



## INVESTIGATION OF TOP FIVE GAINERS OF BSE A SPECIAL REPORT ON S & P BSE SENSEX, CIPLA, ITC, MARUTI SUZUKI, BHARTI AIRTEL AND TATA POWER

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**Abstract:** At stock research, we selected five stocks of BSE based on their price, volume, cluster and on plethora of establish technical analysis. The stock which are taken into consideration are Sensex, Cipla and ITC. A rigorous study has been conducted of these stock by investigating one month returns and their risk. During the study it was examined that the overall return of BSE for a month testified 1.54. Cipla stock, ITC, MARUTI SUZUKI, BHARTI AIRTEL stock also showed a positive testified of 19.61, 6.35, 8.2 and 9.64 respectively. Beta and Alpha assessment are conducted to make the study more materialise using regression model.

**Keywords:** Systematic Risk, Returns In Stock Market, Bse Top Gainers.

### INTRODUCTION

A stock is a share of a company. As an asset, it can be bought and sold, and the possibility to make money in this process attracts a range of both professional full-time investors. The two main schools for maximizing profits from such trading are called technical and fundamental analysis.

The Indian stock exchanges hold a place of prominence not only in Asia but also at the global stage. The Bombay Stock Exchange (BSE) is one of the oldest exchanges across the world, while the National Stock Exchange (NSE) is among the best in terms of sophistication and advancement of technology. The Indian stock market scene really picked up after the opening up of the economy in the early nineties. The whole of nineties were used to experiment

and fine tune an efficient and effective system. The corporate governance rules were gradually put in place which initiated the process of bringing the listed companies at a uniform level.

## **FUNDAMENTAL ANALYSIS**

Fundamental analysis involves using economic data to forecast prices or gauge whether the markets are over or undervalued. This data can for instance be stock prices compared to actual earning of each stock, measuring actual value of a company's assets compared to their book value, crop reports or the last development of consumption spending in a specified country.

## **TECHNICAL ANALYSIS**

Technical analysis is the studies of price activity with the assumption that all relevant information is known by the market players and baked into a stocks pricing at any given point. Based on this assumption, and the belief that the fundamental information and market opinions reflected by the stock price at any given time, will result in recurring price patterns that, by fitting them to past movement, can foretell the future direction. Technical patterns are believed to be good predictors for trading entry and exit points.

## **CIPLA COMPANY**

Cipla Global Limited is an Indian multinational pharmaceutical and Biotechnology company, headquartered in Mumbai, India, Belgium, & Surrey in the European Union, and Miami, Florida, in the United States; with manufacturing facilities in Goa (eight), Bengaluru (one), Baddi (one), Indore (one), Kurkumbh (one), Patalganga (one), and Sikkim (one), along with field stations in Delhi, Pune, and Hyderabad. Cipla primarily Develops therapeutics to treat cardiovascular disease, arthritis, diabetes, weight control and depression; other medical conditions It was founded by Dr. Khwaja Abdul Hamied as 'The Chemical, Industrial & Pharmaceutical Laboratories' in 1935 in Mumbai The name of the Company was changed to 'Cipla Limited' with effect from 20 July 1984, wherein the word Cipla came from the first letters of each word in the old name 'The Chemical, Industrial & Pharmaceutical Laboratories' In the year 1985, US FDA approved the company's bulk drug manufacturing facilities. In 1994, Cipla launched Deferiprone, the world's first oral iron chelator. In 2001, Cipla offered medicines (antiretrovirals) for HIV treatment at a fractional cost (less than \$350 per year per patient). In 2012, the company slashed prices of three life-saving cancer drugs by 50-64%. In 2013, it increased its stake in its South African joint venture CIPLA Medpro from 50% to 100% stake for ₹27 billion (US\$440 million) to strengthen its position in the African continent. Cipla Medpro is the third largest South African pharmaceutical company and it was founded in 1993. Cipla has 34 manufacturing units in 8 locations across India and has presence in 170 countries. Exports accounted for 48% ₹49.48 billion (US\$810 million) of its revenue for FY 2013-14.<sup>[1]</sup> Cipla spent INR 517 cr. (5.4% of revenue) in FY 2013-14 on R&D activities.<sup>[1]</sup> The primary focus areas for R&D were development of new formulations, drug-delivery systems and APIs (active pharmaceutical ingredients). Cipla also cooperates with other enterprises in areas

such as consulting, commissioning, engineering, project appraisal, quality control, know-how transfer, support, and plant supply.

## **ITC COMPANY**

ITC Limited or ITC is an Indian conglomerate headquartered in Kolkata, West Bengal. Its diversified business includes five segments: Fast Moving Consumer Goods (FMCG), Hotels, Paperboards & Packaging, Agri Business & Information Technology.

Established in 1910 as the Imperial Tobacco Company of India Limited, the company was renamed as the Indian Tobacco Company Limited in 1970 and further to I.T.C. Limited in 1974. The periods in the name were removed in September 2001 for the company to be renamed as ITC Ltd. The company completed 100 years in 2010 and as of 2012-13, had an annual turnover of US\$ 8.31 billion and a market capitalisation of US\$ 45 billion. It employs over 25,000 people at more than 60 locations across India and is part of Forbes 2000 list.

ITC was formed on 24 August 1910 under the name of Imperial Tobacco Company of India Limited,<sup>[2]</sup> and the company went public on 27 October 1954. The earlier decades of the company's activities centered mainly on tobacco products. In the 1970s, it diversified into non-tobacco businesses.

In 1985, ITC set up Surya Tobacco Co. in Nepal as an Indo-Nepali and British joint venture, with the shares divided between ITC, British American Tobacco and various independent domestic shareholders in Nepal. In 2002, Surya Tobacco became a subsidiary of ITC and its name was changed to Surya Nepal Private Limited.

In 2000, ITC launched the Expressions range of greeting cards, the Wills Sport range of casual wear, and a wholly owned information technology subsidiary, ITC InfotechIndia Limited. In 2001, ITC introduced the Kitchens of India brand of ready-to-eat gourmet Indian recipes. In 2002, ITC entered the confectionery and staples segments and acquired the Bhadrachalam Paperboards Division and the safety matches company WIMCO Limited.

## **Maruti Udyog Limited**

Maruti Udyog Limited was established in February 1981, though the actual production commenced only in 1983. It started with Maruti 800, based on the Suzuki Alto kei car which at the time was the only modern car available in India. Its only competitors were Hindustan Ambassador and Premier Padmini. Originally, 74% of the company was owned by the Indian government, and 26% by Suzuki of Japan. As of May 2007, the government of India sold its complete share to Indian financial institutions and no longer has any stake in Maruti Udyog.

## **Bharti Airtel Limited**

Bharti Airtel Limited commonly known as airtel, is an Indian multinational telecommunications Services Company headquartered in New Delhi, India. It operates in 20 countries across South Asia, Africa, and the Channel Islands. Airtel has a GSM network in all countries in which it operates, providing 2G, 3G and 4G services depending upon the country of

operation. Airtel is the world's third largest mobile telecommunications company by subscribers, with over 275 million subscribers across 20 countries as of July 2013. It is the largest cellular service provider in India, with 192.22 million subscribers as of August 2013. Airtel is the Second largest Asia-Pacific mobile operator by subscriber base, behind China Mobile.

### **Tata Power**

Tata Power is an Indian electric utility company based in Mumbai, Maharashtra, India and is part of the Tata Group.<sup>1</sup>The core business of the company is to generate, transmit and distribute electricity. With an installed electricity generation capacity of about 8560 MW, it is India's second largest private power producer. At the end of August 2013, its market capitalisation was \$2.74 billion (INR 182 billion).

The firm started as the Tata Hydroelectric Power Supply Company in 1911, which amalgamated with the Andhra Valley Power Supply Company in 1916. It commissioned India's first large hydro-electric project in 1915 in Khopoli for 72 MW. Then second and third power plants were installed in Bhivpuri (78 MW) in 1919 and Bhira (300 MW) in 1922.

## **LITERATURE REVIEW**

### **K.K.Suresh kumar and Dr.N.M.Elango**

Forecasting accuracy is the most important factor in selecting any forecasting methods. Research efforts in improving the accuracy of forecasting models are increasing since the last decade. The appropriate stock selections those are suitable for investment is a difficult task. The key factor for each investor is to earn maximum profits on their investments. Numerous techniques used to predict stocks in which fundamental and technical analysis are one among them. In this paper, prediction algorithms and functions are used to predict future share prices and their performance will be compared. The results from analysis shows that isotonic regression function offers the ability to predict the stock prices more accurately than the other existing techniques. The results will be used to analyse the stock prices and their prediction in depth in future research efforts.

### **Fredrik Larsen**

The theory of technical analysis suggests that future stock price development can be foretold by analysing historical price fluctuations and identifying repetitive patterns. A computerized system, able to produce trade recommendations based on different aspects of this theory, has been implemented. The system utilizes trading agents, trained using machine learning techniques, capable of producing unified buy and sell signals. It has been evaluated using actual trade data.

## OBJECTIVES

1. To examine the returns of S & P BSE Sensex, Cipla, ITC, Maruti Suzuki, Bharti Airtel and Tata Power
2. To examine the risk involved in investing in these stocks using regression modelling.

## SCOPE FOR FURTHER RESEARCH

The study conducted has restricted to only S & P BSE Sensex, Cipla, ITC, Maruti Suzuki, Bharti Airtel and Tata Power. A concrete assessment can be examined by considering all blue chip companies of BSE Sensex. The study period also can be extend from one month to six month, which helps to take a firm decision on investment pattern by the investor.

## LIMITATION OF THE STUDY

The researcher have restricted to only five stocks and one indicator as Sensex because of the time constrain. The study can be extend to other companies of BSE Sensex.

## RESEARCH METHODOLOGY

The primary data is collected through a detailed discussion with couple of subject expert and the secondary data of S & P Bse Sensex, Cipla, ITC, Maruti Suzuki, Bharti Airtel and Tata Power is gathered from BSE web side and related journals. During the study the researcher have considered one complete month data of these stocks starting from 25 August 2014 to 26 September 2014. Out of these 5 variables BSE Sensex is Independent variable and Cipla, ITC, Maruti Suzuki, Bharti Airtel and Tata Power are dependent variable. Both the stocks are measured for the study as they are the top gainer during the study period. The returns of these stock is computed by the following formula:

$$\text{Stock Returns} = \frac{\text{Todays Price} - \text{Yesterdays Price}}{\text{Yesterday's Price}} * 100$$

Beta describes the relationship between the stock's return and the index returns. Beta is calculated by the following formula:

$$\beta = \frac{n \cdot \sum xy - (\sum x)(\sum y)}{n \sum x^2 - (\sum x)^2}$$

Where:

**N= Total number of variable**

**$\sum xy$ = Product total of Independent and dependent variable**

$\sum x^2 =$  **Independent variable square**

$\sum x =$  **Total of Independent**

$\sum y =$  **Total of Dependent variable**

Alpha is the intercept of the characteristic regression line is alpha i.e. the distance between the intersection and the horizontal axis. It indicates that the stock return is independent of the market return. A positive value of alpha is healthy sign. Positive alpha values would yield profitable returns. Alpha is calculated by the following formula:

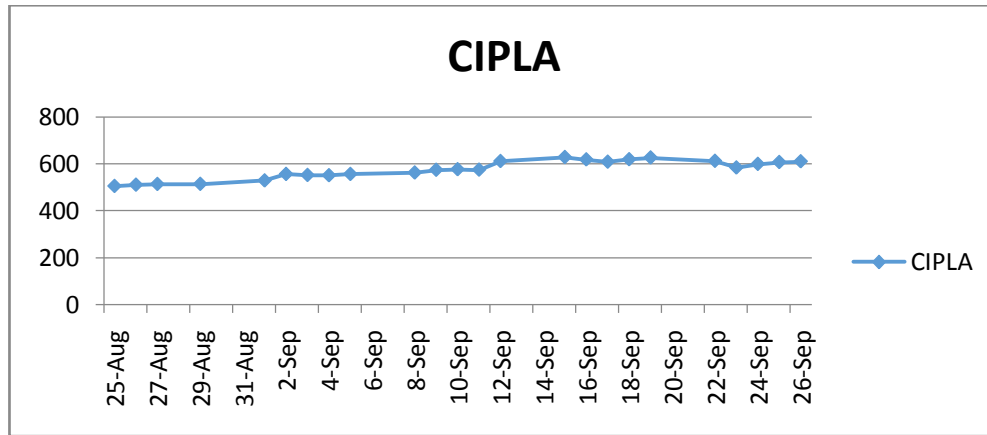
$$\alpha = \bar{Y} - \beta \bar{X}$$

**ANALYSIS AND INTERPRETATION**

Calculation of Return of BSE Sensex and Cipla Ltd.

| <b>Table 1 (RETURN COMPUTATION )</b> |                   |                      |                    |
|--------------------------------------|-------------------|----------------------|--------------------|
| <b>BSE(X)</b>                        | <b>Returns(X)</b> | <b>Cipla LTD (Y)</b> | <b>Returns (Y)</b> |
| 26437.02                             | 0.02              | 505.95               | 1.08               |
| 26442.81                             | 0.44              | 511.45               | 0.59               |
| 26560.15                             | 0.29              | 514.45               | 0.11               |
| 26638.11                             | 0.86              | 515.00               | 2.85               |
| 26867.55                             | 0.57              | 529.70               | 5.23               |
| 27019.39                             | 0.45              | 557.40               | -0.81              |
| 27139.94                             | -0.19             | 552.90               | -0.19              |
| 27085.93                             | -0.22             | 551.80               | 0.99               |
| 27026.7                              | 1.08              | 557.30               | 1.09               |
| 27319.85                             | -0.19             | 563.40               | 2.09               |
| 27265.32                             | -0.76             | 575.20               | 0.42               |
| 27057.41                             | -0.23             | 577.60               | -0.31              |
| 26995.87                             | 0.24              | 575.80               | 6.38               |
| 27061.04                             | -0.90             | 612.55               | 2.79               |
| 26816.56                             | -1.21             | 629.70               | -1.59              |
| 56492.51                             | 0.52              | 619.65               | -1.59              |
| 26631.29                             | 1.81              | 609.75               | 1.72               |
| 27112.21                             | -0.08             | 620.25               | 1.22               |
| 27090.42                             | 0.43              | 627.80               | -2.27              |
| 27206.74                             | -1.58             | 613.55               | -4.65              |
| 26775.69                             | -0.12             | 585.00               | 2.62               |
| 26744.69                             | -8.51             | 600.35               | 1.32               |
| 24468.36                             | 8.82              | 608.35               | 0.52               |
| 26626.32                             |                   | 611.50               |                    |
|                                      | $\Sigma X=1.54$   |                      | $\Sigma Y=19.61$   |

Source: BSE website



**Interpretation:** From the above Table 1 it can be observed that majority of the daily return of Cipla Ltd. Are positive. And the sum total return for one month is also positive. Which indicates a good returns for the investors in Cipla Company. Even in the above chart it indicates a steady return for the investors.

Calculation of Beta and Alpha of BSE Sensex and Cipla Ltd using regression modelling.

| Table 2       |                |                   |                 |  |
|---------------|----------------|-------------------|-----------------|--|
| X             | Y              | X <sup>2</sup>    | XY              |  |
| 0.02          | 1.08           | 0.0004            | 0.0216          |  |
| 0.44          | 0.59           | 0.1936            | 0.2596          |  |
| 0.29          | 0.11           | 0.0841            | 0.0319          |  |
| 0.86          | 2.85           | 0.7396            | 2.451           |  |
| 0.57          | 5.23           | 0.3249            | 2.9811          |  |
| 0.45          | -0.81          | 0.2025            | -0.3645         |  |
| -0.19         | -0.19          | 0.0361            | 0.0361          |  |
| -0.22         | 0.99           | 0.0484            | -0.2178         |  |
| 1.08          | 1.09           | 1.1664            | 1.1772          |  |
| -0.19         | 2.09           | 0.0361            | -0.3971         |  |
| -0.76         | 0.42           | 0.5776            | -0.3192         |  |
| -0.23         | -0.31          | 0.0529            | 0.0961          |  |
| 0.24          | 6.38           | 0.0576            | 40.7044         |  |
| -0.90         | 2.79           | 0.81              | 2.511           |  |
| -1.21         | -1.59          | 1.4641            | -1.9239         |  |
| 0.52          | -1.59          | 0.2704            | -0.8268         |  |
| 1.81          | 1.72           | 3.2761            | 3.1132          |  |
| -0.08         | 1.22           | 0.0064            | -0.0976         |  |
| 0.43          | -2.27          | 0.1849            | -0.9761         |  |
| -1.58         | -4.65          | 2.4964            | 7.347           |  |
| -0.12         | 2.62           | 0.0144            | 0.3144          |  |
| -8.51         | 1.32           | 72.4201           | 11.2332         |  |
| 8.82          | 0.52           | 77.7924           | 4.5864          |  |
| $\sum X=1.54$ | $\sum Y=19.61$ | $\sum X^2=162.26$ | $\sum XY=71.74$ |  |

Source: Primary Data (Computed)

### CALCULATION OF BETA OF CIPLA COMPANY

$$\beta = \frac{n \cdot \sum xy - (\sum x)(\sum y)}{n \sum x^2 - (\sum x)^2}$$



**HERE,**

**N=23**

**$\sum xy=71.74$**

**$\sum x^2=162.26$**

**$\sum x=1.54$**

**$\sum y=19.61$**

$$\begin{aligned} &= \frac{23*71.74-(1.54)(19.61)}{23*162.26-(1.54)^2} \\ &= \frac{1650.02-30.1994}{3731.98-2.3716} \\ &= \frac{1619.82}{3729.61} \\ \beta &= 0.43 \end{aligned}$$

**Calculation of Alpha ( $\alpha$ )**

$$\alpha = \bar{Y} - \beta \bar{X}$$

$$\begin{aligned} &= \frac{\sum y}{n} - \beta \left( \frac{\sum x}{n} \right) \\ &= \frac{19.61}{23} - 0.43 \left( \frac{1.54}{23} \right) \\ &= \frac{0.85-0.43(0.067)}{0.85-0.029} \\ &= 0.85-0.029 \\ &= \mathbf{0.821} \end{aligned}$$

**Interpretation:**

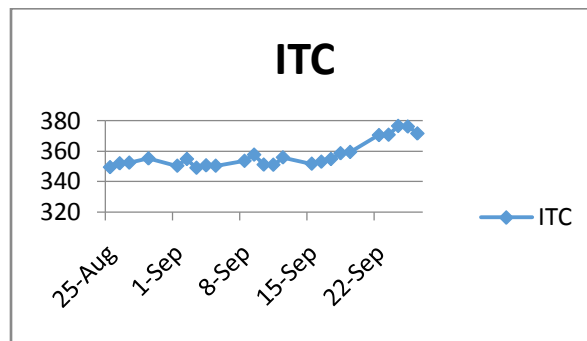
1. From Table 2 and computation of Beta and Alpha. We can observe that beta of Cipla company is 0.43. Which means one percent change in market index causes 0.43 change in the stock return of Cipla Company. It indicates that the stock moves slower than that of market.
2. When we observe the value of alpha of 0.821, it indicates that the return is independent of market return. As the alpha of Cipla Company is positive which refers the company is healthy.

**Calculation of Return of BSE Sensex and ITC.**

| Table 3 |            |       |         |
|---------|------------|-------|---------|
| ITC     | RETURN (D) | X     | XD      |
| 349.35  | 0.73       | 0.02  | 0.0146  |
| 351.90  | 0.13       | 0.44  | 0.0572  |
| 352.35  | 0.79       | 0.29  | 0.2291  |
| 355.15  | -1.37      | 0.86  | -1.1782 |
| 350.30  | 1.28       | 0.57  | 0.7296  |
| 354.80  | -1.65      | 0.45  | -0.7425 |
| 348.95  | 0.46       | -0.19 | -0.0874 |
| 350.55  | -0.07      | -0.22 | 0.0154  |
| 350.30  | 0.93       | 1.08  | 1.0044  |
| 353.55  | 1.16       | -0.19 | -0.2204 |

|        |               |               |                 |
|--------|---------------|---------------|-----------------|
| 357.65 | -1.85         | -0.76         | 1.406           |
| 351.05 | -0.03         | -0.23         | 0.0069          |
| 350.95 | 1.39          | 0.24          | 0.336           |
| 355.85 | -1.18         | -0.90         | 1.062           |
| 351.65 | 0.38          | -1.21         | -0.4598         |
| 353.00 | 0.49          | 0.52          | 0.2548          |
| 354.75 | 1.09          | 1.81          | 1.9729          |
| 358.60 | 0.24          | -0.08         | 0.0192          |
| 359.45 | 3.11          | 0.43          | 1.3373          |
| 370.65 | 0.067         | -1.58         | -0.10586        |
| 370.90 | 1.58          | -0.12         | -0.1896         |
| 376.75 | -0.11         | -8.51         | 0.9361          |
| 376.35 | -1.22         | 8.82          | -10.7604        |
| 371.75 |               |               |                 |
|        | $\sum D=6.35$ | $\sum D=1.54$ | $\sum XD=-4.36$ |

Source: Primary Data (Computed)



**Interpretation:** From the above Table 3 it can be observed that majority of the daily return of ITC. Are negative and only for few days it has shown positive. And the sum total return is relative positive for a lesser margin. And from the above chart we can observe that the return are not stable as it shows lot of volatility.

### CALUCULATION OF BETA OF ITC

$$\beta = \frac{n \cdot \sum xd - (\sum x)(\sum d)}{n \sum x^2 - (\sum x)^2}$$

HERE,

N=23

$\sum xd=-4.36$

$\sum x^2=162.26$

$\sum x=1.54$

$\sum d=6.35$

$$= \frac{23 * -4.36 - (1.54)(6.35)}{23 * 162.26 - (1.54)^2}$$

$$= \frac{-100.28 - 4.48}{3731.98 - 2.3716}$$

$$\beta = \frac{-104.76}{3729.61} = -0.028$$

**Calculation of Alpha ( $\alpha$ )**

$$\begin{aligned} \alpha &= \bar{D} - \beta \bar{X} \\ &= \frac{\sum d}{n} - \beta \left( \frac{\sum x}{n} \right) \\ &= \frac{6.35}{23} - (-0.028) \left( \frac{1.54}{23} \right) \\ &= 0.28 - 0.028(0.07) \\ &= 0.28 + 0.00196 \\ &= \mathbf{0.28} \end{aligned}$$

**Interpretation:**

1. From Table 3 and computation of Beta and Alpha. We can observe that beta of ITC company is - 0.028. Which means one percent change in market index causes -0.028 change in the stock negative return of ITC Company. It indicates that the stock is moving at the negative slope than that of market.
2. When we observe the value of alpha of 0.28, it indicates that the return is independent of market return. As the alpha of ITC is positive which refers the company is healthy.

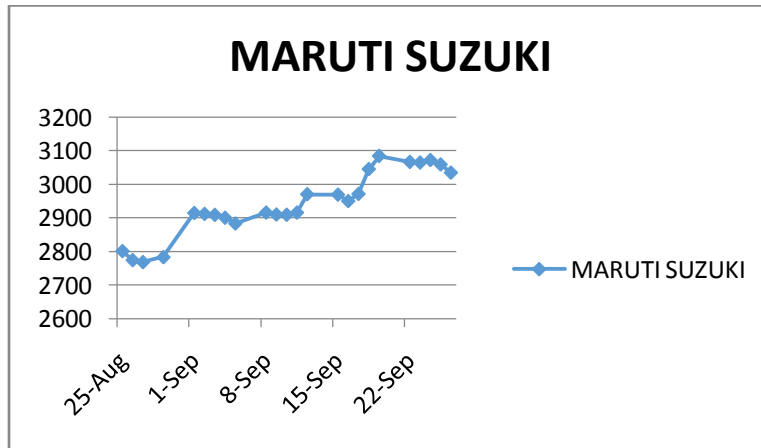
**Calculation of Return and Beta, Alpha of BSE Sensex and Maruti Suzuki using regression modelling.**

| Maruti suzuki | Return (A) | X     | XA      |
|---------------|------------|-------|---------|
| 2802.40       | -0.96      | 0.02  | -0.0192 |
| 2775.50       | -0.21      | 0.44  | -0.0924 |
| 2769.55       | 0.53       | 0.29  | 0.1537  |
| 2784.35       | 4.71       | 0.86  | 4.0506  |
| 2915.50       | -0.09      | 0.57  | -0.0513 |
| 2912.80       | -0.09      | 0.45  | -0.0405 |
| 2909.90       | -0.29      | -0.19 | 0.0551  |
| 2901.35       | -0.59      | -0.22 | 0.1298  |
| 2884.35       | 1.12       | 1.08  | 1.2096  |
| 2916.65       | -0.19      | -0.19 | 0.0361  |
| 2910.95       | -0.02      | -0.76 | 0.0152  |
| 2910.30       | 0.22       | -0.23 | -0.0506 |
| 2916.65       | 1.87       | 0.24  | 0.4488  |
| 2971.15       | -0.04      | -0.90 | 0.036   |
| 2970.00       | -0.65      | -1.21 | 0.7865  |
| 2950.80       | 0.72       | 0.52  | 0.3744  |
| 2972.10       | 2.48       | 1.81  | 4.4888  |
| 3045.75       | 1.29       | -0.08 | -0.1032 |
| 3084.95       | -0.58      | 0.43  | 0.2494  |

|         |              |               |                 |
|---------|--------------|---------------|-----------------|
| 3067.00 | -0.06        | -1.58         | 0.0948          |
| 3065.20 | 0.24         | -0.12         | 0.0288          |
| 3072.50 | -0.42        | -8.51         | 3.5742          |
| 3059.45 | -0.79        | 8.82          | 6.9678          |
| 3035.25 |              |               |                 |
|         | $\sum a=8.2$ | $\sum x=1.54$ | $\sum xa=16.94$ |

Source: BSE Website

### SHOWING VALUES IN LINE CHART



**Interpretation:** From the above Table 4 it can be observed that majority of the daily return of Maruti Suzuki are positive. Which indicates a good returns for the investors in Maruti Suzuki. Even in the above chart it indicates that frequently the returns are moving higher which indicates good return to the investor.

### CALCULATION OF BETA

$$\beta = \frac{n \cdot \sum xa - (\sum x)(\sum a)}{n \sum x^2 - (\sum x)^2}$$

HERE,

N=23

$\sum xa=16.94$

$\sum x^2=162.26$

$\sum x=1.54$

$\sum a=8.2$

$$= \frac{23 \cdot 16.94 - (1.54)(8.2)}{23 \cdot 162.26 - (1.54)^2}$$

$$= \frac{389.62 - 12.63}{3731.98 - 2.3716}$$

$$= \frac{376.99}{3729.55}$$

$$\beta=0.10$$

### calculation of alpha( $\alpha$ )

$$\alpha = \bar{a} - \beta \bar{x}$$

$$= \frac{\sum A}{n} - \beta \left( \frac{\sum x}{n} \right)$$

$$= \frac{8.2}{23} - 0.10 \left( \frac{1.54}{23} \right)$$

$$= 0.36 - 0.10(0.07)$$

$$= 0.36 - 0.007$$

$$\alpha = 0.353$$

### Interpretation:

1. From Table 4 and computation of Beta and Alpha. We can observe that beta of Maruti Suzuki is 0.10. Which means one percent change in market index causes 0.10 change in the stock return of 0.10. It indicates that the stock moves slower than that of market.
2. When we observe the value of alpha of 0.353, it indicates that the return is independent of market return. As the alpha of Maruti Suzuki is positive which refers the company is healthy.

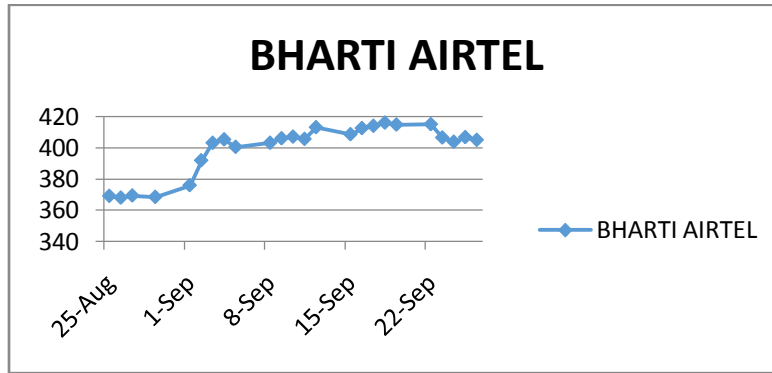
### Calculation of Return and Beta, Alpha of BSE Sensex and BHARTI AIRTEL using regression modelling.

| BHARTI AIRTEL | RETURN (B)(Ri3) | X     | XB      |
|---------------|-----------------|-------|---------|
| 369.10        | -0.29           | 0.02  | -0.0058 |
| 368.00        | 0.37            | 0.44  | 0.1628  |
| 369.35        | -0.24           | 0.29  | 0.0696  |
| 368.45        | 2.04            | 0.86  | 1.7544  |
| 375.95        | 4.24            | 0.57  | 2.4168  |
| 391.90        | 2.87            | 0.45  | 1.2915  |
| 403.15        | 0.55            | -0.19 | -0.1045 |
| 405.35        | -1.18           | -0.22 | 0.2596  |
| 400.55        | 0.66            | 1.08  | 0.7128  |
| 403.20        | 0.71            | -0.19 | -0.1349 |
| 406.05        | 0.26            | -0.76 | -0.1976 |
| 407.10        | -0.36           | -0.23 | 0.0828  |
| 405.65        | 1.85            | 0.24  | 0.444   |
| 413.15        | -1.09           | -0.90 | 0.981   |
| 408.65        | 0.97            | -1.21 | -1.1737 |
| 412.60        | 0.35            | 0.52  | 0.182   |
| 414.05        | 0.49            | 1.81  | 0.8869  |
| 416.10        | -0.20           | -0.08 | 0.016   |
| 414.85        | 0.06            | 0.43  | 0.0258  |
| 415.10        | -2.06           | -1.58 | 3.2548  |
| 406.55        | -0.66           | -0.12 | 0.0792  |
| 403.85        | 0.73            | -8.51 | -6.2123 |
| 406.80        | -0.43           | 8.82  | -3.7926 |

|        |               |               |                 |
|--------|---------------|---------------|-----------------|
| 405.05 | $\sum b=9.64$ | $\sum X=1.54$ | $\sum xb=-5.33$ |
|--------|---------------|---------------|-----------------|

Source: BSE wesite

### SHOWING VALUES IN LINE CHART



**Interpretation:** From the above Table 5 it can be observed that majority of the daily return of Bharti Airtel are positive. Which indicates a good returns for the investors. In the above chart it indicates that there is lot of the returns are moving higher which indicates good return to the investor.

### CALUCULATION OF BETA OF AIRTEL CO,

$$\beta = \frac{n \cdot \sum xb - (\sum x)(\sum b)}{n \sum x^2 - (\sum x)^2}$$

HERE,  
 N=23  
 $\sum xb=-5.33$   
 $\sum x^2=162.26$   
 $\sum x=1.54$   
 $\sum b=9.64$

$$\begin{aligned}
 &= \frac{23 * -5.33 - (1.54)(9.64)}{23 * 162.26 - (1.54)^2} \\
 &= \frac{-122.59 - 14.8456}{3731.98 - 2.3716} \\
 &= \frac{-149.68}{3729.61} \\
 \beta &= -0.04
 \end{aligned}$$

## calculation of alpha( $\alpha$ )

$$\begin{aligned} \alpha &= b' - \beta x' \\ &= \frac{\sum b}{n} - \beta \left( \frac{\sum x}{n} \right) \\ &= \frac{5.33}{23} - (-0.04) \left( \frac{1.54}{23} \right) \\ &= 0.23 - 0.04(0.07) \\ &= 0.2 + -0.0028 \\ \alpha &= \mathbf{0.2028} \end{aligned}$$

### Interpretation:

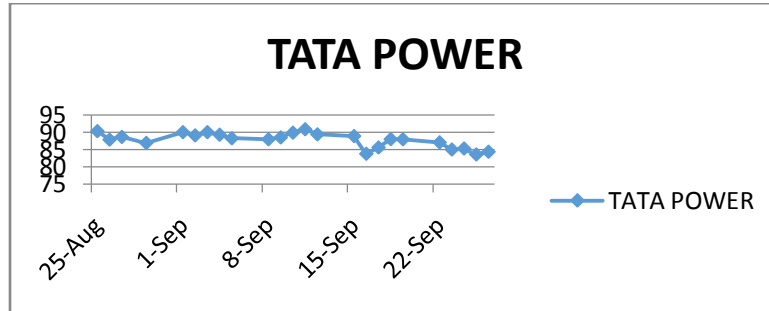
1. From Table 5 and computation of Beta and Alpha. We can observe that beta of Bharti Airtel is -0.04. Which means one percent change in market index causes -0.04 change in the stock return in negative. It indicates that the stock moves negative than that of market.
2. When we observe the value of alpha of 0.2028, it indicates that the return is independent of market return. As the alpha of Bharti Airtel is positive which refers the company is healthy.

### Calculation of Return and Beta, Alpha of BSE Sensex and TATA POWER CO using regression modelling.

| TATA POWER | RETURN (C)(R14)  | X               | XC                |
|------------|------------------|-----------------|-------------------|
| 90.35      | -2.77            | 0.02            | -0.0554           |
| 87.85      | 0.91             | 0.44            | 0.4004            |
| 88.65      | -1.97            | 0.29            | -0.5713           |
| 86.90      | 3.62             | 0.86            | 3.1132            |
| 90.05      | -1.05            | 0.57            | -0.5985           |
| 89.10      | 1.07             | 0.45            | 0.4815            |
| 90.05      | -0.83            | -0.19           | 0.1577            |
| 89.30      | -1.18            | -0.22           | 0.2596            |
| 88.25      | -0.34            | 1.08            | -0.0612           |
| 87.95      | 0.63             | -0.19           | -0.1197           |
| 88.50      | 1.58             | -0.76           | -1.2008           |
| 89.90      | 1.11             | -0.23           | -0.2553           |
| 90.90      | -1.65            | 0.24            | -0.396            |
| 89.40      | -0.56            | -0.90           | 0.504             |
| 88.90      | -5.85            | -1.21           | 7.0785            |
| 83.70      | 2.21             | 0.52            | 1.1492            |
| 85.55      | 2.86             | 1.81            | 5.1766            |
| 88.00      | -0.06            | -0.08           | 0.0048            |
| 87.95      | -1.02            | 0.43            | -0.4386           |
| 87.05      | -2.41            | -1.58           | 3.8078            |
| 84.95      | 1.18             | -0.12           | -0.1416           |
| 85.25      | -2.05            | -8.51           | 17.4455           |
| 83.50      | 0.96             | 8.82            | 8.4672            |
| 84.30      |                  |                 |                   |
|            | $\sum c = -5.61$ | $\sum x = 1.54$ | $\sum xc = 26.76$ |

## SHOWING VALUES IN LINE CHART

**Interpretation:** From the above Table 6 it can be observed that majority of the daily return of TATA POWER CO. are negative. Which indicates a negative returns for the investors. In the above chart it indicates that the returns are lower which indicate negative return to the investor.



$$\beta = \frac{n \cdot \sum xc - (\sum x)(\sum c)}{n \sum x^2 - (\sum x)^2}$$

HERE,

$$N=23$$

$$\sum xc=26.76$$

$$\sum x^2=162.26$$

$$\sum x=1.54$$

$$\sum c= -5.61$$

$$= \frac{23 * 26.76 - (1.54)(-5.61)}{23 * 162.26 - (1.54)^2}$$

$$= \frac{615.48 - 8.64}{3731.98 - 2.3716}$$

$$= \frac{606.84}{3729.61}$$

$$\beta = 0.16$$

calculation of alpha( $\alpha$ )

$$\alpha = c' - \beta x'$$

$$= \frac{\sum c}{n} - \beta \left( \frac{\sum x}{n} \right)$$

$$= \frac{(-5.61)}{23} - 0.16 \left( \frac{1.54}{23} \right)$$



$$=-0.24-0.16(0.07)$$

$$= -0.24-0.0112$$

$$= \mathbf{-0.25}$$

### Interpretation:

1. From Table 6 and computation of Beta and Alpha. We can observe that beta of TATA POWER CO is 0.16. Which means one percent change in market index causes 0.16 change in the stock return in positive. It indicates that the stock moves positive than that of market.
2. When we observe the value of alpha of -0.25, it indicates that the return is independent of market return. As the alpha of TATA POWER CO is negative which refers the company is financial weak.

### CONCLUSION

BSE SENSEX, first compiled in 1986, was calculated on a "Market Capitalization-Weighted" methodology of 30 component stocks representing large, well-established and financially sound companies across key sectors. The "free-float market capitalization-weighted" methodology is a widely followed index construction methodology on which majority of global equity indices are based; all major index providers like MSCI, FTSE, STOXX, and Dow Jones use the free-float. Cipla Ltd. and ITC are one amount the robust companies in the Sensex.

| <b>S.No.</b> | <b>COMPANIES</b> | <b>RETURNS</b> | <b>BETA</b> | <b>ALPHA</b> |
|--------------|------------------|----------------|-------------|--------------|
| 1.           | CIPLA            | 19.61          | 0.43        | 0.821        |
| 2.           | ITC              | 6.35           | -0.028      | 0.28         |
| 3.           | MARUTI SUZUKI    | 8.2            | 0.10        | 0.353        |
| 4.           | BHARTI AIRTEL    | 9.64           | -0.04       | 0.2028       |
| 5.           | TATA POWER       | -5.61          | 0.16        | -0.25        |

During the study it was observed that the return wise Cipla Ltd. is stable with 19.61% and even on daily returns it is positive. The beta of Cipla Ltd. shows a slower returns of 0.43 and the alpha is also positive with 0.821 which is the sign of a healthy company. On the other side ITC has a return have slower return of 6.35% and on the daily note majority are negative return. The beta of ITC shows a negative returns of -0.028 which indicate risk involved in investing and the alpha is positive of 0.28, which indicates the company is health. Maruti Suzuki has a positive returns of 8.2 and beta shows a positive mark of .10 which indicates a slower returns. And the Alpha is 0353 which specifies the good health of the company. BHARTI AIRTEL is moving at a positive note of 9.64, on the other side it is reflecting a negative beta of -0.04 which indicates risk involved in investment. TATA POWER is showing a negative returns of -5.61 and a beta of 0.16 a slower return mode for the investor and the health of the company is weak which is

noted as -0.25 of Alpha. By observing holistically it good to invest in Cipla Ltd and Maruti Suzuki as it has positive returns and a stabilised Market.

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