



Technical Analysis of Tata Consultancy Services Ltd. And Larsen & Toubro Infotech Ltd.

Udit Agrawal^{1*}, Dr. Meghna Jain²

^{1*}MBA 3rd Semester Gyan Ganga College of Technology, Jabalpur, India

²Associate Professor MBA Department, Gyan Ganga Institute of Technology and Science, Jabalpur, India

Email: ²meghnajain13@gmail.com

Corresponding Email: ^{1*}uditagrwal06@gmail.com

Received: 12 December 2022 **Accepted:** 27 February 2023 **Published:** 03 April 2023

Abstract: *Stock market plays a very crucial role in the country's economy. Stock market is a place where people or laymen invest their money on shares. A place where buying or selling of shares takes place is Stock market. There are so many different sectors are there such as- Information Technology(IT) sector, Pharmaceutical sector, Textile sector, Telecom sector, etc. which helps in developing the economy of our country. But in today's date IT sector is in boom and performing well in the market and also plays an important role in the development of country's economy. That's why here we have choosing two famous IT companies for our Research Paper are- TCS and LTI. Technical analysis of selected IT companies have indicated that LTI company has performed best as compared to TCS. For evaluation the share price movement has been considered for a period of year from 2018-2022.*

Keywords: *Information Technology, Stock Market, Technical Analysis.*

1. INTRODUCTION

About Stock Market

Stock market or Stock exchange is a point where buyer and seller meet to exchange stock or shares of public cooperation. Stock exchange allows stock brokers to trade stocks and other securities which were listed on stock exchange i.e. Bombay Stock Exchange (BSE) and National Stock Exchange (NSE). In India Stock market is controlled by the government body known as SEBI (Security and Exchange Board of India).

To measure the index value for BSE we use **Sensex** and for NSE we use **Nifty**. **Sensex** is form for the top 30 companies listed on Bombay Stock Exchange and **Nifty** is form for the top 50 companies listed on National Stock Exchange that's why is known as **Nifty 50**.

About Technical Analysis

Technical analysis is a tool to predict the future price of stock or securities by using price charts. Technical analysis in trading to evaluate the investment in price trend. It uses charts instead of annual reports to evaluate the stock price. It is a method used by traders to predict the future price of stock by analysing the past performance of stock in the market. It studies trend in price, volume and moving averages over a period of time. In recent years technical analysis has gained popularity not only because of its simplicity but also because of its universal approach i.e. it can be applied in different market segments in different time intervals. The two most common form of technical analysis is charts patterns and statistical indicators i.e. shown below:



Source Stock Charts.com

About IT Sector

Information Technology commonly known as IT is a business sector that deals with computing including hardware and software that facilitates communication. IT also include management of data whether it is in the form of text, voice, image, audio, etc. As we know this is the generation of computer technology artificial intelligence so IT sector is one of the most important sector of Indian industry and plays very important role in the economy of the country. That's the reason IT sector companies stock or shares are in the boom in the market. The IT sector currently contributing about 7.7% in GDP and is expected to contribute about 10% by 2025. According to STPI (Software Technology Park of India) IT companies connected to it stood to Rs. 1.20 Lakh Crore in the first quarter of Financial Year 2022. There are many top IT companies in the market like- TCS, Wipro, HCL Technologies, Infosys, Tech Mahindra, Mindtree, L&T Technologies, L&T InfoTech, Mphasis, etc. which are doing very well in the stock market.

Market Cap (Cr): 11

\$ (□): 105.46



Source-Statista.com

About Companies

Tata Consultancy Services Limited (TCS)



Tata Consultancy Services is an IT services, consulting, and business solutions organization that has been partnering with many of the world's largest businesses in their transformation journeys for over 50 years. Tata Consultancy Services is an Indian multinational information technology services and consulting company with its headquarters in Mumbai. It is a part of the Tata Group and operates in 150 locations across 46 countries. In July 2022, it was reported that TCS had over 600,000 employees worldwide. A part of the Tata group, India's largest multinational business group, TCS has over 592,000 of the world's best-trained consultants in 55 countries. The company generated consolidated revenues of US \$25.7 billion in the fiscal year ended March 31, 2022. Tata Consultancy Services is a leading globally IT services, consulting and business solutions organization offering transformational as well as outsourcing services to enterprises globally. Tata Consultancy Services Ltd. was incorporated in the year 1968 founded by Tata Son's. Tata Consultancy Services Ltd. provides consultancy services, services integration, digital transformation services to the businesses globally. The company shares were listed in Bombay Stock Exchange (BSE) and National Stock Exchange (NSE) in India.

CEO: Rajesh Gopinathan (10 Feb 2013-)

Headquarters: Mumbai

Founders: Faquir Chand Kohli, J. R. D. Tata



Book Value (₹): 244	Roce (%): 54.9	Debt to Equity: 0.09
Stock P/E: 29.5	ROE (%): 43.6	Dividend Yield (%): 1.37
Revenue (Cr): 184,868	Earnings (Cr): 52,013	Cash (Cr): 18,221
Total Debt (Cr): 7,818	Promoter's Holdings (%): 72.05	

Revenue: 1.96 lakh crores INR (US\$26 billion, 2022)

Parent organizations: Tata Group, Tata Sons

Founded: 1 April 1968

Number of employees: 6,16,171(October 2022)

Larsen & Toubro InfoTech Limited (LTI):



Larsen & Toubro Infotech Limited is an Indian multinational information technology services and consulting company based in Mumbai. A subsidiary of Larsen & Toubro, the company was incorporated in 1996 and employs more than 90,000 people.

Larsen & Toubro InfoTech Ltd. is a global technology consulting and digital solutions companies helping more than 300 clients succeeding a converging world. Larsen & Toubro Infotech Ltd. (LTI) was incorporated in the year 1997 it was subsidiary of Larsen & Toubro

Limited (L&T) by Henning Holk Larsen and Soren Kristian Toubro at Mumbai. In 2002 company name changed from L&T Information Technology Limited to Larsen & Toubro Infotech Limited. The company shares were listed in Bombay Stock Exchange (BSE) and National Stock Exchange (NSE) in India. In 2022 the company was merged with Mindtree which was the other IT services subsidiary of Larsen & Toubro and the company was renamed as LTIMindtree Limited.

CEO: Debashis Chatterjee (14 Nov 2022–)

Headquarters: Mumbai

Revenue: 351 crores USD (FY22)

Number of employees: 90,000 (2022)

Net income: 53 crores USD (FY22)

Founded: 23 December 1996

**Quick Overview of Tata Consultancy Services Ltd.
Quick Overview of Larsen & Toubro Infotech Ltd.**

Market Cap (Cr): 78403	Face Value (₹): 1	EPS (₹): 138.88
Book Value (₹): 503	Roce (%): 35.7	Debt to Equity: 0.10
Stock P/E: 32.2	ROE (%): 28.5	Dividend Yield (%): 1.01
Revenue (Cr): 14,636	Earnings (Cr): 2,928	Cash (Cr): 777
Total Debt (Cr): 836	Promoter's Holdings (%): 74.31	



Objectives

Understanding the Technical Analysis of IT companies- Tata Consultancy Services (TCS) and Larsen & Toubro Infotech (LTI) for last four Financial Year i.e. 2018-19, 2019-20, 2020-21 and 2021-22.

To compare the last four Financial Year performance of selected IT companies i.e. TCS and LTI.

To provide information about whether these selected IT companies i.e. TCS and LTI were good for investing or not.



2. RESEARCH METHODOLOGY

Research methodology is the specific procedures or techniques used to identify, select, process, and analyze information about a topic. In a research paper, the methodology section allows the reader to critically evaluate a study's overall validity and reliability. Research methodology is a way of explaining how a researcher intends to carry out their research. It's a logical, systematic plan to resolve a research problem. A research methodology gives research legitimacy and provides scientifically sound findings. It also provides a detailed plan that helps to keep researchers on track, making the process smooth, effective and manageable. The methodology section answers two main questions: How was the data collected or generated? How was it analyzed?

Research Plan-

A research plan is the main part of a grant application and describes a principal investigator's proposed research. The research plan gives a principal investigator the opportunity to discuss proposed research, stating its importance and how it will be conducted.

Research Design-

Research design refers to the framework of market research methods and techniques that are chosen by a researcher. The design that is chosen by the researchers allows them to utilise the methods that are suitable for the study and to set up their studies successfully in the future as well. The research design in the study is Analytical in nature.

Sample of the Study-

- Tata Consultancy Services Ltd. (TCS)
- Larsen & Toubro Infotech Ltd. (LTI)

Period of Study-

The last four Financial Years data has been taken into consideration 2018-19, 2019-20, 2020-21, 2021-22 for the analysis of Share Prices.



Data Collection-

There are several ways of collecting the appropriate data, which may differ considerably in context of money costs, time and other resources at the disposal of the researcher. Broadly data collection methods can be divided in two categories:

- Primary source
- Secondary source

In this Project Report we have taken **Secondary Data** from different websites such as:

- Investing.com
- tcs.com
- Itimindtree.com
- samco.in
- moneycontrol.com

Tools for Presentation-

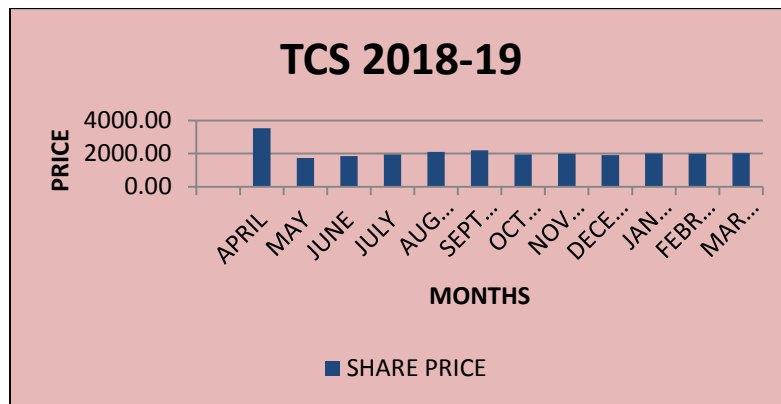
- Tables
- Graphs

Data Analysis:

Tata Consultancy Services Ltd. (TCS) of Financial Year 2018-19

(Share price were taken for the end of each month)

MONTH	SHARE PRICE	PERCENT INCREASE or DECREASE
APRIL	3528.05	-
MAY	1739.25	-50.70%
JUNE	1853.15	6.55%
JULY	1946.95	5.06%
AUGUST	2093.85	7.55%
SEPTEMBER	2193.55	4.76%
OCTOBER	1944.20	-11.37%
NOVEMBER	1976.55	1.66%
DECEMBER	1904.75	-3.63%
JANUARY	2013.50	5.71%
FEBRUARY	1983.65	-1.48%
MARCH	2014.60	1.56%
AVERAGE	2099.34	-3.12%

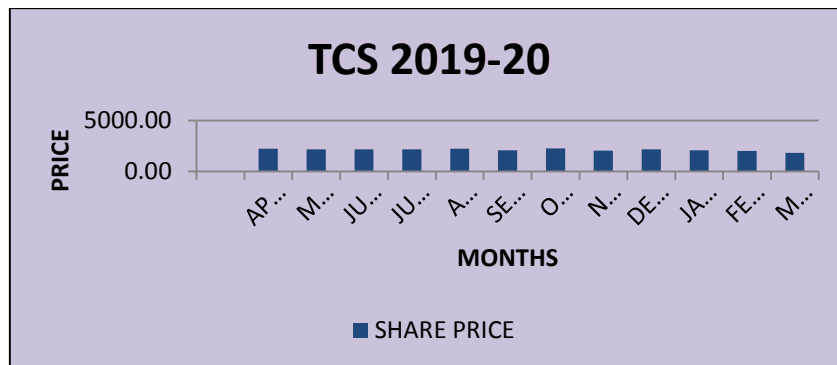


Interpretation-

- There is a huge downfall in the share price in the month of May as compared to the month of April, there is a negative change in the price i.e. -50.70%.
- In the month of April and September the price of share is higher than the average share price of Financial Year 2018-19.
- If one have purchase the shares of TCS in the month of April and wants to sell the share in the month of March 2019 than he/she have to bear the loss of 42.89%.

Tata Consultancy Services Ltd. (TCS) of Financial Year 2019-20
(Share price were taken for the end of each month)

MONTH	SHARE PRICE	PERCENT INCREASE or DECREASE
APRIL	2216.17	-
MAY	2153.61	-2.82%
JUNE	2183.67	1.40%
JULY	2162.58	-0.97%
AUGUST	2215.43	2.44%
SEPTEMBER	2058.26	-7.09%
OCTOBER	2269.65	10.27%
NOVEMBER	2053.25	-9.53%
DECEMBER	2161.70	5.28%
JANUARY	2079.05	-3.82%
FEBRUARY	2000.15	-3.80%
MARCH	1826.10	-8.70%
AVERAGE	2114.97	-1.58%

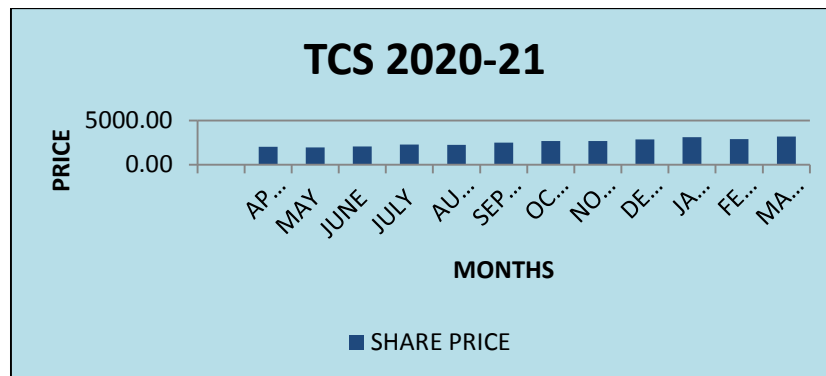


Interpretation-

- There is a slight rise in the share price in the month of October as compared to the month of September, there is a rise of 10.27% in the share price.
- In the month of April, May, June, July, August, October and December the price of share is higher than the average share price of Financial Year 2019-20.
- If one have purchase the shares of TCS in the month of April and sell it on October he/she gained the profit of 2.41% and if he/she sells it on March 2020 have to bear the loss of 17.60%.

Tata Consultancy Services Ltd. (TCS) of Financial Year 2020-21
(Share price were taken for the end of each month)

MONTH	SHARE PRICE	PERCENT INCREASE or DECREASE
APRIL	2014.45	-
MAY	1972.35	-2.09%
JUNE	2082.15	5.57%
JULY	2281.40	9.57%
AUGUST	2257.25	-1.06%
SEPTEMBER	2492.30	10.41%
OCTOBER	2664.85	6.92%
NOVEMBER	2679.65	0.56%
DECEMBER	2862.75	6.83%
JANUARY	3111.35	8.68%
FEBRUARY	2894.30	-6.98%
MARCH	3177.85	9.80%
AVERAGE	2540.89	4.38%



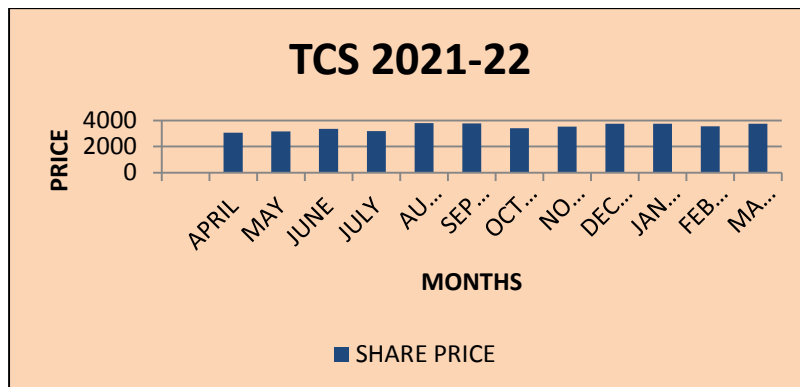
Interpretation-

- There is a slight rise in the share price in the month of September as compared to the month of August, there is a rise of 10.41% in the share price.
- In the month of October, November, December, January, February and March the price of share is higher than the average share price of Financial Year 2020-21.
- If one have purchase the shares of TCS in the month of April and sell it on any of the month from July to March must earn the profit, but if he/she sells it on the month of March 2021 earn the profit of 57.75%.

Tata Consultancy Services Ltd. (TCS) of Financial Year 2021-22

(Share price were taken for the end of each month)

MONTH	SHARE PRICE	PERCENT INCREASE or DECREASE
APRIL	3052.5	-
MAY	3167.45	3.77%
JUNE	3351.3	5.80%
JULY	3181.55	-5.07%
AUGUST	3789.55	19.11%
SEPTEMBER	3775.55	-0.37%
OCTOBER	3413.25	-9.60%
NOVEMBER	3541.55	3.76%
DECEMBER	3744.35	5.73%
JANUARY	3753	0.23%
FEBRUARY	3560.35	-5.13%
MARCH	3739.95	5.04%
AVERAGE	3505.86	2.12%



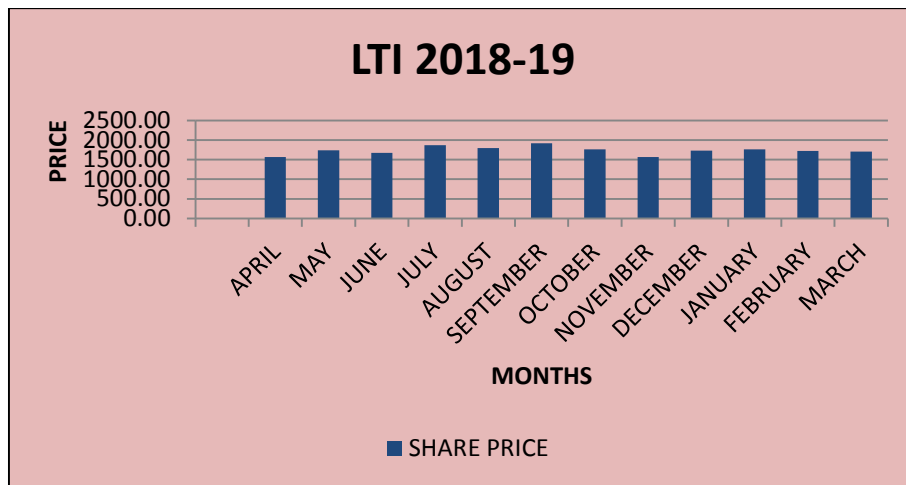
Interpretation-

- There is a rise in the share price in the month of August as compared to the month of July, there is an increase of 19.11% in the share price.
- In the month of August, September, November, December, January, February and March the price of share is higher than the average price of Financial Year 2021-22.
- If one have purchase the shares of TCS in the month of April and sell it on any of the month from May to March must earn the profit, but if he/she sells it on August 2021 earns the profit of 24.14%.

4.5 Larsen & Toubro Infotech Ltd. (LTI) of Financial Year 2018-19

(Share price were taken for the end of each month)

MONTH	SHARE PRICE	PERCENT INCREASE or DECREASE
APRIL	1568.95	-
MAY	1740.70	10.95%
JUNE	1671.40	-3.98%
JULY	1872.90	12.06%
AUGUST	1797.75	-4.01%
SEPTEMBER	1917.00	6.63%
OCTOBER	1766.45	-7.85%
NOVEMBER	1569.75	-11.14%
DECEMBER	1731.20	10.29%
JANUARY	1760.85	1.71%
FEBRUARY	1719.55	-2.35%
MARCH	1702.60	-0.99%
AVERAGE	1734.93	1.03%



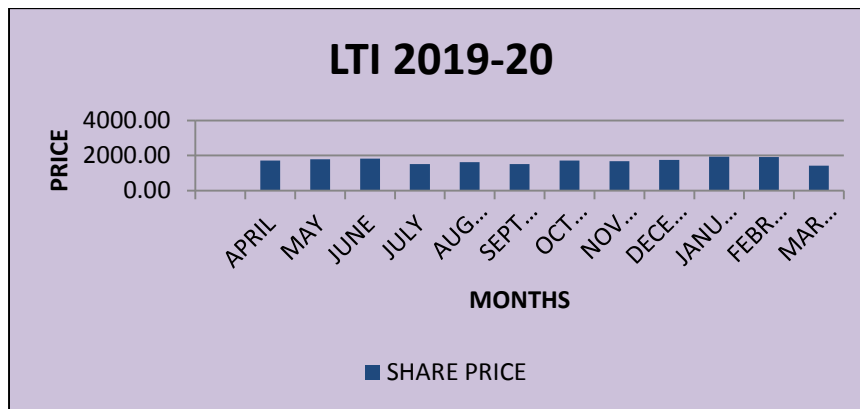
Interpretation-

- There is a slight rise in the prices of share in the month of July as compared to the month of June, there is a rise of 12.06% in the share price.
- In the month of May, July, August, September, October and January the prices of share is higher than the average price of Financial Year 2018-19.
- If one have purchase the shares of LTI in the month of April and sell it on any of the month from May to March must earn the profit, but if he/she sells it on September 2018 earn the profit of 22.18%.

Larsen & Toubro Infotech Ltd. (LTI) of Financial Year 2019-20

(Share price were taken for the end of each month)

MONTH	SHARE PRICE	PERCENT INCREASE or DECREASE
APRIL	1716.85	-
MAY	1785.05	3.97%
JUNE	1829.45	2.49%
JULY	1513.60	-17.26%
AUGUST	1626.45	7.46%
SEPTEMBER	1511.25	-7.08%
OCTOBER	1721.85	13.94%
NOVEMBER	1689.65	-1.87%
DECEMBER	1750.50	3.60%
JANUARY	1940.25	10.84%
FEBRUARY	1910.15	-1.55%
MARCH	1428.85	-25.20%
AVERAGE	1701.99	-0.97%



Interpretation-

- There is a slight downfall in the share price in the month of March as compared to February, there is a negative change in the price i.e. -25.20%.
- In the month of April, May, June, October, December, January and February the prices of share is higher than the average price of Financial Year 2019-20.
- If one have purchase the shares of LTI in the month of April and sell it on the month of January earns the profit of 13.01%.

Larsen & Toubro Infotech Ltd. (LTI) of Financial Year 2020-21

(Share price were taken for the end of each month)

MONTH	SHARE PRICE	PERCENT INCREASE or DECREASE
APRIL	1592.95	-
MAY	1798.85	12.93%
JUNE	1957.90	8.84%
JULY	2416.80	23.44%
AUGUST	2458.35	1.72%
SEPTEMBER	2543.55	3.47%
OCTOBER	2918.50	14.74%
NOVEMBER	3200.45	9.66%
DECEMBER	3659.50	14.34%
JANUARY	3963.90	8.32%
FEBRUARY	3599.85	-9.18%
MARCH	4054.30	12.62%
AVERAGE	2847.08	9.17%

Interpretation-

- There is a rise of 23.44% of share price in the month of July as compared to the month of June.
- In the month October to March the share price of each month is higher than the average price of Financial Year 2020-21.

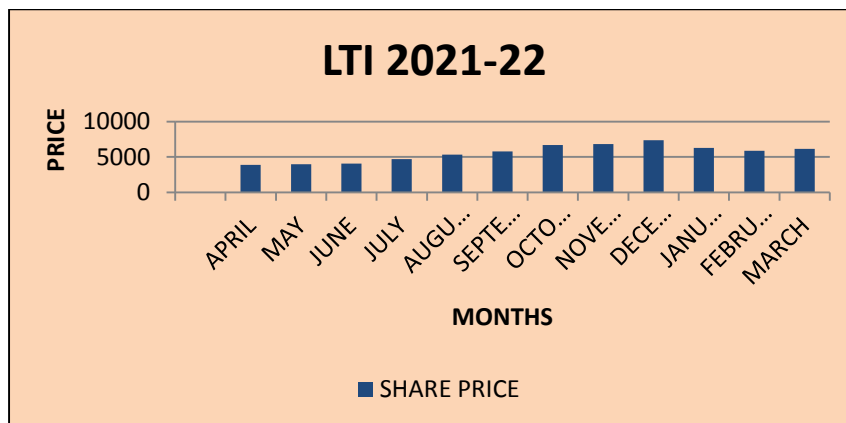


- If one have purchase the shares of LTI in the month of April and sell it on any of the month from May to March must earn the profit, but if he/she sells it on March 2021 earns the good profit of 154.5%.

Larsen & Toubro Infotech Ltd. (LTI) of Financial Year 2021-22

(Share price were taken for the end of each month)

MONTH	SHARE PRICE	PERCENT INCREASE or DECREASE
APRIL	3902.15	-
MAY	3955.05	1.36%
JUNE	4055.1	2.53%
JULY	4704.1	16.00%
AUGUST	5334.25	13.40%
SEPTEMBER	5765.3	8.08%
OCTOBER	6694.45	16.12%
NOVEMBER	6832.25	2.06%
DECEMBER	7350.35	7.58%
JANUARY	6289.9	-14.43%
FEBRUARY	5855.35	-6.91%
MARCH	6155.45	5.13%
AVERAGE	5574.48	4.63%



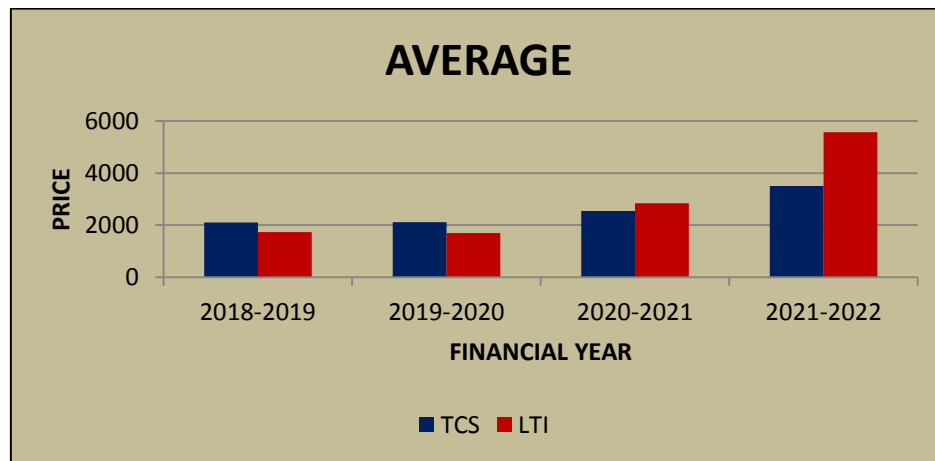
Interpretation-

- There is a rise of 16.12% of share price in the month of October as compared to the month of September.
- In the month September to March the share price of each month is higher than the average price of Financial Year 2021-22.
- If one have purchase the shares of LTI in the month of April and sell it on any of the month from June to March must earn the profit, but if he/she sells it on December 2021 earns the good profit of 88.36%.



Comparison of Average Prices of last four Financial Year

Financial Year	TCS	LTI
2018-2019	2099.34	1734.93
2019-2020	2114.97	1701.99
2020-2021	2540.89	2847.08
2021-2022	3505.86	5574.47

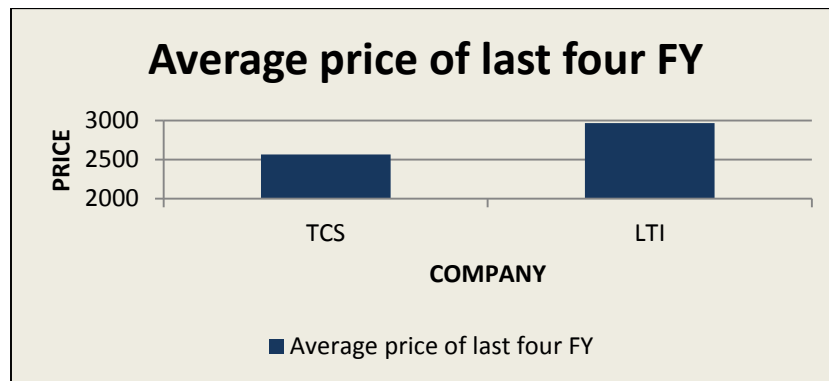


Interpretation-

As we can observe the almost same trend in both the companies, in the year 2018-19, 2019-20 and 2020-21 there is not much change in the price but in the year 2021-22 we can see there is the huge rise in prices in both the companies. There is highest average price change of Rs.2068.61 in Larsen & Toubro Infotech Ltd. (LTI) in comparison to Tata Consultancy Services Ltd. (TCS) in the Financial Year 2021-22. As we can also observe in the graph that both the companies had perform well in the Covid-19 period.

Calculation of Average of Average Prices of last four FY

Financial Year	TCS	LTI
2018-2019	2099.34	1734.93
2019-2020	2114.97	1701.99
2020-2021	2540.89	2847.08
2021-2022	3505.86	5574.47
Average price of last four FY	2565.27	2964.62

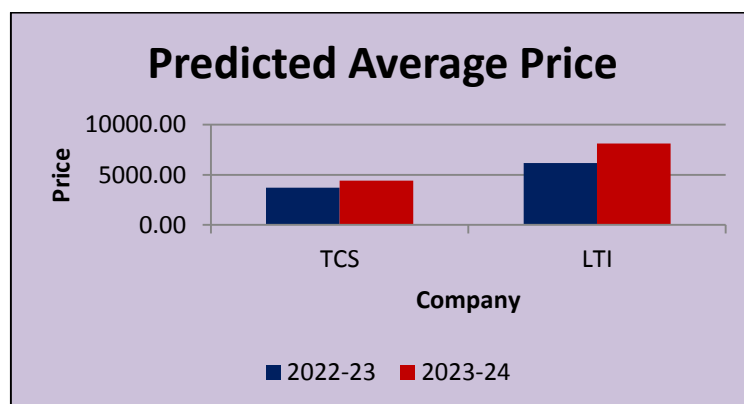


Interpretation-

As we have calculated the average of average prices of share of last four Financial Year, so we can see that there is a difference of Rs.399.35 in the average prices of both the company's i.e. TCS and LTI in last four Financial Year- 2018-19, 2019-20, 2020-21 and 2021-22. By observing the above table and chart we can say that both the company's had perform well in last four Financial Year.

Prediction of Average Share Price of FY-2022-23 and 2023-24

Financial Year	TCS	LTI
2018	2099.34	1734.93
2019	2114.97	1701.99
2020	2540.89	2847.08
2021	3505.86	5574.47
2022	3726.64	6167.26
2023	4422.08	8110.59



Interpretation-

Here we have calculated the predicted average share price for Financial Year 2022-23 (from 1st April 22 to 31st March 23) and for Financial Year 2023-24 (from 1st April 23 to 31st March 24) by taking last four Financial Year- 2018, 2019, 2020 and 2021 as a base by using Forecast formula in Excel: =FORECAST(x, known_y's, known_x's)

For example: = FORECAST(A6,B2:B5,A2:A5)

- There is a change of Rs.220.78 in the average share price of TCS in FY- 2022-23 as compared to FY- 2021-22 and in FY- 2023-24 there is a change of Rs.695.44 as compared to FY- 2022-23.
- There is a change of Rs.592.79 in the average share price of LTI in FY- 2022-23 as compared to FY- 2021-22 and in FY- 2023-24 there is a change of Rs.1943.33 as compared to FY- 2022-23.
- LTI is more beneficial than TCS in both the FY- 2022-23 and 2023-24.



Findings

In TCS in Financial Year 2018-19 there is a loss in the month of May as compared to April.

In TCS in Financial Year 2019-20 investors have to face the loss in the month of March as compared to April.

In TCS in Financial Year 2020-21 if investor has bought the share in month of April and sell it on March he/she earns the profit.

In TCS in Financial Year 2021-22 the highest share price is Rs.3789.55 in the month of August and there is a profit as compared to the month of April.

In LTI in Financial Year 2018-19 if investors sells the share, earns the profit in the month of September as compared to April.

In LTI in Financial Year 2019-20 there is a negative change in the share price in the month of March as compared to February. If one have purchase the shares of LTI in the month of April and sell it on the month of January earns the profit.

In LTI in Financial Year 2020-21 if one have purchase the shares of LTI in the month of April and sells it on March 2021 earns the good profit.

In LTI in Financial Year 2021-22 investors earns the good profit in the month of December if he/she sells the share which were purchased in the month of April.

There is highest average price change in Larsen & Toubro Infotech Ltd. (LTI) in comparison to Tata Consultancy Services Ltd. (TCS) in the Financial Year 2021-2022.

There is a difference of Rs.399.35 in the average prices of both the company's i.e. TCS and LIT in last four Financial Year- 2018-19, 2019-20, 2020-21 and 2021-22.

In FY- 2022-23 the predicted average share price of TCS is Rs.3726.64 and of LTI is Rs.6167.26.

In FY- 2023-24 the predicted average share price of TCS is Rs.4422.08 and of LTI is Rs.8110.59.



3. CONCLUSION

As we can observe the almost same trend in both the companies- Tata Consultancy Services Ltd. (TCS) and Larsen & Toubro Infotech Ltd. (LTI) in the year 2018-19, 2019-20 and 2020-21 there is not much change in the price but in the year 2021-22 we can see there is the huge rise in prices in both the companies. Due to Covid-19 we can see the huge impact in prices of share in IT sector because in pandemic people were becoming more dependent on technology, the use of technology is increasing now a days. People were getting education online, doing their business online, ordering food online, getting all the banking services on your mobile phones in a single click and many more other facilities which we are using just because of technology which was made possible by IT companies. In this we have analyse the month wise changes in the share price of Tata Consultancy Services Ltd. (TCS) and Larsen & Toubro Infotech Ltd. (LTI) and done the comparison of average prices of these companies for the last four Financial Year- 2018-19, 2019-20, 2020-21 and 2021-22 by using tables and charts. It is done to know the changes in the share price and to analyse that by what percent share prices are changing. As we have calculated the predicted average share prices for Financial Year 2022-23 and 2023-24, so from that we can say that Larsen & Toubro Infotech Ltd. (LTI) can perform well in upcoming Financial Year's, so people can invest their money in LTI for higher returns in future as compared to TCS. By technical analysis we got to know the best company between Tata Consultancy Services Ltd. (TCS) and Larsen & Toubro Infotech Ltd. (LTI) in which today's generation can invest their money is Larsen & Toubro Infotech Ltd. (LTI) because their performance in all four Financial Year is good.



4. BIBLIOGRAPHY

The data has been collected from different websites-

1. <https://www.tcs.com/>
2. <https://www.ltimindtree.com/>
3. <https://in.investing.com/>
4. <https://www.investopedia.com/>
5. <https://economictimes.indiatimes.com/>
6. <https://www.capitalmarket.com/>
7. <https://www.samco.in/>
8. <https://groww.in/>
9. <https://www.moneycontrol.com/>
10. <https://www.marketsstory.com/>

The data has also been collected from different books and papers-

1. Technical Analysis of the Financial Markets by John Murphy
2. Technical Analysis Explained by Martin Pring
3. Guide To Technical Analysis & Candlesticks by Ravi Patel
4. Guide to Indian Stock Market by Jitendra Gala
5. Han, Y., He, A., Rapach, D., Zhou, G., 2020. Firm characteristics and expected stock returns. Available at SSRN 3185335.
6. Kozak, S., Nagel, S., Santosh, S., 2020. Shrinking the cross-section. Journal of Financial Economics 135, 271- 292.
7. Rapach, D.E., Zhou, G., 2020. Time-series and Cross-sectional Stock Return Forecasting: New Machine Learning Methods. Machine Learning for Asset Management: New Developments and Financial Applications, pp.1- 33.
8. Kozak, S., Nagel, S., Santosh, S., 2020. Shrinking the cross-section. Journal of Financial Economics 135, 271- 292.