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# EVALUATION OF LONG-TERM PERFORMANCE OF SELECTED IT EQUITY STOCKS WITH REFERENCE TO NSE

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## ABSTRACT
The main objective of this paper is to find the performance of selected equity stocks of IT industry on a long term basis. This paper includes different tools for evaluating the performance of the selected IT stocks. Some of the tools like standard deviation, Beta and Average returns are mainly used to calculate the risk and return of selected IT stocks in this study. The IT Sector occupies a position of importance in the Indian Economy. Stock markets play a predominant role in the up-liftment of the Indian Economy financially. Stock markets plays crucial role in the economic development of an investor. Indian financial markets also play a crucial role for the economic well being of the nation. Since secondary market is a part of financial market, it has major percent of share of contribution in the development of Indian Economy. In the present paper we are trying to evaluate the long term performance of IT industry with the help of evaluation of selected IT stocks. This evaluation is done on the basis of some statistical tools. The time period for evaluation is 5 years.

**Keywords:** IT industry, equity stocks, Beta, Indian Economy, stock markets, Indian financial markets, statistical tools.

## INTRODUCTION
Stock markets play a predominant role in the up-liftment of the Indian Economy financially. Both capital market and money markets are giving fruitful results to the investors as well as institutions. They play crucial role in the economic development of an investor. Indian financial markets also play a crucial role for the economic well being of the nation. Since secondary market is a part of financial market, it has major percent of share of contribution in the development of Indian Economy.

Many of the investors choose to invest in capital markets because of its liquidity and credibility. Even illiterates gain much out of the stock markets both returns wise as well as knowledge and experience wise. There are several institutions which are giving good recommendations on stocks based on technical and fundamental analysis. People use these sources well and get abundant knowledge and expertise in investing their money wisely. Not only individual investors, but also institutional investors are getting good returns in investing their idle funds of organization. The main intention behind investing in these areas are to get liquid returns with in short period of time.

The information technology (IT) industry has become one of the most robust industries in the world. IT, more than any other industry or economic facet, has an increased productivity, particularly in the developed world, and therefore is a key driver of global economic growth. Economies of scale and insatiable demand from both consumers and enterprises characterize this rapidly growing sector. Information technology, and the hardware and software associated with the IT industry, are an integral part of nearly every major global industry. Owing to its easy accessibility and the wide range of IT products available, the demand for IT services has increased substantially over the years. The IT sector has emerged as a major global source of both growth and employment.

## OBJECTIVES OF THE STUDY

- To examine return of selected equity stocks of IT industry by calculating the average return.
- To examine risk of selected equity stocks of IT industry with the help of calculating Beta value for the stocks.
- To compare the performance of selected stocks with benchmarks.

## METHODOLOGY

### Data:

The data used in this study is purely secondary data which is collected from several websites like NSE India.com, money control.com, yahoofinance.com etc.

### Time Period:

The time period of 5 years data is collected in order to get effective results.
The following are the five companies used for evaluation of results.

Table No. 1: Table showing the list of companies

| SL.NO | COMPANY NAME |
|---|---|
| 1 | TCS |
| 2 | INFOSYS |
| 3 | WIPRO |
| 4 | HCL |
| 5 | TECH MAHINDRA |

### Analysis and Interpretation:

- Data collected is thus analyzed and interpreted with the help of statistical and technical tools.
- The opening price of the stock is taken on the first day of trading in January month of that year and closing price is taken as the last trading day of the December month.

TABLE N0:2 CALCULATIONS OF RETURNS OF TCS

| Year | Opening price (Rs) as on Jan 1st week | Closing price (Rs) as on Dec last week |
|---|---|---|
| 2016 | 1219.50 | 1182.78 |
| 2017 | 1183.30 | 1350.60 |
| 2018 | 1341.15 | 1893.05 |
| 2019 | 1896.00 | 2161.70 |
| 2020 | 2168.00 | 2862.75 |

$$\textbf{Return} = \frac{(\textbf{closing price} - \textbf{opening price})}{\textbf{opening price}} \times \textbf{100}$$

Return (2016) $= \frac{(1182.78-1219.50)}{1219.50} \times 100$ = -3.01%

Return (2017) $= \frac{(1350.60-1183.30)}{1183.30} \times 100$ = 14.14%

Return (2018) $= \frac{(1893.05-1341.15)}{1341.15} \times 100$ = 41.15%

Return (2019) $= \frac{(2161.70-1896.00)}{1896.00} \times 100$ = 14.01%

Return (2020) $= \frac{(2862.75-2168.00)}{2168.00} \times 100$ = 32.05%

## CALCULATION OF AVERAGE RETURN:

$$\overline{\mathbf{R}} = \frac{\Sigma \mathbf{R}}{\mathbf{n}}$$

$$= \frac{98.34}{5}$$

= 19.67

Table No. 3: CALCULATION OF BETA

| Year | Market Returns (x) | Returns (y) | x2 | Xy |
|---|---|---|---|---|
| 2016 | 3.30 | -3.01 | 10.89 | -9.93 |
| 2017 | 28.27 | 14.14 | 824.84 | 399.74 |
| 2018 | 3.67 | 41.15 | 13.47 | 151.02 |
| 2019 | 11.96 | 14.01 | 143.04 | 167.56 |
| 2020 | 14.58 | 32.05 | 212.58 | 467.29 |
| | ∑x=61.78 | ∑y=98.34 | ∑ x2=1204.82 | ∑xy=1175.68 |

**Beta (β) =** $\frac{\mathbf{n\,\Sigma xy-\Sigma x\Sigma y}}{\mathbf{n\Sigma x^2-(\Sigma x)^2}}$

$= \frac{5(1175.68)-(61.78*98.34)}{5(1204.82)-(61.78)2}$

$= \frac{-197.05}{2207.33}$ = -0.089

Table no.4 :CALCULATION OF RETURNS OF INFOSYS

| Year | Opening Price as on Jan 1st | Closing Price as on Dec 31st |
|---|---|---|
| 2016 | 550.00 | 505.30 |
| 2017 | 505.55 | 521.03 |
| 2018 | 518.95 | 658.95 |
| 2019 | 660.95 | 731.15 |
| 2020 | 735.00 | 1255.80 |

**Return=** $\frac{(\boldsymbol{closing\ price-opening\ price})}{\boldsymbol{opening\ price}} \times \mathbf{100}$

Return (2016) = $\frac{505.30-550.00}{550.00} \times 100$ = -8.13

Return (2017) = $\frac{521.03-505.55}{505.55} \times 100$ = 3.06

Return (2018) = $\frac{658.95-518.95}{518.95} \times 100$ = 26.98

Return (2019) = $\frac{731.15-660.95}{660.95} \times 100$ = 10.62

Return (2020) = $\frac{1255.80-735.00}{735.00} \times 100$ = 70.86

## CALCULATION OF AVERAGE RATE OF RETURN:

$\overline{\mathbf{R}} = \frac{\Sigma \mathbf{R}}{\mathbf{n}}$

$= \frac{103.89}{5}$ = 20.68

Table No.5 :CALCULATION OF BETA:

| Year | Market Returns X | Return Y | X2 | XY |
|---|---|---|---|---|
| 2016 | 3.30 | -8.13 | 10.89 | -26.83 |
| 2017 | 28.27 | 3.06 | 824.84 | 86.51 |
| 2018 | 3.67 | 26.98 | 13.47 | 99.02 |
| 2019 | 11.96 | 10.62 | 143.04 | 127.02 |
| 2020 | 14.58 | 70.86 | 212.58 | 1033.14 |
| | ∑x=61.78 | ∑y=103.39 | ∑ x2=1204.82 | ∑by=1318.86 |

**Beta (β) =** $\frac{\mathbf{n\,\Sigma xy-\Sigma x\Sigma y}}{\mathbf{n\Sigma x^2-(\Sigma x)^2}}$

$= \frac{5(1318.86)-(61.78*103.89)}{5(1545.83)-(61.78)^2}$

$= \frac{175.98}{2207.33}$ β = 0. 08

Table no.6 : CALCULATION OF RETURNS OF WIPRO

| Year | Opening Price) as on Jan 1st | Closing Price as on Dec 31st |
|---|---|---|
| 2016 | 209.93 | 177.92 |
| 2017 | 178.15 | 235.69 |
| 2018 | 233.63 | 248.14 |
| 2019 | 248.06 | 245.8 |
| 2020 | 246.50 | 386.25 |

**Return=** $\frac{(closing\ price - opening\ price)}{opening\ price} \times 100$

Return (2016) = $\frac{177.92 - 209.93}{209.93} \times 100 = -15.25$

Return (2017) = $\frac{235.69 - 178.15}{178.15} \times 100 = 32.30$

Return (2018) = $\frac{248.14 - 233.63}{233.63} \times 100 = 6.21$

Return (2019) = $\frac{245.8 - 248.06}{248.06} \times 100 = -0.91$

Return (2020) = $\frac{386.25 - 246.50}{246.50} \times 100 = 56.70$

## CALCULATION OF AVERAGE RATE OF RETURN

$\overline{R} = \frac{\Sigma R}{n}$

$= \frac{79.05}{5}$

= 15.81

Table no.7: CALCULATION OF BETA:

| Year | Market Returns X | Return Y | X2 | XY |
|---|---|---|---|---|
| 2016 | 3.30 | -15.25 | 10.89 | -50.33 |
| 2017 | 28.27 | 32.3 | 824.84 | 913.12 |
| 2018 | 3.67 | 6.21 | 13.47 | 22.79 |
| 2019 | 11.96 | -0.91 | 143.04 | -10.88 |
| 2020 | 14.58 | 56.7 | 212.58 | 826.69 |
| | ∑x=61.78 | ∑y=79.05 | ∑ x2=1204.82 | ∑xy=1701.39 |

**Beta (β) =** $\frac{n\Sigma xy - \Sigma x \Sigma y}{n\Sigma x^2 - (\Sigma x)^2}$

$= \frac{5(1701.39) - (61.78)(79.05)}{5(1204.82) - (61.78)^2}$

$= \frac{3623.24}{2207.33}$ = 1.64

Table no.8 CALCULATIONS OF RETURNS OF HCL TECHNOLOGIES

| Year | Opening Price as on Jan 1st | Closing Price as on Dec 31st |
|---|---|---|
| 2016 | 427.55 | 413.98 |
| 2017 | 411.50 | 445.25 |
| 2018 | 444.50 | 482.18 |
| 2019 | 481.00 | 568.10 |
| 2020 | 569.40 | 946.15 |

**Return=** $\frac{(closing\ price - opening\ price)}{opening\ price} \times 100$

Return (2016) = $\frac{413.98-427.55}{427.55} \times 100$ = -3.17%

Return (2017) = $\frac{445.25-411.50}{411.50} \times 100$ = 8.20%

Return (2018) = $\frac{482.18-444.50}{444.50} \times 100$ = 8.48%

Return (2019) = $\frac{568.10-481.00}{481.00} \times 100$ = 18.11%

Return (2020) = $\frac{946.15-569.40}{569.40} \times 100$ = 66.17%

## CALCULATION OF AVERAGE RATE OF RETURN:

**Average rate of return =**

$\overline{\mathbf{R}} = \frac{\Sigma \mathbf{R}}{\mathbf{n}}$

$= \frac{97.79}{5}$

=19.56

Table no. 9: CALCULATION OF BETA:

| Year | Market Returns X | Return Y | X2 | XY |
|---|---|---|---|---|
| 2016 | 3.30 | -3.17 | 10.89 | -10.46 |
| 2017 | 28.27 | 8.20 | 824.84 | 231.81 |
| 2018 | 3.67 | 8.48 | 13.47 | 31.12 |
| 2019 | 11.96 | 18.11 | 143.04 | 216.60 |
| 2020 | 14.58 | 66.17 | 212.58 | 964.76 |
| | ∑x=61.78 | ∑y=97.79 | ∑ x2=1204.82 | ∑xy=1433.83 |

**Beta (β) =** $\frac{\mathbf{n}\,\Sigma \mathbf{xy}-\Sigma \mathbf{x}\Sigma \mathbf{y}}{\mathbf{n}\Sigma \mathbf{x^2}-(\Sigma \mathbf{x})^2}$

$= \frac{5(1433.83)-(61.78)(97.79)}{5(1204.82)-(61.78)^2}$

$= \frac{1127.68}{2207.33}$ = 0.51

Table no.10 : CALCULATION OF RETURNS OF TECH MAHINDRA

| Year | Opening Price as on Jan 1st | Closing Price(Rs) as on Dec 31st |
|---|---|---|
| 2016 | 522.95 | 488.70 |
| 2017 | 494.00 | 503.85 |
| 2018 | 500.00 | 721.10 |
| 2019 | 715.00 | 762.60 |
| 2020 | 764.50 | 973.05 |

**Return=** $\frac{(\boldsymbol{closing\ price - opening\ price})}{\boldsymbol{opening\ price}} \times \mathbf{100}$

Return (2016) = $\frac{488.70-522.95}{522.95} \times 100$ = -6.55%

Return (2017) = $\frac{503.85-494.00}{494.00} \times 100$ = 1.99%

Return (2018) = $\frac{721.10-500.00}{500.00} \times 100$ = 44.22%

Return (2019) = $\frac{762.60-715.00}{715.00} \times 100$ = 6.66%

Return (2020) = $\frac{973.05-764.50}{764.50} \times 100$ = 27.28%

## CALCULATION OF AVERAGE RATE OF RETURNS:

$\overline{\mathbf{R}} = \frac{\Sigma \mathbf{R}}{\mathbf{n}}$

$= \frac{73.6}{5}$

=14.72

Table no.11: CALCULATION OF BETA:

| Year | Market Returns X | Returns Y | X2 | XY |
|---|---|---|---|---|
| 2016 | 3.30 | -6.55 | 10.89 | -21.62 |
| 2017 | 28.27 | 1.99 | 824.84 | 56.26 |
| 2018 | 3.67 | 44.22 | 13.47 | 162.29 |
| 2019 | 11.96 | 6.66 | 143.04 | 79.65 |
| 2020 | 14.58 | 27.28 | 212.58 | 397.74 |
| | ∑x=61.78 | ∑y=73.6 | ∑ x2=1204.82 | ∑xy=674.32 |

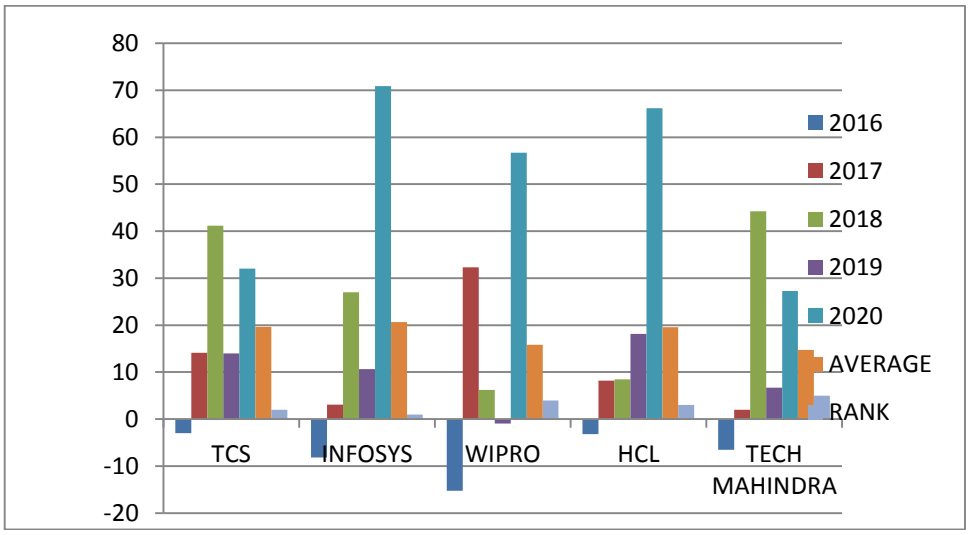
$$\textbf{Beta } (\beta) = \frac{n\,\Sigma xy - \Sigma x \Sigma y}{n\Sigma x^2 - (\Sigma x)^2}$$

$$= \frac{5(674.32) - (61.78)(73.6)}{5(1204.82) - (61.78)^2}$$

$$= \frac{-1175.41}{2207.33} = -0.53$$

Table no.12: TABLE SHOWING AVERGE RETURNS OF 5 STOCKS FOR 5 YEARS

| COMPANY NAME | 2016 | 2017 | 2018 | 2019 | 2020 | AVERAGE | RANK |
|---|---|---|---|---|---|---|---|
| TCS | -3.01 | 14.14 | 41.15 | 14.01 | 32.05 | 19.67 | 2 |
| INFOSYS | -8.13 | 3.06 | 26.98 | 10.62 | 70.86 | 20.68 | 1 |
| WIPRO | -15.25 | 32.3 | 6.21 | -0.91 | 56.7 | 15.81 | 4 |
| HCL | -3.17 | 8.2 | 8.48 | 18.11 | 66.17 | 19.56 | 3 |
| TECH MAHINDRA | -6.55 | 1.99 | 44.22 | 6.66 | 27.28 | 14.72 | 5 |



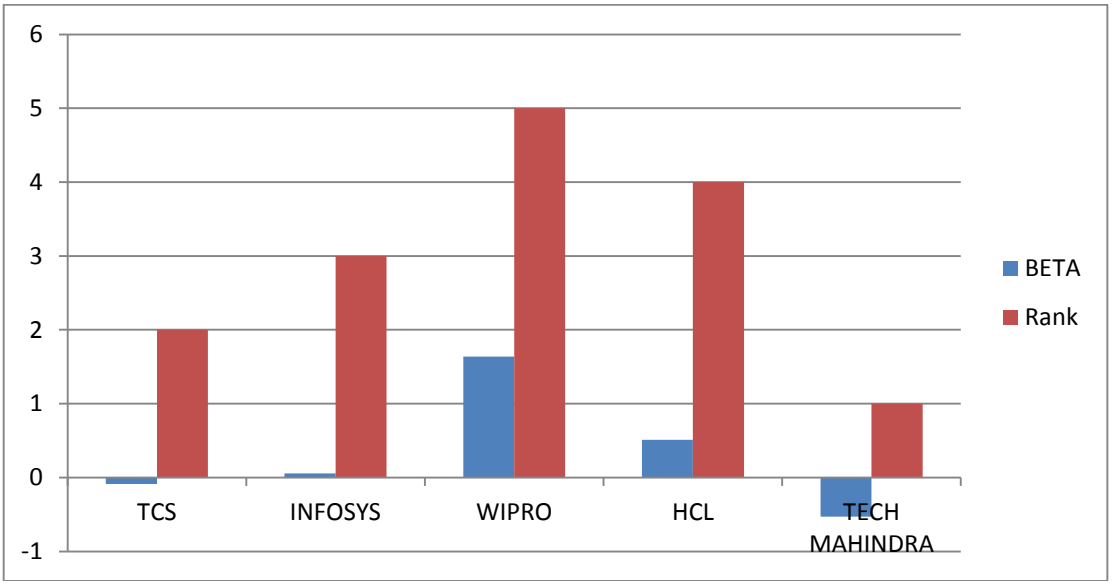

Graph No.1: Graph showing Average Returns of Five companies.

**INTERPRETATION:**

**INFOSYS** Equity earned highest average rate of return i.e., 20.68 among all the 5 companies stocks for five years, followed by **TCS** Equity and **HCL** Equity in second and third ranks.

Table no.13: TABLE SHOWING THE VALUE OF BETA FOR 5 YEARS

| S.NO | COMPANY NAME | BETA | Rank |
|---|---|---|---|
| 1 | TCS | -0.089 | 2 |
| 2 | INFOSYS | 0.058 | 3 |
| 3 | WIPRO | 1.64 | 5 |
| 4 | HCL | 0.51 | 4 |
| 5 | TECH MAHINDRA | -0.53 | 1 |



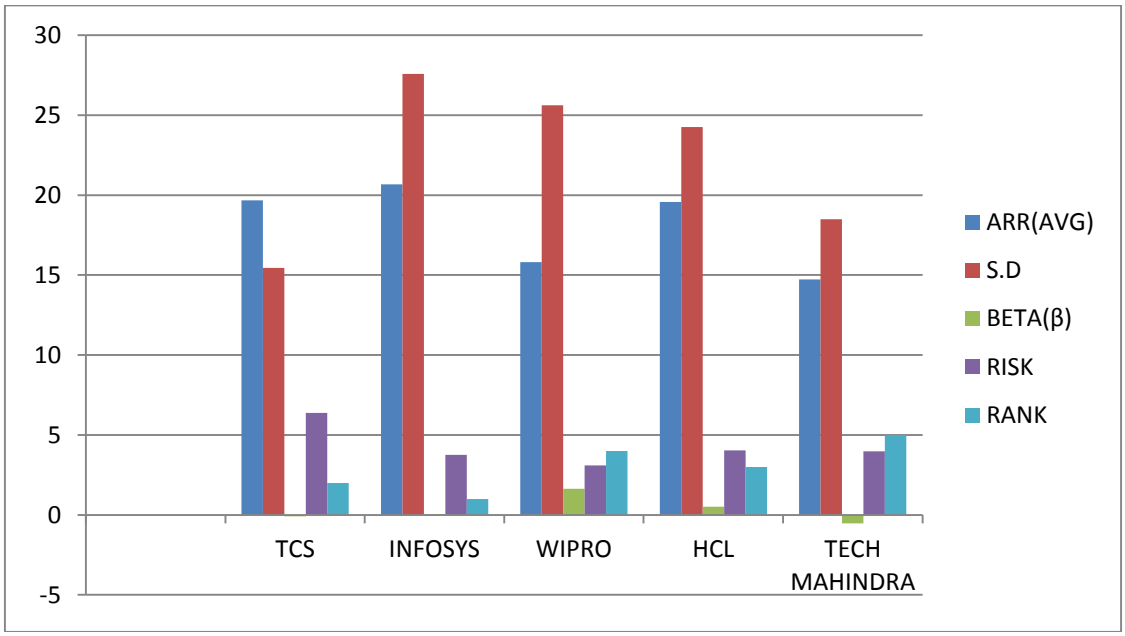

Graph No.2: Graph showing Beta value of five stocks.

**INTERPRETATION:**

TECH MAHINDRA Equity holds lowest risk of -0.53 which is less than the bench mark of beta. WIPRO Holds highest risk than remaining four companies stocks i.e., 1.64

Table no.14: RANK WISE PERFORMANCE OF COMPANIES

| COMPANY | ARR(AVG) | S.D | BETA(β) | RANK |
|---|---|---|---|---|
| **TCS** | 19.67 | 15.44 | -0.089 | 2 |
| **INFOSYS** | 20.68 | 27.57 | 0.058 | 1 |
| **WIPRO** | 15.81 | 25.61 | 1.64 | 4 |
| **HCL** | 19.56 | 24.26 | 0.51 | 3 |
| **TECH MAHINDRA** | 14.72 | 18.48 | -0.53 | 5 |




Graph 3 : Graph showing Rank wise performance of 5 stocks based on average return

## FINDINGS

- By analyzing the performance of various IT company's shares, it is found that the average return of INFOSYS is 20.68, and beta is 0.058.
- It is found that the average return of TCS is 19.67, and beta is -0.089.
- It is also evident from the study that, the average return and beta values of WIPRO is 15.81 and 1.64 respectively.
- The study shows the average return and beta values of 19.56 and 0.51 respectively to HCL Company.
- Finally, Tech Mahindra's average return is 14.72 and beta is -0.53.

## SUGGESTIONS

- Based on the returns, it is suggested that, INFOSYS is giving high returns when compared to all other stocks, and hence investors may choose to invest in INFOSYS stock.
- As the beta value for INFOSYS is also less when compare with all the stocks, it means the risk is also less and hence it is recommended to invest in the stock.
- Returns wise, TCS is also performing well after INFOSYS, but the beta value is -0.089 which indicates that, if the market moves positively, this stock will move negatively and vice versa. Hence investors while choosing to invest in TCS should be cautious about the market trend.
- HCL stood in 3$^{rd}$ place in terms of returns, with a beta value of 0.51 which is also a good option to invest after INFOSYS.
- As WIPRO gives moderate returns with highest risk factor, it is suggested not to go for it. It is recommended for risk takers.
- When compared to all the stocks, Tech Mahindra is giving least returns with negative beta. So it is also not recommended for risk averse.

## CONCLUSION

As per the study is concerned, it is concluded that investing in stock markets is like gambling and one should be very cautious while investing in stocks. For better returns, it is recommended to do fundamental analysis before investing in a particular stock. As stock markets are volatile in nature, it is recommended to the investors to invest their money on long term basis and not to go for short term. Definitely, one can gain some returns in long term. Based on this study, it is evident that all the five stocks have give moderate to good returns when compared to other type of traditional investments like bank deposits, post office savings etc. As this study is done only on 5 stocks of IT industry, we may not come to a conclusion that IT industry is performing well. There are other industries which are performing better than IT industry. Hence investors are recommended to do fundamental analysis which covers the analysis of Economy, Industry and company.

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