

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

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Abstract

The nation's economy heavily depends on the stock market. People or laypeople invest their money in shares on the stock market. The stock market is a location where shares are purchased or sold. There are so many different sectors such as, Information Technology (IT) sector, Pharmaceutical sector, Textile sector, Telecom sector, etc. which help 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 is why here we have chosen two famous IT companies for our research work which are: TCS and LTI. Technical analysis of selected IT companies has 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 to 2022.

Keywords: Information technology, stock market, technical analysis, economy

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 stockbrokers to trade stocks and other securities which were listed on stock exchange i.e., National Stock Exchange and Bombay 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 is why it is known as *Nifty 50* [1].

About Technical Analysis

Technical analysis is a tool to predict the future price of stock or securities by using price charts (Figure 1). Technical analysis in trading is done to evaluate the investment in price trend. In place of annual reports, charts are used to assess the stock price. It is a technique used by traders to forecast the price of a stock by examining its previous market performance. It analyses price, volume, and moving average trends over time. Technical analysis has grown in popularity in recent years due to its simplicity as well as the fact that it is a universal strategy that can be used in a variety of market segments and time frames. The two most common forms of technical analysis are charts patterns and statistical indicators that are shown below in Figure 1 [2]:

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Figure 1. The two most common forms of technical analysis are chart patterns and statistical indicators.

Source: StockCharts.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 includes overseeing data, including text, voice, image, audio, and other types.

As we know, this is the generation of computer technology artificial intelligence, so, IT sector is one of the most important sectors of Indian industry and plays very important role in the economy of the country. That is the reason IT sector companies' stock or shares are in the boom in the market. By 2025, it is anticipated that the IT sector would have contributed roughly 10% of GDP, up from its present 7.7% share (Figure 2). IT enterprises related to it were worth Rs. 1.20 lakh crore in the first quarter of the financial year 2022, according to STPI (Software Technology Park of India) [3].

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.

About Companies

Tata Consultancy Services Limited (TCS) (Figure 3)

For more than 50 years, Tata Consultancy Services, an enterprise that provides IT services, consulting, and business solutions, has worked as a transformation partner with many of the biggest companies in the world. With its corporate headquarters in Mumbai, Tata Consultancy Services is a multinational Indian provider of consulting and information technology services. It operates in 150 locations throughout 46 countries as a part of the Tata Group. According to a report from July 2022, TCS employed more than 600,000 people worldwide [4].

TCS, a member of the Tata group, the biggest multinational corporation in India, employs over 592,000 of the best-trained consultants in the world across 55 nations. The company's fiscal year ended March 31, 2022, with consolidated revenues of US \$ 25.7 billion.

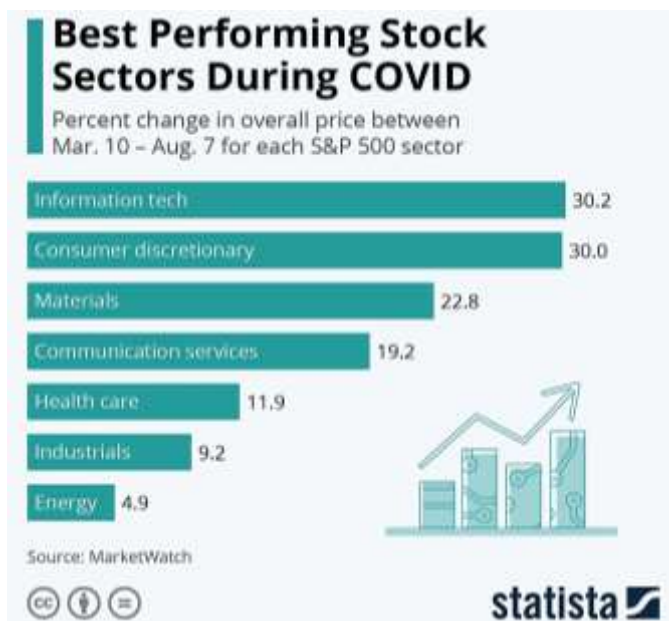


Figure 2. Best performing stock sectors during covid.
Source: Statista.com



Figure 3. TCS.

An industry leader in IT services, consulting, and business solutions, Tata Consultancy Services provides outsourced and transformational services to businesses all over the world. Tata Sons founded and incorporated Tata Consultancy Services Ltd. in 1968. Tata Consultancy Services Ltd. provides consultancy services, services integration, digital transformation services to the businesses globally. In India, the National Stock Exchange (NSE) and the Bombay Stock Exchange (BSE) both listed the company's shares [5].

CEO: Rajesh Gopinathan (10 Feb 2013)

Headquarters: Mumbai

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

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) (Figure 4)

An international provider of consulting and information technology services with headquarters in Mumbai is India's Larsen & Toubro Infotech Ltd. The business, a subsidiary of Larsen & Toubro, was founded in 1996 and now employs over 90,000 people [6].

More than 300 clients are assisted by the global technology consulting and digital solutions firm Larsen & Toubro InfoTech Ltd. in thriving in the convergent world. Infotech Larsen & Toubro 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. L&T Information Technology Ltd. was

renamed Larsen & Toubro Infotech Limited in 2002. In India, the National Stock Exchange (NSE) and the Bombay Stock Exchange (BSE) both listed the company's shares [7].



Figure 4. LTI.

The business amalgamated with Mindtree, Larsen & Toubro's second IT services subsidiary, in 2022, and adopted the name 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

Table 1. Quick overview of tata consultancy services Ltd.

Market Cap (Cr.): 1146216	Face Value (₹): 1	EPS (₹): 105.46
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	

Table 2. 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) (Table 1) and Larsen & Toubro Infotech (LTI) for last four Financial Years, i.e., 2018–19, 2019–20, 2020–21 and 2021–22 (Table 2).
- 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.

RESEARCH METHODOLOGY

Research methodology refers to the precise procedures or techniques used to locate, select, organize, and analyse material on a subject. The reader has the opportunity to evaluate the study's general validity and dependability in the methodology part of a research paper. A research methodology is a way for a researcher to explain how they intend to carry out their investigation. It is a deliberate, logical approach to a research problem. A research-based methodology lends the study legitimacy and produces valid

scientific findings. It also provides a thorough framework that helps keep researchers on track and enables a straightforward, effective, and manageable approach. The methods section responds to two key inquiries: How were the data gathered or produced? How was it examined?

Research Plan

The main section of a grant application is a research plan that details the intended research of the principal investigator. A primary investigator has the chance to explain planned research in the research plan, outlining its significance and how it will be carried out.

Research Design

The framework of market research methodologies and approaches that a researcher selects is referred to as the research design. The design that the researchers opt for enables them to successfully set up their investigations in the future as well as to use the methodologies that are appropriate for the study.

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, and 2021–22* for the analysis of Share Prices.

Data Collection

There are various methods for gathering the correct data, and the expenses, time commitments, and other resources available to the researcher might all vary significantly. Broadly, data collection methods can be divided in two categories:

- Primary source, and
- Secondary source.

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

- Investing.com,
- tcs.com,
- ltimindtree.com,
- samco.in, and
- moneycontrol.com.

Tools for Presentation

- Tables, and
- Graphs.

DATA ANALYSIS

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

Share prices were taken for the end of each month of financial year 2018–19 is presented in Table 3.

Interpretation

- There is a huge downfall in the share price in the month of May as compared to the month of April, so, there is a negative change in the price i.e., -50.70% (Figure 5).
- 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 has purchased the shares of TCS in the month of April 2019 and wants to sell the share in the month of March 2019, then he/she has to bear the loss of 42.89%.

Table 3. Tata Consultancy Services Ltd. (TCS)
of Financial Year 2018–19.

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%

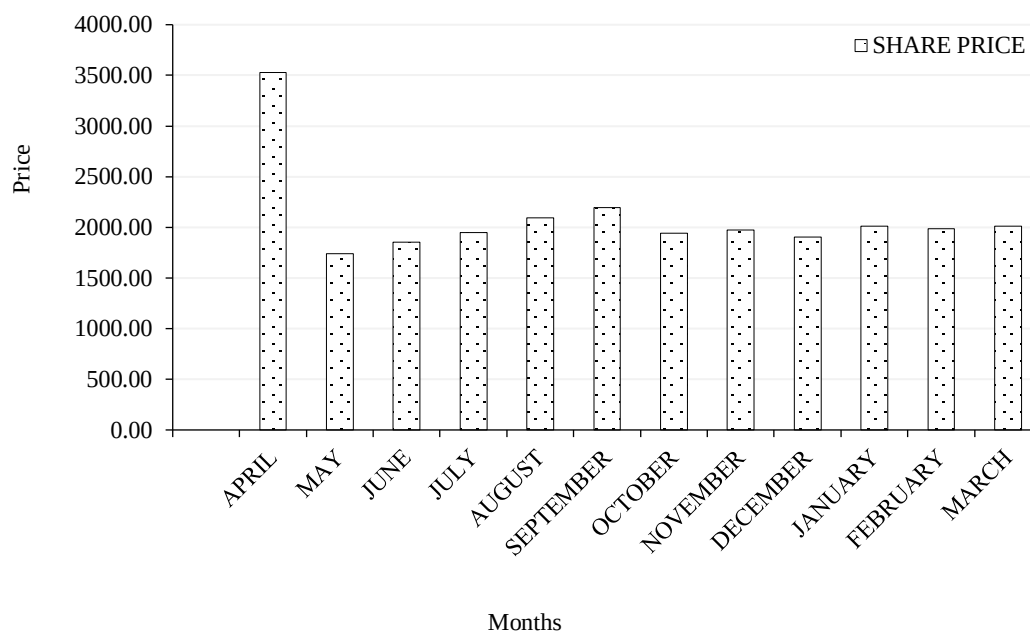


Figure 5. Share price of TCS for the year 2018–19.

Tata Consultancy Services Ltd. (TCS) of Financial Year 2019–20

Interpretation

- There is a slight rise in the share price in the month of October as compared to the month of September, as there is a rise of 10.27% in the share price (Table 4).
- In the months 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 (Figure 6).
- If one has purchased the shares of TCS in the month of April and sell it on October 2019 he/she gained the profit of 2.41% and if he/she sells it in March 2020, he/she has to bear the loss of 17.60% [8].

Table 4. Tata Consultancy Services Ltd. (TCS)
of Financial Year 2019–20.

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%

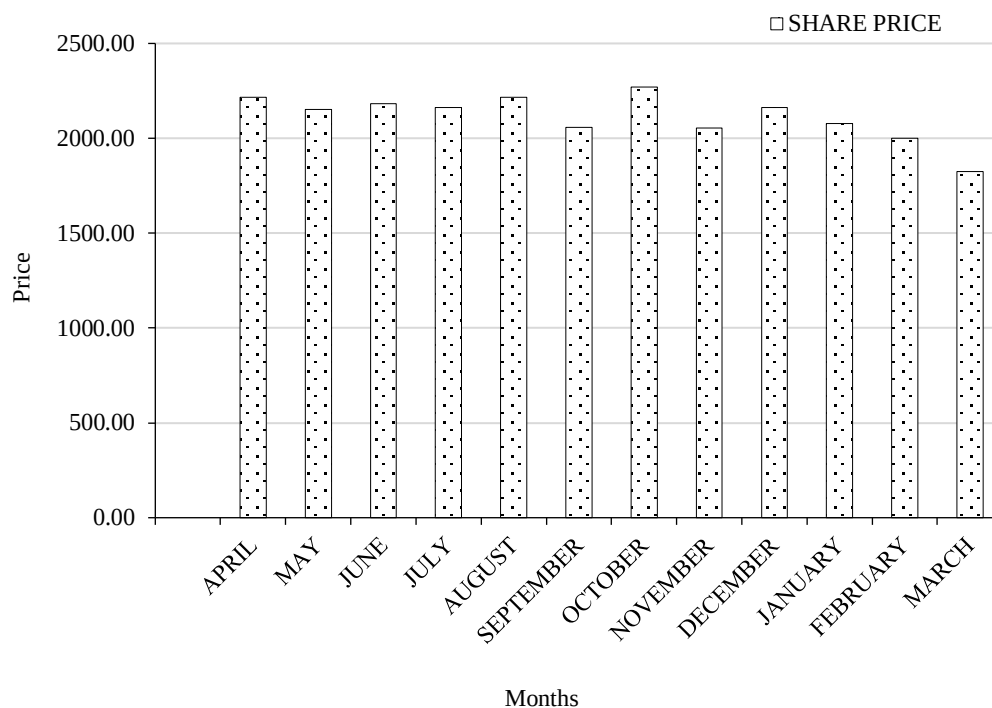


Figure 6. Share price of TCS 2019-20.

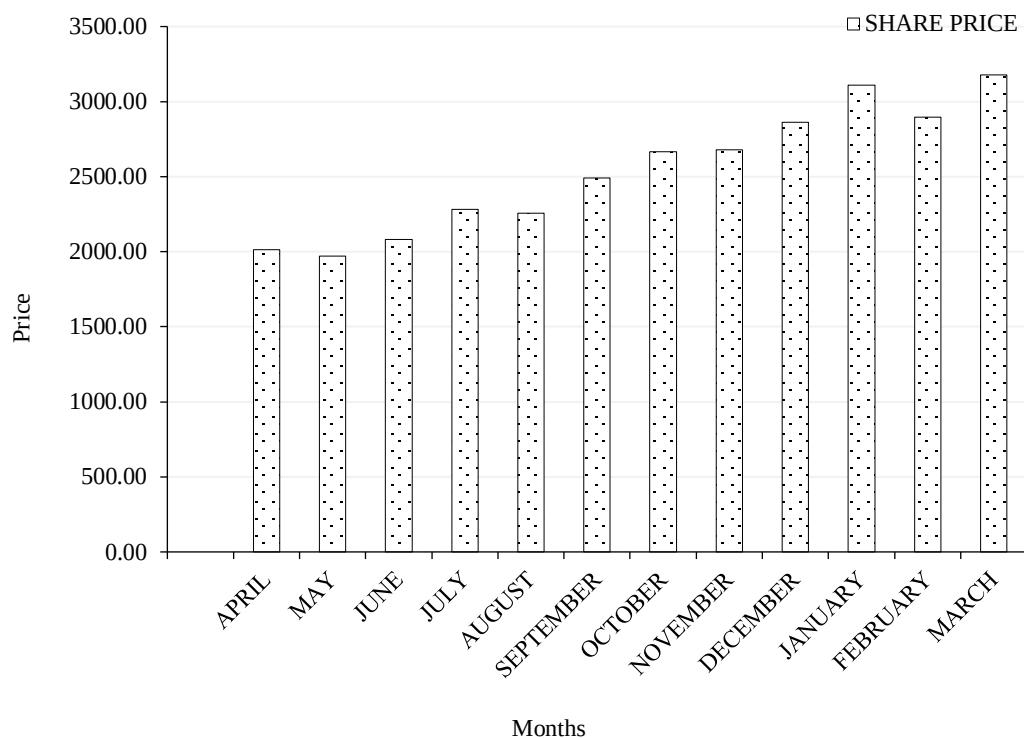
Tata Consultancy Services Ltd. (TCS) of Financial Year 2020–21

Interpretation

- There is a slight rise in the share price in the month of September as compared to the month of August, as there is a rise of 10.41% in the share price (Table 5).
- 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 (Figure 7).
- If one has purchased the shares of TCS in the month of April 2020 and sells it in any of the months from July to March, he/she must earn the profit, but if he/she sells it in the month of March 2021 he/she earns the profit of 57.75% [9].

Table 5. Tata Consultancy Services Ltd. (TCS) of Financial Year 2020–21.

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%

**Figure 7.** Share price of TCS 2020-21.**Tata Consultancy Services Ltd. (TCS) of Financial Year 2021–22****Interpretation**

- There is a rise in the share price in the month of August as compared to the month of July, as there is an increase of 19.11% in the share price (Table 6).
- 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 (Figure 8).
- If one has purchased the shares of TCS in the month of April and sells it in any of the months from May to March, he/she must earn the profit, but if he/she sells it in August 2021 he/she earns the profit of 24.14% [10].

Table 6. Tata Consultancy Services Ltd. (TCS)
of Financial Year 2021–22.

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%

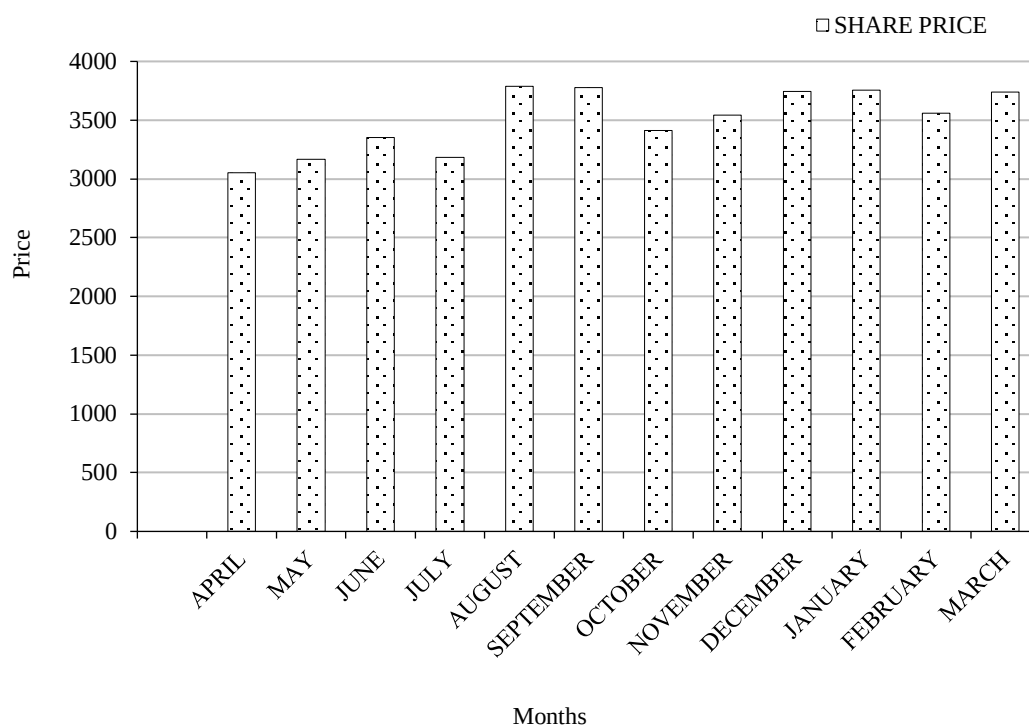


Figure 8. Share price of TCS 2021–22.

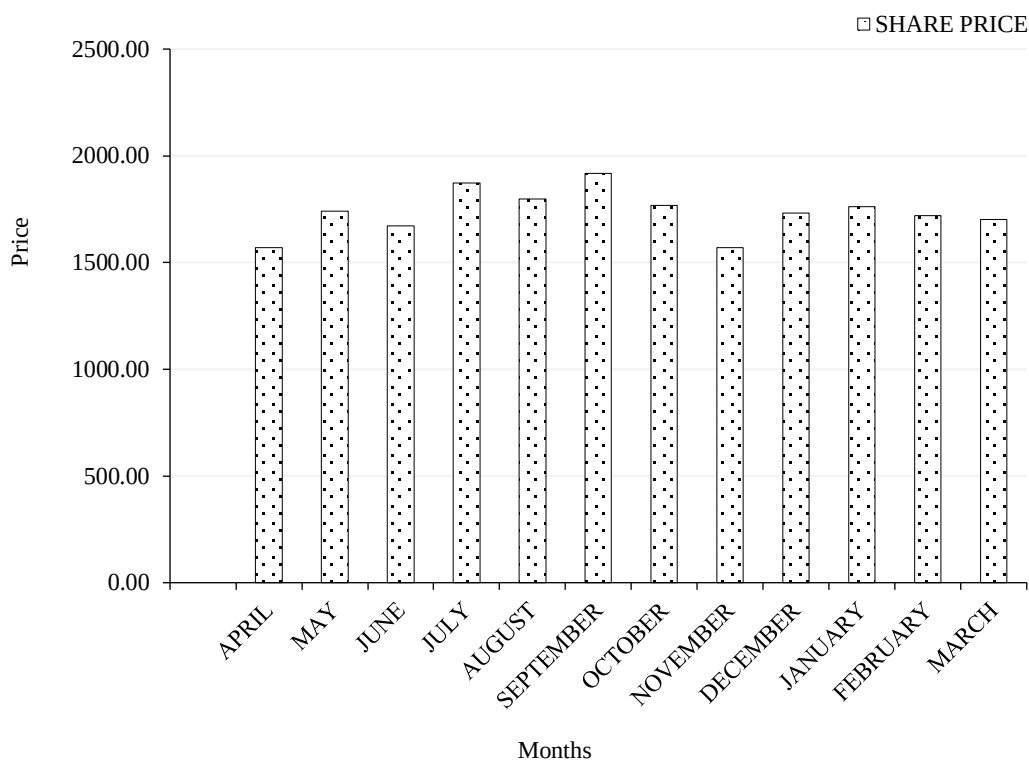
Larsen & Toubro Infotech Ltd. (LTI) of Financial Year 2018–19

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 (Table 7).
- In the month of May, July, August, September, October and January the prices of share are higher than the average price of Financial Year 2018–19 (Figure 9).
- If one has purchased the shares of LTI in the month of April and sells it in any of the months from May to March he/she must earn the profit, but if he/she sells it in September 2018, he/she earns the profit of 22.18% [11].

Table 7. Larsen & Toubro Infotech Ltd. (LTI) of Financial Year 2018–19.

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%

**Figure 9.** Share price of LTI 2018-19.**Larsen & Toubro Infotech Ltd. (LTI) of Financial Year 2019–20****Interpretation**

- There is a slight downfall in the share price in the month of March as compared to February, as there is a negative change in the price i.e., -25.20% (Table 8).
- In the months of April, May, June, October, December, January and February, the prices of share are higher than the average price of Financial Year 2019–20 (Figure 10).
- If one has purchased the shares of LTI in the month of April and sells it on the month of January, he/she earns the profit of 13.01% [12].

Table 8. Larsen & Toubro Infotech Ltd. (LTI)
of Financial Year 2019–20.

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%

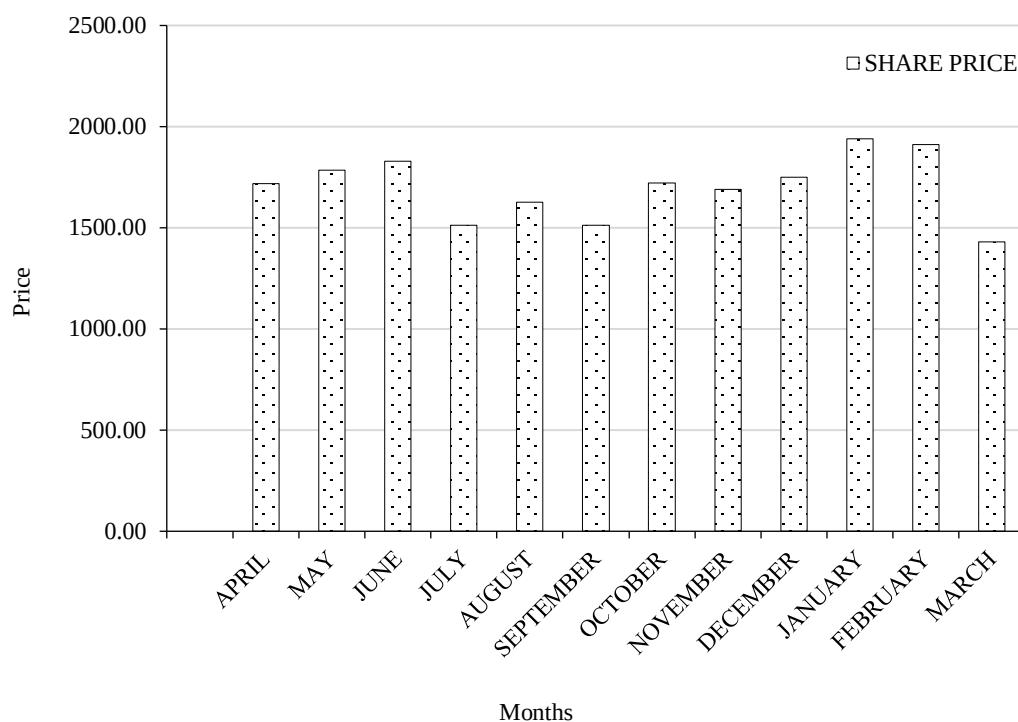


Figure 10. Share price of LTI 2019-20.

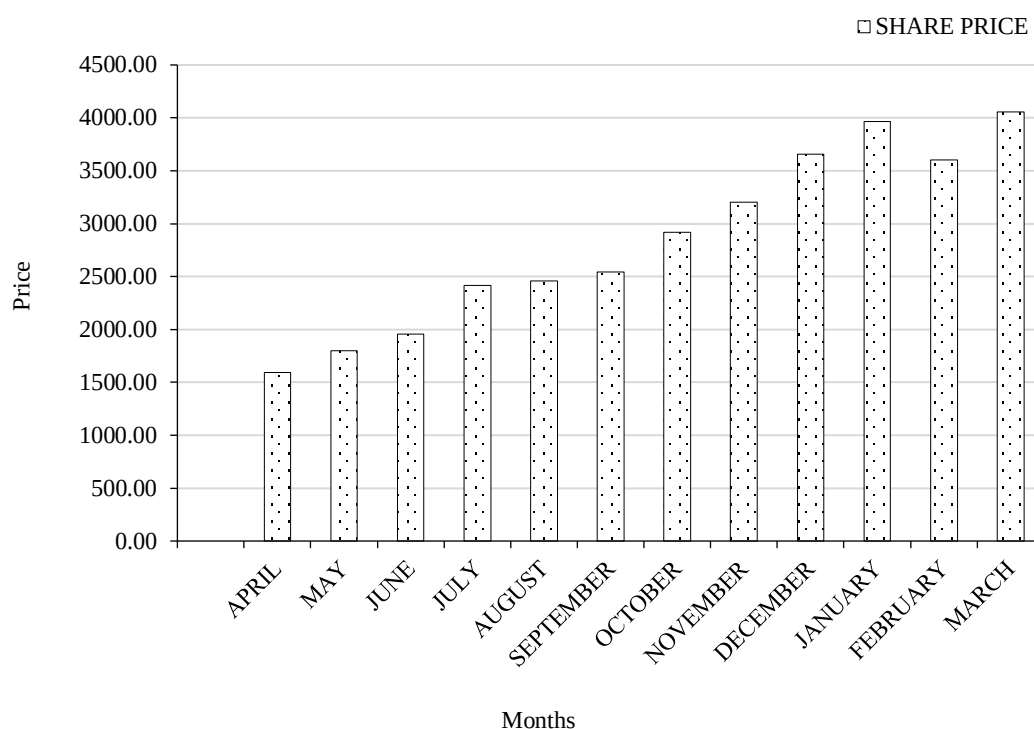
Larsen & Toubro Infotech Ltd. (LTI) of Financial Year 2020–21

Interpretation

- There is a rise of 23.44% of share price in the month of July as compared to the month of June (Table 9).
- In the months October to March, the share price of each month is higher than the average price of Financial Year 2020–21 (Figure 11).
- If one has purchased the shares of LTI in the month of April and sells it in any of the months from May to March, he/she must earn the profit, but if he/she sells it in March 2021, he/she earns the good profit of 154.5% [13].

Table 9. Larsen & Toubro Infotech Ltd. (LTI) of Financial Year 2020–21.

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%

**Figure 11.** Share price of LTI 2020-21.**Larsen & Toubro Infotech Ltd. (LTI) of Financial Year 2021–22****Interpretation**

- There is a rise of 16.12% in the share price in the month of October as compared to the month of September (Table 10).
- In the months of September to March, the share price of each month is higher than the average price of Financial Year 2021–22 (Figure 12).
- If one has purchased the shares of LTI in the month of April and sells it in any of the months from June to March, he/she must earn the profit, but if he/she sells it in December 2021, he/she earns the good profit of 88.36%.

Table 10. Larsen & Toubro Infotech Ltd. (LTI)
of Financial Year 2021–22.

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%

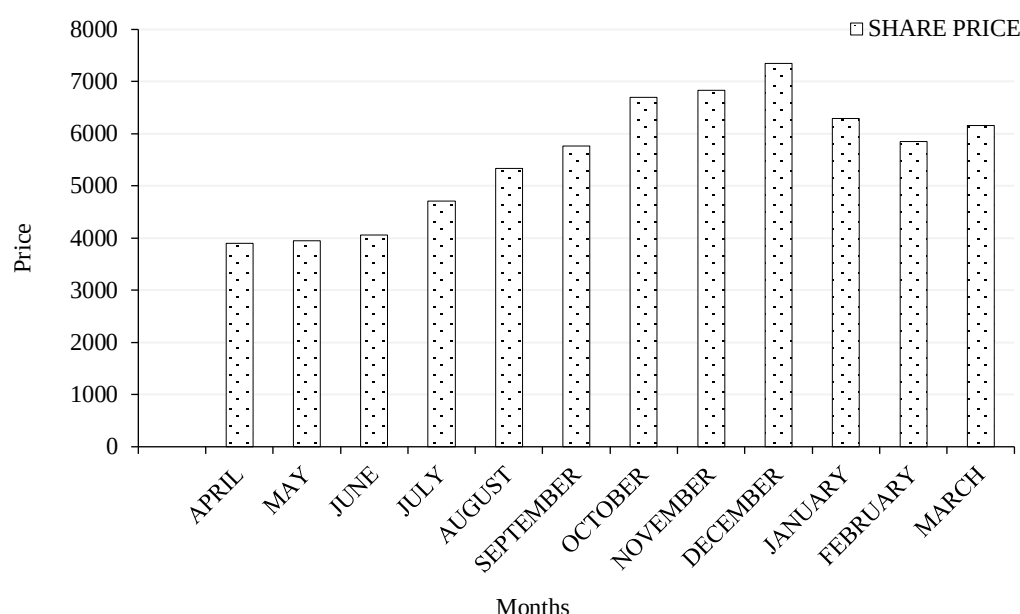


Figure 12. Share price of LTI.

Comparison of Average Prices of Last Four Financial Years *Interpretation (Table 11)*

As we can observe almost the 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 resemblance 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 performed well in the COVID-19 period (Figure 13).

Calculation of Average of Average Prices of last four FYs *Interpretation (Table 12)*

As we have calculated the average of average prices of share of last four Financial Years, we can see that there is a difference of Rs. 399.35 in the average prices of both the companies' i.e., TCS and LTI

in last four Financial Years, 2018–19, 2019–20, 2020–21 and 2021–22. By observing the above table and chart we can say that both the companies had performed well in last four Financial Years (Figure 14).

Table 11. Calculation of average of average prices of last four FYs.

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

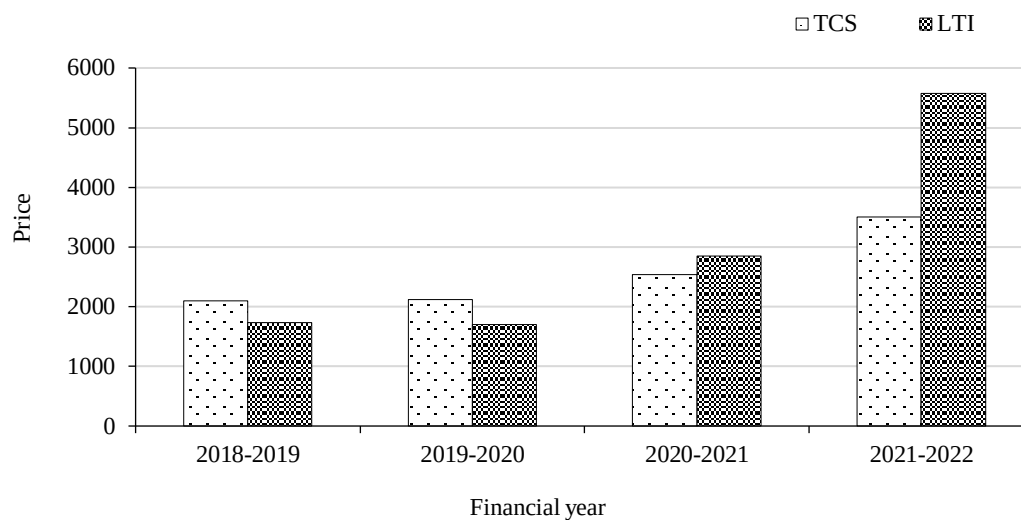


Figure 13. Average price of last four FY.

Table 12. Average price of last four FY 2018–2022.

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

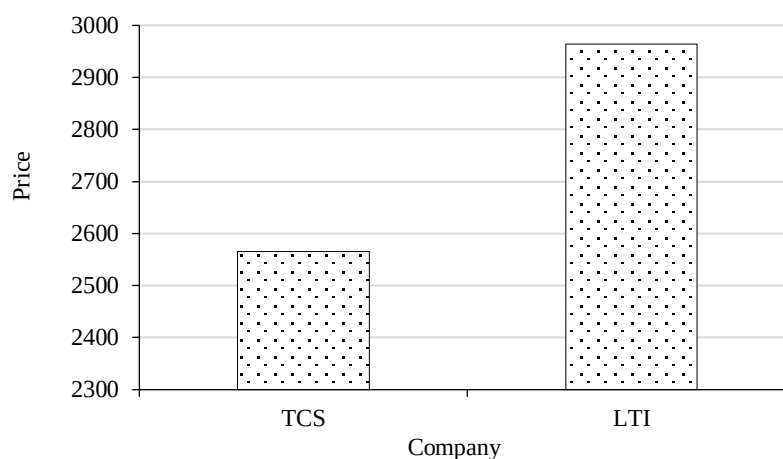


Figure 14. Average price of last four FY 2018–22.

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

Interpretation (Table 13)

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 Years, 2018, 2019, 2020 and 2021 as a base by using Forecast formula in Excel: =FORECAST(x, known_y's, known_x's) (Figure 15)

Table 13. 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

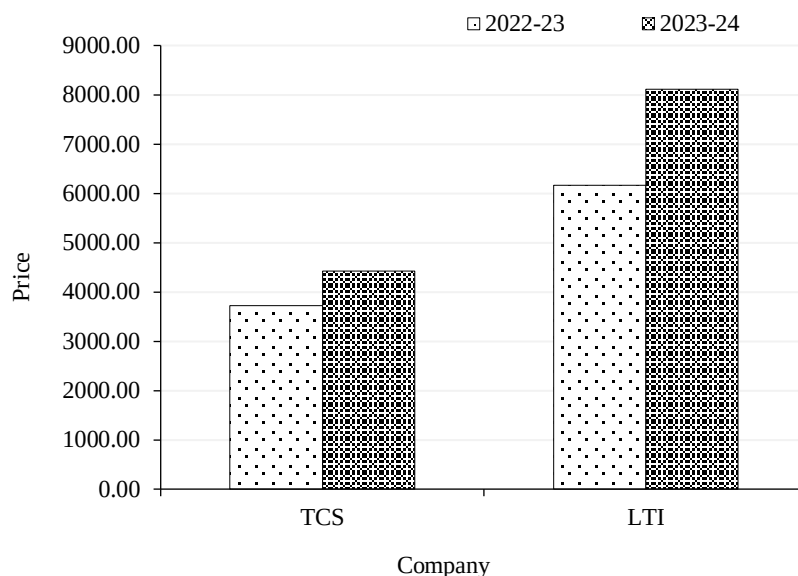


Figure 15. Predicted avg price.

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 FYs, 2022–23 and 2023–24.

Findings

1. In TCS, in Financial Year 2018–19, there is a loss in the month of May as compared to April.
2. In TCS, in Financial Year 2019–20 investors have to face the loss in the month of March as compared to April.
3. In TCS, in Financial Year 2020–21, if investor has bought the share in month of April and sold it in March, he/she earns the profit.
4. In TCS, in Financial Year 2021–22, the highest share price was Rs. 3789.55 in the month of August and there is a profit as compared to the month of April.

5. In LTI, in Financial Year 2018–19, if investor sells the share, earns the profit in the month of September as compared to April.
6. 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 has purchased the shares of LTI in the month of April and sells it in the month of January, earns the profit.
7. In LTI, in Financial Year 2020–21, if one has purchased the shares of LTI in the month of April and sells it in March 2021, earns the good profit.
8. In LTI, in Financial Year 2021–22, investor earns the good profit in the month of December if he/she sells the share which were purchased in the month of April.
9. 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.
10. 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 Years: 2018–19, 2019–20, 2020–21 and 2021–22.
11. In FY 2022–23, the predicted average share price of TCS is Rs. 3726.64 and of LTI is Rs. 6167.26.
12. In FY 2023–24, the predicted average share price of TCS is Rs. 4422.08 and of LTI is Rs. 8110.59.

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 nowadays. People are getting education online, doing their business online, ordering food online, getting all the banking services on the 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 study, we have analysed 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 Years, 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 analyses 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 Years, 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 Years is good.

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