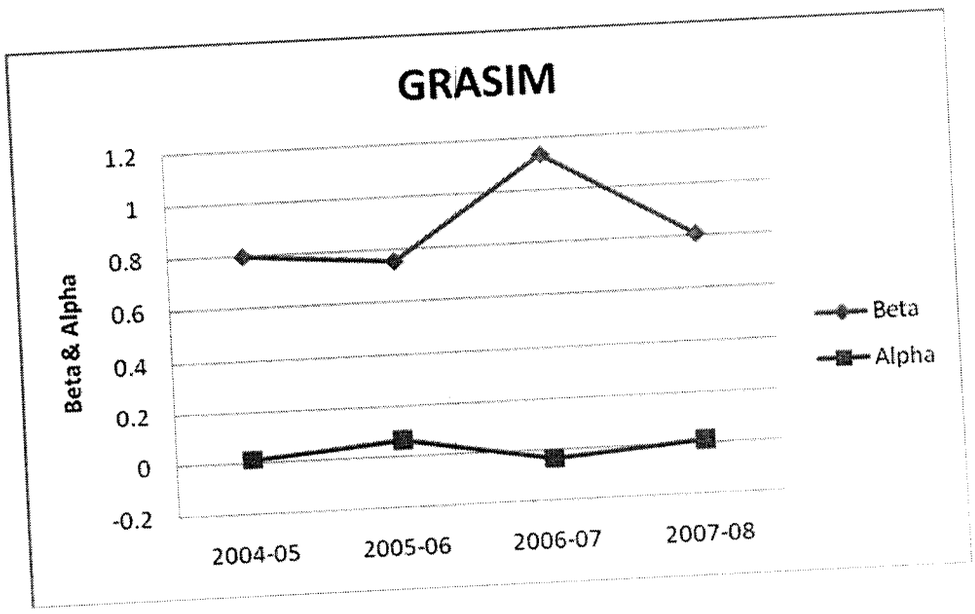
- In the alpha graph of STER, from the year 2004-05 to 2005-06 alpha is increased by 0.02 times
- From the year 2005-06 to 2006-07 alpha is decreased by 0.006 times and finally in the year 2006-07 to 2007-08 it is increased by 0.06 times
- As a whole from the year 2004-08 alpha is decrease by 0.03 times

**GRASIM**

**Table 3.8.4 Risk and Return of GRASIM**

| Year | Beta | Alpha |
|---|---|---|
| 2004-05 | 0.801273 | 0.015845 |
| 2005-06 | 0.756515 | 0.065608 |
| 2006-07 | 1.137379 | -0.03337 |
| 2007-08 | 0.807441 | 0.012588 |

**Chart 3.8.4**



## INTERPRETATION

### BETA

- In the beta graph of GRASIM, beta value is decreased by 0.04 times from the year 2004-05 to 2005-06
- From 2005-06 to 2006-07 beta is increased by 0.38 times and finally in the year 2006-07 to 2007-08 beta is decreased by 0.33 times
- As a whole beta of GRASIM is increased by 0.006 times from the year 2004 -08

### ALPHA

- In the alpha graph of GRASIM, from the year 2004-05 to 2005-06 alpha is increased by 0.05 times
- From the year 2005-06 to 2006-07 alpha is decreased by 0.03 times and finally in the year 2006-07 to 2007-08 it is increased by 0.02 times
- As a whole from the year 2004-08 alpha is decrease by 0.03 times

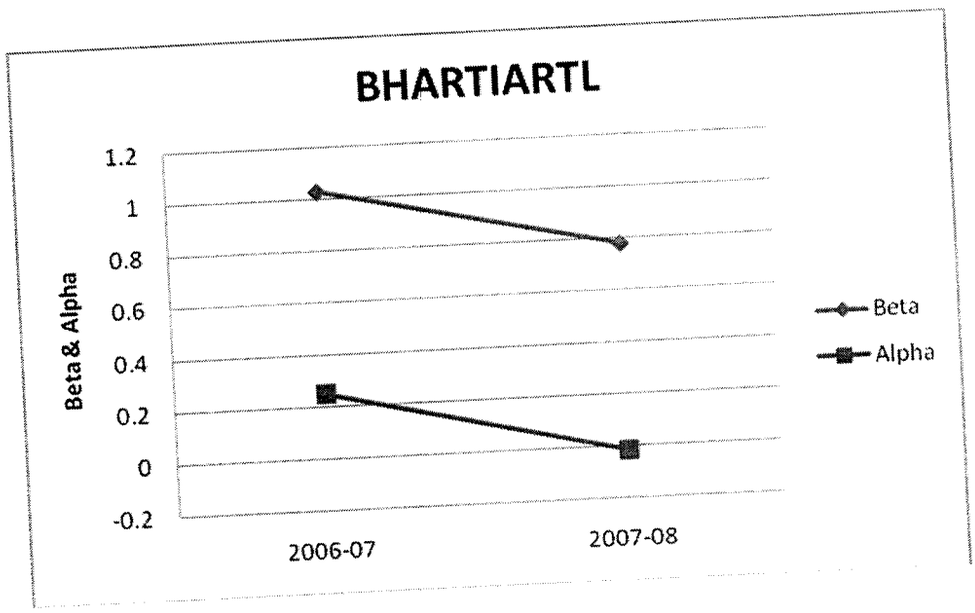
## RISK AND RETURN OF TELECOMMUNICATON SECTOR

## BARATI AIRTEL

**Table 3.9.1 Risk and Return of BARATI AIRTEL**

| Year | Beta | Alpha |
|---|---|---|
| 2006-07 | 1.030633 | 0.249161 |
| 2007-08 | 0.779045 | -0.0153 |

**Chart 3.9.1**



## INTERPRETATION

### BETA

- In the beta graph of BHARTIARTL, beta value is decreased by 0.25 times from the year 2006-07 to 2007-08

### ALPHA

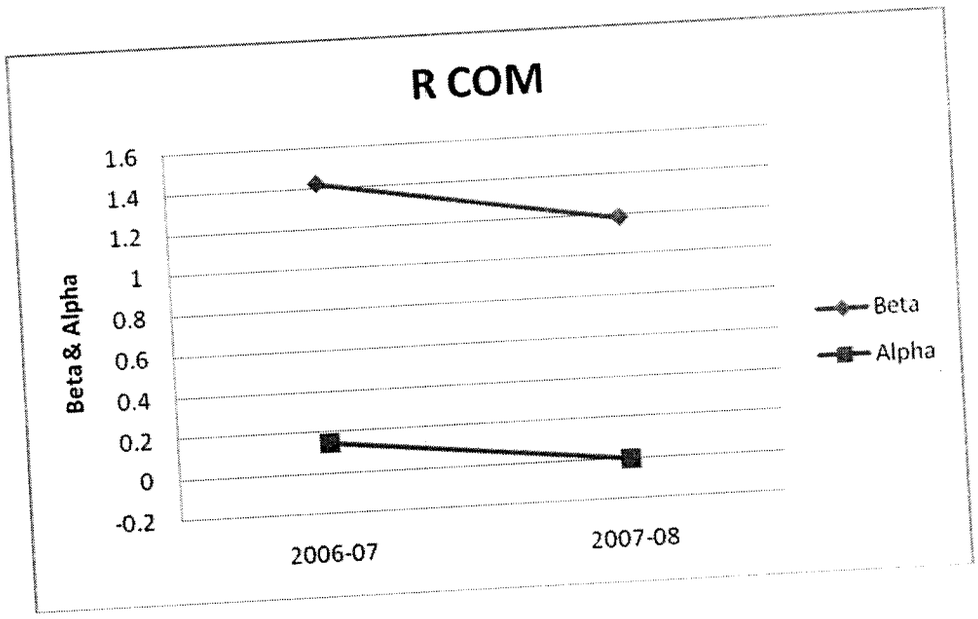
- In the alpha graph of BHARTIARTL, from the year 2006-07 to 2007-08 alpha is decreased by 0.23 times

**RCOM**

**Table 3.9.2 Risk and Return of RCOM**

| Year | Beta | Alpha |
|---|---|---|
| 2006-07 | 1.420965 | 0.149631 |
| 2007-08 | 1.179644 | -0.00557 |

**Chart 3.9.2**



## INTERPRETATION

### BETA

- In the beta graph of RCOM, beta value is decreased by 0.24 times from the year 2006-07 to 2007-08

### ALPHA

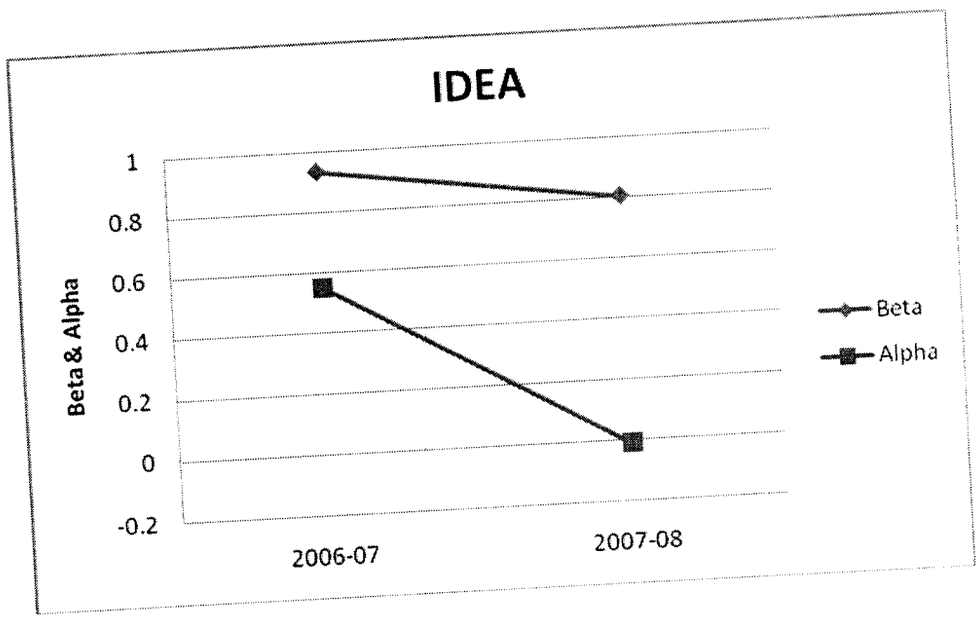
- In the alpha graph of RCOM, from the year 2006-07 to 2007-08 alpha is decreased by 0.14 times

**IDEA**

**Table 3.9.3 Risk and Return of IDEA**

| Year | Beta | Alpha |
|---|---|---|
| 2006-07 | 0.935205 | 0.549958 |
| 2007-08 | 0.80491 | -0.01378 |

**Chart 3.9.3**



## INTERPRETATION

### BETA

- In the beta graph of IDEA, beta value is decreased by 0.13 times from the year 2006-07 to 2007-08

### ALPHA

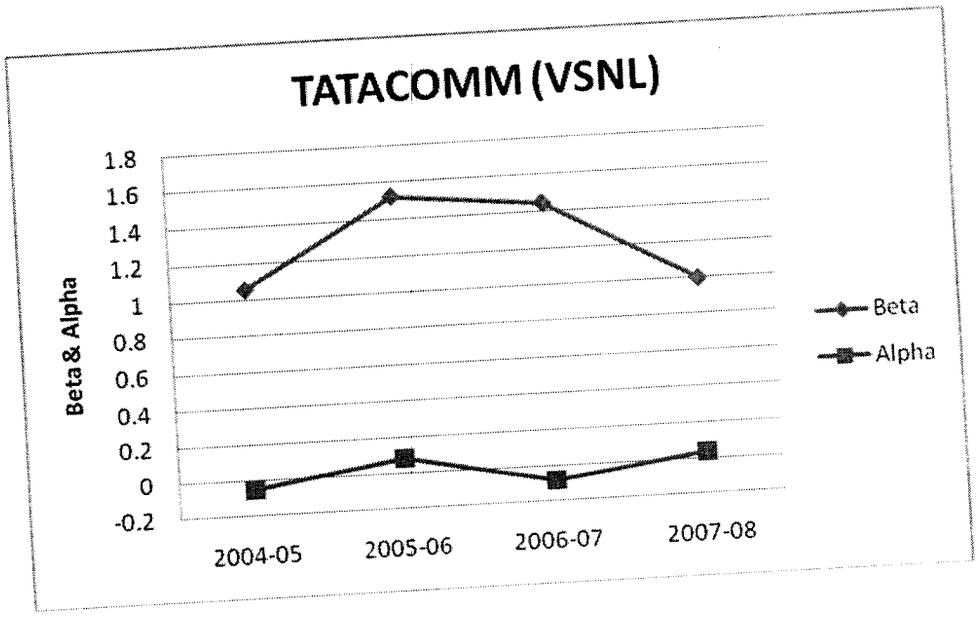
- In the alpha graph of IDEA, from the year 2006-07 to 2007-08 alpha is decreased by 0.54 times

## TATA COMM (VSNL)

**Table 3.9.4 Risk and Return of TATA COMM (VSNL)**

| Year | Beta | Alpha |
|---|---|---|
| 2004-05 | 1.05869 | -0.05235 |
| 2005-06 | 1.520299 | 0.085535 |
| 2006-07 | 1.444345 | -0.08477 |
| 2007-08 | 0.998377 | 0.035593 |

**Chart 3.9.4**



## INTERPRETATION

### BETA

- In the beta graph of TATA COM (VSNL), beta value is increased by 0.46 times from the year 2004-05 to 2005-06
- From 2005-06 to 2006-07 beta is decreased by 0.07 times and finally in the year 2006-07 to 2007-08 beta is decreased by 0.44 times
- As a whole beta of TATA COM is decreased by 0.06 times from the year 2004 -08

### ALPHA

- In the alpha graph of TATA COM, from the year 2004-05 to 2005-06 alpha is increased by 0.03 times
- From the year 2005-06 to 2006-07 alpha is decreased by 0.008 times and finally in the year 2006-07 to 2007-08 it is increased by 0.05 times
- As a whole from the year 2004-08 alpha is increase by 0.02 times

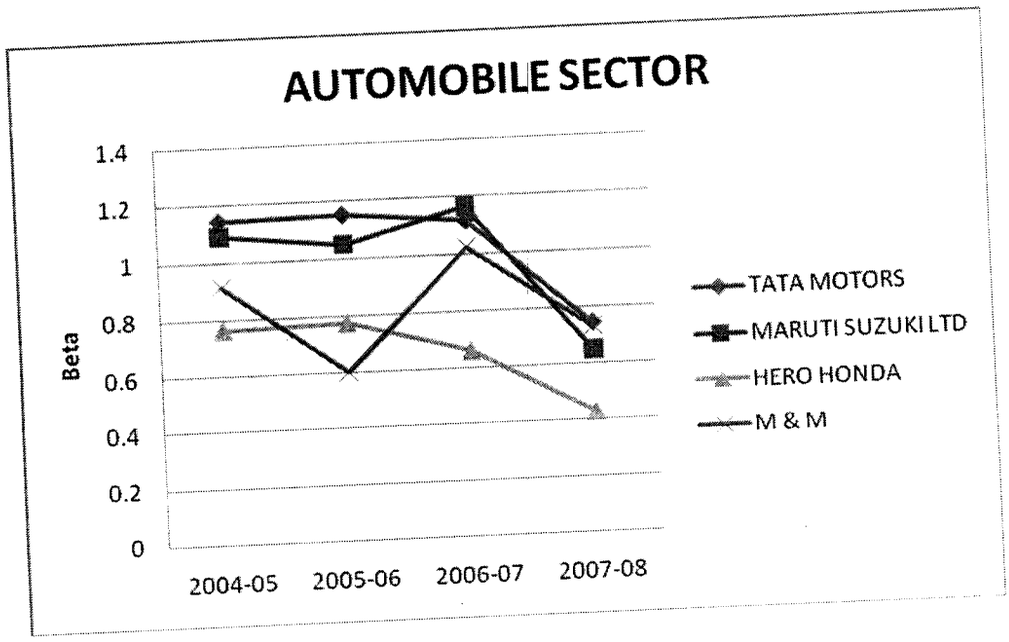
## 3.10 SECTOR WISE ANALYSIS OF BETA (RISK)

### AUTOMOBILE SECTOR

**Table 3.10.1 Beta value for Automobile Sector**

| YEAR | TATA MOTORS | MARUTI SUZUKI LTD | HERO HONDA | M & M |
|---|---|---|---|---|
| 2004-05 | 1.143005 | 1.08875 | 0.762005 | 0.915863 |
| 2005-06 | 1.151395 | 1.048621 | 0.773954 | 0.602968 |
| 2006-07 | 1.116083 | 1.164128 | 0.659948 | 1.021801 |
| 2007-08 | 0.745296 | 0.649361 | 0.429496 | 0.733332 |

**Chart 3.10.1**



## INTERPRETATION

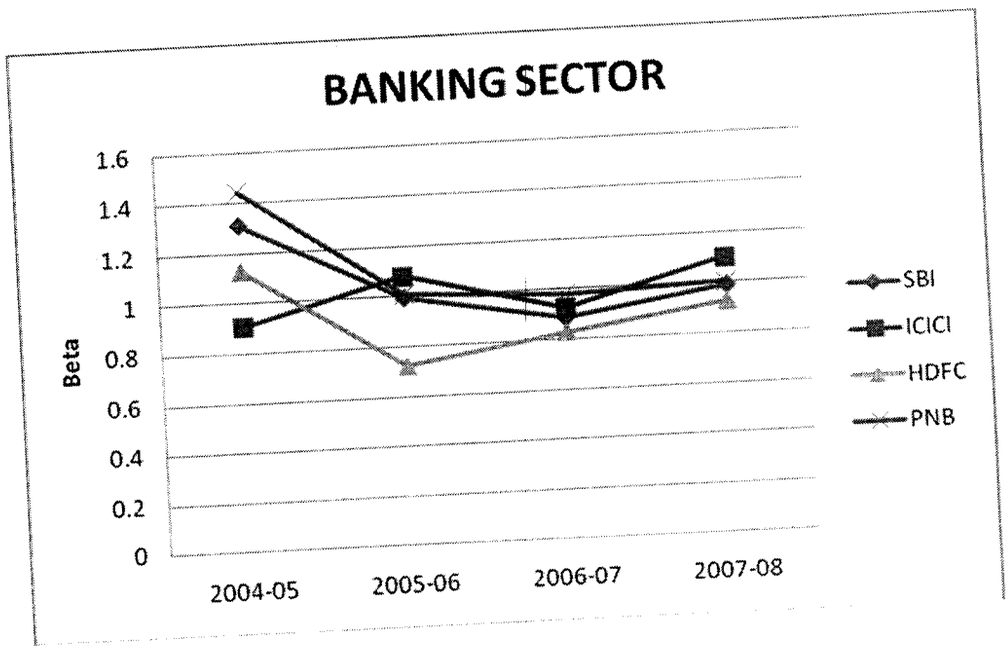
- From the above table & graph beta value is greater than 1 in TATA MOTORS and MARUTI SUZUKI LTD for three years from 2004-2005 to 2006-07 it shows they are more volatile than the market but by the year 2007-08 it reduced to less than one in both the companies so it has less volatile than the market
- If we consider HERO HONDA & MAHINDRA & MAHINDRA LTD both the companies has beta value less than 1 so it is less volatile than the market but M & M Company has beta value is more than 1 for the year 2006-07 this shows this company is more volatile than the market in that period

## BANKING SECTOR

**Table 3.10.2 Beta value for Banking Sector**

| YEAR | SBI | ICICI | HDFC | PNB |
|---|---|---|---|---|
| 2004-05 | 1.311543 | 0.907006 | 1.128142 | 1.44351 |
| 2005-06 | 0.995825 | 1.080546 | 0.720744 | 1.010209 |
| 2006-07 | 0.886377 | 0.927502 | 0.827269 | 0.978871 |
| 2007-08 | 0.990861 | 1.101684 | 0.925333 | 1.005016 |

**Chart 3.10.2**



## INTERPRETATION

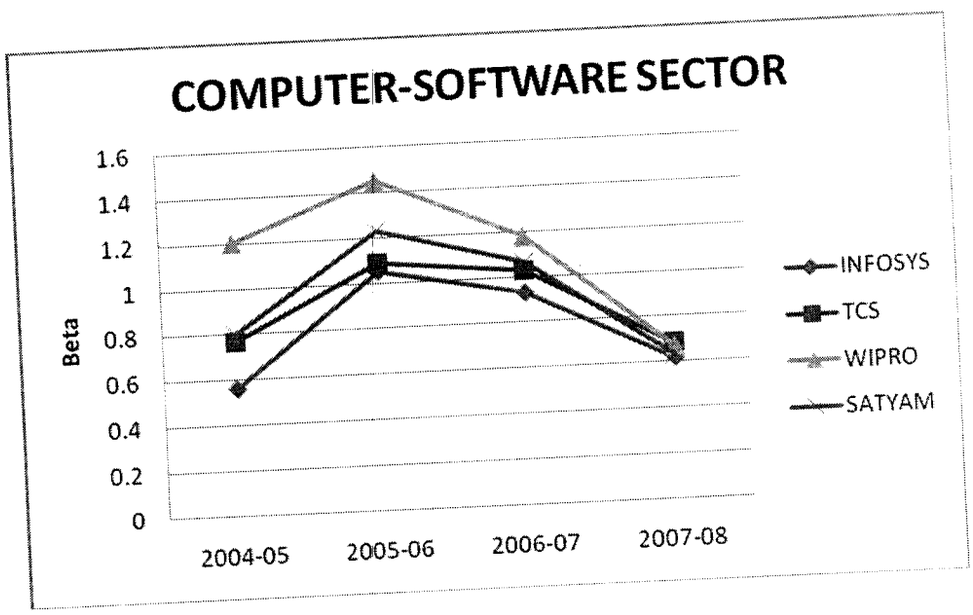
- From the above table and graph, beta value of SBI & HDFC bank for the year 2004-05 it is greater than 1(β>1),this shows the company has more unavoidable risk and hence it is more volatile than the market. But in the next 3 years the value is less than 1(β<1), this shows the company has less unavoidable risk and hence it is less volatile than the market.
- In HDFC bank beta value is gradually increasing from year to year but in SBI it gets fluctuates.
- In ICICI bank for 2 years (2004-05 & 2006-07) beta is less than 1(β<1), this shows it has less unavoidable risk and less volatile than the market . In the year 2005-06 & 2007-08 beta is greater than 1(β>1), this shows it has more unavoidable risk and more volatile than the market for those years.
- In PNB beta is greater than 1(β>1) for 3 years (2004-05 to 2005-06 & 2007-08).so PNB has more unavoidable risk and more volatile than the market in those 3 years. In the year 2006-07 beta is less than 1(β<1) for PNB this shows it has less unavoidable risk and less volatile than the market for that particular year and for the first 3 years beta reduced gradually and become less than 1 in the year 2006-07 & in the next year (2007-08) it get increased to 1.

## COMPUTER - SOFTWARE SECTOR

**Table 3.10.3 Beta value for COMPUTER - SOFTWARE SECTOR**

| YEAR | INFOSYS | TCS | WIPRO | SATYAM |
|---|---|---|---|---|
| 2004-05 | 0.561663 | 0.767961 | 1.202909 | 0.801887 |
| 2005-06 | 1.05061 | 1.088371 | 1.450073 | 1.231599 |
| 2006-07 | 0.930525 | 1.027256 | 1.179371 | 1.066684 |
| 2007-08 | 0.616781 | 0.684484 | 0.672796 | 0.634761 |

**Chart 3.10.3**



## INTERPRETATION

- From the above table & graph, beta value of TCS & SATYAM is less than 1 in the year 2004-05 & 2007-08 this shows that the company has less unavoidable risk and less volatile than the market in those years and in the year 2005-06 to 2006-07 beta is greater than 1($\beta>1$) for those companies and this shows those 2 companies has more unavoidable risk and more volatile than the market

- If we consider WIPRO for the first 3 years (2004-05 to 2006-07) beta is greater than 1($\beta>1$) and this shows WIPRO has more unavoidable risk and more volatile than the market on that particular period.

- In INFOSYS for the year 2004-05 & 2006-07 to 2007-08 beta is less than 1($\beta<1$) this shows, INFOSYS has less unavoidable risk and less volatile than the market for that particular period .For the year 2005-06 beta is greater than 1($\beta>1$) this shows INFOSYS has more unavoidable risk and more volatile than the market on that particular year

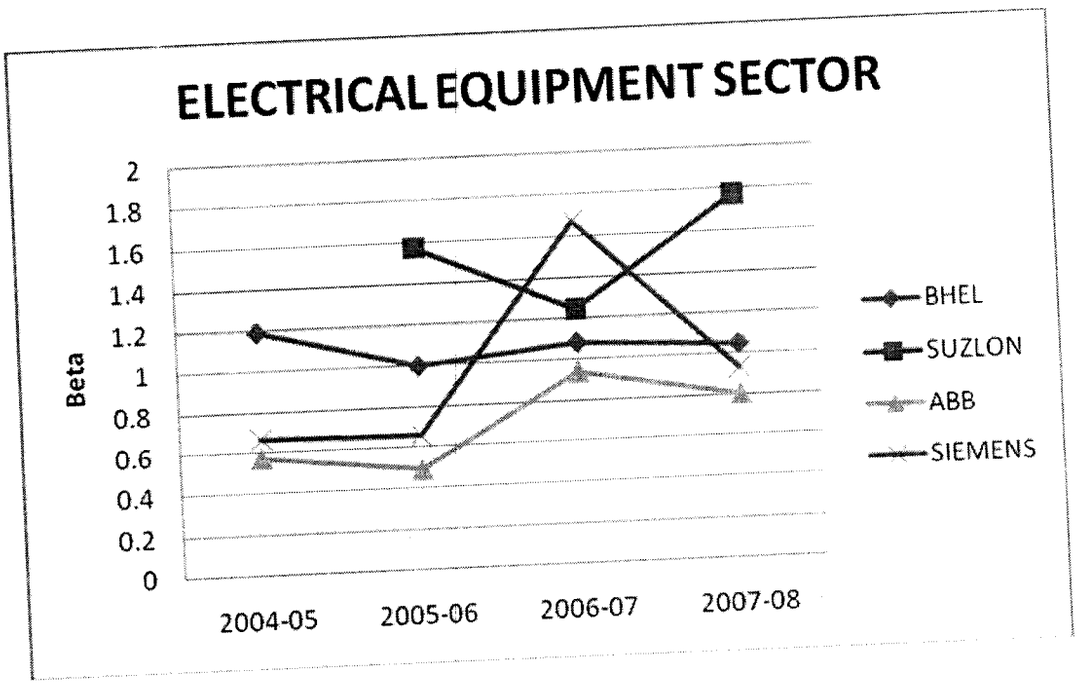
## ELECTRICAL EQUIPMENT SECTOR

**Table 3.10.4 Beta value for ELECTRICAL EQUIPMENT SECTOR**

| YEAR | BHEL | SUZLON | ABB | SIEMENS |
|---|---|---|---|---|
| 2004-05 | 1.191719 | * | 0.579417 | 0.670817 |
| 2005-06 | 1.004001 | 1.572452 | 0.495629 | 0.661475 |
| 2006-07 | 1.085701 | 1.245246 | 0.942783 | 1.673256 |
| 2007-08 | 1.053023 | 1.773273 | 0.804434 | 0.932265 |

*** DATA NOT AVAILABLE**

**Chart 3.10.4**



## INTERPRETATION

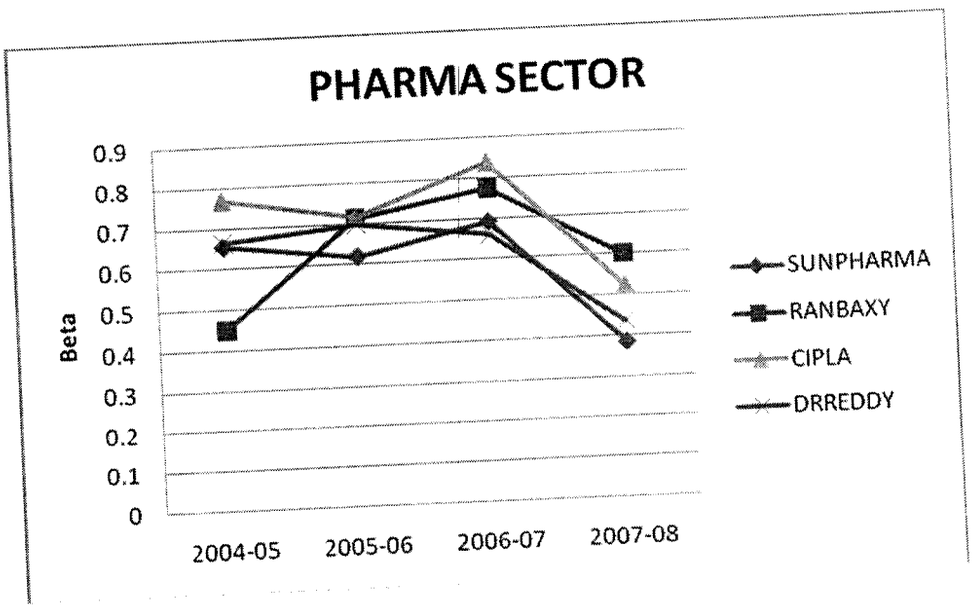
- From the above table & graph, beta value of BHEL from 2004-05 to 2007-08 beta is greater than 1(β>1) for those period, this shows that BHEL has more unavoidable risk and more volatile than the market.
- In SUZLON, this company is listed in the year 2005-06 from that year up to 2007-08 this company has beta greater than 1(β>1) which shows this company has more unavoidable risk and more volatile than the market
- In ABB for the 4 years beta is less than 1(β<1) and there is less fluctuation the beta compared to SIMENS. This shows the company has less unavoidable risk and less volatile than the market.
- In SIMENS beta is less than 1(β<1) from the year 2004-05 to 2005-06 & 2007-08 this shows the company has less unavoidable risk and less volatile than the market in those years and in the year 2006-07 beta is greater than 1(β>1) for SIMENS this shows the company has more unavoidable risk in that year and more volatile than the market.

## PHARMACEUTICAL SECTOR

**Table 3.10.5 Beta value for PHARMACUITAL SECTOR**

| YEAR | SUNPHARMA | RANBAXY | CIPLA | DRREDDY |
|---|---|---|---|---|
| 2004-05 | 0.654973 | 0.451801 | 0.768619 | 0.664595 |
| 2005-06 | 0.619895 | 0.714584 | 0.716149 | 0.698474 |
| 2006-07 | 0.693201 | 0.773895 | 0.838617 | 0.661132 |
| 2007-08 | 0.386332 | 0.602031 | 0.523064 | 0.437027 |

**Chart 3.10.5**



## INTERPRETATION

- From the above table and graph, In Pharmaceuticals sector all the companies in this sector has beta vale is less than 1($\beta<1$) this shows these companies has less unavoidable risk and less volatile than the market for 4 years (2004-05 to 2007-08).

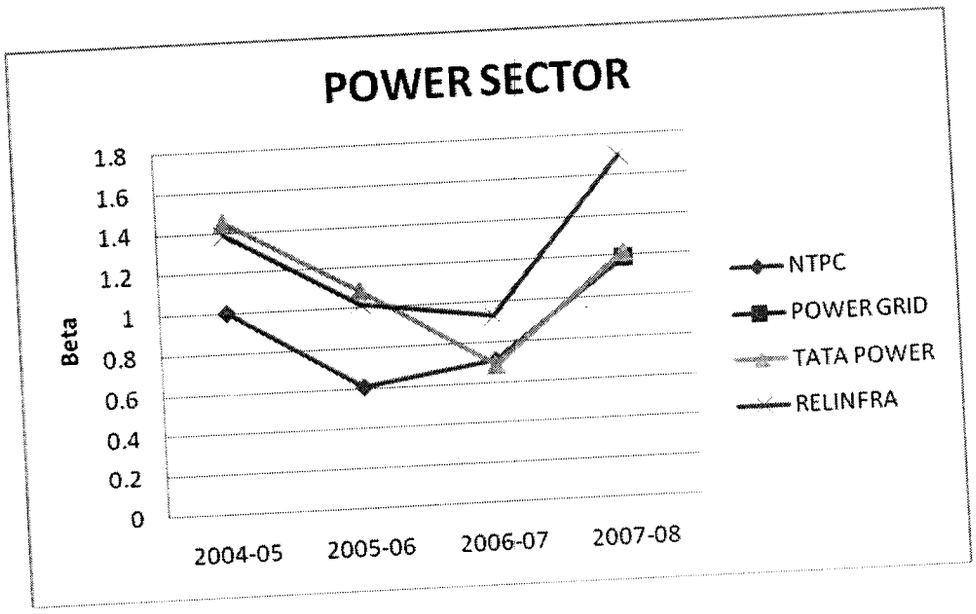
## POWER SECTOR

**Table 3.10.6 Beta value for POWER SECTOR**

| YEAR | NTPC | POWER GRID | TATA POWER | RELINFRA |
|---|---|---|---|---|
| 2004-05 | 1.00552 | * | 1.450002 | 1.38832 |
| 2005-06 | 0.607925 | * | 1.086228 | 1.01377 |
| 2006-07 | 0.709616 | * | 0.687947 | 0.930693 |
| 2007-08 | 1.189352 | 1.19126 | 1.218162 | 1.696519 |

*** DATA NOT AVAILABLE**

**Chart 3.10.6**



## INTERPRETATION

- If we consider NTPC this company has beta value greater than 1(β>1)for the years 2004-05 and 2007-08 this shows NTPC has more unavoidable risk and more volatile than the market in those years
- In the year 2005-06 to 2006-07 beta value is less than 1(β<1) for NTPC this shows this company has less unavoidable risk and less volatile than the market in those period
- POWER GRID Company is listed in the year 2007-08. In that year beta is greater than 1(β>1) for that company so it has more unavoidable risk and more volatile than the market.
- If we consider TATA POWER and RELIANCE beta value is greater than 1(β>1) for the years 2004-05 to 2005-06 & 2007-08.This shows these companies has more unavoidable risk and more volatile than the market and in the year 2006-07 beta is less than 1(β<1) this shows the company has less unavoidable risk and less volatile than the market

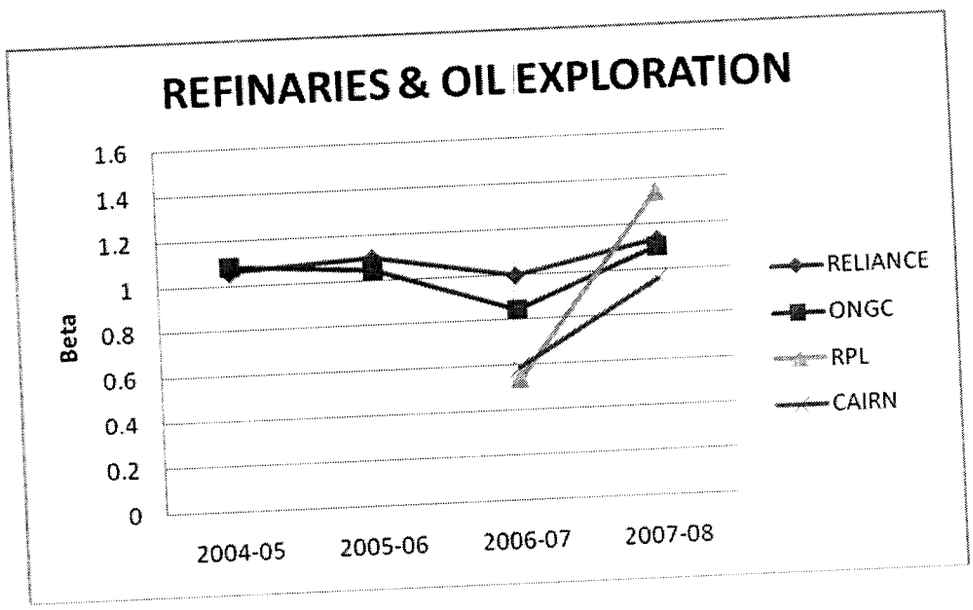
## REFINARIES & OIL EXPLORATION SECTOR

**Table 3.10.7 Beta value for REFINARIES & OIL EXPLORATION SECTOR**

| YEAR | RELIANCE | ONGC | RPL | CAIRN |
|---|---|---|---|---|
| 2004-05 | 1.058108 | 1.079847 | * | * |
| 2005-06 | 1.098039 | 1.043664 | * | * |
| 2006-07 | 0.996294 | 0.843637 | 0.538716 | 0.589649 |
| 2007-08 | 1.130286 | 1.098617 | 1.338093 | 0.959662 |

*** DATA NOT AVAILABLE**

**Chart 3.10.7**



## INTERPRETATION

- From the above table and graph, If we consider RELIANCE & ONGC for the years 2004-05 to 2005-06 & 2007-08 the value of beta is more than 1(β>1)this shows these companies has more unavoidable risk and more volatile than the market in those period.
- In the year 2006-07 beta is less than 1(β<1) this shows those two companies has less unavoidable risk and less volatile than the market
- If we consider RPL & CAIRN these companies are listed in the year 2006-07.CAIRN has less unavoidable risk & less volatile than the market since its beta value is less than 1(β<1) from 2006-07 to 2007-08.
- For RPL in the year 2006-07 beta is less than 1(β<1), this shows RPL has less unavoidable risk & less volatile than the market in that particular year and in the year 2007-08 beta is greater than 1(β>1), this shows RPL has more unavoidable risk and more volatile than the market in that year.

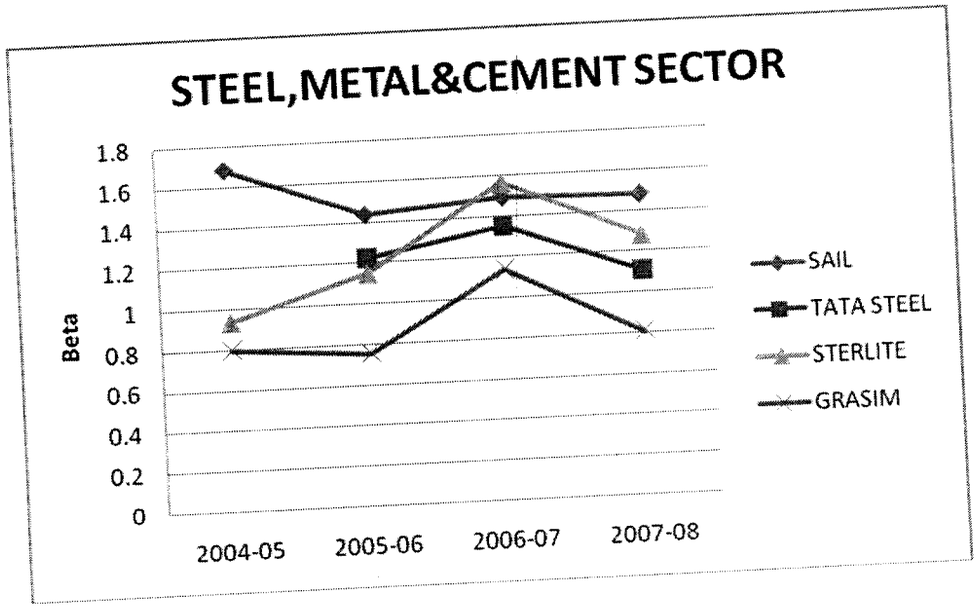
## STEEL, METAL & CEMENT SECTOR

**Table 3.10.8 Beta value for STEEL, METAL & CEMENT SECTOR**

| YEAR | SAIL | TATA STEEL | STERLITE | GRASIM |
|---|---|---|---|---|
| 2004-05 | 1.680957 | * | 0.937522 | 0.801273 |
| 2005-06 | 1.434835 | 1.224413 | 1.149505 | 0.756515 |
| 2006-07 | 1.491098 | 1.351489 | 1.563512 | 1.137379 |
| 2007-08 | 1.479672 | 1.107652 | 1.281201 | 0.807441 |

*** DATA NOT AVAILABLE**

**Chart 3.10.8**



## INTERPRETATION

- From the above table & graph, if we consider beta value of SAIL from 2004-05 to 2007-08 it is greater than 1(β>1) for all the 4 years this shows SAIL has more unavoidable risk and more volatile than the market.
- TATA STEEL is listed in the year 2005-06 from that year it has beta greater than 1(β>1) till 2007-08 this shows TATA STEEL has more unavoidable risk and more volatile than the market.
- In STERLITE beta value is greater than 1(β>1) from 2005-06 to 2007-08 this shows STERLITE has more unavoidable risk and more volatile than the market and in the year 2004-05 beta is less than 1(β<1) this shows STERLITE has less unavoidable risk and less volatile than the market in that particular year.
- If we consider GRASIM, beta is less than 1(β<1) for this company from 2004-05 to 2005-06 & 2007-08, this shows GRASIM has less unavoidable risk and less volatile than the market in those years
- In the year 2006-07 beta is greater than 1(β>1) this shows GRASIM has more unavoidable risk and more volatile than the market for that particular year.

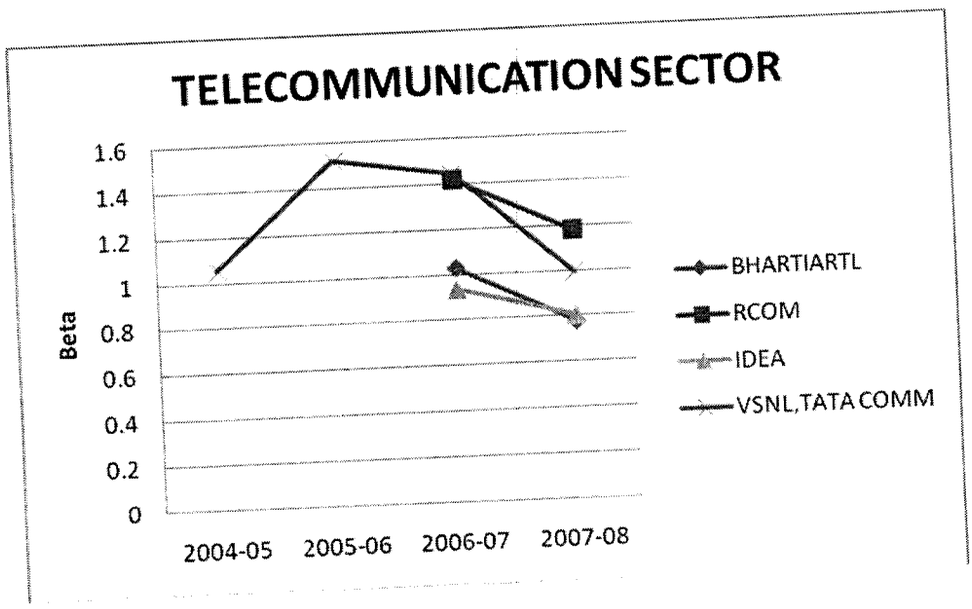
## TELECOMMUNICATION SECTOR

**Table 3.10.9 Beta value for TELECOMMUNICATION SECTOR**

| YEAR | BHARTIARTL | RCOM | IDEA | VSNL,TATA COMM |
|---|---|---|---|---|
| 2004-05 | * | * | * | 1.05869 |
| 2005-06 | * | * | * | 1.520299 |
| 2006-07 | 1.030633 | 1.420965 | 0.935205 | 1.444345 |
| 2007-08 | 0.779045 | 1.179644 | 0.80491 | 0.998377 |

*** DATA NOT AVAILABLE**

**Chart 3.10.9**



## INTERPRETATION

- From the above table and graph, if we consider RCOM it was listed in the year 2006-07 from that year till 2007-08 beta is more than 1(β>1),this shows RCOM has more unavoidable risk and more volatile than the market in that period.

- IDEA company was listed in the year 2006-07 from that year till 2007-08 beta is less than 1(β<1) this shows IDEA has less unavoidable risk and less volatile than the market in that period
- If we consider BHARTIARTL, it was listed in the year 2006-07 in that year beta is more than 1(β>1) this shows BHARATIARTL has more unavoidable risk and more volatile than the market in that particular year. But in the next year (2007-08) it becomes less than 1(β<1) this shows that company has less unavoidable risk and less volatile than the market in that particular year.

- In TATA COMM beta is greater than 1(β>1) from the year 2004-05 to 2006-07 this shows TATA COMM has more unavoidable risk and more volatile than the market for those period. But in the next year (2007-08) it becomes less than 1(β<1) this shows TATA COMM has less unavoidable risk and less volatile than the market in that particular year

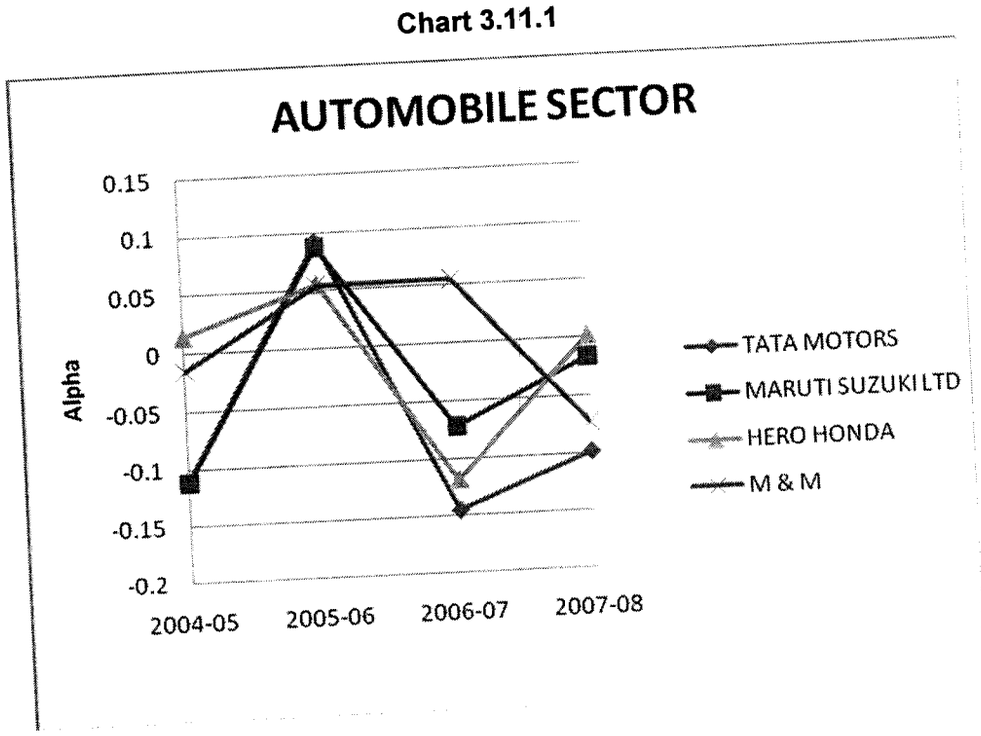
## 3.11 SECTOR WISE ANALYZE OF ALPHA

### AUTOMOBILE SECTOR

**Table 3.11.1 Alpha value for AUTOMOBILE SECTOR**

| YEAR | TATA MOTORS | MARUTI SUZUKI LTD | HERO HONDA | M & M |
|---|---|---|---|---|
| 2004-05 | -0.109932 | -0.11194 | 0.014727 | -0.0145 |
| 2005-06 | 0.091982 | 0.087796 | 0.055828 | 0.054958 |
| 2006-07 | -0.1449 | -0.07221 | -0.11863 | 0.055947 |
| 2007-08 | -0.09875 | -0.01633 | 0.002099 | -0.07304 |

**Chart 3.11.1**



## INTERPRETATION

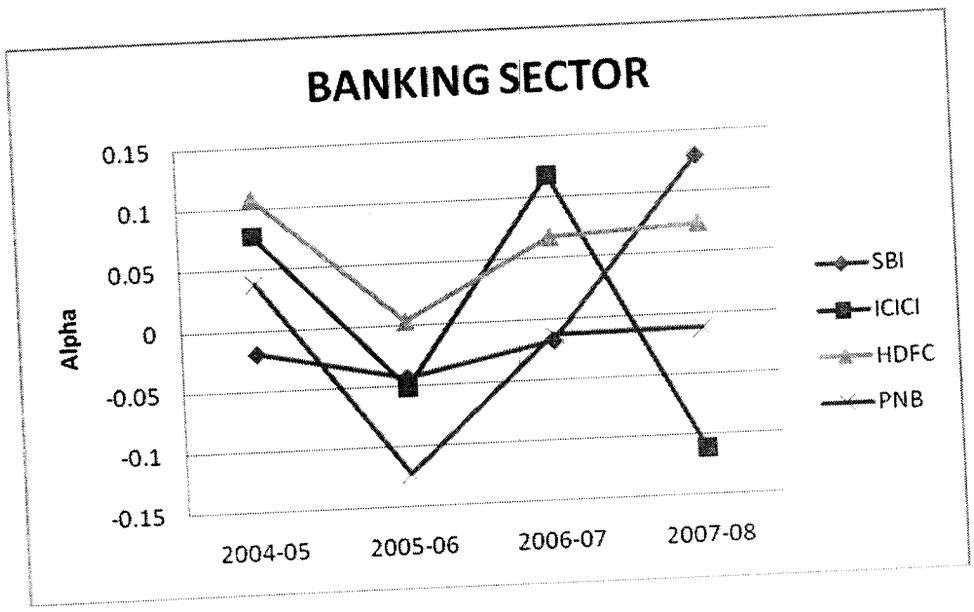
- For healthy sign alpha value of any company should be positive, if we consider TATA MOTORS & MARUTI SUZULI LTD both the companies have negative alpha for the years 2004-05 & 2006-07 to 2007-08, so there is a chance that the 2 companies may give less return in those years but in the year 2005-06 both the companies have positive alpha so there is a chance to yield profitable return
- If we consider alpha of HERO HONDA for 3 years from 2004-05 to 2005-06 & 2007-08 alpha shows a positive sign so there is a chance that this company may yield profitable return in those period. But in the year 2006-07 HERO HONDA has negative alpha value so there may be a chance of less return in that particular year.
- In MAHINDRA & MAHINDRA LTD for the years 2004-05 & 2007-08 alpha value is negative so there may be a chance that this company may give less return in those years. But from the year 2005-06 to 2006-07 alpha is positive so there may be a chance that the company may yield good profitable returns.

## BANKING SECTOR

**Table 3.11.2 Alpha value for BANKING SECTOR**

| YEAR | SBI | ICICI | HDFC | PNB |
|---|---|---|---|---|
| 2004-05 | -0.01921 | 0.077734 | 0.10809 | 0.03859 |
| 2005-06 | -0.04357 | -0.05159 | 0.003067 | -0.12298 |
| 2006-07 | -0.01802 | 0.117989 | 0.067294 | -0.01318 |
| 2007-08 | 0.129756 | -0.11113 | 0.073844 | -0.01251 |

**Chart 3.11.2**



## INTERPRETATION

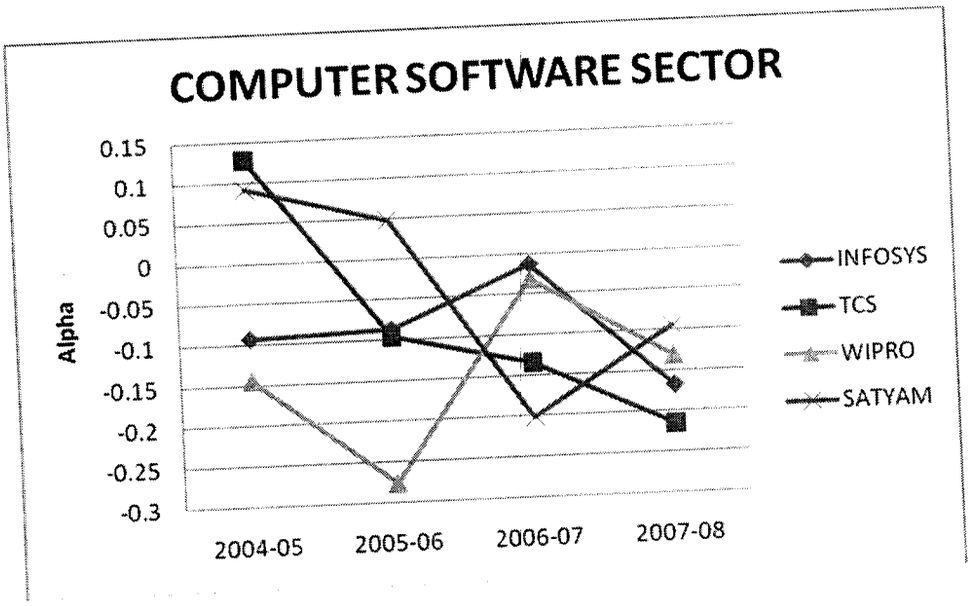
- If we consider SBI alpha value is in negative value for 3 years (2004-05 to 2006-07) so there may be a chance that this bank may give negative return in those 3 years. But in the next year (2007-08) alpha shows a positive sign, so there may be a chance that this bank may give good profitable return in that particular year
- If we consider ICICI bank, in the year 2004-05 & 2006-07 alpha is positive, so there may be a chance that this bank may give good profitable return in those years
- In the year 2005-06 & 2007-08 alpha shows a negative sign , so there may be a chance that this bank may give negative return in those years
- In HDFC bank, alpha is positive for all the 4 years from 2004-05 to 2007-08.So there may be a chance that this bank may yield good profitable return in those period.
- In PNB alpha is negative for 3 years from 2005-06 to 2007-08 so there may be a chance that this bank may give negative return in those period .in the year 2004-05 alpha is positive ,so there may be a chance that this bank may give good profitable return in that particular year.

## COMPUTER - SOFTWARE SECTOR

**Table 3.11.3 Alpha value for COMPUTER - SOFTWARE SECTOR**

| YEAR | INFOSYS | TCS | WIPRO | SATYAM |
|---|---|---|---|---|
| 2004-05 | -0.09197 | 0.127751 | -0.14392 | 0.091646 |
| 2005-06 | -0.08643 | -0.09603 | -0.27599 | 0.047913 |
| 2006-07 | -0.01295 | -0.1343 | -0.03122 | -0.20081 |
| 2007-08 | -0.16713 | -0.21537 | -0.13084 | -0.09471 |

**Chart 3.11.3**



## INTERPRETATION

- If we consider INFOSYS & WIPRO both the companies have negative alpha for all the 4 years (2004-05 to 2007-08) .So there may be chance that these companies may give negative return in those period
- In TCS, from the year 2005-06 to 2007-08 alpha is negative so there may be chance that this company may give negative return in those period. But in the year 2004-05 it has positive value so there may be a chance that TCS may give profitable return in that particular year.
- If we consider SATYAM for the first 2 years from 2004-05 to 2005-06 alpha is positive so there may be a chance that this company may give good profitable return during those period
- In the next 2 years from 2006-07 to 2007-08 alpha is negative for SATYAM, so there may be a chance that the company may give negative return in that 2 years

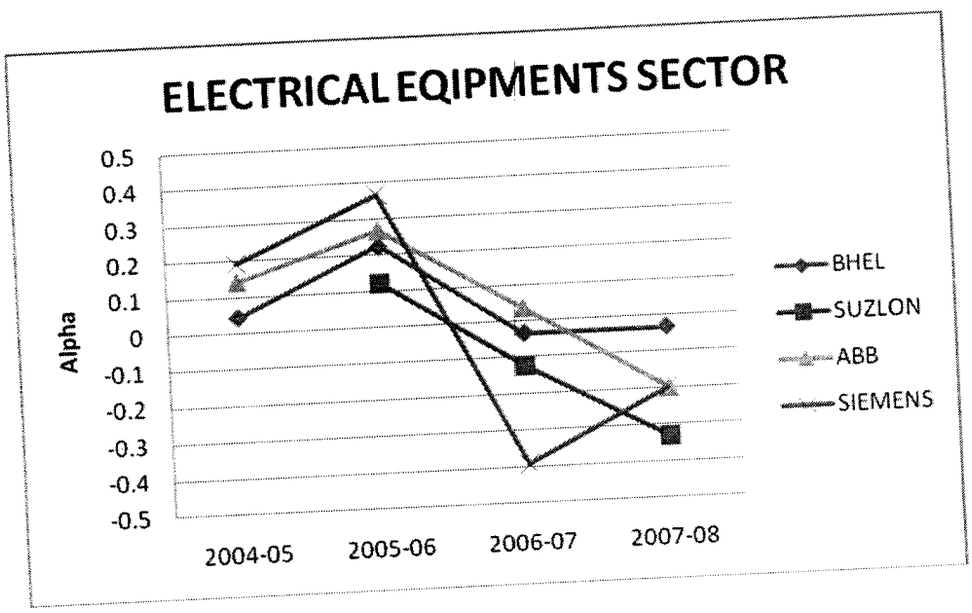
## ELECTRICAL EQUIPMENT SECTOR

**Table 3.11.4 Alpha value for ELECTRICAL EQUIPMENT SECTOR**

| YEAR | BHEL | SUZLON | ABB | SIEMENS |
|---|---|---|---|---|
| 2004-05 | 0.042011 | * | 0.14249 | 0.192315 |
| 2005-06 | 0.224851 | 0.122515 | 0.268892 | 0.366527 |
| 2006-07 | -0.03449 | -0.12406 | 0.037167 | -0.39446 |
| 2007-08 | -0.03316 | -0.33224 | -0.19869 | -0.19921 |

*** DATA NOT AVAILABLE**

**Chart 3.11.4**



## INTERPRETATION

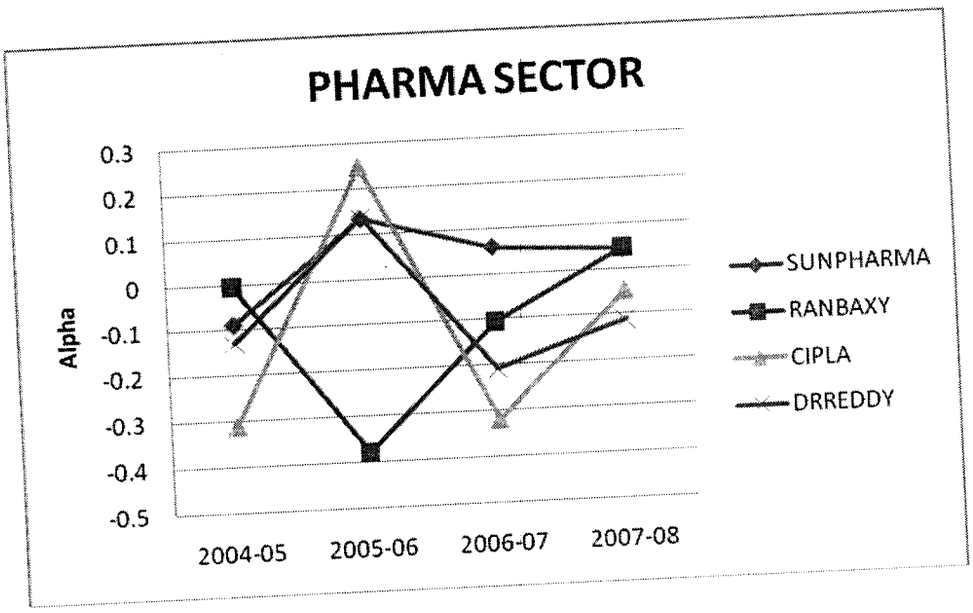
- If we consider BHEL & SIMENS both the companies have positive alpha for first 2 years (2004-05 to 2005-06) so there may be a chance that these two companies may give good profitable return for those 2 years.
- For the next 2 years 2006-07 to 2007-08 alpha is negative so there may be a chance that these companies may give negative return in those 2 years.
- If we consider ABB for the first 3 years from 2004-05 to 2006-07 alpha is positive so there may be a chance that the company may give good profitable return for those 3 years. But in the next year (2007-08) alpha is negative, so there may be a chance that the company may give negative return in that particular year.
- SUZLON was listed in the year 2005-06 , in that year SUZLON shows a positive alpha value, so there may be a chance that SUZLON may give good profitable return in that particular year.
- In the next 2 years (2006-07 to 2007-08) alpha is negative, so there may be a chance that this company may give negative return in those 2 years.

## PHARMACUITICAL SECTOR

**Table 3.11.5 Alpha value for PHARMACUITICAL SECTOR**

| YEAR | SUNPHARMA | RANBAXY | CIPLA | DRREDDY |
|---|---|---|---|---|
| 2004-05 | -0.08904 | -0.00518 | -0.31007 | -0.12974 |
| 2005-06 | 0.134604 | -0.37786 | 0.24688 | 0.135624 |
| 2006-07 | 0.059394 | -0.10443 | -0.31913 | -0.20771 |
| 2007-08 | 0.043678 | 0.047332 | -0.04798 | -0.11169 |

**Chart 3.11.5**



## INTERPRETATION

- If we consider SUNPHARMA, In the year 2004-05 alpha is negative, So there may be a chance that this company may give negative return in that particular year. But for the next 3 years from 2005-06 to 2007-08 alpha is positive .So there may be a chance that SUNPHARMA may give good profitable return for those 3 years
- If we take RANBAXY for the first 3 years (2004-05 to 2006-07) alpha is negative, so there may be chance that RANBAXY may give negative return for those 3 years. But in the next year alpha becomes positive so there may be a chance that RANBAXY may give good profitable return in that particular year.
- If we consider CIPLA & DRREDDY, in the year 2004-05 & 2006-07 to 2007-08 alpha is negative so there may be a chance that these 2 companies may give negative return in those years. In the year 2005-06 alpha is positive for CIPLA & DRREDDY, so there may be a chance that these companies may give good return in that particular year.

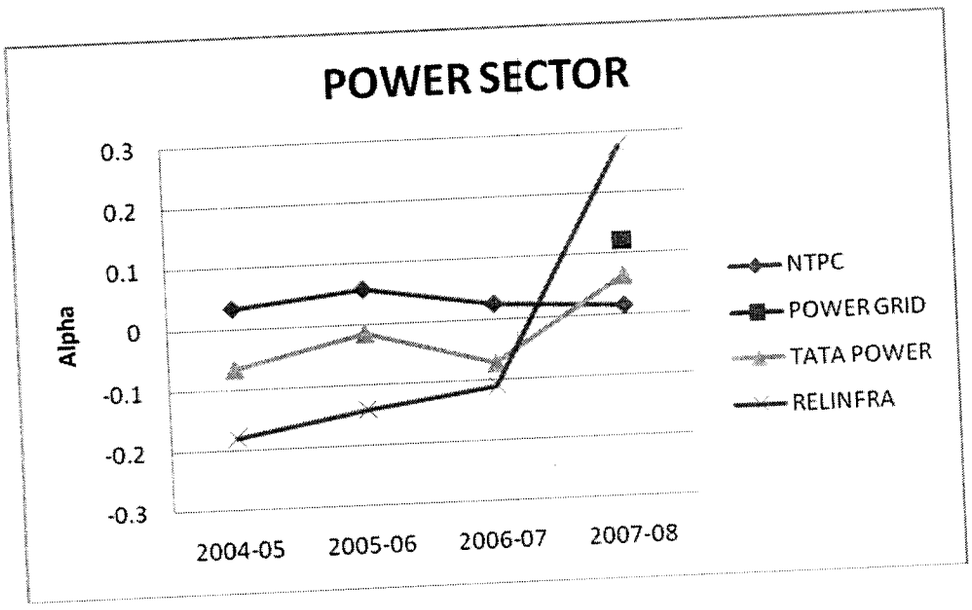
## POWER SECTOR

**Table 3.11.6 Alpha value for POWER SECTOR**

| YEAR | NTPC | POWER GRID | TATA POWER | RELINFRA |
|---|---|---|---|---|
| 2004-05 | 0.033451 | * | -0.06538 | -0.17938 |
| 2005-06 | 0.058291 | * | -0.01471 | -0.14123 |
| 2006-07 | 0.024646 | * | -0.07243 | -0.10966 |
| 2007-08 | 0.014545 | 0.121243 | 0.064421 | 0.276992 |

*** DATA NOT AVAILABLE**

**Chart 3.11.6**



## INTERPRETATION

- If we consider NTPC, alpha is positive for all the 4 years from (2004-05 to 2007-08) so there may a chance that this company may yield good profitable return for the entire 4 years.
- POWER GRID is listed in the year 2007-08 in that year alpha is positive so there may be a chance that POWER GRID may yield good profitable return in that particular year.
- If we consider TATA POWER & RELINFRA these two companies have negative alpha for the first 3 years from 2004-05 to 2006-07 so there may be a chance that these 2 companies may give negative return in those 3 years.
- In the next year(2007-08) alpha becomes positive so there may be a chance that these companies may yield good profitable return in that particular year.

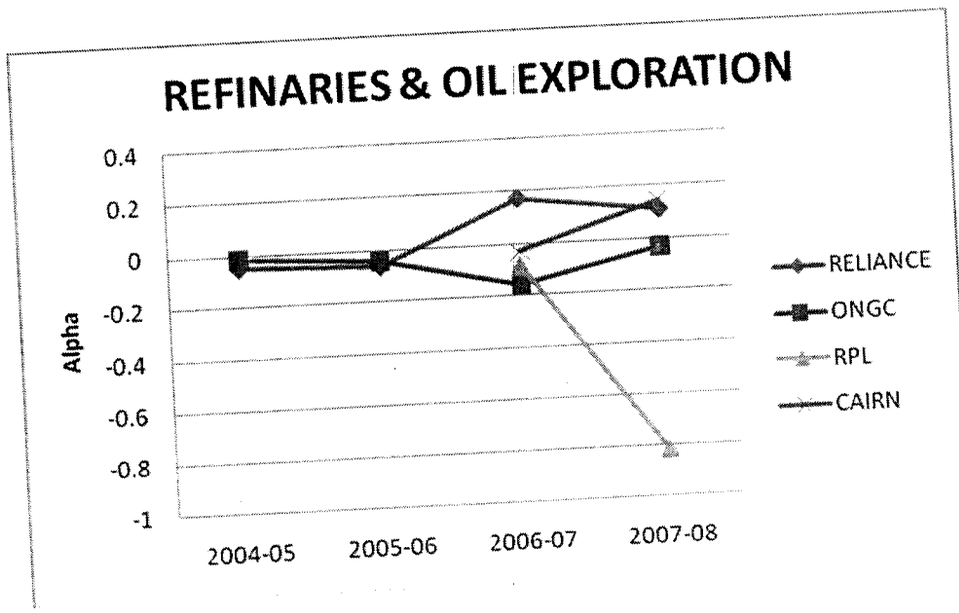
## REFINARIES & OILEXPLORATION SECTOR

**Table 3.11.7 Alpha value for REFINARIES & OIL EXPLORATION SECTOR**

| YEAR | RELIANCE | O NGC | RPL | CAIRN |
|---|---|---|---|---|
| 2004-05 | -0.04595 | -0.01279 | * | * |
| 2005-06 | -0.06057 | -0.04105 | * | * |
| 2006-07 | 0.172592 | -0.1573 | -0.08189 | -0.0297 |
| 2007-08 | 0.108554 | -0.03157 | -0.81641 | 0.144543 |

*** DATA NOT AVAILABLE**

**Chart 3.11.7**



## INTERPRETATION

- If we consider RELIANCE, alpha is negative for 2 years (2004-05 to 2005-06) so there may be a chance that RELIANCE may give negative return in those 2 years. In the next 2 year (2006-07 to 2007-08) alpha is positive, so there is a chance that the company may give good profitable return in those 2 years.
- In ONGC, alpha is negative for all the 4 years from 2004-05 to 2007-08, so there may be a chance that the company may give negative return for those 4 years
- RPL is listed in the year 2006-07 from that year RPL has negative alpha till the year 2007-08. So this shows there may be a chance that RPL may give negative return on those 2 years
- CAIRN is listed in the year 2006-07 in that year alpha is negative so there may be a chance that CAIRN may give negative return in that particular year. But by the next year 2007-08 alpha becomes positive, so there may be a chance that CAIRN may yield good profitable return in that particular year

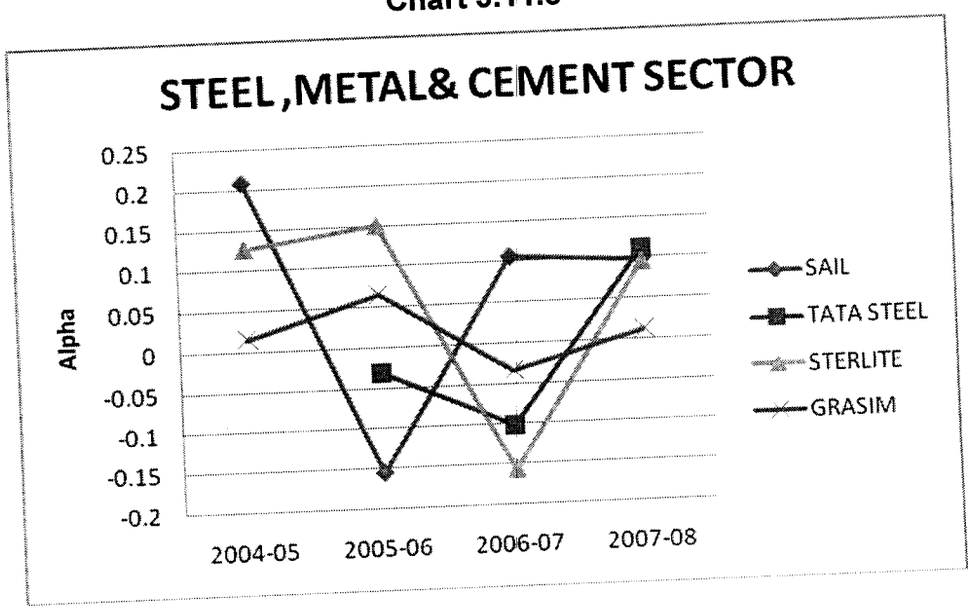
## STEEL, METAL & CEMENT SECTOR

**Table 3.11.8 Alpha value for STEEL, METAL & CEMENT SECTOR**

| YEAR | SAIL | TATA STEEL | STERLITE | GRASIM |
|---|---|---|---|---|
| 2004-05 | 0.20886 | * | 0.126741 | 0.015845 |
| 2005-06 | -0.15528 | -0.03142 | 0.150807 | 0.065608 |
| 2006-07 | 0.106061 | -0.10162 | -0.1568 | -0.03337 |
| 2007-08 | 0.098093 | 0.111118 | 0.095492 | 0.012588 |

*** DATA NOT AVAILABLE**

**Chart 3.11.8**



## INTERPRETATION

- If we consider SAIL in the year 2004-05 & 2006-07 to 2007-08 alpha is positive .so there may be a chance that SAIL may yield good profitable return in those years
- In the year 2005-06 alpha is negative for SAIL, so there may be a chance that SAIL may give negative return in that particular year.
- TATA STEEL is listed in the year 2005-06 for the first 2 years alpha is negative, so there may be a chance that TATA STEEL may give negative return in those 2 years. But in the next year (2007-08) alpha becomes positive, so there may be a chance that TATA STEEL may give good profitable return in that particular year.
- If we consider STERLITE & GRASIM for the years 2004-05 to 2005-06 & 2007-08 alpha is positive, so there may be a chance that these 2 companies may give good profitable return for those years. But in the year 2006-07 alpha is negative for these 2 companies , so there is a chance that these 2 companies may give negative return in that particular year

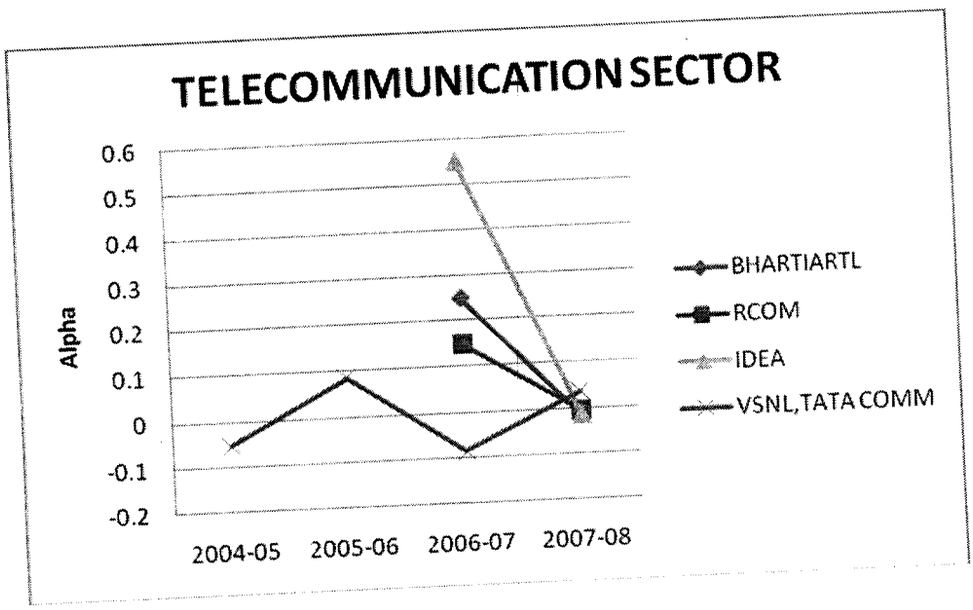
## TELECOMMUNICATION SECTOR

**Table 3.11.9 Alpha value for TELECOMMUNICATION SECTOR**

| YEAR | BHARTIARTL | RCOM | IDEA | VSNL,TATA COMM |
|---|---|---|---|---|
| 2004-05 | * | * | * | -0.05235 |
| 2005-06 | * | * | * | 0.085535 |
| 2006-07 | 0.249161 | 0.149631 | 0.549958 | -0.08477 |
| 2007-08 | -0.0153 | -0.00557 | -0.01378 | 0.035593 |

*** DATA NOT AVAILABLE**

**Chart 3.11.9**



## INTERPRETATION

- If we consider BHARTIARTL, RCOM & IDEA all the companies are listed in the year 2006-06 in that year alpha is positive for all the 3 companies , so there may be a chance that these companies may yield good profitable return in that particular year.
- In the next year 2006-07 alpha is negative for all the 3 companies, so there may be a chance that these companies may give negative return in that particular year.
- In the year 2004-05 & 2006-07 alpha is negative for TATA COMM, so there may be a chance that TATA COMM may give negative return in those years.
- In the year 2005-06 & 2007-08 alpha is positive for TATA COMM, so there may be a chance that TATA COMM may yield good profitable return in the above mentioned years.

# COEFFICIENT OF CORRELATION MATRIX

## 3.12 COEFFICIENT OF CORRELATION MATRIX

| | HERO HONDA | SBI | SATYAM | ABB | SUNPHARMA | NTPC | RELIANCE | GRASIM | BHARTIARTL |
|---|---|---|---|---|---|---|---|---|---|
| HERO HONDA | - | 0.4392905 | 0.766782878 | 0.6094004 | 0.608011165 | 0.288282185 | 0.38502754 | 0.49559674 | -0.38312558 |
| SBI | 0.439290541 | - | -0.0232442 | 0.161554 | 0.825475273 | 0.961758806 | 0.97533429 | 0.90329319 | 0.788915512 |
| SATYAM | 0.766782878 | -0.0232442 | - | 0.455473 | 0.193153849 | -0.204033998 | -0.0599242 | 0.0760843 | -0.742612767 |
| ABB | 0.609400414 | 0.161554 | 0.455473 | - | 0.561279784 | 1.38255 | 0.19300343 | 0.38821605 | -0.3837659 |
| SUNPHARMA | 0.608011165 | 0.8254753 | 0.193153849 | 0.5612798 | - | 0.84973951 | 0.84372979 | 0.88740952 | 0.677448421 |
| NTPC | 0.288282185 | 0.9617588 | -0.204033998 | 1.38255 | 0.84973951 | - | 0.97352853 | 0.91759012 | 0.792383287 |
| RELIANCE | 0.38502754 | 0.9753343 | -0.0599242 | 0.1930034 | 0.843729787 | 0.97352853 | - | 0.9258721 | 0.826699639 |
| GRASIM | 0.495596735 | 0.9032932 | 0.0760843 | 0.3882161 | 0.887409515 | 0.91759012 | 0.9258721 | - | 0.72891519 |
| BHARTIARTL | -0.383125583 | 0.7889155 | -0.742612767 | -0.383766 | 0.677448421 | 0.792383287 | 0.82669964 | 0.72891519 | - |

## TERPRETATION

A correlation coefficient gives the strength of the relationship between the stocks and eir direction of association. They are calculated to find out what are all the possible ombination of sectors could be identified so that overall risk can be minimized and return can e maximized. If any correlation coefficient of two stocks is negatively associated, then they are o be grouped in the same portfolios. The magnitude of the correlation coefficient gives the strength of association, that is, the level of return likely to be compensated at adverse condition of the economy. So, negatively correlated stocks will diversify risk factors and reduce the investment risk. So, the negatively correlated stocks are grouped.

## SECTOR WISE GROUPING

1) Automobile sector combined with Telecommunication sector
2) Banking sector combined with computer - software sector
3) Computer - software sector combined with Banking, Power, Refineries & Oil Exploration and Telecommunication sector
4) Electrical equipment sector combined with Telecommunication sector
5) Power sector combined with Computer Software sector
6) Refineries & oil exploration sector combined with Computer – software sector
7) Telecommunication sector combined with Automobile, Computer – software, and Electrical Equipment sector.

# Findings

# CHAPTER 4

# 4. FINDINGS

## AUTOMOBILE SECTOR

- Compare to all the companies in the automobile sector HERO HONDA shows a steady decrease in the beta and its beta value is also less than 1 for the past four years so risk in this company is less compared to other companies in this sector. Hence this company is less volatile than the market and less unavoidable risk compared to other companies in this sector.
- Compare to all the companies in the automobile sector HERO HONDA gives a good profitable return.

## BANKING SECTOR

- In banking sector HDFC has very low risk but it has less return than SBI as we analyze the risk of SBI it is comparatively higher than HDFC, but SBI shows a very good return than other Banks.

## COMPUTER SOFTWARE SECTOR

- If we compare the risk of the computer software sector INFOSYS & TCS has less risk compare to SATYAM & WIPRO. But if we compare the alpha value of INFOSYS & TCS it may give negative return. Whereas SATYAM may give good return when compare to other Companies in this sector.

## ELECTRICAL EQUIPMENT SECTOR

- When compare to all the Companies in this sector ABB as less Beta, so this Company has less unavoidable risk compare to other companies. If we consider alpha, BHEL has more return .But if we consider the Beta for BHEL, it has high risk compared to ABB. So it is better to choose ABB for less risk and moderate return.

## PHARMACEUTICAL SECTOR

- In Pharmaceutical sector SUNPHARMA has less Beta, i.e. risk in this Company is less compared to all other companies in this sector and if we consider alpha, RANBAXY has .04%more return when compared to SUNPHARMA .But RANBAXY has more risk than SUNPHARMA and from the Year 2004-2005 to 2006-2007 alpha is negative for RANBAXY. So this Company may give negative return compared to SUNPHARMA. Therefore it is better to choose SUNPHARMA to get good return.

## POWER SECTOR

- In Power sector NTPC is consider to be a less risk Company when compared to all other Companies in this sector. If we consider alpha also NTPC gives a positive return for all the 4 years compared to all other companies in this sector.

## REFINARY & OIL EXPLORATION SECTOR

- In this sector ONGC is considered to be less risk compared to RELIANCE. But if we compare alpha for these two companies ONGC has negative alpha for all the 4 years hence this company may give negative return. But if we choose RELIANCE instead of ONGC it may give good return.

## STEEL, METAL AND CEMENT SECTOR

- In this sector as per the risk is concern GRASIM has the least risk and as we analyze the return i.e. alpha, GRASIM provides a moderate return with very less fluctuations whereas all the other company in spite they have high return and they also have more fluctuation.

## TELECOMMUNICATION SECTOR

- In this sector, IDEA & BHARATIARTL has minimum risk when compared to other companies. As we analyze the return of these two companies BHARATIARTL provides moderate return. So it's better to choose BHARATIARTL to yield moderate return.

# *Suggestions*

# CHAPTER 5

## 5. SUGGESTIONS

The Risk and Return analysis of the total thirty six companies for their past four years were carried out in this project. The companies were distributed in to nine sectors and the analysis was carried out. The method of risk analysis was found to be the best method through which less risk and moderate return portfolio could be constructed for the investors. Most of the investors are concerned about the safety of their investment rather than the high returns.

From the results obtained some suggestions may be drawn as to which would be the safest company for the investor to invest in the securities market;

### AUTOMOBILE SECTOR

- Based on the analysis, the company in the automobile sector which had less unavoidable risk and more return was found to be **HERO HONDA**. The investor could invest safely in this company.

### BANKING SECTOR

- Based on the analysis carried out the **SBI** was found to be the safest bank to invest in the Banking sector for the investors.

## COMPUTER SOFTWARE SECTOR

- The company **SATYAM** in the computer sector was found to provide less unavoidable risk and moderate return for the investors.

## ELECTRICAL EQUIPMENT SECTOR

- Based on the analysis carried out the company **ABB** was found to provide less of unavoidable risk to the investors with more of returns.

## PHARMACEUTICAL SECTOR

- The analysis carried out in the sector of pharmaceuticals showed that the company **SUNPHARMA** gave less of unavoidable risk and good return in the market.

## POWER SECTOR

- The power company **NTPC** was found to be providing the less unavoidable risk and more high return than other companies in the sector and it would be the safer one for the investor.

## REFINERY AND OIL EXPLORATION SECTOR

- Based on the analysis carried out in the sector of refinery and oil exploration the company **RELIANCE** was found to provide more high return and less of unavoidable risk for the investors.

## STEEL, METAL AND CEMENT SECTOR

- The analysis provided a clear report that the company **GRASIM** gave only less unavoidable risk and more moderate returns to its investors from the rest of the companies in the sector.

## TELECOMMUNICATION SECTOR

- Based on the analysis performed in this sector, the company BHARATIARTL was found to provide a much higher return and less of unavoidable risk to their investors.

The different possible portfolio constructions based on the previous groupings their combination is shown in the following table.

**Table 3.12.1 shows different possible combinations of portfolio**

| PORTFOLIO NO | BHARTIARTL |
|---|---|
| 1 | HERO HONDA ,BHARTIARTL |
| 2 | SBIN,SATYAMCOMP |
| 3 | SATYAMCOMP,SBIN,NTPC,RELIANCE,BHARTIARTL |
| 4 | ABB,BHARTIARTL |
| 5 | NTPC,SATYAMCOMP |
| 6 | RELIANCE,SATYAMCOMP |
| 7 | BHARTIARTL,HERO HONDA,SATYAMCOMP,ABB |

# Conclusion

# CHAPTER 6

## 6. CONCLUSION

Risk analysis is an important aspect of business recovery planning. In the current analysis, there is a high degree of fluctuation in every sector but at the same time, the analysis also shows that some companies provide a moderate return with less risk. The investors are likely to choose the companies which are safe to invest rather than giving more return.

The primary objective of the report, which was to analyze the risk involved in the selected companies were dealt with much importance and the new investors were provided with the necessary information regarding investment into these companies. Risks involved within each sector of the companies were analyzed clearly, which could help the investor to choose the company that could provide a less risk and profitable income.

The co-efficient of correlation matrix compares the selected companies with other companies in different sectors and provides the best choice of companies to invest for the investors. The investor can now choose from the choices given to them and invest in the company which they have a chance of getting more return and less of risk. The combination may provide a better investment with much diversified portfolio for the investor.

# Annexure

# ANNEXURE

| Constituents list of S&P CNX Nifty | | |
|---|---|---|
| **Company Name** | **Industry** | **Symbol** |
| ABB Ltd. | ELECTRICAL EQUIPMENT | ABB |
| ACC Ltd. | CEMENT AND CEMENT PRODUCTS | ACC |
| Ambuja Cements Ltd. | CEMENT AND CEMENT PRODUCTS | AMBUJACEM |
| Bharat Heavy Electricals Ltd. | ELECTRICAL EQUIPMENT | BHEL |
| Bharat Petroleum Corporation Ltd. | REFINERIES | BPCL |
| Bharti Airtel Ltd. | TELECOMMUNICATION - SERVICES | BHARTIARTL |
| Cairn India Ltd. | OIL EXPLORATION/PRODUCTION | CAIRN |
| Cipla Ltd. | PHARMACEUTICALS | CIPLA |
| DLF Ltd. | CONSTRUCTION | DLF |
| Dr. Reddy's Laboratories Ltd. | PHARMACEUTICALS | DRREDDY |
| GAIL (India) Ltd. | GAS | GAIL |
| Grasim Industries Ltd. | CEMENT AND CEMENT PRODUCTS | GRASIM |
| HCL Technologies Ltd. | COMPUTERS - SOFTWARE | HCLTECH |
| HDFC Bank Ltd. | BANKS | HDFCBANK |
| Hero Honda Motors Ltd. | AUTOMOBILES - 2 AND 3 WHEELERS | HEROHONDA |
| Hindalco Industries Ltd. | ALUMINIUM | HINDALCO |
| Hindustan Unilever Ltd. | DIVERSIFIED | HINDUNILVR |
| Housing Development Finance Corporation Ltd. | FINANCE - HOUSING | HDFC |
| I T C Ltd. | CIGARETTES | ITC |
| ICICI Bank Ltd. | BANKS | ICICIBANK |
| Idea Cellular Ltd. | TELECOMMUNICATION - SERVICES | IDEA |
| Infosys Technologies Ltd. | COMPUTERS - SOFTWARE | INFOSYSTCH |
| Larsen & Toubro Ltd. | ENGINEERING | LT |
| Mahindra & Mahindra Ltd. | AUTOMOBILES - 4 WHEELERS | M&M |
| Maruti Suzuki India Ltd. | AUTOMOBILES - 4 WHEELERS | MARUTI |
| NTPC Ltd. | POWER | NTPC |
| National Aluminium Co. Ltd. | ALUMINIUM | NATIONALUM |
| Oil & Natural Gas Corporation Ltd. | OIL EXPLORATION/PRODUCTION | ONGC |
| Power Grid Corporation of India Ltd. | POWER | POWERGRID |
| Punjab National Bank | BANKS | PNB |
| Ranbaxy Laboratories Ltd. | PHARMACEUTICALS | RANBAXY |
| Reliance Communications Ltd. | TELECOMMUNICATION - SERVICES | RCOM |
| Reliance Industries Ltd. | REFINERIES | RELIANCE |
| Reliance Infrastructure Ltd. | POWER | RELINFRA |
| Reliance Petroleum Ltd. | REFINERIES | RPL |
| Satyam Computer Services Ltd. | COMPUTERS - SOFTWARE | SATYAMCOMP |
| Siemens Ltd. | ELECTRICAL EQUIPMENT | SIEMENS |
| State Bank of India | BANKS | SBIN |
| Steel Authority of India Ltd. | STEEL AND STEEL PRODUCTS | SAIL |
| Sterlite Industries (India) Ltd. | METALS | STER |
| Sun Pharmaceutical Industries Ltd. | PHARMACEUTICALS | SUNPHARMA |
| Suzlon Energy Ltd. | ELECTRICAL EQUIPMENT | SUZLON |
| Tata Communications Ltd. | TELECOMMUNICATION - SERVICES | TATACOMM |
| Tata Consultancy Services Ltd. | COMPUTERS - SOFTWARE | TCS |
| Tata Motors Ltd. | AUTOMOBILES - 4 WHEELERS | TATAMOTORS |
| Tata Power Co. Ltd. | POWER | TATAPOWER |
| Tata Steel Ltd. | STEEL AND STEEL PRODUCTS | TATASTEEL |
| Unitech Ltd. | CONSTRUCTION | UNITECH |
| Wipro Ltd. | COMPUTERS - SOFTWARE | WIPRO |
| Zee Entertainment Enterprises Ltd. | MEDIA & ENTERTAINMENT | ZEEL |

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