



P-1956



**ANALYSIS OF SELECT STOCK PRICE  
BEHAVIOR IN NATIONAL STOCK EXCHANGE  
(2000-2006)**

By

**K.KARTHIK  
(71205631022)**

of

Department of management studies  
**Kumaraguru College of technology  
Coimbatore**

A PROJECT REPORT  
Submitted to the

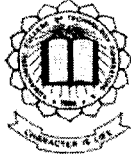
**FACULTY OF MANAGEMENT SCIENCE**

In partial fulfillment of the requirements  
for the award of the degree

of

**MASTER OF BUSINESS ADMINISTRATION**

June, 2007



**KCT Business School**  
**Department of management studies**  
**Kumaraguru College of Technology**  
**Coimbatore – 641006**

### **BONAFIDE CERTIFICATE**

Certified that this project titled '**Analysis of select stock price behavior in National Stock Exchange (2000-2006)**' is the bonafide work of **Mr. K.Karthik (Reg No: 71205631022)**, who carried out this 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.

**Prof. K. R. Ayyasamy**

**Project Guide**

**Director**

Evaluated and Viva Voice conducted on 02.07.07.....

**Examiner 1**

**Examiner 2**

**Date:** 22-May-2007

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that the following student has successfully completed his project under the topic “**Analysis of Share Price Behavior in National Stock Exchange [2000-2006]**” in our premises. The performance during the period is good.

Name : Karthik K  
Course : Master of Business Administration  
College : Kumaraguru College of Technology, Coimbatore.  
Duration : 16 weeks

Please feel free to contact the undersigned or project guide for any further information you may require.

For Kotak Securities Limited



**Raghavendra Nayak**

Manager – Human Resources

## DECLARATION

I hereby declare that this project entitled as '**Analysis of select stock price behavior in National Stock Exchange(2000-2006)**' has been undertaken for academic purpose submitted to Anna University in partial fulfillment of the requirements 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 Prof. K. R. Ayyasamy during the academic year 2006-2007.

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

Place: Coimbatore

Date: 22.06.07.



[K.KARTHIK]

## ACKNOWLEDGEMENT

I express my sincere gratitude to our beloved Correspondent **Prof. Dr. K. Arumugam**, the prime guiding spirit of Kumaraguru College of Technology.

I extend my heartfelt thanks to Principal **Dr. Joseph V. Thanikal**, Kumaraguru College of Technology, Coimbatore for providing facilities to do this project.

I express my sincere gratitude and thanks to **Prof. S. Ganesan**, the then Director, KCT Business School for permitting me to carry out the project.

I endeavor my sincere gratitude towards my guiding spirit **Prof. K. R. Ayyaswamy**, who has given me all the guidance throughout this project.

I would like to express my sincere thanks to **Mr. Amarnath** our organizational guide for the necessary inspiration that they provide when needed in the most.

## EXECUTIVE SUMMARY

In the wake of the introduction of new economic policy in the middle of the year 1991, the Indian Capital Market has witnessed a tremendous growth. There was an explosion of investor interest during the nineties and an equity cult emerged in the country. To experience sustained growth statutory legislations have helped the capital market. Foreign Exchange regulation act is one such legislation in this direction.

An important recent development has been the entry of Foreign Institutional Investors as participants in the primary and secondary markets for industrial securities. In the past several years, investments in developing countries have increased remarkably. Among the developing countries India has received considerable capital inflows in recent years.

The liberalization policy of the Government of India has now started yielding results and the country is poised for a big leap in the industrial and economic growth. The Economy of the country is mainly based on the development of the corporate sectors. Funds may be raised through securities market for financing corporate growth.

Generally, the security prices reflect the performance of a company. Both economic and non-economic factors invariably affect stock return behavior. As Cootner (1964) says that "the prices of securities are typically very sensitive, responsive to all events, both real and imagined". Again a major factor responsible for stock return fluctuations is speculative purchase and sale by foreign institutional investors. Indian financial institutions also play a major role in equity market leading to stock return fluctuations. In the present project, it is attempted to test the equity price behavior taking pharmaceuticals, cement, Information technology and steel industries as sample sectors.

## CONTENTS

<b>CHAPTER</b>	<b>DESCRIPTION</b>	<b>PAGE NO</b>
	<b>ACKNOWLEDGEMENT</b>	iv
	<b>EXECUTIVE SUMMARY</b>	v
<b>1</b>	<b>INTRODUCTION</b>	
	1.1 BACKGROUND OF THE STUDY	1
	1.2 REVIEW OF LITERATURE	1
	1.3 OBJECTIVES OF THE STUDY	2
	1.4 SCOPE OF THE STUDY	3
	1.5 METHODOLOGY	
	1.5.1 RESEARCH DESIGN	3
	1.5.2 DATA AND SOURCES OF DATA	3
	1.5.3 METHOD OF SAMPLING	4
	1.5.4 TOOLS USED FOR ANALYSIS	5
	1.6 LIMITATIONS OF THE STUDY	6
<b>2</b>	<b>ORGANIZATIONAL PROFILE</b>	
	2.1 HISTORY OF THE ORGANISATION	8
	2.2 ORGANISATION STRUCTURE	9
	2.3 PRODUCT PROFILE	10
	2.4 COMPETITIVE STRENGTH OF THE COMPANY	12
	2.5 DESCRIPTION OF VARIOUS FUNCTIONAL AREAS	14
<b>3</b>	<b>MACRO AND MICRO ANALYSIS</b>	16
<b>4</b>	<b>ANALYSIS AND INTERPRETATION</b>	40
<b>5</b>	<b>CONCLUSION AND SUGGESTIONS</b>	93
	<b>REFERENCES</b>	94

## LIST OF TABLES

<b>TABLE No.</b>	<b>TITLE</b>	<b>PAGE NO.</b>
4.1.1.	Calculation of beta for SATYAM computers	40
4.1.2.	Calculation of multiple regression for SATYAM computers	42
4.1.3.	Calculation of co efficient of determination for SATYAM computers	43
4.2.1	Calculation of beta for INFOSYS TECHNOLOGIES	44
4.2.2	Calculation of multiple regression for INFOSYS TECHNOLOGIES	45
4.2.3	Calculation of co efficient of determination for INFOSYS TECHNOLOGIES	46
4.3.1	Calculation of beta for WIPRO TECHNOLOGIES	47
4.3.2	Calculation of multiple regression for WIPRO TECHNOLOGIES	48
4.3.3	Calculation of co efficient of determination for WIPRO TECHNOLOGIES	49
4.4.1	Calculation of beta for GLOBAL TECHNOLOGY	50
4.4.2	Calculation of multiple regression for GLOBAL TECHNOLOGY	51
4.4.3	Calculation of co efficient of determination for GLOBAL TECHNOLOGY	52
4.5.1	Calculation of beta for TISCO	53
4.5.2	Calculation of multiple regression for TISCO	54
4.5.3	Calculation of co efficient of determination for TISCO	55
4.6.1	Calculation of beta for SAIL	56
4.6.2	Calculation of multiple regression for SAIL	57
4.6.3	Calculation of co efficient of determination for SAIL	58
4.7.1	Calculation of beta for ESSAR GUJARATH	59
4.7.2	Calculation of multiple regression for ESSAR GUJARATH	60
4.7.3	Calculation of co efficient of determination for ESSAR GUJARATH	61



4.8.1	Calculation of beta for AMBUJA CEMENTS	62
4.8.2	Calculation of multiple regression for AMBUJA CEMENTS	63
4.8.3	Calculation of co efficient of determination for AMBUJA CEMENTS	64
4.9.1	Calculation of beta for INDIAN CEMENTS	65
4.9.2	Calculation of multiple regression for INDIAN CEMENTS	66
4.9.3	Calculation of co efficient of determination for INDIAN CEMENTS	67
4.10.1	Calculation of beta for PRISM CEMENTS	68
4.10.2	Calculation of multiple regression for PRISM CEMENTS	69
4.10.3	Calculation of co efficient of determination for PRISM CEMENTS	70
4.11.1	Calculation of beta for ULTRA TECH CEMENTS	71
4.11.2	Calculation of multiple regression for ULTRA TECH CEMENTS	72
4.11.3	Calculation of co efficient of determination for ULTRA TECH CEMENTS	73
4.12.1	Calculation of beta for Dr. REDDY LABORATORIES	74
4.12.2	Calculation of multiple regression for Dr. REDDY LABORATORIES	75
4.12.3	Calculation of co efficient of determination for Dr. REDDY LABORATORIES	76
4.13.1	Calculation of beta for RAN BAXY LABORATORIES	77
4.13.2	Calculation of multiple regression for RAN BAXY LABORATORIES	78
4.13.3	Calculation of co efficient of determination for RAN BAXY LABORATORIES	79
4.14.1	Calculation of beta for ORCHID	80
4.14.2	Calculation of multiple regression for ORCHID	81
4.14.3	Calculation of co efficient of determination for ORCHID	82
4.15.1	Calculation of beta for CIPLA	83
4.15.2	Calculation of multiple regression for CIPLA	84
4.15.3	Calculation of co efficient of determination for CIPLA	85

# **CHAPTER - 1**

## **INTRODCUTION**

### **1.1 BACKGROUND OF THE STUDY**

The stock exchange or secondary market is a highly organized market for the purchase and sale of second hand quoted of listed securities. The securities contracts (Regulation) Act 1956 defines a stock exchange as “an association, organization or not, established for the purpose of assisting, regulating and controlling business in buying, selling and dealing in securities”

Of all the modern service institutions, stock exchange plays a crucial agents and facilitators of entrepreneurial progress. After the industrial resolution, as the size of the business enterprises grew, it was no longer possible for individual person or even partnerships to raise such huge amount for undertaking these ventures. Such huge requirements of capital can be met only large number of individuals.

These investors could be expected to participate actively only if investment is liquid or they could sell a part of their stake whenever they wish to generate cash. This liquidity can be achieved through shares and debentures representing smallest units of ownership and lending represented by the public. The institution where these securities are traded is known as stock exchange. This stock exchange is one of the most important institutions in the capital market.

### **1.2.REVIEW OF LITERATURE**

The purpose of the chapter is to review the various studies conducted and made to consolidate the views and studies to determine the effectiveness of different factors which influence the equity price.

D. Sarkar studies the share price behavior using the time series data. He found that the retained earnings had on effect on share price while the influence of dividend was very much significant.

Prof. Leopold A. Bernstein (1975) in his article had defended the function and value of fundamental investment analysis as the basis of successful investment in equity

shares. He had argued that even though psychological and other factors accounted 50% of price changes the other 50% of it was only due to fundamental factors.

Balasubramaniam. K. (1994) examined the behavior of stock returns in India. He took the daily and weekly prices of 90 shares listed in BSE. He applied auto correlation analysis; runs test and filter techniques for the study. He concluded that share price behavior is not random and hence random walk hypothesis cannot be established for Indian stock market.

Ritter (1988) analyzed the buy/ sell details of NYSE stocks over a period of 15 years from Dec 17, 1970 to Dec 16, 1985. Ritter proposed the “parking- the –proceeds” hypothesis i.e., the individual investors who sell the stocks prior to the late December for tax loss selling and they buy the shares in early January, mostly small stocks. He concluded that the ratio of stock purchases to sales by individual investor displays a seasonal pattern, with individuals having a below-normal and buy/sell ratio in late December and above normal ratio in early January.

Prakash.L. Dheeriyia studied the early movement of stock market indices of major rational stock exchanges of 16 countries over the period of 1987 crash. He used time series of daily stock market indices at closing time. He found evidence of co-integration between stock indices of some small European countries.

Chan and Chen (1991) examined the difference in structural characteristics that lead firms of different size to react differently to the same economic news. By using time series analysis they found that return difference between small and large firms could be captured by the responses of high leverage firms and marginal firms to economic views.

### **1.3 OBJECTIVES OF THE STUDY**

#### **1.3.1. PRIMARY OBJECTIVE**

To analyze the risk associated with the share market, stock price behavior in relation to the volume of trading and the share market of selected industries and the coefficient of determination..

#### **1.3.2. SECONDARY OBJECTIVE**

- To predict the coefficient of determination ( $R^2$ ).
- To study the price movements in the stock market.
- To recapitulate the key findings and offer suggestions to investors.

## **1.4 SCOPE OF THE STUDY**

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

The study also helps the customers to ascertain the risk and return of the stocks. This will help the investors viz, individuals, FIIs in identifying the stocks which would yield them higher return and lesser risk.

## **1.5 RESEARCH METHODOLOGY**

### **1.5.1. RESEARCH DESIGN**

This project analyses the equity market and its fluctuations in India. The project aims to analyze the relationship between the volume of the shares traded, price of the share and the market return (multiple regression). It also measures the risk (BETA) involved in investing in the stocks and the co-efficient of determination (R<sup>2</sup>) which determines the strength of relationship between the return on the security to that of the market.

### **1.5.2. DATA AND SOURCES OF DATA**

Main objective of this analysis is to predict the future price movements using technical analysis. Source of data collected is Secondary. Print media and internet has been used for data collection. The data was obtained form the national stock exchange website ([www.nse-india.com](http://www.nse-india.com)). For the purpose of this study the daily closing prices of 16 companies included in National Stock Exchange were taken and their price movements are computed and studied. The sectors selected are as follows:

- **Pharmaceuticals**
- **Information technology**
- **Steel**
- **Cement**

Secondly, In the above mentioned sector four companies in each sector is taken as follows:

**Pharmaceuticals**

- Dr.Reddys laboratories
- Ranbaxy
- Cipla
- Orchid

**Information Technology**

- Infosys
- Satyam
- Global Technologies
- WiproTechnologies

**Steel**

- Sail
- Tata Steel
- Essar gujarath
- Jindal iron

**Cement**

- Gujarat Ambuja
- India Cement
- Prism Cement
- Ultra cement

The purpose of this analysis is to take the seven years solid data from the National Stock Exchange Website and to predict the market trends in each of the above mentioned companies.

**1.5.3 METHOD OF SAMPLING**

Since for the purpose of this analysis four sectors are taken and from the four sectors four companies are taken in each sector. Therefore the sampling used is judgmental sampling. In this method, items for the sample are selected on certain predetermined criteria i.e. on the basis of their turnover for the past seven years (2000-2006).

## **1.5.4. TOOLS USED FOR ANALYSIS**

### **TECHNICAL ANALYSIS**

“Technical analysis refers to the study of the stock market itself rather than those external factors which are reflected in the market. It involves the examination of volume and price traded in the market.

Technical approach to investment is essentially a reflection of the idea that the stock market moves in trend which are determined by changing attitude of investors to a variety of economic, monetary, political and psychological forces.

Hence technical analysis involves a study of action of the market. In simple words, it is an art that helps to invest/trade along with the direction of trend and make the gain out of it.

### **I. BETA**

The degrees to which different portfolios are affected by these systematic risks as compared to the effect on the market as a whole is different and is measured by Beta. The Beta factor describes the movement in a stock's or a portfolio's returns in relation to that of the market return.

The main purpose of using Slope or Beta is to predict the change in the market. Beta is a measure of the market or non-diversible risk associated with any given security in the market.

The analysis is done based on the following rule:

If the beta is 1            The company will move along with the market.

If the beta is >1        The share is more volatile than the market.

If the beta is <1        The share is less volatile than the market.

### **II. Multiple Regression between Volume of Shares Traded, Price of the Share and the Market Return**

Here the variations and the dependence between the three parameters i.e. the volume of shares traded, the price of the share and the market return is analyzed for every companies.

$$Y = a + b_1 * X_1 + b_2 * X_2$$

Where y is the stock price, X1 is the volume of stock traded and X2 is the market return.

### III. COEFFICIENT OF DETERMINATION ( $R^2$ )

The co-efficient of determination, ( $R^2$ ) which determines the strength of relationship between the return on the security to that of the market.

$$R^2 = \frac{SS_R}{SS_T} = 1 - \frac{SS_E}{SS_T}.$$

In the above definition,

$$SS_T = \sum_i (y_i - \bar{y})^2, SS_R = \sum_i (\hat{y}_i - \bar{y})^2, SS_E = \sum_i (y_i - \hat{y}_i)^2.$$

That is, SST is the total sum of squares, SSR is the regression sum of squares, and SSE is the sum of squared errors.

#### 1.6. LIMITATIONS OF THE STUDY

The main limitations of the study are as follows:

- We cannot predict the price movements accurately whether the price is moving up or coming down. We can predict the price movements only based on the assumptions.
- There is no guarantee that what has worked for over a hundred and fifty years in the past may continue to work in the future.
- The study is confined to 7 years only and hence the changes taken place before and after these periods have not been taken into considerations.
- The study considers only four sectors namely steel, IT, Cement and Pharmaceuticals.
- The data regarding the share price and volume of trading are confined to the data published in the NSE stock exchange and the kotak securities websites.

## **1.7 CHAPTER SCHEME**

### **CHAPTER – 1**

The first chapter deals with the introduction to the industry which describes the stock exchange industry and then gets into the objectives of the study, research designing which includes the data collection method and the sampling design and the limitations of the study has been mentioned.

### **CHAPTER – 2**

The second chapter deals with the organization profile which includes the history of the organization, management structure and their products and achievements.

### **CHAPTER – 3**

The third chapter deals with the macro and micro analysis of the stock exchange as well as the companies taken in each sectors i.e IT, Steel, Cement, Pharmaceuticals.

### **CHAPTER – 4**

The fourth chapter deals with the analysis and interpretation of the sector companies taken into study with their calculation of risk(BETA),relationship between the share price, volume of the shares traded, market return i.e.(MULTIPLE REGRESSION) and the coefficient of determination®.

### **CHAPTER – 5**

The final chapter deals with the findings i.e. the results obtained from the study and the suggestions given to the investors.



## **CHAPTER - 2**

### **ORGANIZATIONAL PROFILE**

#### **2.1 HISTORY OF THE ORGANIZATION**

The Kotak Mahindra Group was born in 1985 as Kotak Capital Management Finance Limited. This company was promoted by Uday Kotak, Sidney A. A. Pinto and Kotak & Company. Industrialists Harish Mahindra and Anand Mahindra took a stake in 1986, and that's when the company changed its name to Kotak Mahindra Finance Limited. It is one of India's leading financial institutions, offering complete financial solutions that encompass every sphere of life. From commercial banking, to stock broking, to mutual funds, to life insurance, to investment banking, the group caters to the financial needs of individuals and corporates.

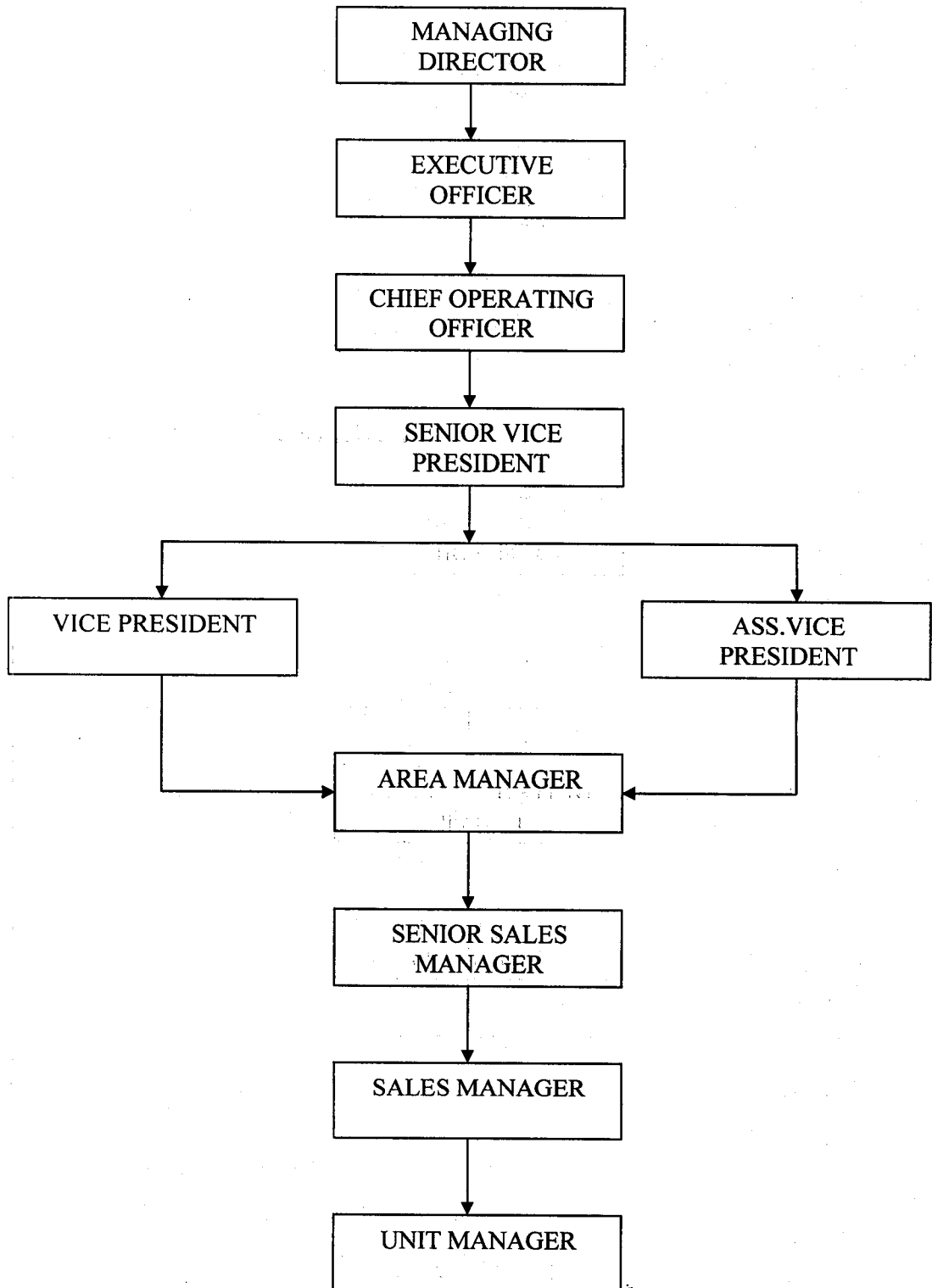
The group has a net worth of around Rs. 3,100 crores, employs around 9,600 people in its various businesses and has a distribution network of branches, franchisees, representative offices and satellite offices across 300 cities and towns in India and offices in New York, London, Dubai and Mauritius. The Group services around 2.2 million customer accounts.

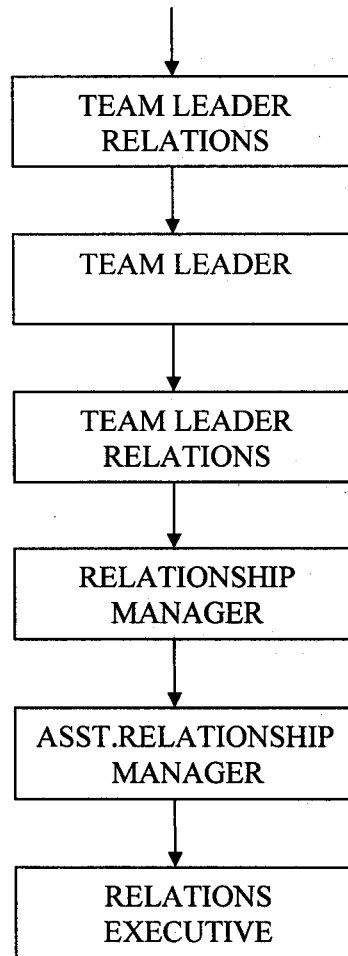
#### **KOTAK SECURITIES LIMITED**

Kotak securities, a strategic joint venture between Kotak Mahindra Bank (holding 75%) and Goldman Sachs (holding 25% - one of the world's leading investment banks and brokerage firms) in India's leading stock broking house with a market share of 5 – 6%. Kotak Securities has been the largest in IPO distribution and was ranked No. 1 in 2003-04 as Book Running Laws Managers in public equity offerings by PRIME Database. It has also won the 'Best Equity House' Award from Finance Asia – April 2004.

The company has a full-fledged research division involved in Macro Economic studies, sectoral research and company specific equity research combined with a strong and well-networked sales force which helps deliver current and up to date market information and news. Kotak Securities is also a depository participant with National Securities Depository Limited (NSDL) and Central Depository Services Limited (CDSL), provide dual benefit services wherein the investors can use the brokerage services of the company for executing the transactions and the depository services setting them.

## 2.2 ORGANISATION STRUCTURE





## 2.3 PRODUCT PROFILE

Kotak securities offer a range of products and services to meet all the investing needs. Whether the customers are a savvy investor or just getting started, they would find out service just right to meet their specific needs. Kotak have different products designed to meet different investor needs.

### **Kotak Gateway Account**

Its basic account that allows doing trading over the internet and phone. Offering ease and convenience. Kotak Gateway Account can be activated with any amount less than Rs.1, 00,000/- as margin, by way of cash or stock. The customers can also have four times exposure on the margin.

### **Kotak Value Account**

Kotak Value Account can be activate with any amount between Rs. 1, 00,000/- and Rs. 5, 00,000/- as margin, by way of cash or stock. The customers can have five times exposure on the margin.

### **Kotak Privilege Circle**

Kotak Privilege Circle account- makes more, make most with all the premium services.. Kotak privilege circle can be activated with any amount more than Rs. 5, 00,000/- as margin, by way of cash or stock. The customer can have six times exposure on the margin.

### **Services offered by kotak**

#### **Margin Finance**

Kotak Securities is the first online websites to provide with margin finance. This means that one can invest in stocks by paying only 50% of the actual money due.

#### **Twin Advantage**

Kotak Securities not only provides with margin on the cash money, but also on the stock that are idle in the demat account. This means that customer can get margin against their shares too. The customer can use the exposure against this margin to take intraday position which can yield him bigger profits.

#### **Instant Credit on Delivery trades**

Instant credit for delivery marked trades is a great product advantage offered by Kotak Securities. When one sells his shares, he does not realize the payment immediately. The exchange makes the payment to the broker according to the settlement calendar. After receiving payment from the exchange the broker makes payment to the client. Realization of the sale proceeds of the shares take anywhere between 4 days from the date of the sale depending on what day of the trading cycle the shares were sold. But with Kotak Securities there is no reason to worry because the customer sells his shares and mark them for delivery on the site, kotak credits the money to his account and treat that as the base capital. This means that the customer gets a trading limit for four times the sale proceeds of his shares.

### **Call and Trade Facilities**

Call and trade enables customers to trade while on the move. With kotak securities account, customers can trade even when they cannot access the internet

### **Easy access to KEAT software**

Kotak E-trading access terminal is the live terminal in the customers desktop. With KEAT customers can watch the live ticker rates.

### **Research and Advice**

To assist the customers in their investments and trading, Kotak Securities gives them research inputs and valuable recommendations.

### **Portfolio Advice**

Kotak Securities also offers free portfolio advice and can constantly monitor the value of the customers' portfolio with inputs from expert advisors.

## **2.4 COMPETITIVE STRENGTH OF THE COMPANY**

Having been in the business from 1985, the KOTAK group has won the confidence of the investors. Investor's confidence in Kotak Securities is their main competitive strength. It is because of the confidence clients have on Kotak Securities, they could serve more and more customer within a short time period than their rivals.

Apart from that the other Competitive strengths of Kotak Securities are as follows:

➤ **Recommendations:**

Compare with their competitors, Kotak Securities have a fully fledged research team which has been analyzing and predicting the market movements in an extraordinary manner, which in turn enable them to provide investors better suggestions and ideas than their competitors.

Sudden changes in the market are made known to the clients through marketing and advisory divisions which enables them to respond in advance to the future actions thereby leading them to maximization of profit in case of positive situation and minimization of loss in case of negative situation.

According to a study, the recommendations given by Kotak Securities are 85% successful when it comes to intra day transactions and 90% successful when it comes to delivery day transactions. In case of competitors the successful percentage was 60% and 65% respectively.

➤ **Services:**

Kotak Securities are well known for the level of services they have been providing to the clients. This service includes suggestions, tips, important forecasted messages and the like. Even though the competitors too have been providing these sorts of services, the services that Kotak securities have been providing is different in the following ways.

**Door to door service:**

Kotak Securities have been offering suggestions, tips and important market information's directly to the customers at their door steps. It has been considered as a competitive advantage because they have been doing this in an outstanding manner. Rivals have not been showing that much interest in providing clients with the latest information.

**Training**

In Kotak securities employees have been given special training in dealing with the information's provided to them by advisory divisions. Through these sort of special trainings employees of Kotak securities know very well how to react for information's provided to them by advisory divisions. Share market activities are very volatile, because of this timely intimation plays a crucial role in determining profit or loss to the clients. Knowing this great level of concentration is being given in this area.

➤ **Brand name:**

Kotak Securities Limited, a subsidiary of Kotak Mahindra Bank, is the stock broking and distribution arm of the Kotak Mahindra Group. The company was set up in 1994. Kotak Securities is a corporate member of both The Bombay Stock Exchange and The National Stock Exchange of India Limited. Currently, Kotak Securities is one of the largest broking houses in India with wide geographical reach.

Because of the above mentioned reasons and the achievements it has made in the recent past good image among the investors has been created for Kotak securities.

## **2.5 DESCRIPTION OF VARIOUS FUNCTIONAL AREAS**

Being a leading player in the business, Kotak Securities have fully fledged functional areas which can be divided into

- Marketing division
- Advisory division
- Operational division
- Customer care division

### **➤ Marketing division:**

Through this clients are informed about various avenues available for them to invest. In order to serve the customers to their expectation, and to add serve more and more clients this activity is being carried out in three forms. They are

#### **I. Direct marketing**

#### **II. Tele calling**

#### **I. Direct marketing:**

Under this new clients are being explained about various products available with Kotak Securities through the marketing personal directly. This method suits well when it comes to marketing financial products since it provides a greater opportunity for the clients to get clear information about the products, thus making the job of the marketing personals easy.

#### **II. Tele calling**

Under this, clients interested to invest, based on the references given by existing clients would be informed all the information's about the avenues available to invest. Apart from these, marketing activities is also being done on the basis of references from existing clients. Along with marketing functions, this department also carries out activities to maintain smooth relationship with the clients. Based on the information provided by the research team marketing personals provide tips and ideas to the investors.

➤ **Advisory Division:**

They are considered as the backbone because of the operation that is being done by them. They are the market watchers who monitor the market, advise the clients to take certain actions at times to gain profit. They, at the initial stage encode the basic information about the clients. Later at the time of purchase or sales transaction, they carry out the transactions on behalf of the clients for commission.

Client actions are mainly based on the information provided by them and because of this their activity deserves high importance. The brokerage earned by the concern mainly depends on their effectiveness in monitoring the market and their efficiency in informing the clients about the changes in the market. Based on the volume of transactions performed by them the brokerage will be charged from the clients.

➤ **Operations divisions:**

Their main activity is to assist marketing and advisory divisions in performing their activities. Operations divisions perform the activities related with client login. Customer login comprises code generation according to the instructions given by the advisory division, verification of the details provided to them by the clients, deposition of the cheques given to them by the client, etc.

They also perform the activity of creating dematerialization account for the customers for transaction purpose. Along with the above mentioned functions they have been maintaining good co-ordination between all the divisions, between divisions and the head office.

➤ **Customer care:**

This division takes care of the grievances and doubts of the clients. Customer care mainly concentrates on

- Answering the queries of the clients.
- Providing suggestion to the clients.



## CHAPTER - 3

### MACRO-MICRO ANALYSIS

#### 3.1 MACRO ANALYSIS

A stock exchange, share market or bourse is a corporation or mutual organization which provides facilities for stock brokers and traders, to trade company stocks and other securities. Stock exchanges also provide facilities for the issue and redemption of securities, as well as, other financial instruments and capital events including the payment of income and dividends. The securities traded on a stock exchange include: shares issued by companies, unit trusts and other pooled investment products and bonds. To be able to trade a security on a certain stock exchange, it has to be listed there. Usually there is a central location at least for recordkeeping, but trade is less and less linked to such a physical place, as modern markets are electronic networks, which gives them advantages of speed and cost of transactions. Trade on an exchange is by members only.

The initial offering of stocks and bonds to investors is by definition done in the primary market and subsequent trading is done in the secondary market. A stock exchange is often the most important component of a stock market. Supply and demand in stock markets is driven by various factors which, as in all free markets, affect the price of stocks. There is usually no compulsion to issue stock via the stock exchange itself, nor must stock be subsequently traded on the exchange. Such trading is said to be off exchange or over-the-counter. This is the usual way that bonds are traded. Increasingly, stock exchanges are part of a global market for securities.

#### **History of stock exchange**

In 12th century France the courratiers de change were concerned with managing and regulating the debts of agricultural communities on behalf of the banks. As these men also traded in debts, they could be called the first brokers.

Some stories suggest that the origins of the term "bourse" come from the Latin bursa meaning a bag because, in 13th century Bruges, the sign of a purse (or perhaps three purses), hung on the front of the house where merchants met. However, it is more likely that in the late 13th century commodity traders in Bruges gathered inside the house of a man called Van der Burse, and in 1309 they institutionalized this until now informal

meeting and became the "Bruges Bourse". The idea spread quickly around Flanders and neighbouring counties and "Bourses" soon opened in Ghent and Amsterdam.

In the middle of the 13th century, Venetian bankers began to trade in government securities. In 1351, the Venetian Government outlawed spreading rumors intended to lower the price of government funds. There were people in Pisa, Verona, Genoa and Florence who also began trading in government securities during the 14th century. This was only possible because these were independent city states ruled by a council of influential citizens, not by a duke.

The Dutch later started joint stock companies, which let shareholders invest in business ventures and get a share of their profits - or losses. In 1602, the Dutch East India Company issued the first shares on the Amsterdam Stock Exchange. It was the first company to issue stocks and bonds. In 1688, the trading of stocks began on a stock exchange in London.

### **The role of stock exchanges**

Stock exchanges have multiple roles in the economy, this may include the following:

- Raising capital for businesses
- The Stock Exchange provides companies with the facility to raise capital for expansion through selling shares to the investing public.
- Mobilizing savings for investment
- When people draw their savings and invest in shares, it leads to a more rational allocation of resources because funds, which could have been consumed, or kept in idle deposits with banks, are mobilized and redirected to promote business activity with benefits for several economic sectors such as agriculture, commerce and industry, resulting in a stronger economic growth and higher productivity levels.
- Facilitating company growth
- Companies view acquisitions as an opportunity to expand product lines, increase distribution channels, hedge against volatility, increase its market share, or acquire other necessary business assets. A takeover bid or a merger agreement through the stock market is one of the simplest and most common ways for a company to grow by acquisition or fusion.
- Redistribution of wealth

- Stocks exchanges do not exist to redistribute wealth although casual and professional stock investors through stock price increases and dividends get a chance to share in the wealth of profitable businesses.
- Corporate governance
- Creating investment opportunities for small investors
- As opposed to other businesses that require huge capital outlay, investing in shares is open to both the large and small stock investors because a person buys the number of shares they can afford. Therefore the Stock Exchange provides the opportunity for small investors to own shares of the same companies as large investors, and to enjoy similar rates of return(s).
- Government capital-raising for development projects
- Barometer of the economy

At the stock exchange, share prices rise and fall depending, largely, on market forces. Share prices tend to rise or remain stable when companies and the economy in general show signs of stability and growth. An economic recession, depression, or financial crisis could eventually lead to a stock market crash. Therefore the movement of share prices and in general of the stock indexes can be an indicator of the general trend in the economy.

The following sectors are considered for the analysis of the stock price behavior in the stock market:

## **INFORMATION TECHNOLOGY**

Information Technology (IT), as defined by the Information Technology Association of America (ITAA) is: "the study, design, development, implementation, support or management of computer-based information systems, particularly software applications and computer hardware." In short, IT deals with the use of electronic computers and computer software to convert, store, protect, process, transmit and retrieve information, securely.

In this definition, the term "information" can usually be replaced by "data" without loss of meaning. Recently it has become popular to broaden the term to explicitly include the field of electronic communication so that people tend to use the abbreviation ICT (Information and Communication Technology). Strictly speaking, this name is slightly redundant. The term "information technology" came about in the 1970s. Its basic concept,

however, can be traced back even further. Throughout the 20th century, an alliance between the military and various industries has existed in the development of electronics, computers, and information theory. The military has historically driven such research by providing motivation and funding for innovation in the field of mechanization and computing.

### **Information technology today**

Today, the term Information Technology has ballooned to encompass many aspects of computing and technology, and the term is more recognizable than ever before. The Information Technology umbrella can be quite large, covering many fields. IT professionals perform a variety of duties that range from installing applications to designing complex computer networks and information databases. A few of the duties that IT professionals perform may include:

- Data Management
- Computer Networking
- Database Systems Design
- Software design
- Management Information Systems
- Systems management
- Industry organizations

World Information Technology and Services Alliance (WITSA) is a consortium of over 60 information technology (IT) industry associations from economies around the world. Founded in 1978 and originally known as the World Computing Services Industry Association, WITSA has increasingly assumed an active advocacy role in international public policy issues affecting the creation of a robust global information infrastructure.

The Information Technology Association of America (ITAA) is an industry trade group for several U.S. information technology companies. Founded in 1961 as the Association of Data Processing Services Organizations (ADAPSO), the Information Technology Association of America (ITAA) provides global public policy, business networking, and national leadership to promote the continued rapid growth of the IT industry. ITAA consists of approximately 325 corporate members throughout the U.S., and is secretariat of the World Information Technology and Services Alliance (WITSA), a global network of 67 countries' IT associations.

## PHARMACEUTICALS INDUSTRY

Most of today's major pharmaceutical companies were founded in the late 19th and early 20th centuries. Key discoveries of the 1920s and 1930s, such as insulin and penicillin, became mass-manufactured and distributed. Switzerland, Germany and Italy had particularly strong industries, with the UK and US following suit. Legislation was enacted to test and approve drugs and to require appropriate labeling. Prescription and nonprescription drugs became legally distinguished from one another as the pharmaceutical industry matured. The industry got underway in earnest from the 1950s, due to the development of systematic scientific approaches, understanding of human biology (including DNA) and sophisticated manufacturing techniques. Numerous new drugs were developed during the 1950s and mass-produced and marketed through the 1960s. This included the first oral contraceptive, "The Pill", Cortisone, blood-pressure drugs and other heart medications, MAO Inhibitors, chlorpromazine (Thorazine), Haldol (Haloperidol) and the tranquilizers ushered in the age of psychiatric medication. Valium (diazepam), discovered in 1960, was marketed from 1963 and rapidly became the most prescribed drug in history, prior to controversy over dependency and habituation.

Attempts were made to increase regulation and to limit financial links between pharmaceutical companies and prescribing physicians, including by the relatively new US FDA. Such calls increased in the 1960s after the thalidomide tragedy came to light, in which the use of a new tranquilizer in pregnant women caused severe birth defects. In 1964, the World Medical Association issued its Declaration of Helsinki, which set standards for clinical research and demanded that subjects give their informed consent before enrolling in an experiment. Pharmaceutical companies became required to prove efficacy in clinical trials before marketing drugs.

The industry remained relatively small scale until the 1970s when it began to expand at a greater rate. Legislation allowing for strong patents, to cover both the process of manufacture and the specific products, came in to force in most countries. By the mid-1980s, small biotechnology firms were struggling for survival, which led to the formation of mutually beneficial partnerships with large pharmaceutical companies and a host of corporate buyouts of the smaller firms. Pharmaceutical manufacturing became concentrated, with a few large companies holding a dominant position throughout the world and with a few companies producing medicines within each country.

The pharmaceutical industry entered the 1980s pressured by economics and a host of new regulations, both safety and environmental, but also transformed by new DNA chemistries and new technologies for analysis and computation. Drugs for heart disease and for AIDS were a feature of the 1980s, involving challenges to regulatory bodies and a faster approval process.

There are now more than 200 major pharmaceutical companies, jointly said to be more profitable than almost any other industry, and employing more political lobbyists than any other industry. Advances in biotechnology and the human genome project promise ever more sophisticated, and possibly more individualized, medications.

## **CEMENT INDUSTRY**

In the most general sense of the word, cement is a binder, a substance which sets and hardens independently, and can bind other materials together. The name "cement" goes back to the Romans who used the term "opus caementitium" to describe masonry which resembled concrete and was made from crushed rock with burnt lime as binder. The volcanic ash and pulverized brick additives which were added to the burnt lime to obtain a hydraulic binder were later referred to as cementum, cimentum, cäment and cement. Cements used in construction are characterized as hydraulic or non-hydraulic.

The most important use of cement is the production of mortar and concrete - the bonding of natural or artificial aggregates to form a strong building material which is durable in the face of normal environmental effects.. The success of "Roman Cement" led other manufacturers to develop rival products by burning artificial mixtures of clay and chalk.

Overview of the performance of the Cement Sector

The Indian cement Industry not only ranks second in the production of cement in the world but also produces quality cement, which meets global standards. However, the industry faces a number of constraints in terms of high cost of power, high railway tariff; high incidence of state and central levies and duties; lack of private and public investment in infrastructure projects; poor quality coal and inadequate growth of related infrastructure like sea and rail transport, ports and bulk terminals. In order to utilize excess capacity available with the cement industry, the government has identified the following thrust areas for increasing demand for cement:

- (i) Housing development programmes;
- (ii) Promotion of concrete highways and roads;
- (iii) Use of ready-mix concrete in large infrastructure projects; and
- (iv) Construction of concrete roads in rural areas under Prime Ministers Gram Sadak Yojana.

### **Technological advancements**

Indian cement industry is modern and uses latest technology. Only a small segment of industry is using old technology based on wet and semi-dry process. Efforts are being made to recover waste heat and success in this area has been significant.

India is also producing different varieties of cement like Ordinary Portland Cement (OPC), Portland Pozzolana Cement (PPC), Portland Blast Furnace Slag Cement (PBFS), Oil Well Cement, Rapid Hardening Portland Cement, Sulphate Resisting Portland Cement, White Cement, etc. Production of these varieties of cement conforms to the BIS Specifications. It is worth mentioning that some cement plants have set up dedicated jetties for promoting bulk transportation and export.

### **STEEL INDUSTRY**

With the given cyclic nature of the world steel market and the tendency of steel prices to touch peaks and bottoms at will, no year is a surprise, in real terms, for steel watchers. Starting off with a historically high price line, 2005 closed with an overall downward correction of 30 per cent. For instance, the Europe export price, which was ruling at a high of \$582 per tonne at the beginning of the year, fell 32 per cent to \$393 by end-2005.

This happened despite the fact that real consumption remained relatively strong through most of the year. The factor that played the crucial role in deciding the demand and supply mismatch, or mix-match, was the 'de-stocking' of huge quantities of piled-up inventory lying with the service centres and end-users at the beginning of 2005.

This de-stocking of inventories deflected a significant portion of demand and did not let it reach the steel producers in full. In the European markets, for instance, the growth in apparent consumption of steel went down from 3.4 per cent in Q1-04 to -6.1 per cent in Q3-05 whereas real consumption growth showed figures of 3.7 per cent and 0.7 per cent in Q1-04 and Q3-05 respectively, showing that the decline in apparent demand was not real.

China too played a major role, virtually driving global steel production. Its crude steel output rose 25.5 per cent, to 317.7 million tonnes in the first 11 months of 2005, pushing world steel production up by 6.1 per cent despite rest of the world registering a fall of 0.9 per cent in production.

The continued increase in output in China has changed the demand-supply equation in the global and Chinese steel industries. From being a net importer of steel till 2004, China exported 23.34 mt of steel (including billets), against imports of 23.03 mt, making it a net exporter. These two major factors put together resulted in downward price pressures in the industry. According to Metal Service Centre Institute, a renowned steel journal, the stockists inventories in the US are at their lowest in more than seven years.

In the Asian markets too, the de-stocking activity has almost reached its end, signalling the arrival of a period of overall price stability. The year 2006 starts on a healthy and vibrant note as the global economy is projected to grow at 4.3 per cent (IMF estimate), virtually the same rate of growth as last year.

China, the country driving world steel demand, is unlikely to see a sudden slowdown in either its GDP or industrial production, which are currently growing at a scorching pace of 9.4 per cent and 16.1 per cent per annum respectively. The US economy is expected to grow reasonably well at 3.3 per cent, which, although slightly less than the 3.5 per cent expected for the current year, is in itself a huge growth considering the size of the economy. Europe and Japan along with Asia too are showing robust growth. The rebuilding activities in the aftermath of the Iraq war, and the Hurricane Katrina and the tsunami are likely to further push up the demand for steel in the world.

The party on the demand side gets even better as the International Iron and Steel Institute (IISI) has projected a growth of 4-5 per cent in steel demand in 2006 against an estimated growth of 3 per cent in 2005. This projected rate of growth is well above the historical average annual growth rate of 3.6 per cent experienced by the steel industry.

The strong growth continues to come from China, West Asia, India and South America. In the case of India too, the strong economic and manufacturing growth of 8.1 per cent and 9 per cent respectively during April-September 2005 spell hope for the domestic steel industry. This along with strong performances being witnessed in various user segments, such as capital goods and automobiles, brings the global party home for the Indian steel producers.



The medium- and long-term outlook for the Indian steel sector remains positive, with a lot expected to happen on the capacity addition front in the market. On the supply-side too there are healthy signs. In China, where a third of the steel producers are currently operating below average cost of production, the producers are expected to cut down growth in production. Therefore, the fear of Chinese overproduction entering the international markets is somewhat receding, giving further stability to prices.

However, as behind every growth spurt, there is a note of caution, there is one here too. The Chinese Government's ability to control the molten hot Chinese steel sector and to curtail surging steel capacities still remains a billion dollar question.

Barring these factors, the overall near outlook for the global steel industry remains positive in the year 2006. The industry is likely to see a normal and healthy year with prices remaining stable.

### **3.2 MICRO ANALYSIS:**

#### **NATIONAL STOCK EXCHANGE**

The National Stock Exchange of India Limited has genesis in the report of the High Powered Study Group on Establishment of New Stock Exchanges, which recommended promotion of a National Stock Exchange by financial institutions (FIs) to provide access to investors from all across the country on an equal footing. Based on the recommendations, NSE was promoted by leading Financial Institutions at the behest of the Government of India and was incorporated in November 1992 as a tax-paying company unlike other stock exchanges in the country.

Trading on NSE is characterized by four key innovations.

- The physical floor was replaced by anonymous, computerized order- matching with strict prime-time priority.
- The limitations of being on Mumbai and the limitations of India's Public telecom network were avoided by using satellite communications. Now NSE has a network of over 2000 satellite terminals all over the country. On a typical day almost over 3500 traders login to the trading computer over this network. This is larger than the capacity of the largest trading floors in the world.
- NSE is not owned by brokers. It is a limited liability company and brokers or franchisees. Therefore NSEs' staff is free of pressures from brokers and is able to perform its regulatory and enforcement functions more effectively.

- Traditional practices of unreliable fortnightly settlement cycle with escape clause of badla were replaced by a strict weekly settlement cycle without badla.

## **INFORMATION TECHNOLOGY SECTOR COMPANIES**

### **INFOSYS TECHNOLOGIES**

Infosys Technologies Ltd. (NASDAQ: INFY) provides consulting and IT services to clients globally - as partners to conceptualize and realize technology driven business transformation initiatives. With over 72,000 employees worldwide, we use a low-risk Global Delivery Model (GDM) to accelerate schedules with a high degree of time and cost predictability.

As one of the pioneers in strategic offshore outsourcing of software services, Infosys has leveraged the global trend of offshore outsourcing. Even as many software outsourcing companies were blamed for diverting global jobs to cheaper offshore outsourcing destinations like India and China, Infosys was recently applauded by Wired magazine for its unique offshore outsourcing strategy — it singled out Infosys for turning the outsourcing myth around and bringing jobs back to the US.

Infosys provides end-to-end business solutions that leverage technology. We provide solutions for a dynamic environment where business and technology strategies converge. Our approach focuses on new ways of business combining IT innovation and adoption while also leveraging an organization's current IT assets. We work with large global corporations and new generation technology companies - to build new products or services and to implement prudent business and technology strategies in today's dynamic digital environment.

### **WIPRO TECHNOLOGIES**

Wipro Technologies is an IT service company established in 1980 in India. It is the global IT services arm of Wipro Limited (incorporated 1946, in operation since 1945). It is headquartered in Bangalore. It is the third largest IT services company in India. It has 68,000 employees as of Apr 2007, inclusive of its BPO arm which it acquired in 2002.[1] Wipro Technologies has over 300 customers across USA, Europe and Japan including 50 of the Fortune 500 companies. Some of its customers are Boeing, Cisco, Ericsson, IBM, Microsoft, Prudential, Seagate, Sony, and Toshiba.[citation needed] It is listed on the New York Stock Exchange and is part of its TMT (technology media telecom) index.

With revenue in the excess of US \$3 billion, Wipro is one of India's major information technology companies. Wipro has dedicated development centers and offices across India, Europe, North America, Latin America and Asia Pacific. The current Chairman, Managing Director and majority stake owner is Azim Premji. From inception, the software and hardware divisions have been headed by him. Wipro was set up in Amalner, Maharashtra in 1945. Primarily an edible oil factory, the chief products were Sunflower Vanaspati and 787 laundry soap (a by-product of the Vanaspati operations). The company was called Western India Vegetable Products Limited, with a minor presence in Maharashtra and Madhya Pradesh.[2][3] In the 1970s and 1980s it began to expand and made forays into computing. In 1975, Wipro marketed India's first homegrown PC. Wipro was the sole representative for Sun Microsystems in India, before the Sun liaison office was set up in India, in the early nineties.

In 1995, it received ISO 9001 quality certification. In 1997, Wipro received CMM level 3 certification from the Software Engineering Institute. In 1998, it was certified at CMMi level 5. In 2001, it was awarded the PCMM level 5 certification. In the same year, Business Today rated it as India's most valuable company.

In June 2001, it was ranked among the top 100 best performing technology companies globally by BusinessWeek. In November 2002, it was ranked among the top 10 software services companies in the world by the same magazine. As of 2004, it was the 4th largest company in the world in terms of market capitalization in IT services. Wipro is the highest ranked among the Indian IT providers in the list published by International Association of Outsourcing Professionals.

Wipro and its success in handling outsourced information technology from U.S. businesses is detailed in Thomas L. Friedman's best-selling novel "The World Is Flat". Services. Wipro Technologies offers end-to-end software solutions. Software services offered include e-commerce, business process re-engineering, system migration, maintenance of legacy systems, system integration and others.

## **SATYAM COMPUTER SERVICE LIMITED**

Satyam Computer Services Ltd. is a consulting and information technology (IT) services company based in India. Satyam Computer Services Ltd. is headquartered at Hyderabad, India. It was founded by B.Ramalinga Raju in 1987, Satyam meaning "truth" in Sanskrit. It offers a variety of IT services spanning across different industry verticals.

Satyam's network spans 55 countries, across six continents. The company employs 40,000+ IT professionals across development centers in India, the United States, the United Kingdom, the United Arab Emirates, Canada, Hungary, Singapore, Malaysia, China, Japan and Australia. It serves over 489 global companies, 156 of which are Fortune 500 corporations. Satyam has strategic technology and marketing alliances with over 50 companies.

Apart from Hyderabad, it has development centers in India at Chennai, Bangalore, Pune, Mumbai, Nagpur, Delhi, Kolkata, and Bhubaneswar. October 19, 2006 - Satyam Q2 Results Declared-- Profit Increased by 34.7% YoY, with total 34,908 Leaders. Satyam has been accorded the prestigious recognition by Most Admired Knowledge Enterprise (MAKE) as a top Asian Knowledge Organization. The MAKE Awards are given to leading Asian organizations that leverage enterprise knowledge to create value through innovation, product or service excellence, and operational effectiveness.

Satyam's best-of-breed training programs and learning interventions for Associates were accorded the prestigious [[American Society for Training & Development's (ASTD)\] BEST Awards-recognition. Satyam was ranked 15th in the ASTD's Fourth Annual BEST Awards program, and is among the 39 organizations from India, South Africa, and the United States to receive this high-status award. Verticals in Satyam serve different industry domains - Aerospace and Automobile (AnA) - Banking & Capital Markets (BCM) - Communication Service Providers (CSP) - Resources, Energy & Utilities (REU) - Hi Tech & Discrete Manufacturing (HTDM) - Insurance, Healthcare & Life Sciences (IHL) - Media and Entertainment - Product Lifecycle and Engineering Solutions (PLES) - Retail, Distribution & CPG (RETL) - Transportation & Services (TnS) - Independent Validation Solutions (IVS) - provides software testing services. - IT Infrastructure Management Services (IMS) - manages core networks, data centers and servers of clients.

## **GLOBAL TELE-SYSTEMS LIMITED.**

International Global Tele-Systems Ltd., (IGTL) is a subsidiary of the Company. Mauritius and Elber Trading Pvt. Ltd. is a subsidiary of IGTL. The Company made foray into software development and Export in 1997. The company started executing I-Trade CommNet and Logistics Tracking System (LTS) projects. The I-Trade CommNet aims to establish electronic exchange of information and documents which is currently being

exchanged manually amongst the entities of cargo community in India by using Electronic Data Interchange (EDI) technology. The Company issued FCCBs worth Swiss Francs (SFr) 60,000,000 and out of these the company had received FECBs worth SFr 2,30,000 for conversion into equity shares. Global Tele-Systems Ltd. (GTL), has signed an agreement with National Securities Depository Ltd. (NSDL), to get its securities admitted for dematerialization. GTL has signed Bipartite Agreement with NSDL to the effect that the shares of GTL would be available for dematerialization process and first private sector telecom company to do so. With this, the shareholders of GTL would be in a position to hold equity shares in electronic firm.

The company has strategic alliances with Samsung Corporation and Muratec for their range of fax machines, Northern Telecom for its range of PBX, Ericsson for cellular phones and turnkey solutions, Nokia for turnkey cellular projects, Maxon for cordless phones and Alcatel for turnkey projects and fibre-optic solutions.

Global Telesystems Ltd has tied up with Iscor of the US to provide advanced integration products like fax systems, E-mail equipment and electronic data interchange (EDI) in India.- The company has also been awarded a contract from Tata Communications for running a quality audit of its telecom towers for the cellular network in the Andhra Pradesh circle. GTSL had recently tied up with the US-based GE Information Systems, under which the companies will together develop a source code, on which applications would be developed and exported.

- The company has entered into alliances with AFNET, which will distribute all of AFNET's traffic into India, and with UNIFI Communications to distribute fax traffic.
- Microsoft Corporation of USA has recently certified Global Telesystems Ltd (GTL) as competence centre on Internet and e-commerce businesses. GTL has thus become the only company in India to have been accorded this status.
- IGTL has entered into a joint venture with Al-Nasser LLC in the Middle East for engineering services. It has also acquired a strategic stake in an international telecom value added service provider i.e. The Voice Company Pte. Ltd.
- Oracle Software India Ltd., the wholly owned subsidiary of the Oracle Corporation of the US entered into a strategic tie-up with the Global Tele-Systems Ltd. for addressing the high growth application service provider market in the country.

- The Company had acquired two software companies - Thermax Systems and Software, an associate of Thermax group and Fine Infotech, a company focused on banking products
- in a Rs.15 crore all stock deal.
- Global Tele Systems has allotted 85,000 equity share of Rs.10 each for cash at a premium in terms of the employees stock option scheme upon exercise of right of option or conversion of warrants into equity shares issued under the scheme into equity shares.
- The Company allotted 83474 No. of equity shares of face value of Rs. 10.
- The Company has entered into an MOU for a joint venture with Enron to build a state-of-the-art fibre optic broadband network.
- The Company received a Silver Plaque from the Institute of Chartered Accountants of India for the Best Presented Accounts for entries received from non financial private sector companies for the year 1998-99.
- Mr. Manoj G. Tirodkar, Executive Vice Chairman, became the first Indian to win the World Young Business Achiever Award for the year 2000 in Orlando, USA, from Worldcom, USA.

## **STEEL SECTOR COMPANIES**

### **TATA STEEL**

Established in 1907, Tata Steel is Asia's first and India's largest private sector steel company. Tata Steel is among the lowest cost producers of steel in the world and one of the few select steel companies in the world that is EVA+. Its captive raw material resources and the state-of-the-art 5 MTPA (million tonne per annum) plant at Jamshedpur, in Jharkhand State, India give it a competitive edge. Determined to be a major global steel player, Tata Steel has recently included in its fold NatSteel, Asia (2 MTPA) and Millennium Steel (now Tata Steel Thailand) (1.7 MTPA) creating a manufacturing network in eight markets in South East Asia and Pacific rim countries. Soon the Jamshedpur plant will expand its capacity from 5 MTPA to 7 MTPA by 2008. The Company plans to enhance its capacity, manifold through organic growth and investments. The Company's wire manufacturing unit in Sri Lanka is known as Lanka Special Steel, while the joint venture in Thailand for limestone mining is known as Sila Eastern. Tata Steel's products are targeted at the quality conscious auto sector and the burgeoning construction industry. With wire manufacturing facilities in India, Sri Lanka and Thailand, the Company plans to emerge as a major global player in the wire business

Tata Steel's products include hot and cold rolled coils and sheets, galvanised sheets, tubes, wire rods, construction rebars, rings and bearings. In an attempt to 'decommoditise' steel, the company has introduced brands like Tata Steelium (the world's first branded Cold Rolled Steel), Tata Shaktee (Galvanised Corrugated Sheets), Tata Tiscon (re-bars), Tata Bearings, Tata Agrico (hand tools and implements), Tata Wiron (galvanised wire products), Tata Pipes (pipes for construction) and Tata Structura (contemporary construction material). The company has launched the Customer Value Management initiative with the objective of creating complete understanding of customer problems and finding solutions jointly. The company's Retail Value Management addresses the needs of distributors, retailers and end consumers. The company has also launched India's first steel retail store - steeljunction - for making steel shopping a happy and memorable experience.

## **ESSAR STEEL**

Essar Steel is a versatile manufacturer, capable of producing highly customized products. Catering to quality-conscious niches, we compete against top-of-the-league international steel producers. For example, we are one of the few manufacturers globally who can make API grade steel with low sulphur. We cater to a wide variety of product segments including roofing, automobiles, oil and gas, shipbuilding, fabrication and white goods. Domestically, we have emerged as leaders in product development, quality and service. To maintain and enhance our leading position, our R&D team is constantly developing new grades and applications.

No wonder we are India's largest exporter of flat products, selling almost one-third of our production to the highly demanding US and European markets, and to the growing markets of South East Asia and the Middle East. A number of major client companies have approved our steel for their use, including Caterpillar, Hyundai, Swaraj Mazda, the Konkan Railway and Maruti Suzuki. Essar Steel is among the 25 percentile of lowest cost producers world-wide and has acquired extensive quality accreditations. Our lean team gives us one of the highest productivities and lowest manpower costs among steel plants internationally.

## **Seamless Integration**

A major strategic advantage is our high level of forward and backward integration. We are totally integrated - from raw material to finished products, adding value at every stage of the manufacturing process.

## **Customer-driven excellence**

Customer delight drives everything we do at Essar Steel. To allow customers to consistently choose the best, we became the first Indian company to brand flat products, under the name '24-carat steel' with a full range including hot and cold rolled coils, galvanised sheets and plates. From order booking to delivery, our information technology systems are integrated between processes and with suppliers and customers. Our major customers can simply go online to place orders or check details like their order status, dispatch details, accounts and due payments. Our Systems Applications & Products (SAP R/3) installation is India's biggest and has been judged the best-implemented Indian SAP site by SAP AG Germany.

## **SAIL**

Steel Authority of India Limited (SAIL) is the leading steel-making company in India. It is a fully integrated iron and steel maker, producing both basic and special steels for domestic construction, engineering, power, railway, automotive and defence industries and for sale in export markets. Ranked amongst the top ten public sector companies in India in terms of turnover, SAIL manufactures and sells a broad range of steel products, including hot and cold rolled sheets and coils, galvanised sheets, electrical sheets, structurals, railway products, plates, bars and rods, stainless steel and other alloy steels. SAIL produces iron and steel at five integrated plants and three special steel plants, located principally in the eastern and central regions of India and situated close to domestic sources of raw materials, including the Company's iron ore, limestone and dolomite mines. SAIL's wide range of long and flat steel products are much in demand in the domestic as well as the international market. This vital responsibility is carried out by SAIL's own Central Marketing Organisation (CMO) and the International Trade Division. CMO encompasses a wide network of 38 branch offices and 47 stockyards located in major cities and towns throughout India.



SAIL has a well-equipped Research and Development Centre for Iron and Steel (RDCIS) at Ranchi which helps to produce quality steel and develop new technologies for the steel industry. Besides, SAIL has its own in-house Centre for Engineering and Technology (CET), Management Training Institute (MTI) and Safety Organisation at Ranchi. Our captive mines are under the control of the Raw Materials Division in Calcutta. The Environment Management Division and Growth Division of SAIL operate from their headquarters in Calcutta. Almost all our plants and major units are ISO Certified.

## **Major Units**

### **Integrated Steel Plants**

- Bhilai Steel Plant (BSP) in Chhattisgarh
- Durgapur Steel Plant (DSP) in West Bengal
- Rourkela Steel Plant (RSP) in Orissa
- Bokaro Steel Plant (BSL) in Jharkhand
- IISCO Steel Plant (ISP) in West Bengal
- Special Steel Plants
- Alloy Steels Plants (ASP) in West Bengal
- Salem Steel Plant (SSP) in Tamil Nadu
- Visvesvaraya Iron and Steel Plant (VISL) in Karnataka

### **Subsidiaries**

- Maharashtra Elektros melt Limited (MEL) in Maharashtra

## **SAIL TODAY**

SAIL today is one of the largest industrial entities in India. Its strength has been the diversified range of quality steel products catering to the domestic, as well as the export markets and a large pool of technical and professional expertise.

Today, the accent in SAIL is to continuously adapt to the competitive business environment and excel as a business organisation, both within and outside India.

## PHARMACEUTICAL COMPANIES

### ORCHID

Orchid Chemicals & Pharmaceuticals Ltd (Orchid) was established in July 1992 as a 100% Export Oriented Unit (EOU). Commencing operations in February 1994, Orchid achieved rapid growth to emerge as the eleventh largest company in the Indian pharmaceutical industry in a short span of eleven years of operations. Orchid employs over 3000 people, of which over 600 are scientists, technologists and other professionals.

Orchid is today a globally recognized, integrated pharmaceutical company with core competencies in the development and manufacture of Active Pharmaceutical Ingredients (APIs) and Finished Dosage Forms as well as in drug discovery. From the very inception, Orchid has been investing aggressively for establishing modern research and manufacturing facilities aimed at global markets, thus emerging as a world-class pharmaceutical company covering the entire value chain from "Discovery to Delivery".

Orchid has two manufacturing sites for APIs (at Alathur, Chennai and Aurangabad) and three manufacturing sites for Dosage forms (at Irungattukottai and Alathur), besides two R&D centres (at Sholinganallur and Irungattukottai). Orchid's facilities are state-of-the-art and have several international regulatory approvals, including the US FDA and UK MHRA. Orchid's API facilities are ISO certified for their quality and environmental management systems. Orchid has a subsidiary in the US for Drug Discovery and a Joint Venture in China for manufacturing APIs.

Orchid's scientific and technical strengths have made it a partner of choice for several multinational corporations. Orchid has long-term exclusive agreements with reputed global companies such as Apotex, Par, Alpharma (Actavis), Stada (Dava) and Mayne for distribution of Orchid's products in the regulated markets of US and Europe.

Orchid has two subsidiaries to undertake drug discovery, Orchid Research Laboratories Ltd in Chennai and Bexel Pharmaceuticals Inc in the US, developing new chemical entities in six therapeutic areas. Orchid's anti-diabetes molecule, which has advanced into human clinicals is unique for its efficacy and safety. It not only reduces blood glucose levels in diabetic patients but also controls hyperlipidemia and hypertension. Unlike other diabetes drugs it has no adverse effects on liver enzymes and does not lead to weight gain. Besides this, Orchid has lead compounds in various stages of evaluation.

Orchid is a leader in the use of environment friendly technologies. Orchid has invested substantially in zero-discharge manufacturing processes at its API facilities and is considered a national show-case in environmental friendliness.

## **RANBAXY**

Ranbaxy Laboratories Limited, headquartered in India, is an integrated, research based, international pharmaceutical company, producing a wide range of quality, affordable generic medicines, trusted by healthcare professionals and patients across geographies. It is ranked amongst the top ten generic companies worldwide. The Company has world class manufacturing facilities in 9 countries on ground presence in 49 countries and its products available in over 125 countries across the globe

Ranbaxy was incorporated in 1961 and went public in 1973. For the twelve months ended December 31, 2006, the Company's Global Sales were at US \$1340 Mn. Overseas markets accounted for around 80% of global sales. The Company's largest market, USA with the sales of US \$ 380 Mn, , while Europe and BRICS (Brazil, Russia, India, China, South Africa) countries contributed US \$194 Mn and US \$ 477 Mn to global sales.

Ranbaxy has an expanding international portfolio of affiliates, joint ventures and representative offices across the globe with a presence in 23 of the Top 25 pharma markets of the world. Ranbaxy has robust operations in USA, UK, France, Germany, Russia, India, Romania and South Africa, and is strengthening its business in Japan, Italy, Spain and several other markets in the Asia Pacific. While the Company is aggressively pursuing its internationalization strategy it has also gained market leadership in India, leveraging its strong brand building skills. A balanced geographical presence coupled with a strong product flow from a wide therapeutic range serve as the business building blocks of the Company.

Growth through acquisition is one of Ranbaxy's stated strategies. The Company has successfully concluded 15 acquisitions since 2004, including 8 in 2006 (4 in Europe, 1 in the US, 2 in India and 1 in South Africa). Ranbaxy will continue to look at target acquisitions in US, Europe, India and emerging markets based on value and synergies that can be unlocked from such transactions.

## **Research & Development (R&D)**

Ranbaxy views its R&D capabilities as a vital component of its business strategy that will provide the company with a sustainable, long-term competitive advantage. The company today has a pool of ~1,100 scientists who are engaged in path-breaking research. With the commissioning of its new R&D centre in August 2005, Ranbaxy now has in place, a total of three modern state-of-the-art multi-disciplinary research facilities, in the same campus at Gurgaon (near New Delhi), India. While two centers focus on the development of generics and Novel Drug Delivery Systems (NDDS) research; the third center, is dedicated to New Drug Discovery Research (NDDR).

Amongst the pharmaceutical companies in India, Ranbaxy has the largest R&D budget with an R&D spend of over 7% of sales. The Company plans to progressively increase its investment in R&D in the coming years. The robust R&D environment within the company for both drug discovery & development and for generics is designed to bring into sharper focus, the unique needs of both equally.

The company's NDDS focus is mainly on the development of NDA/ ANDAs of oral controlled- release products for the regulated markets. The Company's first significant international success using the NDDS technology platform came in September 1999 when Ranbaxy licensed its once-a-day Ciprofloxacin formulation, on a worldwide basis to Bayer AG. The Company is focusing on expanding its platform technologies and developing newer prescription products based on them. Ranbaxy's in-house NDDS programs are primarily focused on the oral segment. Inhalation (patented devices) and trans-dermal patch (patented adhesive polymers) programs are also being pursued through collaborations.

The focus areas for drug discovery at Ranbaxy are anti-infectives, urology, respiratory/inflammatory and metabolic diseases. Presently, the Company has 10 programs in the area of NDDR including one NCE in Phase-II clinical trials. The Company has received approval to commence Phase I studies in India on its NCE molecule for Dyslipidemia. In addition, the Company also has a number of other pre-clinical leads in the anti-infective, inflammatory, metabolic diseases and urology segments. Ranbaxy also has a global alliance in the area of drug discovery and development with GlaxoSmithKline Plc. Presently two research programs have been initiated which are progressing well.

## **CIPLA**

Cipla founded as The Chemical, Industrial & Pharmaceutical Laboratories is a major Indian pharmaceutical company, best-known for manufacturing economical anti-AIDS drugs. The company was founded in 1935 by Khwaja Abdul Hamied, and its Chairman today is Yusuf Hamied (b. 1936), the founder's eldest son.

Today (2007), Cipla is the world's largest manufacturer of antiretroviral drugs to fight HIV/AIDS, as measured by units produced, distributed and sold (multinational brand-name drugs are exponentially more expensive, so in money terms Cipla's medicines are probably not in top spot). Cipla ignores foreign patents on these drugs where no Indian law is broken in the process. By doing so Cipla has reduced the cost of providing antiretrovirals to AIDS patients from \$12,000 (and beyond) to around \$300 per year. While this sum remains out of reach for many millions of people in 'Third World' countries, charitable sources often are in a position to make up the difference for destitute patients.

The customary treatment of AIDS consists of a cocktail of three drugs. Cipla produces an all-in-one pill called Triomune which contains all three substances (Lamivudine, stavudine and Nevirapine), something difficult elsewhere because the three patents are held by different companies. One more popular fixed dose combination is there, with the name Duovir-N. This contains Lamivudine, Zidovudine and Nevirapine.

## **REDDY**

Dr. Reddy's Laboratories was founded by Dr Anji Reddy, a entrepreneur-scientist, in 1984. The DNA of the company is drawn from its founder and his vision to establish India's first discovery led global pharmaceutical company. In fact, it is this spirit of entrepreneurship that has shaped the company to become what it is today.

Dr Anji Reddy, having moved out of Standard Organics Limited, a company he had successfully co-founded, started Dr. Reddy's Laboratories with \$ 40,000 in cash and \$120,000 in bank loan! Today, the company with revenues of Rs.2,427 crore (US \$546 million), as of fiscal year 2006, is India's second largest pharmaceutical company and the youngest among its peer group. The company has several distinctions to its credit. Being the first pharmaceutical company from Asia Pacific (outside Japan) to be listed on the New York Stock Exchange (on April 11, 2001) is only one among them. And as always, Dr. Reddy's chose to do it in the most difficult of circumstances against widespread

skepticism. Dr. Reddy's came up trumps not only having its stock oversubscribed but also becoming the best performing IPO that year.

Dr. Anji Reddy is well known for his passion for research and drug discovery. Dr. Reddy's started its drug discovery programme in 1993 and within three years it achieved its first breakthrough by outlicensing an anti-diabetes molecule to Novo Nordisk in March 1997. With this very small but significant step, the Indian industry went through a paradigm shift in its image from being known as just 'copycats' to 'innovators'! Through its success, Dr. Reddy's pioneered drug discovery in India. There are several such inflection points in the company's evolution from a bulk drug (API) manufacturer into a vertically integrated global pharmaceutical company today.

Today, the company manufactures and markets API (Bulk Actives), Finished Dosages and Biologics in over 100 countries worldwide, in addition to having a very promising Drug Discovery Pipeline. When Dr. Reddy's started its first big move in 1986 from manufacturing and marketing bulk actives to the domestic (Indian) market to manufacturing and exporting difficult-to-manufacture bulk actives such as Methyldopa to highly regulated overseas markets, it had to not only overcome regulatory and legal hurdles but also battle deeply entrenched mind-set issues of Indian Pharma being seen as producers of 'cheap' and therefore 'low quality' pharmaceuticals. Today, the Indian pharma industry, in stark contrast, is known globally for its proven high quality-low cost advantage in delivering safe and effective pharmaceuticals.

With over 950 scientists working across the globe, around the clock, the company continues its relentless march forward to discover and deliver a breakthrough medicine to address an unmet medical need and make a difference to peoples lives worldwide. And when it does that, it would only be the beginning and yet it would be the most important step. As Lao Tzu wrote a long time ago, 'Even a 1000 mile journey starts with a single step.'

## **CEMENT SECTOR**

### **ULTRA TECH**

UltraTech Cement Limited, a Grasim subsidiary has an annual capacity of 17 million tonnes. It manufactures and markets Ordinary Portland Cement, Portland Blast Furnace Slag Cement and Portland Pozzolana Cement

UltraTech has five integrated plants, five grinding units and three terminals — two in India and one in Sri Lanka. These include an integrated plant and two grinding units of the erstwhile Narmada Cement Company Limited, a subsidiary, which has been amalgamated with the company in May 2006. UltraTech is the country's largest exporter of cement clinker. The company exports over 2.5 million tonnes per annum, which is about 30 per cent of the country's total exports. The export markets span countries around the Indian Ocean, Africa, Europe and the Middle East.

The cement division of L&T was demerged in 2004 after Grasim made the 30 per cent open offer for equity shares, gaining control over the new company, christened UltraTech. Besides the long term strategic value in the wake of rising demand for cement, with the growth of housing and infrastructure sectors in the country, the acquisition brings significant synergy gains to the parent company.

### **AMBUJA CEMENT**

Ambuja Cements was set up in 1986. In the last decade the company has grown tenfold. The total cement capacity of the company is 16 million tonnes. Its plants are some of the most efficient in the world. With environment protection measures that are on par with the finest in the developed world.

The company's most distinctive attribute, however, is its approach to the business. Ambuja follows a unique homegrown philosophy of giving people the authority to set their own targets, and the freedom to achieve their goals. This simple vision has created an environment where there are no limits to excellence, no limits to efficiency. And has proved to be a powerful engine of growth for the company. As a result, Ambuja is the most profitable cement company in India, and the lowest cost producer of cement in the world. The India Cements Ltd was established in 1946 and the first plant was setup at Sankarnagar in Tamilnadu in 1949 . Since then it has grown in stature to seven plants

spread over Tamilnadu and Andhra Pradesh . The capacities as on March 2002 have increased multifold to 9 million tons per annum.

## **PRISM CEMENT**

Prism Cement Limited has set up a state-of-the-art cement plant near Satna, in Madhya Pradesh. The 2.51 million tonnes capacity ultra-modern cement plant of Prism is one of the most advanced cement producers in the world. With machinery and technology imported from the world leaders, and state-of-art processes that lend it a futurist environment. The company has set up a packing unit at Allahabad to cater to the requirement of customers in Eastern/Central U.P.

The Company is jointly promoted by Rajan Raheja Group of Mumbai, F. L. Smidth & Co. A/S, Denmark (FLS), World leaders in cement technology and Industrialization Fund for Developing Countries, Denmark (IFU). A team of experienced engineers and a dedicated workforce, rich deposits of high quality limestone, a high level of automation and sophisticated quality control systems... with unbeatable facilities, Prism has truly taken cement production to global standards Prism achievements have been made possible by our people - People with vision, united by shared values and their commitment to excellence in the world of construction. No wonder, on quality, strength and consistency, Prism Cement is a world apart.



## CHAPTER - 4

### DATA ANALYSIS AND INTERPRETATION

#### CALCULATION OF RISK (BETA)

The linear regression equation representing the relation between the share price and market return can be represented as follows:

$$Y = a + \beta * X$$

The normal equations for the above equations is

$$\sum Y = na + b\sum X;$$

$$\sum XY = a\sum X + b\sum X^2$$

Where Y represents the percentage change in share price, X represents the percentage change in market return, a represents the risk less free return(Alpha) and b represents the risk associated with the market(Beta).

#### INFORMATION TECHNOLOGY SECTOR

##### SATYAM-(2000-2006)

The following table gives the average share price and the average market return of the satyam company for the year 2000:

2000	NIFTY	sathyam	X	Y	X <sup>2</sup>	Y <sup>2</sup>	X*Y
DEC	1436.36	2317.43	0	0	0	0	0
JAN	1607.8	2568.15	11.9357	10.81888	142.4616	117.0482	129.1312
FEB	1686.57	4112.973	4.89924	60.15313	24.00256	3618.399	294.7047
MAR	1605.55	5602.113	-4.8038	36.20593	23.07681	1310.869	-173.927

APR	1469.03	3705.985	-8.5029	-33.8467	72.30004	1145.596	287.7961
MAY	1312.65	2773.193	-10.645	-25.1699	113.3199	633.5236	267.9381
JUNE	1451.74	3041.173	10.5961	9.663231	112.2778	93.37804	102.3928
JULY	1445.26	2869.235	-0.4464	-5.65366	0.199238	31.96385	2.523572
AUG	1350.94	879.1975	-6.5262	-69.3578	42.59078	4810.501	452.64
SEP	1371.27	552.0925	1.50488	-37.205	2.264658	1384.208	-55.9889
OCT	1201.59	380.29	-12.374	-31.1184	153.1142	968.3565	385.0573
NOV	1240.58	362.0525	3.24487	-4.79568	10.52916	22.99857	-15.5614
DEC	1291.42	350.725	4.09808	-3.12869	16.79429	9.7887	-12.8216
			-7.0195	-93.4346	712.9309	14146.63	1663.885

$a = -6.457$        $\beta = 1.400886$

### INTERPRETATION

The beta calculated for the satyam company from 2000-2006 represents 1.400886 which is volatile compared to the market. The return from the stock and the risk associated with the stock is high. Hence the risk is completely associated with the investor's interest.

### MULTIPLE REGRESSION

The multiple regression line equation which represents the relationship between the share price, volume of the shares traded and the market return can be represented as follows:

$$Y = a + b_1x_1 + b_2x_2;$$

The normal equations for the above equation are

$$\sum y = a + b_1x_1 + b_2x_2;$$

$$\sum x_1y = ax_1 + b_1x_1^2 + b_2x_1x_2$$

$$\sum x_2y = ax_2 + b_1x_1x_2 + b_2x_2^2$$

where y represents the average price of the stock, x1 represents the average volume of the shares traded and x2 represents the average market return of the year.

2000	x2	Y	X1	X1y	x2y	x1x2	x1^2	x2^2
JAN	1607.8	2568.15	195.503	502081.9	4129071.57	314330.3	38221.5579	2585020.84
FEB	1686.57	4112.973	160.1461	658676.3	6936816.029	270097.5	25646.7573	2844518.36
MAR	1605.55	5602.113	149.2771	836267	8994471.724	239671.8	22283.6481	2577790.8
APR	1469.03	3705.985	104.0207	385499	5444206.851	152809.6	10820.2977	2158052.08
MAY	1312.65	2773.193	214.6481	595260.5	3640231.135	281757.8	46073.8025	1723050.02
JUNE	1451.74	3041.173	225.9562	687171.8	4414991.765	328029.7	51056.2066	2107549.03
JULY	1445.26	2869.235	240.7713	690829.4	4146790.576	347977.1	57970.8093	2088776.47
AUG	1350.94	879.1975	1108.45	974546.5	1187743.071	1497449	1228661.49	1825038.88
SEP	1371.27	552.0925	1221.835	674565.8	757067.8825	1675465	1492880.22	1880381.41
OCT	1201.59	380.29	1579.1	600515.8	456952.6611	1897430	2493555.53	1443818.53
NOV	1240.58	362.0525	1542.071	558310.8	449155.0905	1913063	2377984.43	1539038.74
DEC	1291.42	350.725	1891.412	663365.6	452933.2795	2442608	3577440.53	1667765.62
Sum	17034.4	27197.18	8633.19	7827090	41010431.63	11360690	11422595.3	24440800.8

$$A=-137.98 \quad B1=-0.2175 \quad B2=0.695528571$$

$$Y=-137.98-0.2175X1+0.6955X2$$

## INTERPRETATION

The multiple regression line equation obtained for the satyam company from 2000-2006 represents that the share price is largely influenced by the market than the volume of the share traded in that year. The share price of the satyam company will be changing 0.6955 times for the one percent change in the market return as well as -0.2175 times to the one percent change in the volume of the shares traded.

### 3. COEFFICIENT OF DETERMINATION

The co-efficient of determination can be determined by the following equation

$$R^2 = \frac{SS_R}{SS_T} = 1 - \frac{SS_E}{SS_T}.$$

In the above definition,

$$SS_T = \sum_i (y_i - \bar{y})^2, SS_R = \sum_i (\hat{y}_i - \bar{y})^2, SS_E = \sum_i (y_i - \hat{y}_i)^2.$$

That is, SST is the total sum of squares, SSR is the regression sum of squares, and SSE is the sum of squared errors.

Ye	E.V	U.E.V	R^2
3805.572341	2368956	1531214	0.607398
4150.58168	3550024	1414.45	0.999602
3872.523515	2579533	2991478	0.463028
3447.80246	1395639	66658.22	0.954415
2697.115971	185489.5	5787.638	0.969742
3186.421385	846382.3	21097.24	0.97568
3138.679425	760817.3	72600.3	0.912888
1383.556329	779467.7	254377.8	0.75395
1273.399283	986112	520283.5	0.654617
73.13771796	4810535	94342.52	0.980766
275.6628397	3963158	7463.173	0.99812
-106.7942741	5632198	209323.9	0.964166
	27858312	5776041	0.82827

### INTREPRETATION

From the above table the coefficient of determination is found to be 0.793383 for the satyam company from the year 2000-2006. The relationship between the stock and the market is found to be higher and return on the share is found to be highly worthy as it is in increasing trend from the beginning of the year 2000-2006.

## INFOSYS (2000-2006)

### CALCULATION OF BETA:

The following table gives the average share price and the average market return of the satyam company for the year 2000:

2000	NIFTY	INFOSYS	X	Y	X <sup>2</sup>	Y <sup>2</sup>	X*Y
DEC	1436.36	12578.77	0	0	0	0	0
JAN	1607.8	12610.77	11.93573	0.254377	142.4616	0.064708	3.036174
FEB	1686.57	9186.975	4.899241	-27.1498	24.00256	737.1092	-133.013
MAR	1605.55	10631.43	-4.80383	15.72283	23.07681	247.2074	-75.5298
APR	1469.031	8462.56	-8.50294	-20.4005	72.30004	416.1816	173.4645
MAY	1312.65	6859.98	-10.6452	-18.9373	113.3199	358.6212	201.5909
JUNE	1451.74	8169.925	10.59612	19.09546	112.2778	364.6367	202.3379
JULY	1445.26	7661.385	-0.44636	-6.22454	0.199238	38.74486	2.77839
AUG	1350.94	7589.65	-6.52616	-0.93632	42.59078	0.876693	6.110569
SEP	1371.27	8041.265	1.504878	5.950406	2.264658	35.40733	8.954636
OCT	1201.59	7011.553	-12.3739	-12.8054	153.1142	163.9771	158.4526
NOV	1240.58	7576.283	3.244867	8.054279	10.52916	64.87141	26.13507
DEC	1291.42	6793.838	4.098083	-10.3276	16.79429	106.6585	-42.3232
			-7.01949	-47.704	712.9309	2534.357	531.9945

$$A = -1.734 \quad \beta = 0.900571429$$

### INTERPRETATION

The beta calculated for the INFOSYS company from 2000-2006 represents 0.900571429 which is considered to be stable when compared to the market. The return from the stock and the risk associated with the stock is somewhat less compared to that of the satyam company.

## MULTIPLE REGRESSIONS

The following table gives the details regarding the share price, volume of shares traded and the market index for the calculation of the multiple regression between them.

2002	NIFTY	INFOSYS	volume					
	X <sup>2</sup>	Y	x <sub>1</sub>	x <sub>1</sub> y	x <sub>2</sub> y	x <sub>1</sub> x <sub>2</sub>	X <sup>1</sup> <sup>2</sup>	x <sup>2</sup> <sup>2</sup>
JAN	1087.19	4051.973	7.60989	30835.07	4405263.982	8273.396	57.91042581	1181982.096
FEB	1138.16	3746.02	5.178119	19397.34	4263570.123	5893.527	26.8129112	1295408.186
MAR	1159.33	3901.44	6.818896	26603.51	4523056.435	7905.35	46.49733584	1344046.049
APR	1120.73	3782.393	4.678703	17696.69	4239040.747	5243.562	21.89025708	1256035.733
MAY	1079.8	3709.458	3.597357	13344.24	4005472.209	3884.426	12.94097739	1165968.04
JUNE	1065.89	3306.298	5.295038	17506.97	3524149.442	5643.928	28.03742213	1136121.492
JULY	1034.69	3204.355	5.267038	16877.46	3315514.075	5449.751	27.74168403	1070583.396
AUG	977.6	3285.673	6.124162	20121.99	3212073.436	5986.981	37.5053602	955701.76
SEP	987.11	3537.413	6.285289	22233.66	3491815.253	6204.271	39.50485153	974386.1521
OCT	955.11	3709.22	7.922738	29387.18	3542713.114	7567.086	62.76976949	912235.1121
NOV	992.26	4221.778	9.169159	38710.15	4189100.942	9098.189	84.0734676	984579.9076
DEC	1074.04	4621.985	8.702062	40220.8	4964196.769	9346.363	75.72588305	1153561.922
Sum	12671.91	45078	76.64845	292935	47675966.53	80496.83	521.4103453	13430609.85

$$A=1573.49 \quad B1=-58.40764286 \quad B2=2.554528571$$

$$Y=1573.49-58.407X_1+2.55X_2$$

## INTERPRETATION

The multiple regression line equation obtained for the INFOSYS company from 2000-2006 represents that the share price is largely influenced by the market than the volume of the share traded in that year. The share price of the satyam company will be changing 2.55 times for the one percent change in the market return as well as -58.407 times to the one percent change in the volume of the shares traded.

## CO-EFFICIENT OF DETERMINATION

The following table represents the expected regression values, explained variation and the unexplained variations for the calculation of the coefficient of determination ( $R^2$ )

Ye	E.V	U.E.V	$R^2$
4109.875	124873.8	3352.6842	0.973853
3784.62	790.7574	1489.9916	0.34671
4189.734	187691.6	83113.378	0.693088
3624.602	17397.06	24897.817	0.411328
3267.467	239153.2	195355.53	0.550399
3566.957	35926.5	67943.441	0.34588
3456.996	89702.52	63827.58	0.584267
3440.903	99601.23	24096.624	0.805198
3505.517	62992.46	1017.3224	0.984107
3732.285	586.3788	531.98224	0.52432
4110.43	125266.2	12398.355	0.909938
4288.508	283032.4	111206.99	0.71792
	1267014	589231.7	0.682568

## INTERPRETATION

From the above table the coefficient of determination is found to be 0.694803 for the INFOSYS company from the year 2000-2006. The relationship between the stock and the market is found to be higher and return on the share is found to be highly worthy as it is in increasing trend from the beginning of the year 2000-2006.

## WIPRO(2000-2006)

### CALCULATION OF BETA

The following table gives the average share price and the average market return of the satyam company for the year 2000:

2000	NIFTY	WIPRO	X	Y	X <sup>2</sup>	Y <sup>2</sup>	X*Y
DEC	1436.36	2945.45	0	0	0	0	0
JAN	1607.8	2965.73	11.9357	0.68852	142.4616	0.474059	8.217981
FEB	1686.57	6720.775	4.89924	126.6145	24.00256	16031.24	620.3151
MAR	1605.55	5868.985	-4.8038	-12.674	23.07681	160.6299	60.8837
APR	1469.03	4699.945	-8.5029	-19.9189	72.30004	396.7644	169.3697
MAY	1312.65	2264.758	-10.645	-51.8131	113.3199	2684.598	551.5599
JUNE	1451.74	2622.45	10.5961	15.79385	112.2778	249.4458	167.3536
JULY	1445.26	2774.88	-0.4464	5.812504	0.199238	33.7852	-2.59447
AUG	1350.94	2676.273	-6.5262	-3.55358	42.59078	12.62791	23.19122
SEP	1371.27	2975.228	1.50488	11.17057	2.264658	124.7817	16.81035
OCT	1201.59	2312.373	-12.374	-22.2791	153.1142	496.3599	275.6805
NOV	1240.58	2435.373	3.24487	5.319212	10.52916	28.29402	17.26014
DEC	1291.42	2705.748	4.09808	11.102	16.79429	123.2544	45.49691
			-7.0195	66.26244	712.9309	20342.25	1953.545

$$A = -0.529571429 \quad \beta = 1.388571429$$

### INTERPRETATION

The beta calculated for the WIPRO company from 2000-2006 represents 1.388571429 which is considered to be unstable when compared to the market. The return from the stock and the risk associated with the stock is higher. The investment on this type of stock is completely depends upon the investor's interest to gain more dividend as well as the risk.



## MULTIPLE REGRESSIONS

The following table gives the details regarding the share price, volume of shares traded and the market index for the calculation of the multiple regression between them.

2000	NIFTY	WIPRO	Volume					
	x2	Y	x1	x1y	x2y	x1x2	x1^2	x2^2
JAN	1607.8	2965.73	3.807565	11292.21	4768301	6121.803	14.49755	2585020.84
FEB	1686.57	6720.775	5.594945	37602.37	11335057	9436.266	31.30341	2844518.36
MAR	1605.55	5868.985	8.45052	49595.98	9422949	13567.73	71.41129	2577790.8
APR	1469.03	4699.945	7.10707	33402.84	6904365	10440.51	50.51044	2158052.08
MAY	1312.65	2264.758	26.38648	59758.97	2972834	34636.21	696.2461	1723050.02
JUNE	1451.74	2622.45	40.00078	104900	3807116	58070.73	1600.062	2107549.03
JULY	1445.26	2774.88	36.04964	100033.4	4010423	52101.1	1299.577	2088776.47
AUG	1350.94	2676.273	53.70086	143718.1	3615484	72546.63	2883.782	1825038.88
SEP	1371.27	2975.228	54.12715	161040.6	4079840	74222.94	2929.748	1880381.41
OCT	1201.59	2312.373	44.28028	102392.5	2778524	53206.74	1960.743	1443818.53
NOV	1240.58	2435.373	51.92357	126453.2	3021274	64415.34	2696.057	1539038.74
DEC	1291.42	2705.748	74.15705	200650.2	3494256	95767.89	5499.267	1667765.62
Sum	17034.4	41022.52	405.5859	1130840	60210423	544533.9	19733.2	24440800.8

$$A = -695.7094857 \quad B1 = -4.041728571 \quad B2 = 1.908785714$$

$$Y = -695.7 - 4.04X1 + 1.90X2$$

## INTERPRETATION

The multiple regression line equation obtained for the WIPRO company from 2000-2006 represents that the share price is largely influenced by the market than the volume of the share traded in that year. The share price of the satyam company will be changing 1.90 times for the one percent change in the market return as well as -4.04 times to the one percent change in the volume of the shares traded.

## CO-EFFICIENT OF DETERMINATION

The following table represents the expected regression values, explained variation and the unexplained variations for the calculation of the coefficient of determination ( $R^2$ )

Ye	E.V	U.E.V	$R^2$
4910.235	2225144.6	3781099	0.370472
5419.59	4004188.4	1693083	0.702826
4858.11	2072353.1	1021868	0.669749
3961.286	294569.96	545617.1	0.3506
2767.333	424073.86	252582.6	0.62672
3583.021	27053.103	922697.2	0.028484
3571.571	23417.603	634716.7	0.035582
2803.234	378605.44	16119.17	0.959164
2934.975	233837.89	1620.254	0.993119
1885.767	2349403.1	181992.5	0.928106
2083.788	1781571.7	123611.9	0.935118
2243.793	1380037.5	213401.9	0.866075
	15194256	9388410	0.618088

## INTERPRETATION

From the above table the coefficient of determination is found to be 0.7115433 for the WIPRO company from the year 2000-2006. The relationship between the stock and the market is found to be higher and return on the share is found to be highly worthy as it is in increasing trend from the beginning of the year 2000-2006.

## GLOBAL TECHNOLOGY(2000-2006)

### CALCULATION OF BETA

The following table gives the average share price and the average market return of the satyam company for the year 2000:

2000	NIFTY	GLOBAL	X	Y	X <sup>2</sup>	Y <sup>2</sup>	X*Y
DEC	1436.36	1012.561	0	0	0	0	
JAN	1607.8	1102.413	11.9357	8.873688	142.4616	78.74233	105.9139
FEB	1686.57	1913.736	4.89924	73.59525	24.00256	5416.261	360.5609
MAR	1605.55	2631.167	-4.8038	37.48851	23.07681	1405.388	-180.089
APR	1469.03	1671.821	-8.5029	-36.4608	72.30004	1329.392	310.0244
MAY	1312.65	1024.145	-10.645	-38.7408	113.3199	1500.846	412.4023
JUNE	1451.74	1349.024	10.5961	31.72192	112.2778	1006.28	336.1294
JULY	1445.26	1145.569	-0.4464	-15.0816	0.199238	227.4555	6.73185
AUG	1350.94	1046.969	-6.5262	-8.60708	42.59078	74.08176	56.17117
SEP	1371.27	1343.379	1.50488	28.3112	2.264658	801.5242	42.60491
OCT	1201.59	1074.94	-12.374	-19.9823	153.1142	399.2928	247.2597
NOV	1240.58	1082.848	3.24487	0.735589	10.52916	0.541091	2.386888
DEC	1291.42	1004.588	4.09808	-7.2272	16.79429	52.23237	-29.6177
			-7.0195	54.62636	712.9309	12292.04	1670.479

$$A = -1.668 \quad \beta = 1.866$$

### INTERPRETATION

The beta calculated for the GLOBAL company from 2000-2006 represents 1.866 which is considered to be unstable when compared to the market. The return from the stock and the risk associated with the stock is higher. The investment on this type of stock is completely depends upon the investor's interest to gain more dividend as well as the risk.

## MULTIPLE REGRESSION

The following table gives the details regarding the share price, volume of shares traded and the market index for the calculation of the multiple regression between them.

	Nifty	GLOBAL	Volume					
	x2	Y	x1	x1y	x2y	x1x2	x1 <sup>2</sup>	x2 <sup>2</sup>
JAN	1073.4	85.2047619	215.255565	18340.79916	91458.79143	231055.3235	46334.95826	1152187.56
FEB	1055.83	78.10714286	293.95916	22960.3101	82467.86464	310370.8999	86411.98775	1114776.989
MAR	1016.37	68.57857143	161.536385	11077.93452	69701.20264	164180.7356	26094.00368	1033007.977
APR	965.07	59.41428571	346.81918	20606.01385	57338.94471	334704.786	120283.5436	931360.1049
MAY	963.19	65.86904762	277.859075	18302.31264	63444.40798	267631.0824	77205.66556	927734.976
JUNE	1068.58	70.44285714	212.857465	14994.288	75273.82829	227455.2299	45308.30041	1141863.210
JULY	1150.01	70.1452381	213.27637	14960.32175	80667.72526	245269.9583	45486.81	1322523
AUG	1261.112	73.99047619	178.10483	13178.06118	93310.27741	224610.1384	31721.33047	1590403.477
SEP	1369.03	78.65	443.554385	34885.55238	107674.2095	607239.2597	196740.4925	1874243.14
OCT	1506.1			0	0	0	0	2268337.21
NOV	1580.02			0	0	0	0	2496463.2
DEC	1740.05			0	0	0	0	3027774.003
Sum	14748.762	650.402381	2343.222415	169305.5936	721337.2519	2612517.414	675587.0922	18880674.8

$$A = -528.894 \quad B1 = -0.02634 \quad B2 = 0.70788$$

$$Y = -528.9 - 0.02634X1 + 0.70788X2$$

## INTERPRETATION

The multiple regression line equation obtained for the GLOBAL company from 2000-2006 represents that the share price is largely influenced by the market than the volume of the share traded in that year. The share price of the satyam company will be changing 0.707 times for the one percent change in the market return as well as -0.02634 times to the one percent change in the volume of the shares traded.



## CO-EFFICIENT OF DETERMINATION

The following table represents the expected regression values, explained variation and the unexplained variations for the calculation of the coefficient of determination ( $R^2$ )

Ye	E.V	U.E.V	$R^2$
1769.365	162792	444825.6	0.267919
1915.414	301976.5	2.816179	0.999991
1775.224	167553.9	732638.7	0.186131
1532.924	27900.33	19292.52	0.591198
1192.39	30102.4	28306.16	0.515377
1408.563	1821.005	3544.944	0.339363
1404.215	1468.838	66897.95	0.021485
1213.988	23074.33	27895.21	0.452708
1167.841	39223.55	30813.57	0.560039
887.7615	228606.8	35035.95	0.867108
996.7223	136284.8	7417.573	0.948382
1043.852	103708.5	1541.655	0.985352
	1224513	1398213	0.466886

## INTERPRETATION

From the above table the coefficient of determination is found to be 0.760123 for the WIPRO company from the year 2000-2006. The relationship between the stock and the market is found to be higher and return on the share is found to be highly worthy as it is in increasing trend from the beginning of the year 2000-2006.

## STEEL SECTOR

### TISCO(2000-2006)

#### CALCULATION OF BETA

The following table gives the average share price and the average market return of the satyam company for the year 2000:

2000	Nifty	TISCO	X	Y	X square	Ysquare	XY
Dec	1436.36	143.771	0	0	0	0	0
Jan	1607.8	160.15	11.9357	11.3924	142.462	129.787	135.977
Feb	1686.57	135.27	4.89924	-15.535	24.0026	241.35	-76.112
Mar	1605.55	104	-4.8038	-23.117	23.0768	534.383	111.049
Apr	1469.03	115.48	-8.5029	11.0385	72.3	121.848	-93.859
May	1312.65	109.12	-10.645	-5.5074	113.32	30.332	58.6278
Jun	1451.74	126.661	10.5961	16.0753	112.278	258.416	170.336
Jul	1445.26	129.79	-0.4464	2.47005	0.19924	6.10115	-1.1025
Aug	1350.94	110.48	-6.5262	-14.878	42.5908	221.351	97.0954
Sep	1371.27	103.493	1.50488	-6.3247	2.26466	40.0015	-9.5179
Oct	1201.59	94.7625	-12.374	-8.4354	153.114	71.1559	104.379
Nov	1240.58	109.47	3.24487	15.5204	10.5292	240.882	50.3616
Dec	1291.42	125.72	4.09808	14.8442	16.7943	220.352	60.833
			-7.0195	-2.4567	712.931	2115.96	608.067

$$A=0.202571429 \quad \beta=1.146571$$

#### INTERPRETATION

The beta calculated for the TISCO company from 2000-2006 represents 1.146571 which is considered to be unstable when compared to the market. The return from the stock and the risk associated with the stock is higher. The investment on this type of stock is completely depends upon the investor's interest to gain more dividend as well as the risk.

## MULTIPLE REGRESSION

The following table gives the details regarding the share price, volume of shares traded and the market index for the calculation of the multiple regression between them.

2000	Nifty	TISCO	volume					
	X2	Y	x1	x1y	x2y	x1x2	x1^2	x2^2
Jan	1607.8	160.15	418.9165	67089.5	257489.17	673533.9085	175491.013	2585020.84
Feb	1686.57	135.27	198.079	26794.2	228142.32	334074.1581	39235.30411	2844518.365
Mar	1605.55	104	256.477	26673.6	166977.2	411786.5751	65780.42845	2577790.803
Apr	1469.03	115.48	358.8468	41439.6	169643.7	527157.0661	128771.0223	2158052.079
May	1312.65	109.12	250.4655	27330.8	143236.37	328773.5714	62732.97921	1723050.023
Jun	1451.74	126.661	237.7765	30117.1	183879.42	345189.6343	56537.65682	2107549.028
Jul	1445.26	129.79	409.9673	53209.7	187580.3	592509.3978	168073.2199	2088776.468
Aug	1350.94	110.48	175.701	19411.4	149251.85	237361.4617	30870.8291	1825038.884
Sep	1371.27	103.493	114.2523	11824.3	141916.16	156670.6897	13053.57777	1880381.413
Oct	1201.59	94.7625	159.7542	15138.7	113865.67	191959.0972	25521.4172	1443818.528
Nov	1240.58	109.47	384.6369	42106.2	135806.29	477172.8578	147945.5525	1539038.736
Dec	1291.42	125.72	403.7876	50764.2	162357.32	521459.3759	163044.4219	1667765.616
sum	17034.4	1424.4	3368.66	411899	2040145.8	4797647.794	1077057.422	24440800.78

$$A=35.82617143 \quad B1=0.067028571 \quad B2=0.124057143$$

$$Y=35.8261+0.06702X1+0.124057X2$$

## INTERPRETATION

The multiple regression line equation obtained for the TISCO company from 2000-2006 represents that the share price is largely influenced by the market than the volume of the share traded in that year. The share price of the TISCO company will be changing 0.124 times for the one percent change in the market return as well as 0.06702 times to the one percent change in the volume of the shares traded.

## CO-EFFICIENT OF DETERMINATION

The following table represents the expected regression values, explained variation and the unexplained variations for the calculation of the coefficient of determination( R<sup>2</sup>)

Ye	E.V	U.E.V	R <sup>2</sup>
142.4904	565.9847	311.8603	0.644743
129.0665	107.4636	38.48382	0.736317
128.716	100.3194	610.8785	0.141057
128.4584	95.22549	168.4377	0.361163
109.2317	89.64913	0.012472	0.999861
117.1801	2.310099	89.89507	0.025054
131.207	156.4252	2.007911	0.987326
105.4401	175.8243	25.40036	0.873771
101.602	292.343	3.574141	0.987922
94.42431	589.309	0.114371	0.999806
115.8185	8.302923	40.30372	0.170819
120.7197	4.079169	25.00305	0.140263
	2187.24	1315.97	0.624352

## INTERPRETATION

From the above table the coefficient of determination is found to be 0.5465 for the TISCO company from the year 2000-2006. The relationship between the stock and the market is found to be stable and return on the share is found to be worthy and the risk is less from the beginning of the year 2000-2006.



## TISCO(2000-2006)

### CALCULATION OF BETA

The following table gives the average share price and the average market return of the satyam company for the year 2000:

2000	Nifty	SAIL	X	Y	X square	Y SQUARE	X*Y
Dec	1436.36	11.875	0	0	0	0	0
Jan	1607.8	12.1575	11.9357	2.378947	142.462	5.659391	28.39446
Feb	1686.57	11.72	4.89924	-3.5986	24.0026	12.94993	-17.6304
Mar	1605.55	8.2275	-4.8038	-29.7995	23.0768	888.0095	143.1518
Apr	1469.03	7.4625	-8.5029	-9.29809	72.3	86.4544	79.06109
May	1312.65	6.2925	-10.645	-15.6784	113.32	245.812	166.8993
Jun	1451.74	6.69	10.5961	6.317044	112.278	39.90505	66.93617
Jul	1445.26	6.3	-0.4464	-5.8296	0.19924	33.98419	2.602104
Aug	1350.94	5.8875	-6.5262	-6.54762	42.5908	42.87132	42.73082
Sep	1371.27	5.7975	1.50488	-1.52866	2.26466	2.336809	-2.30045
Oct	1201.59	4.9325	-12.374	-14.9202	153.114	222.6131	184.6218
Nov	1240.58	5.7225	3.24487	16.01622	10.5292	256.5193	51.9705
Dec	1291.42	6.4575	4.09808	12.84404	16.7943	164.9693	52.63593
			-7.0195	-49.6444	712.931	2002.084	799.0731

$$A=1.185714286 \quad \beta=1.421428571$$

### INTERPRETATION

The beta calculated for the SAIL company from 2000-2006 represents 1.421 which is considered to be more than the market beta value 1. The return from the stock and the risk associated with the stock is cannot be predicted as the beta value is more than the market beta value. The investment on this type of stock is completely depends upon the investor's interest to gain more dividend as well as the risk.

## MULTIPLE REGRESSION

The following table gives the details regarding the share price, volume of shares traded and the market index for the calculation of the multiple regression between them.

2000	Nifty	SAIL	Volume					
	X <sup>2</sup>	y	x <sub>1</sub>	x <sub>1</sub> y	x <sub>2</sub> y	x <sub>1</sub> x <sub>2</sub>	x <sub>1</sub> <sup>2</sup>	x <sub>2</sub> <sup>2</sup>
Jan	1607.8	12.1575	180.083395	2189.364	19546.8	289538.1	32430.0292	2585020.84
Feb	1686.57	11.72	252.68093	2961.42	19766.6	426164.1	63847.6524	2844518.365
Mar	1605.55	8.2275	96.164765	791.1956	13209.7	154397.3	9247.66203	2577790.803
Apr	1469.031	7.4625	128.853995	961.5729	10962.6	189290.5	16603.352	2158052.079
May	1312.65	6.2925	61.766505	388.6657	8259.85	81077.8	3815.10114	1723050.023
Jun	1451.74	6.69	65.09569	435.4902	9712.14	94502.02	4237.44886	2107549.028
Jul	1445.26	6.3	85.595975	539.2546	9105.14	123708.4	7326.67094	2088776.468
Aug	1350.94	5.8875	46.566465	274.1601	7953.66	62908.5	2168.43566	1825038.884
Sep	1371.27	5.7975	99.78345	578.4946	7949.94	136830.1	9956.73689	1880381.413
Oct	1201.59	4.9325	42.637295	210.3085	5926.84	51232.55	1817.93892	1443818.528
Nov	1240.58	5.7225	130.191305	745.0197	7099.22	161512.7	16949.7759	1539038.736
Dec	1291.42	6.4575	123.88874	800.0115	8339.34	159992.4	15348.4199	1667765.616
sum	17034.4	87.6475	1313.309	10874.96	127832	1931154	183749.22	24440800.78

$$A = -10.26884286 \quad B_1 = 0.0062 \quad B_2 = 0.018442857$$

$$Y = -10.26 + 0.0062X_1 + 0.0184X_2$$

## INTERPRETATION

The multiple regression line equation obtained for the SAIL company from 2000-2006 represents that the share price is largely influenced by the market than the volume of the share traded in that year. The share price of the TISCO company will be changing 0.0184 times for the one percent change in the market return as well as 0.0062 times to the one percent change in the volume of the shares traded.

## CO-EFFICIENT OF DETERMINATION

The following table represents the expected regression values, explained variation and the unexplained variations for the calculation of the coefficient of determination (R<sup>2</sup>)

Ye	E.V	U.E.V	R <sup>2</sup>
10.2089	8.43877	3.797213	0.689668
12.1713	23.69114	0.203631	0.991478
8.70415	1.96069	0.227192	0.896159
8.10868	0.647675	0.417552	0.608016
5.57636	2.984404	0.512861	0.853354
6.83146	0.223202	0.02001	0.917725
7.13858	0.027329	0.703224	0.037409
5.63661	2.779855	0.062946	0.977858
6.75339	0.303062	0.913724	0.249068
4.28265	9.127927	0.4223	0.955781
6.16767	1.291009	0.19818	0.866921
6.49334	0.657003	0.001285	0.998048
	52.13206	7.480116	0.87452

## INTERPRETATION

From the above table the coefficient of determination is found to be 0.787961 for the SAIL company from the year 2000-2006. The relationship between the stock and the market is found to be stable and return on the share is found to be worthy and the risk is less from the beginning of the year 2000-2006.

## ESSARGUJARAT(2000-2006)

### CALCULATION OF BETA

The following table gives the average share price and the average market return of the ESSAR GUJARAT company for the year 2000:

2000	Nifty	ESSAR	X	Y	X square	Ysquare	XY
Dec	1436.36	12.342	0	0	0	0	0
Jan	1607.8	14.61	11.9357	18.3763	142.462	337.6875	219.3342
Feb	1686.57	11.3225	4.89924	-22.502	24.0026	506.327	-110.241
Mar	1605.55	8.235	-4.8038	-27.269	23.0768	743.5827	130.9943
Apr	1469.03	7.54	-8.5029	-8.4396	72.3	71.22663	71.76133
May	1312.65	7.1025	-10.645	-5.8024	113.32	33.6677	61.76746
Jun	1451.74	7.6825	10.5961	8.16614	112.278	66.68582	86.5294
Jul	1445.26	6.7825	-0.4464	-11.715	0.19924	137.2397	5.22909
Aug	1350.94	7.225	-6.5262	6.52414	42.5908	42.56444	-42.5776
Sep	1371.27	6.5825	1.50488	-8.8927	2.26466	79.08071	-13.3825
Oct	1201.59	6.07	-12.374	-7.7858	153.114	60.61861	96.3409
Nov	1240.58	7.4025	3.24487	21.9522	10.5292	481.9001	71.23205
Dec	1291.42	7.26	4.09808	-1.925	16.7943	3.705723	-7.88891
			-7.0195	-39.312	712.931	2564.287	569.0985

$$A=0.777142857 \quad \beta=1.36$$

### INTERPRETATION

The beta calculated for the ESSAR GUJARAT company from 2000-2006 represents 1.36 which is considered to be more than the market beta value 1. The return from the stock and the risk associated with the stock is cannot be predicted as the beta value is more than the market beta value. The investment on this type of stock is completely depends upon the investor's interest to gain more dividend as well as the risk.

## MULTIPLE REGRESSION

The following table gives the details regarding the share price, volume of shares traded and the market index for the calculation of the multiple regression between them.

2000	Nifty	ESSAR	volume					
	x2	Y	x1	x1y	x2y	x1x2	x1^2	x2^2
Jan	1607.8	14.61	86.85921	1269.01	23490	139652.2298	7544.521	2585020.84
Feb	1686.57	11.3225	20.30243	229.874	19096.2	34241.46937	412.1887	2844518.365
Mar	1605.55	8.235	10.85824	89.4176	13221.7	17433.44723	117.9014	2577790.803
Apr	1469.03	7.54	4.99889	37.6916	11076.5	7343.524376	24.9889	2158052.079
May	1312.65	7.1025	7.78742	55.3102	9323.1	10222.15686	60.64391	1723050.023
Jun	1451.74	7.6825	4.844595	37.2186	11153	7033.092345	23.4701	2107549.028
Jul	1445.26	6.7825	3.71503	25.1972	9802.48	5369.184258	13.80145	2088776.468
Aug	1350.94	7.225	2.851085	20.5991	9760.54	3851.64477	8.128686	1825038.884
Sep	1371.27	6.5825	3.43464	22.6085	9026.38	4709.818793	11.79675	1880381.413
Oct	1201.59	6.07	7.035245	42.7039	7293.65	8453.48004	49.49467	1443818.528
Nov	1240.58	7.4025	5.327905	39.4398	9183.39	6609.692385	28.38657	1539038.736
Dec	1291.42	7.26	3.1662	22.9866	9375.71	4088.894004	10.02482	1667765.616
Sum	17034.4	97.815	161.181	1892.06	141803	249008.634	8305.35	24440800.78

$$A=20.49838571 \quad B1=0.009714286 \quad B2=0.001017143$$

$$Y=20.49+0.009714X1+0.001017X2$$

### INTERPRETATION

The multiple regression line equation obtained for the ESSAR GUJARAT company from 2000-2006 represents that the share price is largely influenced by the volume of the shares traded than the market return. The share price of the TISCO company will be changing 0.00101 times for the one percent change in the market return as well as 0.009714 times to the one percent change in the volume of the shares traded.

## CO-EFFICIENT OF DETERMINATION

The following table represents the expected regression values, explained variation and the unexplained variations for the calculation of the coefficient of determination ( $R^2$ )

Ye	E.V	U.E.V	$R^2$
7.309601	0.709889	53.29583	0.013145
2.219034	35.20187	82.8731	0.298132
1.448756	44.93549	46.0531	0.493858
0.926011	52.21709	43.74486	0.544144
1.059688	50.30302	36.51558	0.579404
0.905123	52.5194	45.93284	0.533451
0.814664	53.8387	35.61507	0.601861
0.699007	55.54933	42.58858	0.566033
0.754571	54.72417	33.96475	0.617035
0.943944	51.95823	26.27645	0.664133
0.832583	53.57606	43.16381	0.553816
0.692352	55.64858	43.13399	0.563344
	561.182	533.158	0.512804

## INTERPRETATION

From the above table the coefficient of determination is found to be 0.517156 for the SAIL company from the year 2000-2006. The relationship between the stock and the market is found to be stable and return on the share is found to be worthy and the risk is less from the beginning of the year 2000-2006.

## CEMENT SECTOR

### AMBUJA GUJARAT(2000-2006)

#### CALCULATION OF BETA

The following table gives the average share price and the average market return of the ESSAR GUJARAT company for the year 2000:

2000	NIFTY	AMBUJA	X	Y	X <sup>2</sup>	Y <sup>2</sup>	X*Y
DEC	1436.36	291.0342	0	0	0	0	0
JAN	1607.8	292.0483	11.9357	0.348455	142.4616	0.121421	4.159064
FEB	1686.57	295.2563	4.89924	1.09842	24.00256	1.206526	5.381423
MAR	1605.55	237.0979	-4.8038	-19.6976	23.07681	387.9946	94.62387
APR	1469.03	208.7025	-8.5029	-11.9762	72.30004	143.4303	101.8333
MAY	1312.65	171.7304	-10.645	-17.7152	113.3199	313.8283	188.5815
JUNE	1451.74	186.7522	10.5961	8.747278	112.2778	76.51488	92.68723
JULY	1445.26	211.6405	-0.4464	13.32691	0.199238	177.6066	-5.94861
AUG	1350.94	204.3977	-6.5262	-3.42219	42.59078	11.71142	22.33379
SEP	1371.27	173.035	1.50488	-15.344	2.264658	235.4374	-23.0908
OCT	1201.59	139.0438	-12.374	-19.6441	153.1142	385.8925	243.0753
NOV	1240.58	147.4543	3.24487	6.048886	10.52916	36.58902	19.62783
DEC	1291.42	159.1975	4.09808	7.963924	16.79429	63.42409	32.63682
			-7.0195	-50.2655	712.9309	1833.757	775.9007

$$A=0.390929 \quad \beta=0.625229$$

#### INTERPRETATION

The beta calculated for the AMBUJA GUJARAT company from 2000-2006 represents 0.625229 which is considered to be less than the market beta value 1. The return from the stock and the risk associated with the stock is considered to be stable. The investment on this type of stock is to gain more dividend as well as the risk is considered to be less.

## MULTIPLE REGRESSION

The following table gives the details regarding the share price, volume of shares traded and the market index for the calculation of the multiple regression between them.

2000	NIFTY	AMBUJA	TURN OVER in					
	x2	Y	x1	x1y	x1*x2	x2*y	x1^	x2^
JAN	1607.8	292.0483	15.28975	4465.346	24582.86	469555.3	233.7765	2585020.84
FEB	1686.57	295.2563	16.77437	4952.738	28291.15	497970.3	281.3795	2844518.365
MAR	1605.55	237.0979	16.46021	3902.681	26427.69	380672.6	270.9385	2577790.803
APR	1469.03	208.7025	14.12386	2947.685	20748.39	306590.4	199.4834	2158052.079
MAY	1312.65	171.7304	9.31337	1599.389	12225.2	225422	86.73886	1723050.023
JUNE	1451.74	186.7522	16.33104	3049.857	23708.42	271115.6	266.7029	2107549.028
JULY	1445.26	211.6405	28.32635	5995.002	40938.94	305875.5	802.3821	2088776.468
AUG	1350.94	204.3977	26.72893	5463.333	36109.18	276129.1	714.4357	1825038.884
SEP	1371.27	173.035	19.95113	3452.244	27358.39	237277.7	398.0476	1880381.413
OCT	1201.59	139.0438	16.28359	2264.131	19566.2	167073.6	265.1553	1443818.528
NOV	1240.58	147.4543	17.15172	2529.096	21278.08	182928.9	294.1815	1539038.736
DEC	1291.42	159.1975	19.58838	3118.421	25296.83	205590.8	383.7046	1667765.616
SUM	17034.4	2426.356	216.3227	43739.92	306531.3	3526202	4196.926	24440800.78

$$A=193.7367857 \quad B1=-0.200442857 \quad B2=0.0594$$

$$Y=193.736-0.20044X1+0.0594X2$$

## INTERPRETATION

The multiple regression line equation obtained for the AMBUJA GUJARAT company from 2000-2006 represents that the share price is largely influenced by the market return than the volume of the shares traded. The share price of the AMBUJA company will be changing 0.0594 times for the one percent change in the market return as well as -0.20044 times to the one percent change in the volume of the shares traded.



## CO-EFFICIENT OF DETERMINATION

The following table represents the expected regression values, explained variation and the unexplained variations for the calculation of the coefficient of determination( R<sup>2</sup>)

Ye	E.V	U.E.V	R <sup>2</sup>
260.2074	3365.279	1013.843	0.768483
285.9942	7022.064	85.78642	0.987931
260.1766	3361.705	532.6264	0.86323
215.6225	180.2597	47.88616	0.790107
163.3443	1509.485	70.32709	0.955484
211.436	85.36962	609.2897	0.122894
216.3658	200.771	22.32837	0.899917
185.5934	275.6603	353.6035	0.438068
188.0818	199.2222	226.4059	0.468066
132.2609	4890.975	46.00709	0.990681
145.1025	3259.714	5.531198	0.998306
162.6062	1567.387	11.61901	0.992642
	25917.89	3025.254	0.895476

## INTERPRETATION

From the above table the coefficient of determination is found to be 0.718788 for the AMBUJA GUJARAT company from the year 2000-2006. The relationship between the stock and the market is found to be somewhat volatile and return on the share is found to be worthy and the risk is considered to be more from the beginning of the year 2000-2006.

## INDIAN CEMENT(2000-2006)

### CALCULATION OF BETA

The following table gives the average share price and the average market return of the INDIAN CEMENT company for the year 2000:

2000	NIFTY	INDIA CEMENT	X	Y	X <sup>2</sup>	Y <sup>2</sup>	X*Y
DEC	1436.36	74.256	0	0	0	0	0
JAN	1607.8	77.8325	11.9357	4.816446	142.4616	142.4616	57.48778
FEB	1686.57	85.67381	4.89924	10.0746	24.00256	24.00256	49.35787
MAR	1605.55	73.32619	-4.8038	-14.4124	23.07681	23.07681	69.23457
APR	1469.03	72.63	-8.5029	-0.94944	72.30004	72.30004	8.073061
MAY	1312.65	46.03043	-10.645	-36.6234	113.3199	113.3199	389.8626
JUNE	1451.74	43.92045	10.5961	-4.58388	112.2778	112.2778	-48.5714
JULY	1445.26	46.32727	-0.4464	5.479948	0.199238	0.199238	-2.44603
AUG	1350.94	43.09773	-6.5262	-6.97115	42.59078	42.59078	45.49488
SEP	1371.27	41.455	1.50488	-3.81163	2.264658	2.264658	-5.73604
OCT	1201.59	36.20952	-12.374	-12.6534	153.1142	153.1142	156.5726
NOV	1240.58	39.98182	3.24487	10.41796	10.52916	10.52916	33.8049
DEC	1291.42	50.38409	4.09808	26.01751	16.79429	16.79429	106.6219
			-7.0195	-23.1988	712.9309	712.9309	859.7567

$$A=0.728 \quad \beta=1.303857$$

### INTERPRETATION

The beta calculated for the INDIAN CEMENT company from 2000-2006 represents 1.303 which is considered to be more than the market beta value 1. The return from the stock and the risk associated with the stock is considered to be volatile. The investment on this type of stock is to gain more dividend as well as the risk associated with this stock is considered to be more.

## MULTIPLE REGRESSION

The following table gives the details regarding the share price, volume of shares traded and the market index for the calculation of the multiple regression between them.

2000	NIFTY	INDIA CEMENT	VOLUME IN LAKH					
	x2	Y	x1	x1y	x1*x2	x2*y	x1^	x2^
JAN	1607.8	77.8325	35.05458	2728.385	56360.75	125139.1	1228.823	2585020.84
FEB	1686.57	85.67381	29.11787	2494.639	49109.33	144494.9	847.8504	2844518.365
MAR	1605.55	73.32619	10.68032	783.1472	17147.79	117728.9	114.0692	2577790.803
APR	1469.03	72.63	15.79949	1147.517	23209.93	106695.7	249.6237	2158052.079
MAY	1312.65	46.03043	35.9085	1652.884	47135.29	60421.85	1289.42	1723050.023
JUNE	1451.74	43.92045	21.99724	966.1286	31934.27	63761.08	483.8783	2107549.028
JULY	1445.26	46.32727	45.0618	2087.59	65126.02	66954.95	2030.566	2088776.468
AUG	1350.94	43.09773	29.64347	1277.566	40046.54	58222.44	878.735	1825038.884
SEP	1371.27	41.455	33.47198	1387.581	45899.12	56846	1120.373	1880381.413
OCT	1201.59	36.20952	12.74172	461.3716	15310.32	43509	162.3514	1443818.528
NOV	1240.58	39.98182	65.32565	2611.838	81041.69	49600.64	4267.44	1539038.736
DEC	1291.42	50.38409	120.0235	6047.273	155000.7	65067.02	14405.63	1667765.616
Sum	17034.4	656.8688	454.8261	23645.92	627321.7	958441.6	27078.76	24440800.78

$$A = -56.36395714 \quad B1 = 0.140528571 \quad B2 = 0.0612$$

$$Y = -56.364 + 0.140529X1 + 0.0612X2$$

## INTERPRETATION

The multiple regression line equation obtained for the INDIAN CEMENT company from 2000-2006 represents that the share price is largely influenced by the volume of the shares traded than the market return. The share price of the INDIAN CEMENT company will be changing 0.0612 times for the one percent change in the market return as well as 0.1415 times to the one percent change in the volume of the shares traded.

## CO-EFFICIENT OF DETERMINATION

The following table represents the expected regression values, explained variation and the unexplained variations for the calculation of the coefficient of determination( R<sup>2</sup>)

Ye	E.V	U.E.V	R <sup>2</sup>
74.2618511	1809754	12.74953	0.999993
82.11325116	1788692	12.67758	0.999993
72.36860176	1814852	0.916976	0.999999
58.40951378	1852657	202.2222	0.999891
43.388198	1893775	6.981415	0.999996
57.01886398	1856445	171.5683	0.999908
57.9081504	1854022	134.1167	0.999928
46.97496762	1883916	15.03299	0.999992
49.36589064	1877358	62.58219	0.999967
30.17376896	1930319	36.43034	0.999981
37.83562786	1909088	4.606133	0.999998
46.88311094	1884168	12.25686	0.999993
	22355045	672.1413	0.99997

## INTERPRETATION

From the above table the coefficient of determination is found to be 0.999988 for the INDIAN CEMENT company from the year 2000-2006. The relationship between the stock and the market is found to be neutral. The return on the share is found to be completely associated with the market return.

## PRISM CEMENT(2000-2006)

### CALCULATION OF BETA

The following table gives the average share price and the average market return of the PRISM CEMENT company for the year 2000:

2000	NIFTY	PRISM	X	y	X <sup>2</sup>	y <sup>2</sup>	x*Y
DEC	1436.36	11.345	0	0	0	0	0
JAN	1607.8	13.955	11.9357	23.00573	142.4616	529.2636	274.5901
FEB	1686.57	10.96304	4.89924	-21.44	24.00256	459.675	-105.04
MAR	1605.55	8.140476	-4.8038	-25.7462	23.07681	662.8669	123.6804
APR	1469.03	7.752778	-8.5029	-4.7626	72.30004	22.68237	40.49613
MAY	1312.65	6.493182	-10.645	-16.247	113.3199	263.9659	172.9525
JUNE	1451.74	6.959091	10.5961	7.175359	112.2778	51.48577	76.03098
JULY	1445.26	6.5	-0.4464	-6.597	0.199238	43.52035	2.944641
AUG	1350.94	5.881818	-6.5262	-9.51049	42.59078	90.44941	62.06699
SEP	1371.27	5.73	1.50488	-2.58114	2.264658	6.662303	-3.88431
OCT	1201.59	4.878571	-12.374	-14.8591	153.1142	220.794	183.8659
NOV	1240.58	5.386364	3.24487	10.40863	10.52916	108.3395	33.77461
DEC	1291.42	6.8175	4.09808	26.56962	16.79429	705.9447	108.8845
			-7.0195	-34.5843	712.9309	3165.65	970.3627

$$A=0.861571429 \quad \beta=1.185857143$$

### INTERPRETATION

The beta calculated for the PRISM CEMENT from 2000-2006 represents 1.185 which is considered to be more than the market beta value 1. The return from the stock and the risk associated with the stock is considered to be volatile. The investment on this type of stock is to gain more dividend as well as the risk associated with this stock is considered to be more. Hence the investment on this stock completely depends upon the investor's interest.

## MULTIPLE REGRESSIONS

The following table gives the details regarding the share price, volume of shares traded and the market index for the calculation of the multiple regressions between them.

2000	NIFTY	PRISM	VOLUME IN LAKH					
	x2	y	x1	x1y	x1*x2	x2*y	x1^	x2^
JAN	1607.8	13.955	15.35844	214.327	24693.3	22436.85	235.8817	2585020.84
FEB	1686.57	10.96304	16.50762	180.9737	27841.25	18489.94	272.5014	2844518.365
MAR	1605.55	8.140476	9.635885	78.44069	15470.9	13069.94	92.85028	2577790.803
APR	1469.03	7.752778	5.58201	43.27608	8200.146	11389.07	31.15884	2158052.079
MAY	1312.65	6.493182	3.41257	22.15844	4479.51	8523.275	11.64563	1723050.023
JUNE	1451.74	6.959091	2.49272	17.34707	3618.781	10102.79	6.213653	2107549.028
JULY	1445.26	6.5	2.41477	15.69601	3489.97	9394.19	5.831114	2088776.468
AUG	1350.94	5.881818	1.66935	9.818813	2255.192	7945.983	2.786729	1825038.884
SEP	1371.27	5.73	2.125845	12.18109	2915.107	7857.377	4.519217	1880381.413
OCT	1201.59	4.878571	1.583805	7.726706	1903.084	5862.043	2.508438	1443818.528
NOV	1240.58	5.386364	4.34556	23.40677	5391.015	6682.215	18.88389	1539038.736
DEC	1291.42	6.8175	5.48069	37.3646	7077.873	8804.256	30.03796	1667765.616
SUM	17034.4	89.45782	70.6093	662.717	107336.1	130557.9	714.8188	24440800.78

$$A=0.044428571 \quad B1=0.0915 \quad B2=0.005171429$$

$$Y=0.044429+0.0915X1+0.005171X2$$

### INTERPRETATION

The multiple regression line equation obtained for the PRISM CEMENT from 2000-2006 represents that the share price is largely influenced by the volume of the shares traded than the market return. The share price of the PRISM CEMENT will be changing 0.0612 times for the one percent change in the market return as well as 0.1415 times to the one percent change in the volume of the shares traded.

## CO-EFFICIENT OF DETERMINATION

The following table represents the expected regression values, explained variation and the unexplained variations for the calculation of the coefficient of determination (R<sup>2</sup>)

Ye	E.V	U.E.V	R <sup>2</sup>
11.70248	18.04263	5.073842	0.78051
12.41752	24.62836	2.11549	0.920898
9.584822	4.536914	2.086135	0.685019
7.585444	0.017063	0.028001	0.378639
6.207178	1.556607	0.081798	0.950075
6.382755	1.149322	0.332164	0.77579
6.330046	1.265114	0.028884	0.977678
5.7063	3.057317	0.030806	0.990024
5.949785	2.265126	0.048306	0.979119
5.122174	5.441235	0.059342	0.989212
6.284419	1.369835	0.806504	0.629422
6.890936	0.317964	0.005393	0.983322
	63.64749	10.69667	0.85612

## INTERPRETATION

From the above table the coefficient of determination is found to be 0.801246 for the PRISM CEMENT company from the year 2000-2006. The relationship between the stock and the market is found to be somewhat neutral and the return on the stock is found to be completely associated with the market return.

## ULTRATECH CEMENT (2000-2006)

### CALCULATION OF BETA

The following table gives the average share price and the average market return of the ULTRATECH CEMENT company for the year 2005:

2005	Nifty	Ultra	X	Y	X <sup>2</sup>	Y <sup>2</sup>	X*Y
DEC	2021.94	311	0	0	0	0	0
JAN	1977.82	331.7864	-2.18206	6.683718	4.7614	44.67209	-14.5843
FEB	2067.39	366.9977	4.528622	10.61266	20.5084	112.6286	48.06074
MAR	2096.23	363.9364	1.395094	-0.83416	1.94629	0.69583	-1.16374
APR	1987.09	354.8182	-5.20649	-2.50543	27.1075	6.277195	13.04451
MAY	2002.27	337.9864	0.763931	-4.74379	0.58359	22.50351	-3.62393
JUNE	2134.28	327.7909	6.593017	-3.01653	43.4679	9.099443	-19.888
JULY	2236.7	368.5977	4.798808	12.44904	23.0286	154.9786	59.74055
AUG	2357.56	406.1159	5.403496	-10.17863	29.1978	103.6044	55.00016
SEP	2511.7	451.3432	6.538116	11.13654	42.747	124.0226	72.81201
OCT	2486.77	429.2682	-0.99255	-4.89096	0.98517	23.92146	4.854543
NOV	2574.66	443.3182	3.534304	3.273012	12.4913	10.71261	11.56782
DEC	2772.61	435.9364	7.688433	-1.66513	59.112	2.772654	-12.8022
			32.86271	36.6776	265.937	615.889	213.0181

$$A=1.761666667 \quad \beta=0.816666667$$

### INTERPRETATION

The beta calculated for the ULTRATECH CEMENT from 2004-2006 represents 0.81675 which is considered to be less than the market beta value 1. The return from the stock is considered to be low and the risk associated with the stock is considered to be less. The investment on this type of stock is to be on the safer side. Hence the investment on this stock completely depends upon the long term goal of the investor and no speculation motive.



## MULTIPLE REGRESSION

The following table gives the details regarding the share price, volume of shares traded and the market index for the calculation of the multiple regressions between them.

2005	Nifty	Ultra	VOLUME IN					
	x2	Y	X1	xly				
					x1*x2	x2*y	x1^	x2^
JAN	1977.82	331.7864	20.93127	6944.711	41398.3	656213.7	438.1182	3911771.952
FEB	2067.39	366.9977	16.57569	6083.239	34268.4	758726.7	274.7534	4274093.143
MAR	2096.23	363.9364	9.707373	3532.866	20348.9	762894.3	94.23309	4394180.213
APR	1987.09	354.8182	7.141577	2533.961	14191	705055.7	51.00213	3948526.668
MAY	2002.27	337.9864	6.037673	2040.651	12089.1	676740	36.45349	4009085.153
JUNE	2134.28	327.7909	12.6112	4133.835	26915.8	699597.6	159.0423	4555151.118
JULY	2236.7	368.5977	15.05075	5547.672	33664	824442.5	226.5251	5002826.89
AUG	2357.56	406.1159	15.73109	6388.644	37087	957442.6	247.4671	5558089.154
SEP	2511.7	451.3432	9.677291	4367.779	24306.5	1133639	93.64996	6308636.89
OCT	2486.77	429.2682	6.05505	2599.24	15057.5	1067491	36.66363	6184025.033
NOV	2574.66	443.3182	5.44505	2413.89	14019.2	1141394	29.64857	6628874.116
DEC	2772.61	435.9364	6.3241	2756.905	17534.3	1208682	39.99424	7687371.757
SUM	27205.08	4617.895	131.2881	49343.39	290880	10592319	1727.551	62462632.09

$$A=-159.5359667 \quad B1=-2.177533333 \quad B2=0.230566667$$

$$Y=-156.536-2.17753X2+0.230567$$

### INTERPRETATION

The multiple regression line equation obtained for the ULTRATECH CEMENT from 2004-2006 represents that the share price is largely influenced by the market return when compared to that of the volume of the shares traded. The share price of the PRISM CEMENT will be changing 0.230567 times for the one percent change in the market return as well as -2.1775 times to the one percent change in the volume of the shares traded.

## CO-EFFICIENT OF DETERMINATION

The following table represents the expected regression values, explained variation and the unexplained variations for the calculation of the coefficient of determination (R<sup>2</sup>)

Ye	E.V	U.E.V	R <sup>2</sup>
552.516	32472.09	5537.396	0.854315
607.2133	15750.95	4627.666	0.772916
673.3443	3525.014	3193.4	0.52468
751.652	358.5665	27.94224	0.927706
719.2628	180.9915	0.304073	0.998323
545.2698	35136.13	10296.39	0.77337
646.5614	7422.63	3633.07	0.671385
730.5607	4.645927	433.426	0.010605
795.5825	3952.184	904.8746	0.813699
863.9607	17225.14	225.84	0.987059
951.3026	47780.08	3304.203	0.935319
955.1152	49461.34	1214.416	0.976036
	213269.8	33398.93	0.8646

## INTERPRETATION

From the above table the coefficient of determination is found to be 0.895662 for the ULTRATECH CEMENT company from the year 2004-2006. The relationship between the stock and the market is found to be somewhat neutral and the return on the stock is found to be completely associated with the market return.

## PHARMACEUTICALS SECTOR

### REDDY(2000-2006)

#### CALCULATION OF BETA

The following table gives the average share price and the average market return of the REDDY company for the year 2000:

2000	NIFTY	REDDY	X	Y	X <sup>2</sup>	Y <sup>2</sup>	X*Y
DEC	1436.36	378.281	0	0	0	0	0
JAN	1607.8	376.791	11.9357	-0.39389	142.4616	0.155147	-4.70133
FEB	1686.57	370.435	4.89924	-1.68688	24.00256	2.845553	-8.26442
MAR	1605.55	370.3455	-4.8038	-0.02416	23.07681	0.000584	0.116064
APR	1469.03	363.021	-8.5029	-1.97775	72.30004	3.911486	16.81668
MAY	1312.65	326.896	-10.645	-9.95121	113.3199	99.02668	105.9325
JUNE	1451.74	322.568	10.5961	-1.32397	112.2778	1.752893	-14.0289
JULY	1445.26	310.019	-0.4464	-3.89034	0.199238	15.13476	1.736497
AUG	1350.94	300.7225	-6.5262	-2.99869	42.59078	8.992125	19.56992
SEP	1371.27	325.4305	1.50488	8.216213	2.264658	67.50615	12.3644
OCT	1201.59	340.3115	-12.374	4.572712	153.1142	20.9097	-56.5824
NOV	1240.58	353.75	3.24487	3.948882	10.52916	15.59367	12.8136
DEC	1291.42	333.803	4.09808	-5.63873	16.79429	31.79525	-23.108
			-7.0195	-11.1478	712.9309	267.624	62.66455

$$A = -0.023857143 \quad \beta = 0.705571429$$

#### INTERPRETATION

The beta calculated for the REDDY from 2000-2006 represents 0.7056 which is considered to be less than the market beta value 1. The return from the stock is considered to be low and the risk associated with the stock is considered to be less. The investment on this type of stock is to be on the safer side. Hence the investment on this stock completely depends upon the long term goal of the investor and no speculation type of motive.

## MULTIPLE REGRESSIONS

The following table gives the details regarding the share price, volume of shares traded and the market index for the calculation of the multiple regressions between them.

2000	NIFTY	REDDY	VOLUME					
			LAKH	IN				
	X2	Y	x1	xly	x1*x2	x2*y	x1^2	x2^2
JAN	1607.8	376.791	29.96672	11291.19	48180.49	605804.6	898.0043	2585020.84
FEB	1686.57	370.435	21.08826	7811.83	35566.83	624764.6	444.7147	2844518.36
MAR	1605.55	370.3455	33.47058	12395.68	53738.69	594608.2	1120.28	2577790.8
APR	1469.03	363.021	39.4871	14334.65	58007.77	533289.1	1559.231	2158052.08
MAY	1312.65	326.896	22.69832	7419.99	29794.95	429100	515.2137	1723050.02
JUNE	1451.74	322.568	30.58512	9865.781	44401.64	468284.9	935.4496	2107549.03
JULY	1445.26	310.019	36.07768	11184.77	52141.63	448058.1	1301.599	2088776.47
AUG	1350.94	300.7225	44.8354	13483.01	60569.94	406258.1	2010.213	1825038.88
SEP	1371.27	325.4305	32.71822	10647.51	44865.51	446253.1	1070.482	1880381.41
OCT	1201.59	340.3115	37.80194	12864.43	45422.43	408914.9	1428.987	1443818.53
NOV	1240.58	353.75	77.18672	27304.8	95756.3	438855.2	5957.79	1539038.74
DEC	1291.42	333.803	49.6769	16582.3	64153.74	431079.9	2467.794	1667765.62
SUM	17034.4	4094.093	455.593	155185.9	632599.9	5835270	19709.76	24440800.8

$$A=37.62292857 \quad b_1=0.283014286 \quad b_2=0.253371429$$

$$Y=37.62293+0.283014X_1+0.253371X_2$$

### INTERPRETATION

The multiple regression line equation obtained for the REDDY from 2000-2006 represents that the share price is largely influenced by the volume of the shares traded when compared to that of the market return. The share price of the REDDY will be changing 0.253371 times for the one percent change in the market return as well as 0.283014 times to the one percent change in the volume of the shares traded.

## CO-EFFICIENT OF DETERMINATION

The following table represents the expected regression values, explained variation and the unexplained variations for the calculation of the coefficient of determination (R<sup>2</sup>)

Ye	E.V	U.E.V	R <sup>2</sup>
323.5668	310.0273	2832.815	0.098646
327.8262	178.1749	1815.511	0.08937
325.4818	246.2593	2012.756	0.109012
312.2278	837.9067	2579.951	0.245156
282.2072	3477.128	1997.087	0.635183
304.4936	1345.48	326.6834	0.804634
307.1272	1159.212	8.362529	0.992838
300.8531	1625.809	0.017051	0.99999
295.7956	2059.235	878.227	0.701025
277.822	4013.531	3904.942	0.506857
307.3625	1143.243	2151.798	0.346959
296.4646	1998.964	1394.155	0.589123
	18394.97	19902.3	0.480321

## INTERPRETATION

From the above table the coefficient of determination is found to be 0.70079697 for the REDDY company from the year 2000-2006. The relationship between the stock and the market is found to be somewhat neutral and the return on the stock is found to be completely associated with the market return.

## RANBAXY(2000-2006)

### CALCULATION OF BETA

The following table gives the average share price and the average market return of the REDDY company for the year 2000:

2000	NIFTY	RANBAXY	X	Y	X <sup>2</sup>	Y <sup>2</sup>	X*Y
DEC	1436.36	298.564	0	0	0	0	0
JAN	1607.8	301.7295	11.9357	1.060242	142.4616	1.124112	12.65475
FEB	1686.57	297.639	4.89924	-1.35568	24.00256	1.83788	-6.64183
MAR	1605.55	216.737	-4.8038	-27.1812	23.07681	738.8203	130.5742
APR	1469.03	207.7335	-8.5029	-4.15411	72.30004	17.25666	35.32219
MAY	1312.65	169.8455	-10.645	-18.2388	113.3199	332.6521	194.1548
JUNE	1451.74	182.444	10.5961	7.417624	112.2778	55.02114	78.59805
JULY	1445.26	186.832	-0.4464	2.405122	0.199238	5.78461	-1.07355
AUG	1350.94	190.276	-6.5262	1.843367	42.59078	3.398003	-12.0301
SEP	1371.27	210.2145	1.50488	10.47873	2.264658	109.8037	15.7692
OCT	1201.59	206.9595	-12.374	-1.54842	153.1142	2.3976	19.16002
NOV	1240.58	241.0525	3.24487	16.47327	10.52916	271.3687	53.45358
DEC	1291.42	226.899	4.09808	-5.87154	16.79429	34.47501	-24.0621
			-7.0195	-18.6714	712.9309	1573.94	495.8792

$$A=0.074657143$$

$$\beta=0.4427$$

### INTERPRETATION

The beta calculated for the RANBAXY from 2000-2006 represents 0.4427 which is considered to be less than the market beta value 1. The return from the stock is considered to be low and the risk associated with the stock is considered to be less. The investment on this type of stock is to be on the safer side. Hence the investment on this stock completely depends upon the long term goal of the investor and no speculation type of motive.

## MULTIPLE REGRESSIONS

The following table gives the details regarding the share price, volume of shares traded and the market index for the calculation of the multiple regressions between them.

2000	NIFTY	RANBAXY	VOLUME IN LAKH					
	x2	Y	x1	x1y	x1*x2	x2*y	x1^	x2^
JAN	1607.8	301.7295	561.8832	169536.7	903395.8	485120.7	315712.7	2585020.84
FEB	1686.57	297.639	407.2437	121211.6	686845.1	501989	165847.5	2844518.365
MAR	1605.55	216.737	234.7306	50874.81	376871.8	347982.1	55098.47	2577790.803
APR	1469.03	207.7335	217.1261	45104.37	318965	305167	47143.75	2158052.079
MAY	1312.65	169.8455	140.705	23898.11	184696.4	222947.7	19797.9	1723050.023
JUNE	1451.74	182.444	193.5257	35307.6	280949	264861.3	37452.19	2107549.028
JULY	1445.26	186.832	130.3924	24361.47	188450.9	270020.8	17002.18	2088776.468
AUG	1350.94	190.276	155.3577	29560.84	209878.9	257051.5	24136.01	1825038.884
SEP	1371.27	210.2145	110.1848	23162.45	151093.2	288260.8	12140.7	1880381.413
OCT	1201.59	206.9595	134.4175	27818.97	161514.7	248680.5	18068.06	1443818.528
NOV	1240.58	241.0525	224.5415	54126.3	278561.7	299044.9	50418.9	1539038.736
DEC	1291.42	226.899	188.2384	42711.1	243094.8	293021.9	35433.69	1667765.616
SUM	17034.4	2638.362	2698.35	647674.4	3984317	3784148	798252	24440800.78

$$A=281.0007571 \quad B1=0.076414286 \quad B2=0.044671429$$

$$Y=281.0008+0.076414X1+0.044671X2$$

### INTERPRETATION

The multiple regression line equation obtained for the RANBAXY from 2000-2006 represents that the share price is largely influenced by the volume of the shares traded when compared to that of the market return. The share price of the REDDY will be changing 0.044671 times for the one percent change in the market return as well as 0.07614286 times to the one percent change in the volume of the shares traded.

## CO-EFFICIENT OF DETERMINATION

The following table represents the expected regression values, explained variation and the unexplained variations for the calculation of the coefficient of determination (R<sup>2</sup>)

Ye	E.V	U.E.V	R <sup>2</sup>
315.5472	9155.369	190.9287	0.979572
271.6608	2682.962	674.8663	0.799017
222.6681	7.865982	35.17837	0.182741
217.6429	4.931013	98.19644	0.047815
195.9157	573.4981	679.6543	0.457644
210.9393	79.64155	811.9815	0.089322
193.0145	720.8711	38.22278	0.949647
200.0832	391.2587	96.18194	0.80268
187.2627	1062.81	526.7837	0.668605
194.1084	663.3231	165.1497	0.800658
219.7025	0.025935	455.8244	5.69E-05
209.4062	109.356	305.9994	0.263283
	15451.91	4078.967	0.791153

## INTERPRETATION

From the above table the coefficient of determination is found to be 0.462586 for the RANBAXY company from the year 2000-2006. The relationship between the stock and the market is found to be lower and the return on the stock is found to be completely associated with the market return.



## ORCHID(2000-2006)

### CALCULATION OF BETA

The following table gives the average share price and the average market return of the REDDY company for the year 2000:

2000	NIFTY	ORCHID	X	Y	X <sup>2</sup>	Y <sup>2</sup>	X*Y
DEC	1436.36	398.462	0	0	0	0	0
JAN	1607.8	379.4	11.9357	-4.78389	142.4616	22.88564	-57.0993
FEB	1686.57	444.4625	4.89924	17.14879	24.00256	294.0809	84.01605
MAR	1605.55	327.1775	-4.8038	-26.3881	23.07681	696.3293	126.7638
APR	1469.03	244.6	-8.5029	-25.2394	72.30004	637.0252	214.6088
MAY	1312.65	183.1975	-10.645	-25.1032	113.3199	630.1721	267.2284
JUNE	1451.74	158.5575	10.5961	-13.45	112.2778	180.9016	-142.517
JULY	1445.26	145.615	-0.4464	-8.16265	0.199238	66.62892	3.64349
AUG	1350.94	109.23	-6.5262	-24.9871	42.59078	624.3563	163.07
SEP	1371.27	115.3575	1.50488	5.609723	2.264658	31.46899	8.441949
OCT	1201.59	105.0025	-12.374	-8.97644	153.1142	80.57653	111.0739
NOV	1240.58	107.7075	3.24487	2.576129	10.52916	6.636441	8.359197
DEC	1291.42	108.425	4.09808	0.666156	16.79429	0.443764	2.729963
			-7.0195	-111.09	712.9309	3271.506	790.3188

$$A = -1.718857143 \quad \beta = 0.456142857$$

### INTERPRETATION

The beta calculated for the ORCHID from 2000-2006 represents 0.4561 which is considered to be less than the market beta value 1. The return from the stock is considered to be low and the risk associated with the stock is considered to be less. The investment on this type of stock is to be on the safer side. Hence the investment on this stock completely depends upon the long term goal of the investor and no speculation type of motive.

## MULTIPLE REGRESSIONS

The following table gives the details regarding the share price, volume of shares traded and the market index for the calculation of the multiple regressions between them.

2000	NIFTY	ORCHID	VOLUME IN					
	x2	Y	x1	x1y				
JAN	1607.8	379.4	7.157055	2715.387	11507.11	609999.3	51.22344	2585020.84
FEB	1686.57	444.4625	11.89804	5288.233	20066.88	749617.1	141.5634	2844518.365
MAR	1605.55	327.1775	3.21092	1050.541	5155.293	525299.8	10.31001	2577790.803
APR	1469.03	244.6	1.082545	264.7905	1590.292	359325	1.171904	2158052.079
MAY	1312.65	183.1975	1.377265	252.3115	1807.867	240474.2	1.896859	1723050.023
JUNE	1451.74	158.5575	1.39646	221.4192	2027.297	230184.3	1.950101	2107549.028
JULY	1445.26	145.615	0.94927	138.228	1371.942	210451.5	0.901114	2088776.468
AUG	1350.94	109.23	1.553675	169.7079	2098.922	147563.2	2.413906	1825038.884
SEP	1371.27	115.3575	1.261575	145.5321	1729.96	158186.3	1.591571	1880381.413
OCT	1201.59	105.0025	1.074635	112.8394	1291.271	126170	1.15484	1443818.528
NOV	1240.58	107.7075	1.069455	115.1883	1326.744	133619.8	1.143734	1539038.736
DEC	1291.42	108.425	0.98149	106.4181	1267.516	140022.2	0.963323	1667765.616
SUM	17034.4	2428.733	33.0124	10580.6	51241.09	3630913	216.2842	24440800.78

$$A=67.97471429 \quad B1=2.5509 \quad B2=0.077971429$$

$$Y=67.97471+2.5509X1+0.077971X2$$

### INTERPRETATION

The multiple regression line equation obtained for the ORCHID from 2000-2006 represents that the share price is largely influenced by the volume of the shares traded when compared to that of the market return. The share price of the ORCHID will be changing 0.0779 times for the one percent change in the market return as well as 2.5509 times to the one percent change in the volume of the shares traded.

## CO-EFFICIENT OF DETERMINATION

The following table represents the expected regression values, explained variation and the unexplained variations for the calculation of the coefficient of determination (R<sup>2</sup>)

Ye	E.V	U.E.V	R <sup>2</sup>
353.7492	22908.29	657.9618	0.97208
462.8557	67840.1	338.3106	0.995038
290.7931	7814.326	1323.826	0.855132
197.3028	25.92394	2237.021	0.011456
133.1232	4798.5	2507.436	0.656795
194.6242	60.37583	1300.808	0.044355
184.7508	311.2971	1531.61	0.168916
152.741	2465.464	1893.204	0.565646
157.0993	2051.645	1742.379	0.540757
79.50459	15101.9	650.1432	0.958726
96.57885	11196.93	123.8468	0.98906
117.5671	7195.664	83.57868	0.988518
	141770.4	14390.12	0.90785

## INTERPRETATION

From the above table the coefficient of determination is found to be 0.54242 for the ORCHID company from the year 2000-2006. The relationship between the stock and the market is found to be lower and the return on the stock is found to be completely associated with the market return.

## CIPLA(2000-2006)

### CALCULATION OF BETA

The following table gives the average share price and the average market return of the CIPLA company for the year 2000:

2000	NIFTY	CIPLA	X	Y	X <sup>2</sup>	Y <sup>2</sup>	X*Y
DEC	1436.36	104.78	0	0	0	0	0
JAN	1607.8	108.4331	11.9357	3.486422	142.4616	12.15514	41.61298
FEB	1686.57	98.20151	4.89924	-9.43583	24.00256	89.03489	-46.2284
MAR	1605.55	89.66648	-4.8038	-8.69135	23.07681	75.53957	41.75179
APR	1469.03	87.37238	-8.5029	-2.55848	72.30004	6.545827	21.75462
MAY	1312.65	79.4382	-10.645	-9.08087	113.3199	82.46227	96.66754
JUNE	1451.74	60.9939	10.5961	-23.2184	112.2778	539.0953	-246.025
JULY	1445.26	68.2063	-0.4464	11.82479	0.199238	139.8256	-5.27812
AUG	1350.94	60.74958	-6.5262	-10.9326	42.59078	119.5218	71.34794
SEP	1371.27	62.58068	1.50488	3.014177	2.264658	9.085266	4.53597
OCT	1201.59	59.14775	-12.374	-5.4856	153.1142	30.0918	67.87842
NOV	1240.58	69.41393	3.24487	17.35683	10.52916	301.2596	56.32061
DEC	1291.42	79.74883	4.09808	14.8888	16.79429	221.6763	61.01554
			-7.0195	-18.8321	712.9309	1626.293	165.3536

$$A=1.114285714$$

$$\beta=0.168$$

### INTERPRETATION

The beta calculated for the CIPLA from 2000-2006 represents 0.168 which is considered to be less than the market beta value 1. The return from the stock is considered to be very low and the risk associated with the stock is considered to be too less. The investment on this type of stock is to be on the safer side. Hence the investment on this stock completely depends upon the long term goal of the investor.

## MULTIPLE REGRESSIONS

The following table gives the details regarding the share price, volume of shares traded and the market index for the calculation of the multiple regressions between them.

2000	NIFTY	CIPLA	VOLUME IN					
	x2		Y	x1				
					x1*x2	x2*y	x1^	x2^
JAN	1607.8	108.4331	74.80024	8110.819	120263.8	174338.7	5595.075	2585020.84
FEB	1686.57	98.20151	57.6713	5663.409	97266.68	165623.7	3325.979	2844518.365
MAR	1605.55	89.66648	58.80593	5272.92	94415.85	143964	3458.137	2577790.803
APR	1469.031	87.37238	84.51949	7384.669	124161.8	128352.7	7143.544	2158052.079
MAY	1312.65	79.4382	62.29412	4948.533	81770.38	104274.6	3880.557	1723050.023
JUNE	1451.74	60.9939	53.9561	3290.993	78330.23	88547.28	2911.261	2107549.028
JULY	1445.26	68.2063	122.2698	8339.57	176711.6	98575.84	14949.9	2088776.468
AUG	1350.94	60.74958	84.34556	5123.957	113945.8	82069.03	7114.173	1825038.884
SEP	1371.27	62.58068	110.4232	6910.357	151420	85815	12193.28	1880381.413
OCT	1201.59	59.14775	202.5361	11979.56	243365.4	71071.34	41020.88	1443818.528
NOV	1240.58	69.41393	219.1797	15214.12	271909.9	86113.53	48039.73	1539038.736
DEC	1291.42	79.74883	218.6533	17437.34	282373.2	102989.2	47809.26	1667765.616
SUM	17034.4	923.9526	1349.455	99676.25	1835935	1331735	197441.8	24440800.78

$$A=31.54368429 \quad b1=0.000914286 \quad b2=0.043871429$$

$$Y=31.54368+0.000914X1+0.043871X2$$

## INTERPRETATION

The multiple regression line equation obtained for the CIPLA from 2000-2006 represents that the share price is largely influenced by the market return when compared to that of the volume of the shares traded. The share price of the CIPLA will be changing 0.04387 times for the one percent change in the market return as well as 0.000914 times to the one percent change in the volume of the shares traded.

## CO-EFFICIENT OF DETERMINATION

The following table represents the expected regression values, explained variation and the unexplained variations for the calculation of the coefficient of determination ( $R^2$ )

Ye	E.V	U.E.V	$R^2$
93.52512	273.2102	222.247	0.55143
100.2893	542.575	4.358814	0.99203
91.81377	219.5648	4.610879	0.979432
79.72463	7.445138	58.48804	0.112919
61.11692	252.1467	335.6692	0.428955
75.07862	3.676527	198.3794	0.018196
80.68408	13.60158	155.695	0.080342
67.20277	95.9083	41.64375	0.697251
71.75747	27.44275	84.21351	0.245779
62.27196	216.7989	9.760671	0.956918
67.93387	82.1231	2.190561	0.974019
73.26935	13.88832	41.98364	0.248574
	1748.381	1159.241	0.60131

## INTERPRETATION

From the above table the coefficient of determination is found to be 0.522043 for the CIPLA company from the year 2000-2006. The relationship between the stock and the market is found to be lower and the return on the stock is found to be completely associated with the market return.

## CHAPTER 5

### FINDINGS, SUGGESTIONS AND CONCLUSION

#### 5.1 FINDINGS

Price fluctuation is a statistical measure of the tendency of market or security to rise or fall sharply within a short period of time. Generally higher the fluctuation of a security, greater is its price swings. Larger fluctuations mean returns fluctuate in a wide range.

#### INFORMATION TECHNOLOGY SECTOR

##### INFOSYS TECHNOLOGIES

- The beta calculated for the past seven years (2000-2006) is found to be **0.900571429** which is lesser than the market value of beta 1. The risk associated with the market is found to be neutral as it is changing with the market return. The multiple regression equation calculated represents that the share price depends upon the market return than the volume of the shares traded. The coefficient of determination represents about **0.694802757** which indicates that the dependence of the stock on the market return is moderate.

To conclude the stock completely depends upon the market return, hence it is investor's own risk to predict the market to buy or sell the shares.

##### WIPRO TECHNOLOGIES

- The beta calculated for the past seven years (2000-2006) is found to be **1.388571429** which is higher than the market value of beta 1. The risk associated with the market is found to be higher as it is fluctuating with the market return. The multiple regression equation calculated represents that the share price depends upon the market return than the volume of the shares traded. The coefficient of determination represents about **0.711543257** which indicates that the dependence of the stock on the market return is high.

To conclude the stock completely depends upon the market return, hence it is investor's own risk to predict the market to buy or sell the shares.

## **SATYAM TECHNOLOGIES**

- The beta calculated for the past seven years (2000-2006) is found to be **1.400885714** which is higher than the market value of beta 1. The risk associated with the market is found to be higher as it is fluctuating with the market return. The multiple regression equation calculated represents that the share price depends upon the market return than the volume of the shares traded. The coefficient of determination represents about **0.793383083** which indicates that the dependence of the stock on the market return is high.

To conclude the stock completely depends upon the market return, hence it is investor's own risk to predict the market to buy or sell the shares.

## **GLOBAL TECHNOLOGIES**

- The beta calculated for the past seven years (2000-2006) is found to be **1.866** which is very higher than the market value of beta 1. The risk associated with the market is found to be very higher as it is fluctuating with the market return. The multiple regression equation calculated represents that the share price depends upon the market return than the volume of the shares traded. The coefficient of determination represents about **0.760123441** which indicates that the dependence of the stock on the market return is high.

To conclude, the stock completely depends upon the market return, hence it is investor's own risk to invest in this type of stock to earn more profit or loss as the stock is seemed to be volatile.

## **STEEL SECTOR**

### **TISCO**

- The beta calculated for the past seven years (2000-2006) is found to be **1.146571429** which is very higher than the market value of beta 1. The risk associated with the market is found to be very higher as it is fluctuating with the market return. The investment on this stock is found to be speculation motive i.e. to earn more profit in short term. The multiple regression equation calculated represents that the share price depends upon the market return than the volume of



the shares traded. The coefficient of determination represents about **0.546499698** which indicates that the dependence of the stock on the market return is moderate.

To conclude, the stock completely depends upon the market return, hence it is investor's own risk to invest in this type of stock to earn more profit or loss as the stock is seemed to be volatile.

## **SAIL**

- The beta calculated for the past seven years (2000-2006) is found to be **1.421428571** which is very higher than the market value of beta 1. The risk associated with the market is found to be very higher as it is fluctuating with the market return. The investment on this stock is found to be speculation motive i.e to earn more profit in short term. The multiple regression equation calculated represents that the share price depends upon the market return than the volume of the shares traded. The coefficient of determination represents about **0.787961399** which indicates that the dependence of the stock on the market return is higher.

To conclude, the stock completely depends upon the market return, hence it is investor's own risk to invest in this type of stock to earn more profit or loss as the stock is seemed to be volatile.

## **ESSAR GUJARAT**

- The beta calculated for the past seven years (2000-2006) is found to be **1.36** which is very higher than the market value of beta 1. The risk associated with the market is found to be higher as it is fluctuating with the market return. The investment on this stock is found to be speculation motive i.e to earn more profit in short term. The multiple regression equation calculated represents that the share price depends upon the volume of the shares traded than the market return. The coefficient of determination represents about **0.517156217** which indicates that the dependence of the stock on the market return is moderate.

To conclude, the stock completely depends upon the market return, hence it is investor's own risk to invest in this type of stock to earn more profit or loss.

## **PHARMACEUTICAL SECTOR**

### **CIPLA LABORATORIES**

- The beta calculated for the past seven years (2000-2006) is found to be **0.168** which is very lower than the market value of beta 1. The risk associated with the market is found to be lower and the investment on this stock is found to achieve long term goal and to earn some profit. The multiple regression equation calculated represents that the share price depends upon the market return than the volume of the shares traded. The coefficient of determination represents about **0.522043037** which indicates that the dependence of the stock on the market return is moderate.

To conclude, the risk associated with the stock is found to be very less and the share price of the stock is not that much affected by the market return hence it is advised to buy the share which will yield more profit in future.

### **RANBAXY LABORATORIES**

- The beta calculated for the past seven years (2000-2006) is found to be **0.4427** which is very lower than the market value of beta 1. The risk associated with the market is found to be lower and the investment on this stock is found to achieve long term goal and to earn some profit. The multiple regression equation calculated represents that the share price depends upon the than the volume of the shares traded than the market return. The coefficient of determination represents about **0.462586301** which indicates that the dependence of the stock on the market return is less.

To conclude, the risk associated with the stock is found to be very less and the share price of the stock is not that much affected by the market return hence it is advised to buy the share which will yield more profit in future.

### **REDDY LABORATORIES**

- The beta calculated for the past seven years (2000-2006) is found to be **0.705571429** which is lower than the market value of beta 1. The risk associated with the market is found to be lower and the investment on this stock is found to achieve long term goal and to earn some profit. The multiple regression equation

calculated represents that the share price depends upon the than the volume of the shares traded than the market return. The coefficient of determination represents about **0.70079697** which indicates that the dependence of the stock on the market return is less.

To conclude, the risk associated with the stock is found to be very less and the share price of the stock is not that much affected by the market return hence it is advised to buy the share which will yield more profit in future.

## **ORCHID LABORATORIES**

- The beta calculated for the past seven years (2000-2006) is found to be **0.456142857** which is lower than the market value of beta 1. The risk associated with the market is found to be lower and the investment on this stock is found to achieve long term goal and to earn some profit. The multiple regression equation calculated represents that the share price depends upon the than the volume of the shares traded than the market return. The coefficient of determination represents about **0.542420207** which indicates that the dependence of the stock on the market is moderate.

To conclude, the risk associated with the stock is found to be very less and the share price of the stock is not that much affected by the market return hence it is advised to buy or sell the share which will yield more profit in future.

## **CEMENT SECTOR**

### **AMBUJA CEMENTS**

- The beta calculated for the past seven years (2000-2006) is found to be **0.625928571** which is lower than the market value of beta 1. The risk associated with the market is found to be lower and the investment on this stock is found to achieve long term goal and to earn some profit. The multiple regression equation calculated represents that the share price depends upon the market return than the volume of the shares traded. The coefficient of determination represents about **0.718788476** which indicates that the dependence of the stock on the market is high.

To conclude, the risk associated with the stock is found to be moderate and the share price of the stock is not that much affected by the market return hence it is advised to buy or sell the share which will yield more profit in future.

## **INDIAN CEMENTS**

- The beta calculated for the past seven years (2000-2006) is found to be **1.303857143** which is higher than the market value of beta 1. The risk associated with the market is found to be higher and the investment on this stock is found to be speculation motive. The multiple regression equation calculated represents that the share price depends upon the volume of the shares traded than the market return. The coefficient of determination represents about **0.999988132** which indicates that the dependence of the stock on the market is high.

To conclude, the risk associated with the stock is found to be very high and the share price of the stock is affected by the market return hence it is advised not to buy or sell the share which will yield more risk but it is investor's interest to invest as the coefficient of determination goes along with market return..

## **ULTRATECH CEMENTS**

- The beta calculated for the past seven years (2000-2006) is found to be **0.816666667** which is lesser than the market value of beta 1. The risk associated with the market is found to be lower and the investment on this stock is found to yield more profit. The multiple regression equation calculated represents that the share price depends upon the market return than the volume of the shares traded. The coefficient of determination represents about **0.895661842** which indicates that the dependence of the stock on the market is high.

To conclude, the risk associated with the stock is found to be moderate and the share price of the stock is affected by the market return hence it is advised to buy or sell the share which will yield more profit in the future.

## PRISM CEMENTS

- The beta calculated for the past seven years (2000-2006) is found to be **1.185857143** which is higher than the market value of beta 1. The risk associated with the market is found to be higher and the investment on this stock is found to be of speculation motive in order to earn more profit. The multiple regression equation calculated represents that the share price depends upon the volume of the shares traded than the market return. The coefficient of determination represents about **0.801245827** which indicates that the dependence of the stock on the market is high.

To conclude, the risk associated with the stock is found to be high and the share price of the stock is affected by the market return hence it is advised to buy or sell the share which will yield more profit in the future.

## **5.2. SUGGESTIONS**

Volatile markets are characterized by wide price fluctuations and heavy trading. They often result from an imbalance of trade orders in one direction. Wide price fluctuations are a daily occurrence on the world's stock markets as investors react to economic, business and political events. Markets have been showing extremely erratic movements, which are in no way tandem with the information that is fed to the markets. Market watchers see high volatility as a sign of investor nervousness which, in the counter-intuitive world of markets, is of course bullish.

The present study on the multiple regression between the share price, volume of the shares traded and the market return as well as the coefficient of determination model applied on selected company scrip's would help the investors to take investment decision. It is suggested that the investors can invest in the shares that earn higher average returns. Also, the investors can invest in the companies which involve less risk and which move along with the market.

## **5.3 CONCLUSION**

In India most of the industries require huge amount of investments. Funds are raised mostly through the issue of share. An investor is satisfied from the reasonable return from investment in shares. Besides the investors are motivated to buy the shares from the stock market either for speculation or investments. Speculation involves higher risks to get return on the other hand investment involves no such risks and returns will be fair.

An investor can succeed in his investment only when he is able to select the right shares. The investors should keenly watch the situations like market price, economy, company progress, returns, and the risk involved in a share before taking decision on a particular share. This study made will help the investors know the behavior of share prices and thus can succeed.

## REFERENCES

1. Avadhani V.A., "Investment Management", Himalaya Publishing House, NewDelhi, 2<sup>nd</sup> Edition, 1999.
2. Bhalla V.K., "Investment Management", Security Analysis and Portfolio Management, S.Chand & Co Ltd, New Delhi, 2<sup>nd</sup> Edition, 1997.
3. Gupta.S.P., "Statistical Methods", Sultan Chand & Co, 2<sup>nd</sup> Edition, 1998.
4. Kothari.C.R., " Research Methods and Techniques", Wishwa Prakashan Publishing, New Delhi, 1990.
5. Prasanna Chandra, "Financial Management-Theory and Practice", Tata Mc Graw Hill, International Edition, 5<sup>th</sup> edition, 2000.

## WEBSITES

1. [www.kotaksecurities.com](http://www.kotaksecurities.com)
2. [www.nse-india.com](http://www.nse-india.com)
3. [www.investopedia.com](http://www.investopedia.com)
4. [www.equitymaster.com](http://www.equitymaster.com)
5. [www.moneycontrol.com](http://www.moneycontrol.com)
6. [www.stockmaster.com](http://www.stockmaster.com)
7. [www.wikipedia.com](http://www.wikipedia.com)