

**SECURITIES ANALYSIS AND PORTFOLIO MANAGEMENT**

**PROJECT REPORT**

**ON**

**COMPANY ANALYSIS**



**SCHOOL OF MANAGEMENT**

**National Institute of Technology**  
**Warangal**

Submitted by

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# INTRODUCTION

- To ascertain the equity shares' fair market value, fundamental analysis looks at the assets, earnings prospects, cash flow predictions, and dividend prospects. Fundamental research differs from technical analysis in that it primarily focuses on price and volume fluctuations as well as other market indicators to identify trading opportunities.
- In company analysis the financial performance of the selected companies are analyzed in order to analyze the profitability of the firm. An investor should be aware of the financial performance of the company to know the risk and return associated with particular share. For the purpose of analysis various ratios such as EPS, Book Value, P/E ratio, Return on equity and Dividend payout ratio are used.

## OBJECTIVE

- To analyze the ratios of the company for the past 10 years and understand the financial performance of the company pre and post covid.
- To examine the net profits in order to determine whether or not investing in the business would increase the investor's wealth.

## RATIO ANALYSIS

- Ratio analysis is a statistical method for examining the balance sheet and income statement of a firm in order to learn more about its liquidity, efficiency, and profitability.
- Ratio analysis looks at line-item data from a company's financial statements to provide insights about profitability, liquidity, operational performance, and solvency.
- Ratio analysis enables you to compare businesses within the same industry or sector and follow the evolution of a single business over time.
- Ratio analysis may also be required by external parties who establish standards typically linked to risk.
- Ratios can be useful in learning more about a company, but to get a more complete view of its financial health, they should be used in conjunction with other metrics.
- Examples of ratio analysis include the current ratio, gross profit margin ratio, and inventory turnover ratio.

### Earnings per share (Net Profit per Share):

- Earnings per share is calculated by dividing a company's net profit by the total number of outstanding common shares. EPS, a popular statistic for determining corporate value, shows how

much money a firm produces for each share of its stock.

### **Asset Turnover Ratio :**

- The asset turnover ratio gauges how well a business's assets produce income or sales. It computes an annualized percentage comparison between the number of sales (revenues) and the total assets. Divide net sales or revenue by the average total assets to arrive at the asset turnover ratio.
- A Higher Asset turnover ratio means higher efficiency in utilizing the Assets
- Low efficiency indicates the inability of the company to utilize the Assets efficiently
- Ideally, the Ratio should be more than 1 to indicate the company is efficiently utilizing the Assets, in terms of percentage it should be more or equal to 100.

### **Price to Earning Ratio:**

- The price-to-earnings (P/E) ratio gauges the current share price in relation to the per-share earnings of a company.
- An easy approach to determine if a stock is undervalued or overvalued is to look at its price-to-earnings ratio or P/E ratio. Therefore, generally speaking, the better it is for the company and potential investors the lower the P/E ratio is.

## **Top IT companies in India**

- TCS
- INFOSYS
- HCL
- WIPRO
- MINDTREE

### **TCS**

- Tata Consultancy Services is an Indian multinational information technology services and consulting company headquartered in Mumbai. It provides services like analytics and insights, automation and AI, Blockchain, Cloud, cognitive business operations, consulting, cyber security, enterprise applications, IOT and digital engineering and many more. Revenue mix of TCS is BFSI (32.1%), Retail (15.9%), Life Science and Healthcare (10.1%), Manufacturing (9.9%), Technology and Services (8.8%), Communication and Media (6.8%), Regional Markets and Others (16.4%).
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## Tata Consultancy Services Key Financial Ratios

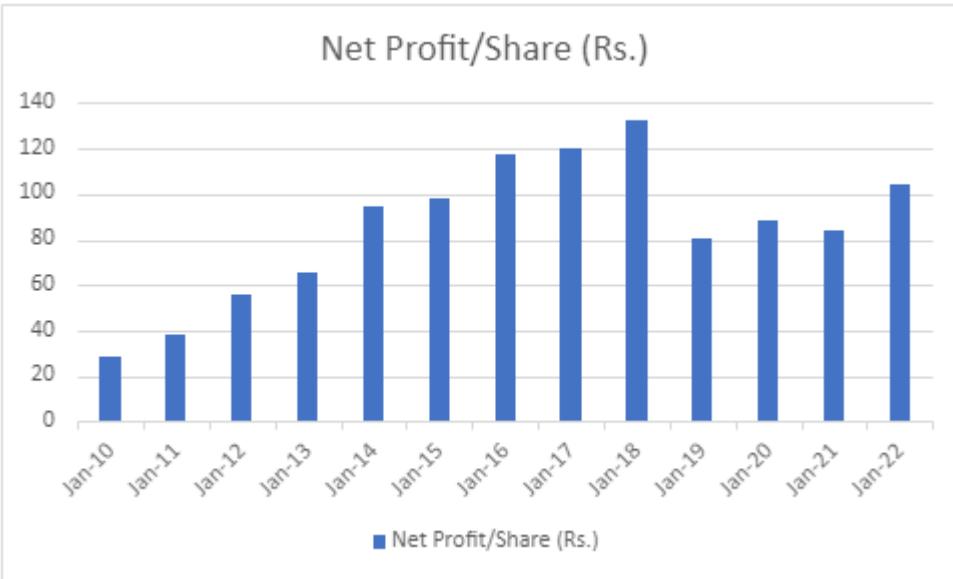
KEY FINANCIAL RATIOS OF WIPRO (in Rs. Cr.)	Mar-22	Mar-21	Mar-20	Mar-19	Mar-18	Mar-17	Mar-16	Mar-15	Mar-14	Mar-13	Mar-12	Mar-11	Mar-10
PER SHARE RATIOS													
Basic EPS (Rs.)	22.2	17.81	14.88	12.67	16.26	33.61	33.38	33.38	30.09	23.03	19.13	19.88	33.37
Diluted EPS (Rs.)	22.14	17.77	14.84	12.67	16.23	33.51	33.31	33.28	30.01	22.99	19.09	19.78	33.37
Cash EPS (Rs.)	24.85	20.83	17.19	14.17	19.31	37.89	36.74	36.34	32.94	25.79	22.09	22.18	37.31
Book Value [ExclRev alReserv e]/Share (Rs.)	99.14	82.57	81.31	81.86	93.42	192.16	166.87	140.25	119.04	98.37	99.05	86.88	120.51
Book Value [InclRev alReserve]/Share (Rs.)	99.14	82.57	81.31	81.86	93.42	192.16	166.87	140.25	119.04	98.37	99.05	86.88	120.51

Dividend / Share(Rs.)	6	1	1	1	1	2	6	12	8	7	6	6	6
Revenue from Operations/Share (Rs.)	108.67	91.8	88.22	79.75	98.83	189.46	180.86	166.94	157.17	134.9	128.87	107.17	156.14
PBDIT/Share (Rs.)	31.22	26.35	22.2	18.78	25.27	50.21	48.65	47.39	43.47	33.53	29.57	26.25	43.38
PBIT/Share (Rs.)	28.51	23.89	20.2	17.23	23.03	45.9	45.11	44.24	40.48	30.68	26.54	23.8	39.43
PBT/Share (Rs.)	27.84	23.15	19.27	16.36	22.18	43.97	42.88	42.77	38.96	29.25	24.07	23.25	38.75
Net Profit/Share (Rs.)	22.14	18.36	15.19	12.62	17.07	33.58	33.19	33.19	29.96	22.94	19.06	19.74	33.37
<b>PROFITABILITY RATIOS</b>													
PBDIT Margin (%)	28.73	28.7	25.16	23.54	25.57	26.5	26.9	28.38	27.65	24.85	22.94	24.49	27.78
PBIT Margin (%)	26.23	26.01	22.89	21.6	23.3	24.22	24.94	26.49	25.75	22.74	20.59	22.21	25.25
PBT Margin (%)	25.62	25.21	21.83	20.51	22.44	23.2	23.71	25.61	24.79	21.68	18.68	21.69	24.81

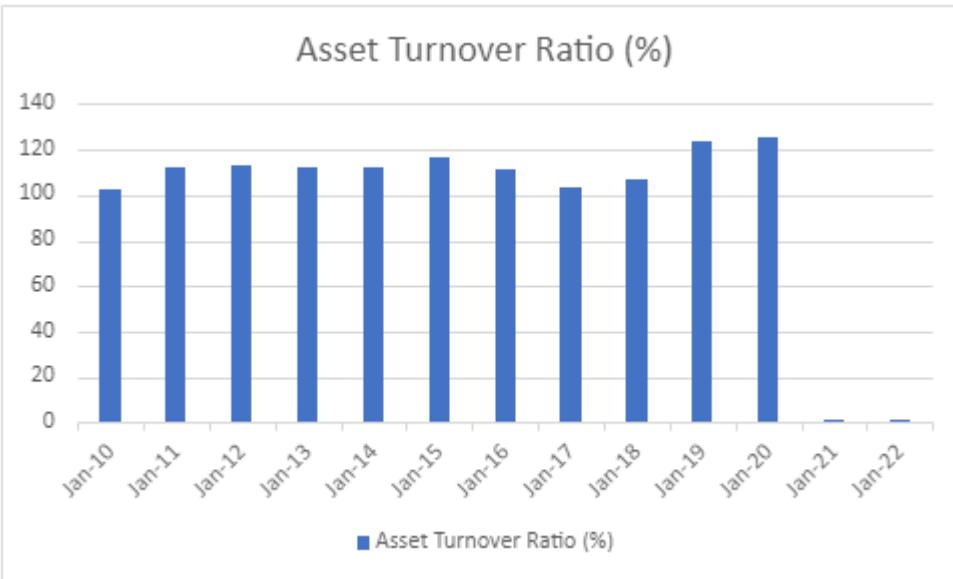
	20.36	20	17.22	15.82	17.27	17.72	18.35	19.88	19.06	17	14.78	18.41	21.36
Net Profit Margin (%)													
Return on Networth / Equity (%)	22.32	22.23	18.68	15.41	18.27	17.47	19.89	23.66	25.16	23.31	19.23	22.71	27.68
Return on Capital Employed (%)	27.32	27.49	23.62	20.44	23.87	22.61	18.75	22.73	23.96	22.98	17.44	20.35	27.54
Return on Assets (%)	15.09	15.3	13.29	11.36	13.16	12.92	13.91	15.34	16.15	13.88	12.13	14.19	16.15
Total Debt/Equity (X)	0.14	0.13	0.11	0.1	0.11	0.13	0.16	0.17	0.15	0.17	0.22	0.22	0.31
Asset Turnover Ratio (%)	0.82	0.77	77.18	71.82	76.2	72.91	75.82	77.15	84.73	81.62	82.08	77.08	75.58
<b>LIQUIDITY RATIOS</b>													
Current Ratio (X)	2.23	2.5	2.78	2.96	2.86	3.52	2.98	2.3	2.19	1.76	2.17	2.1	1.33
Quick Ratio (X)	2.23	2.5	2.77	2.94	2.84	3.5	2.94	2.27	2.17	1.74	2.1	2.03	1.28



EV/Net Operatin g Revenue (X)	5.49	4.43	2.12	3.08	2.9	2.78	3.08	3.53	3.3	3.13	3.38	4.44	4.52
EV/EBIT DA (X)	19.12	15.44	8.43	13.1	11.35	10.48	11.44	12.42	11.92	12.58	14.71	18.14	16.27
MarketCap/Net Operatin g Revenue (X)	5.45	4.51	2.23	3.19	2.85	2.72	3.11	3.76	3.45	3.24	3.41	4.46	4.53
Retention Ratios (%)	72.89	94.55	92.06	92.83	92.94	89.24	56.5	63.82	73.28	69.47	68.51	69.59	82.01
Price/BV (X)	5.97	5.02	2.42	3.11	3.01	2.68	3.38	4.48	4.56	4.44	4.43	5.51	5.87
Price/Net Operatin g Revenue	5.45	4.51	2.23	3.19	2.85	2.72	3.11	3.76	3.45	3.24	3.41	4.46	4.53
Earnings Yield	0.04	0.04	0.08	0.05	0.06	0.07	0.06	0.05	0.06	0.05	0.04	0.04	0.05



This graph shows that the Net profit/share was fluctuating initially and there was a constant increase in profit per share till 2018 but in the pandemic, in 2019 its net profit per share decreased, and again the net profit increased in 2020 and decreased in 2021 to a great extent and again there is a very good increase in net profit per share.



The efficiency of the company in utilizing the assets is good but we can see the is a slight decrease in efficiency after 2017.

## INFOSYS

- Infosys Limited is an Indian multinational information technology company that provides business consulting, information technology and outsourcing services. Narayana Murthy was one of the founders of Infosys. The company was founded in Pune and is headquartered in Bangalore. Infosys has major presence in India, United States, China, Australia, Japan, Middle East and Europe. Revenue mix of Infosys is BFSI (31.3%), Retail (14.3%), Life Science and Healthcare (6.6%), Manufacturing (11.8%), Technology and Services (8.2%), Communication and Media (12.8%), [Energy, Utilities, Resources] (12%), Regional Markets and Others (3%).

## INFOSYS Key Financial Ratios

KEY FINANCIAL RATIOS OF INFOSYS (in Rs. Cr.)	Mar-22	Mar-21	Mar-20	Mar-19	Mar-18	Mar-17	Mar-16	Mar-15	Mar-14	Mar-13	Mar-12	Mar-11	Mar-10
PER SHARE RATIOS													
Basic EPS (Rs.)	50.27	42.37	36.34	33.66	71.28	60.16	55.26	105.91	178.39	158.76	147.51	112.26	101.1
Diluted EPS (Rs.)	50.21	42.33	36.32	33.64	71.25	60.15	55.26	105.91	178.39	158.76	147.5	122.22	101.1
Cash EPS (Rs.)	56.26	47.81	41.54	37.42	80.42	65.98	60.14	113.91	197.47	175.47	161.39	125.14	115.16
Book Value [ExclRev alReserv e]/Share (Rs.)	164.78	167.91	146.16	143.96	290.76	296.24	266.04	418.71	735.87	628.21	518.41	426.85	383.9
Book Value [InclReva lReserve] /Share (Rs.)	164.78	167.91	146.16	143.96	290.76	296.24	266.04	418.71	735.87	628.21	518.41	426.85	383.9





Net Profit Margin (%)	20.43	21	19.66	20.11	26.08	23.3	23.51	25.71	22.99	24.79	27.1	25.38	27.45
Return on Networth / Equity (%)	30.63	25.23	24.97	23.44	25.44	20.31	20.78	25.3	24.21	25.28	28.46	26.29	26.33
Return on Capital Employed (%)	38.46	32.23	31.28	31.38	31	27.8	20.75	25.29	24.01	25.15	28.46	26.29	26.05
Return on Assets (%)	21.36	19.21	19.17	18.62	21.29	17.29	17.45	19.67	19.33	21.18	23.64	22.32	22.26
Total Debt/Equity (X)	0	0	0	0	0	0	0	0	0	0	0	0	0
Asset Turnover Ratio (%)	1.08	91.45	97.53	92.62	81.63	74.21	74.22	76.52	84.11	85.44	87.26	87.97	81.1
<b>LIQUIDITY RATIOS</b>													
Current Ratio (X)	2.1	2.74	2.88	3	3.78	4.05	3.98	3.12	3.83	4.82	4.88	5.28	4.46
Quick Ratio (X)	2.1	2.74	2.88	3	3.78	4.05	3.98	3.12	3.83	4.82	4.88	5.28	4.46

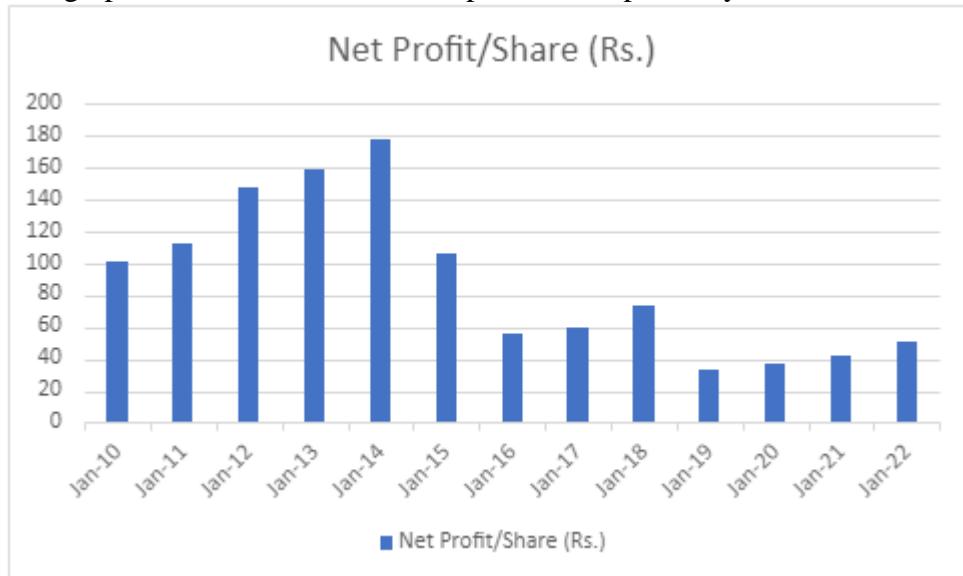
Dividend / Share(Rs.)	31	27	17.5	21.5	43.5	25.75	24.25	59.5	63	42	47	60	25
Revenue from Operations/Share (Rs.)	247.12	201.67	185.64	167.83	283.61	258.23	235.12	412.02	775.19	640.51	544.49	442.25	368.29
PBDIT/Share (Rs.)	73.83	63.2	53.39	49.42	97.6	88.28	81.51	150.69	264.04	230.49	207.14	166.57	145.07
PBIT/Share (Rs.)	68.05	57.75	48.36	45.75	91.15	82.48	76.66	142.74	244.79	213.83	193.31	153.68	131.01
PBT/Share (Rs.)	67.75	57.46	48.09	45.75	91.15	82.48	76.66	146.32	244.79	215.28	201.74	153.68	131.01
Net Profit/Share (Rs.)	50.49	42.37	36.5	33.75	73.97	60.18	55.28	105.96	178.22	158.82	147.56	112.25	101.1
<b>PROFITABILITY RATIOS</b>													
PBDIT Margin (%)	29.87	31.33	28.76	29.44	34.41	34.18	34.66	36.57	34.06	35.98	38.04	37.66	39.38
PBIT Margin (%)	27.53	28.63	26.04	27.25	32.14	31.94	32.6	34.64	31.57	33.38	35.5	34.74	35.57
PBT Margin (%)	27.41	28.49	25.9	27.25	32.14	31.94	32.6	35.51	31.57	33.61	37.05	34.74	35.57

Net Profit Margin (%)	20.43	21	19.66	20.11	26.08	23.3	23.51	25.71	22.99	24.79	27.1	25.38	27.45
Return on Networth / Equity (%)	30.63	25.23	24.97	23.44	25.44	20.31	20.78	25.3	24.21	25.28	28.46	26.29	26.33
Return on Capital Employed (%)	38.46	32.23	31.28	31.38	31	27.8	20.75	25.29	24.01	25.15	28.46	26.29	26.05
Return on Assets (%)	21.36	19.21	19.17	18.62	21.29	17.29	17.45	19.67	19.33	21.18	23.64	22.32	22.26
Total Debt/Equity (X)	0	0	0	0	0	0	0	0	0	0	0	0	0
Asset Turnover Ratio (%)	1.08	91.45	97.53	92.62	81.63	74.21	74.22	76.52	84.11	85.44	87.26	87.97	81.1
<b>LIQUIDITY RATIOS</b>													
Current Ratio (X)	2.1	2.74	2.88	3	3.78	4.05	3.98	3.12	3.83	4.82	4.88	5.28	4.46
Quick Ratio (X)	2.1	2.74	2.88	3	3.78	4.05	3.98	3.12	3.83	4.82	4.88	5.28	4.46

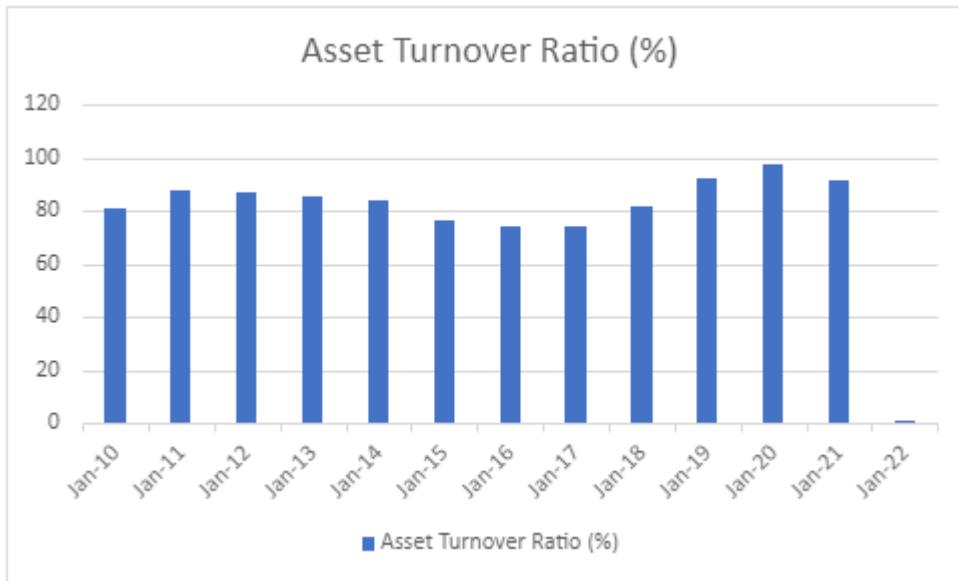


EV/Net Operatin g Revenue (X)	7.6	6.58	3.28	4.21	3.73	3.63	4.64	4.79	3.69	3.96	4.68	6.78	6.64
EV/EBIT DA (X)	25.44	20.99	11.4	14.3	10.84	10.62	13.38	13.11	10.82	11	12.31	18	16.85
MarketCa p/Net Operatin g Revenue (X)	7.72	6.78	3.45	4.42	4	3.95	5.18	5.38	4.23	4.51	5.26	7.32	7.1
Retention Ratios (%)	40.19	49.25	38.53	6.35	53.57	49.48	56.11	57.98	64.5	73.54	68.13	46.53	75.28
Price/BV (X)	11.57	8.15	4.38	5.16	3.9	3.45	4.58	5.29	4.46	4.6	5.53	7.58	6.81
Price/Net Operatin g Revenue	7.72	6.78	3.45	4.42	4	3.95	5.18	5.38	4.23	4.51	5.26	7.32	7.1
Earnings Yield	0.03	0.03	0.06	0.05	0.07	0.06	0.05	0.05	0.05	0.05	0.05	0.03	0.04

The graph of Net Profit/Share in Rupees for the past 10 years is shown below taken from the table above.



This graph shows that the Net profit/share was increasing initially and then started decreasing after 2014 and in the pandemic, in 2019 its net profit per share decreased, and again the net profit increased in 2020 and to a great extent and again there is a very good increase in net profit per share.



The efficiency of the company in utilizing the assets is good but we can see there is a slight decrease in efficiency between 2015 to 2017 after that again it increased.

## WIPRO

- Wipro is a leading global information technology, consulting and business process services company. Azim Premji was the chairman of Wipro. Its service offerings include Data Analytics and AI, Applications, Digital Operations and Platforms, consulting and infrastructure services. Revenue mix of Wipro is BFSI (35.2%), Retail (17.7%), Life Science and Healthcare (11.8%), Manufacturing (6.7%), Technology and Services (11.9%), Communication and Media (5%), [Energy, Utilities, Resources] (11.7%).

## Wipro Key Financial Ratios

KEY FINANCIAL RATIOS OF WIPRO (in Rs. Cr.)	Mar-22	Mar-21	Mar-20	Mar-19	Mar-18	Mar-17	Mar-16	Mar-15	Mar-14	Mar-13	Mar-12	Mar-11	Mar-10
PER SHARE RATIOS													
Basic EPS (Rs.)	22.2	17.81	14.88	12.67	16.26	33.61	33.38	33.38	30.09	23.03	19.13	19.88	33.37
Diluted EPS (Rs.)	22.14	17.77	14.84	12.67	16.23	33.51	33.31	33.28	30.01	22.99	19.09	19.78	33.37
Cash EPS (Rs.)	24.85	20.83	17.19	14.17	19.31	37.89	36.74	36.34	32.94	25.79	22.09	22.18	37.31
Book Value [ExclRev alReserv e]/Share (Rs.)	99.14	82.57	81.31	81.86	93.42	192.16	166.87	140.25	119.04	98.37	99.05	86.88	120.51
Book Value [InclReva lReserve]/Share (Rs.)	99.14	82.57	81.31	81.86	93.42	192.16	166.87	140.25	119.04	98.37	99.05	86.88	120.51

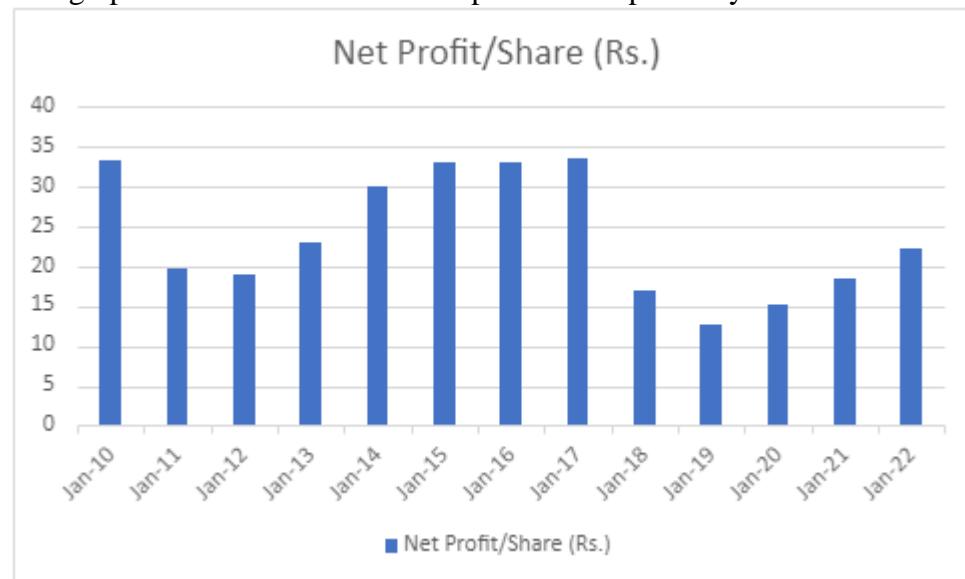
Dividend / Share(Rs.)	6	1	1	1	1	2	6	12	8	7	6	6	6
Revenue from Operations/Share (Rs.)	108.67	91.8	88.22	79.75	98.83	189.46	180.86	166.94	157.17	134.9	128.87	107.17	156.14
PBDIT/Share (Rs.)	31.22	26.35	22.2	18.78	25.27	50.21	48.65	47.39	43.47	33.53	29.57	26.25	43.38
PBIT/Share (Rs.)	28.51	23.89	20.2	17.23	23.03	45.9	45.11	44.24	40.48	30.68	26.54	23.8	39.43
PBT/Share (Rs.)	27.84	23.15	19.27	16.36	22.18	43.97	42.88	42.77	38.96	29.25	24.07	23.25	38.75
Net Profit/Share (Rs.)	22.14	18.36	15.19	12.62	17.07	33.58	33.19	33.19	29.96	22.94	19.06	19.74	33.37
<b>PROFITABILITY RATIOS</b>													
PBDIT Margin (%)	28.73	28.7	25.16	23.54	25.57	26.5	26.9	28.38	27.65	24.85	22.94	24.49	27.78
PBIT Margin (%)	26.23	26.01	22.89	21.6	23.3	24.22	24.94	26.49	25.75	22.74	20.59	22.21	25.25
PBT Margin (%)	25.62	25.21	21.83	20.51	22.44	23.2	23.71	25.61	24.79	21.68	18.68	21.69	24.81

Net Profit Margin (%)	20.36	20	17.22	15.82	17.27	17.72	18.35	19.88	19.06	17	14.78	18.41	21.36
Return on Networth / Equity (%)	22.32	22.23	18.68	15.41	18.27	17.47	19.89	23.66	25.16	23.31	19.23	22.71	27.68
Return on Capital Employed (%)	27.32	27.49	23.62	20.44	23.87	22.61	18.75	22.73	23.96	22.98	17.44	20.35	27.54
Return on Assets (%)	15.09	15.3	13.29	11.36	13.16	12.92	13.91	15.34	16.15	13.88	12.13	14.19	16.15
Total Debt/Equity (X)	0.14	0.13	0.11	0.1	0.11	0.13	0.16	0.17	0.15	0.17	0.22	0.22	0.31
Asset Turnover Ratio (%)	0.82	0.77	77.18	71.82	76.2	72.91	75.82	77.15	84.73	81.62	82.08	77.08	75.58
<b>LIQUIDITY RATIOS</b>													
Current Ratio (X)	2.23	2.5	2.78	2.96	2.86	3.52	2.98	2.3	2.19	1.76	2.17	2.1	1.33
Quick Ratio (X)	2.23	2.5	2.77	2.94	2.84	3.5	2.94	2.27	2.17	1.74	2.1	2.03	1.28

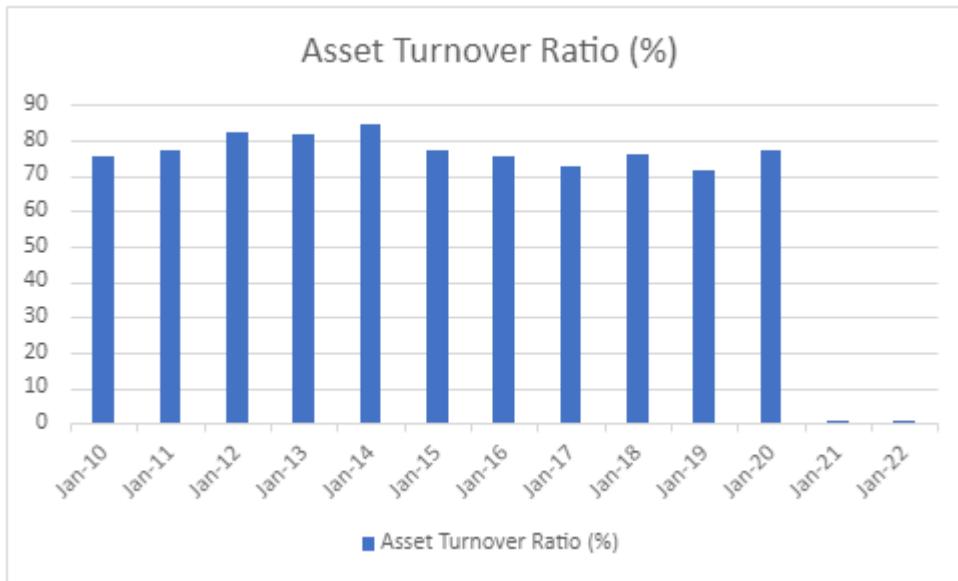


EV/Net Operatin g Revenue (X)	5.49	4.43	2.12	3.08	2.9	2.78	3.08	3.53	3.3	3.13	3.38	4.44	4.52
EV/EBIT DA (X)	19.12	15.44	8.43	13.1	11.35	10.48	11.44	12.42	11.92	12.58	14.71	18.14	16.27
MarketCa p/Net Operatin g Revenue (X)	5.45	4.51	2.23	3.19	2.85	2.72	3.11	3.76	3.45	3.24	3.41	4.46	4.53
Retention Ratios (%)	72.89	94.55	92.06	92.83	92.94	89.24	56.5	63.82	73.28	69.47	68.51	69.59	82.01
Price/BV (X)	5.97	5.02	2.42	3.11	3.01	2.68	3.38	4.48	4.56	4.44	4.43	5.51	5.87
Price/Net Operatin g Revenue	5.45	4.51	2.23	3.19	2.85	2.72	3.11	3.76	3.45	3.24	3.41	4.46	4.53
Earnings Yield	0.04	0.04	0.08	0.05	0.06	0.07	0.06	0.05	0.06	0.05	0.04	0.04	0.05

The graph of Net Profit/Share in Rupees for the past 10 years is shown below taken from the table above.



This graph shows that the Net profit/share was decreasing initially and then started increasing after 2013 and in the pandemic, in 2019 its net profit per share decreased, and again the net profit increased in 2020 and to a great extent and again there is a very good increase in net profit per share.



The efficiency of the company in utilizing the assets is good but we can see there is a slight fluctuation but after 2020 its increasing.

## HCL

- HCL Tech is an Indian multinational IT services company. Shiv Nadar is the founder and chairman emeritus of HCL Technologies Limited. HCL offers an integrated portfolio of products and services through three business units. These are IT and Business Services (ITBS), Engineering and R&D Services (ERS), and Products and Platforms (P&P). Revenue mix consists of financial services (21.1%), Manufacturing (18.3%), Technology and Services (15.4%), Retail & CPG (9.4%), Telecom and Media (9.2%), Life Sciences and Healthcare (16.4%), Public Services-Oil & Gas, Energy & Utilities (10.2%).

## HCL KEY FINANCIAL RATIOS

KEY FINANCI AL RATIOS OF HCL TECHNO LOGIES (in Rs. Cr.)	Mar-22	Mar-21	Mar-20	Mar-19	Mar-18	Mar-17	Mar-16	Jun-15	Jun-14	Jun-13	Jun-12	Jun-11	Jun-10
	PER SHARE RATIOS												
Basic EPS (Rs.)	40.1	32.22	33.06	59.69	52.54	48.18	33.52	45.17	85.66	53.32	35.06	24.09	18.55
Diluted EPS (Rs.)	40.09	32.22	33.05	59.66	52.5	48.13	33.43	44.91	84.51	52.45	34.43	23.61	18.55
Cash EPS (Rs.)	49.68	42.56	40.22	69.82	59.39	51.59	35.42	47.27	92.5	59.51	42.93	30.58	24.71
Book Value [ExclRev alReserv e]/Share (Rs.)	156.87	160.42	137.37	224.64	198.29	182.27	152.41	138.02	224.94	146.84	141.87	111.16	92.67
Book Value [InclReva lReserve] /Share (Rs.)	156.87	160.42	137.37	224.64	198.29	182.27	152.41	138.02	224.94	146.84	141.87	111.16	92.67

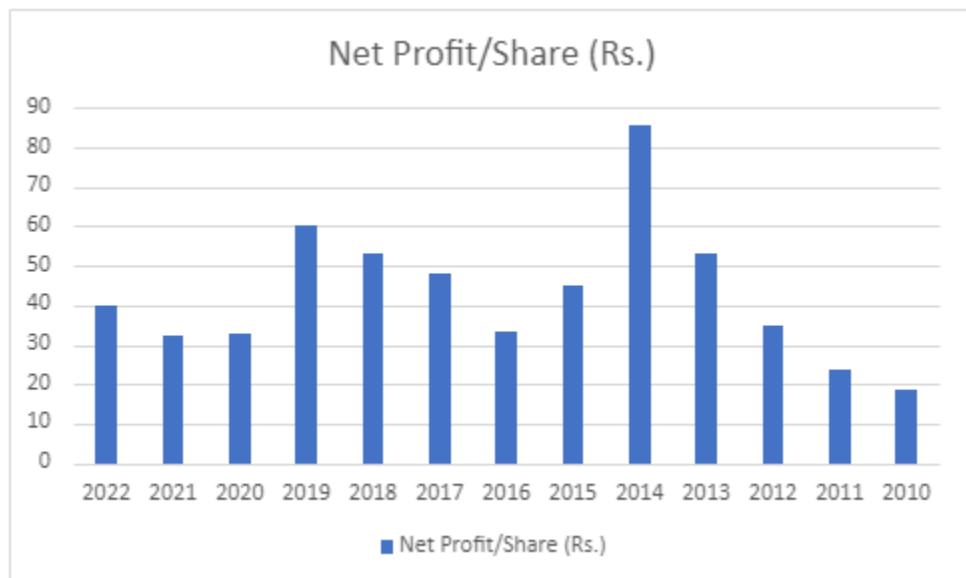
Dividend / Share(Rs.)	42	10	10	8	12	24	16	30	10	12	300.46	228.41	178.79
Revenue from Operations/Share (Rs.)	149.68	131.39	120.1	191.97	158.8	135.56	95.25	122	235.68	179.63	56.28	40.01	30.86
PBDIT/Share (Rs.)	58.9	56.72	49.23	82.83	72.24	61.82	43.28	57.32	113.86	71.31	48.35	33.33	24.7
PBIT/Share (Rs.)	49.27	46.36	42.04	73.41	65.81	58.46	41.32	55.19	106.85	64.97	46.3	31	21.69
PBT/Share (Rs.)	48.87	45.71	41.17	73.29	65.65	58.08	40.99	54.75	105.68	65.22	35.01	23.91	18.55
Net Profit/Share (Rs.)	40.05	32.2	33.03	60.41	52.96	48.23	33.46	45.13	85.49	53.16	34.94	23.91	18.55
<b>PROFITABILITY RATIOS</b>													
PBDIT Margin (%)	39.35	43.16	40.99	43.14	45.48	45.59	45.43	46.98	48.31	39.69	18.73	17.51	17.25
PBIT Margin (%)	32.91	35.28	35	38.24	41.44	43.12	43.37	45.23	45.33	36.16	16.09	14.59	13.81
PBT Margin (%)	32.64	34.78	34.27	38.17	41.34	42.84	43.03	44.88	44.84	36.3	15.4	13.57	12.13

Net Profit Margin (%)	26.75	24.5	27.5	31.46	33.35	35.57	35.12	36.99	36.27	29.59	11.65	10.46	10.37
Return on Networth / Equity (%)	25.53	20.07	24.04	26.88	26.7	26.46	21.95	32.7	38	36.2	11.63	10.46	10.37
Return on Capital Employed (%)	30.14	27.76	28.84	32	32.52	31.49	21.37	31.86	36.33	32.57	24.63	21.51	20.02
Return on Assets (%)	20.35	15.79	16.75	21.85	22.43	21.23	17.74	25.47	27.43	23.21	20.41	16.73	13.96
Total Debt/Equity (X)	0.01	0	0	0	0	0	0	0	0	0.06	13.24	11.84	9.99
Asset Turnover Ratio (%)	76.06	64.43	60.92	69.44	67.25	59.67	50.52	68.84	75.62	78.43	0.16	0.22	0.43
<b>LIQUIDITY RATIOS</b>										113.88	113.16	96.29	
Current Ratio (X)	2.97	2.77	1.69	2.93	3.29	3.06	3.91	3.23	2.62	1.88			
Quick Ratio (X)	2.97	2.76	1.69	2.93	3.28	3.05	3.88	3.22	2.62	1.86	1.41	1.64	1.66

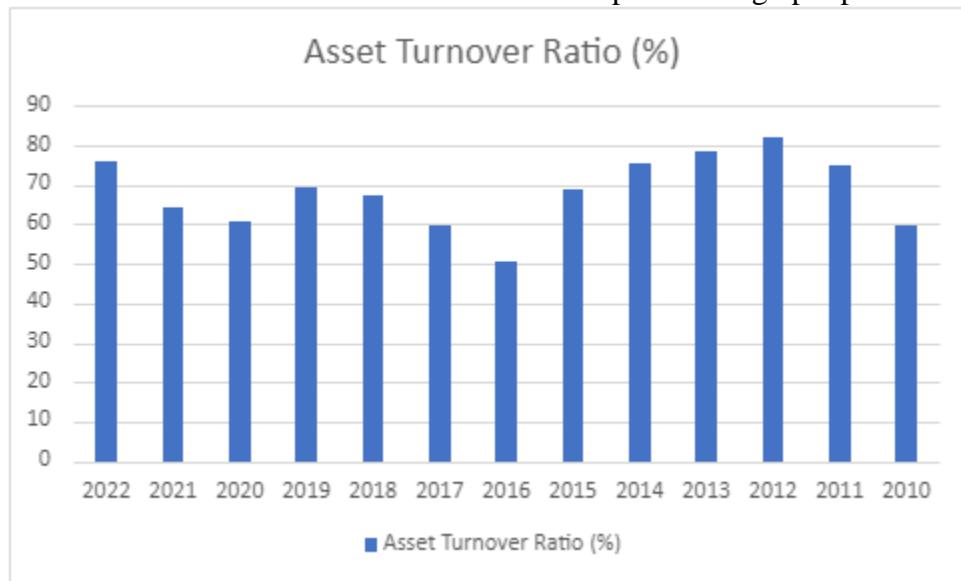
Inventory Turnover Ratio (X)	1,766.87	1,981.83	2,329.00	1,445.11	551.83	214.64	104.5	205.06	1,061.61	152.95	1.37	1.6	1.64
Dividend Payout Ratio (NP) (%)	0	37.25	15.12	13.42	22.98	49.26	57.16	37.59	11.7	22.54	92.11	94.56	186.23
Dividend Payout Ratio (CP) (%)	0	28.18	12.42	11.61	20.49	46.06	53.99	35.89	10.81	20.14	34.28	31.24	21.48
Earnings Retention Ratio (%)	0	62.75	84.88	86.58	77.02	50.74	42.84	62.41	88.3	77.46	27.94	24.42	16.12
Cash Earnings Retention Ratio (%)	0	71.82	87.58	88.39	79.51	53.94	46.01	64.11	89.19	79.86	65.72	68.76	78.52
<b>VALUATION RATIOS</b>											72.06	75.58	83.88
Enterprise Value (Cr.)	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####			

EV/Net Operatin g Revenue (X)	7.66	7.35	3.6	5.43	6	6.03	7.9	7.04	5.87	4.15	23.5	14.31	8.21
EV/EBIT DA (X)	19.46	17.02	8.79	12.58	13.19	13.22	17.4	14.98	12.16	10.44	23.5	14.31	8.21
MarketCap/Net Operatin g Revenue (X)	7.77	7.48	3.64	5.67	6.11	6.44	8.55	7.55	6.35	4.32			
Retention Ratios (%)	0	62.74	84.87	86.57	77.01	50.73	42.83	62.4	88.29	77.45	#####	#####	#####
Price/BV (X)	7.42	6.13	3.18	4.84	4.89	4.79	5.34	6.67	6.65	5.29	1.56	2.16	2.14
Price/Net Operatin g Revenue	7.77	7.48	3.64	5.67	6.11	6.44	8.55	7.55	6.35	4.32	8.35	12.36	12.37
Earnings Yield	0.03	0.03	0.08	0.06	0.05	0.06	0.04	0.05	0.06	0.07	1.58	2.16	2.04
											65.71	68.75	78.51
											3.36	4.44	3.94
											1.58	2.16	2.04
											0.07	0.05	0.05

## Net profit/share



- This graph shows that the Net profit/share was fluctuating initially and there was a constant increase in profit per share till 2014 but after 2014 it decreased and keep increasing upto pandemic then decreased.



The efficiency of the company in utilizing the assets is good but we can see the is a slight increasing after 2015.

## MINDTREE

- Mindtree is a global technology consulting and services company. It is a part of L&T group. Its service line includes data and intelligence, cloud, enterprise IT transformation and automation, customer success and consulting. Revenue mix consists of BFSI (18.6%), Communication, Media and Technology (44.1%), Retail, consumer products and Manufacturing (19.8%), Travel, transport and Hospitality (15.4%), Healthcare (2%).

## MINDTREE FINANCIAL RATIOS

The graph of Net Profit/Share in Rupees for the past 10 years is shown below taken from the table above.

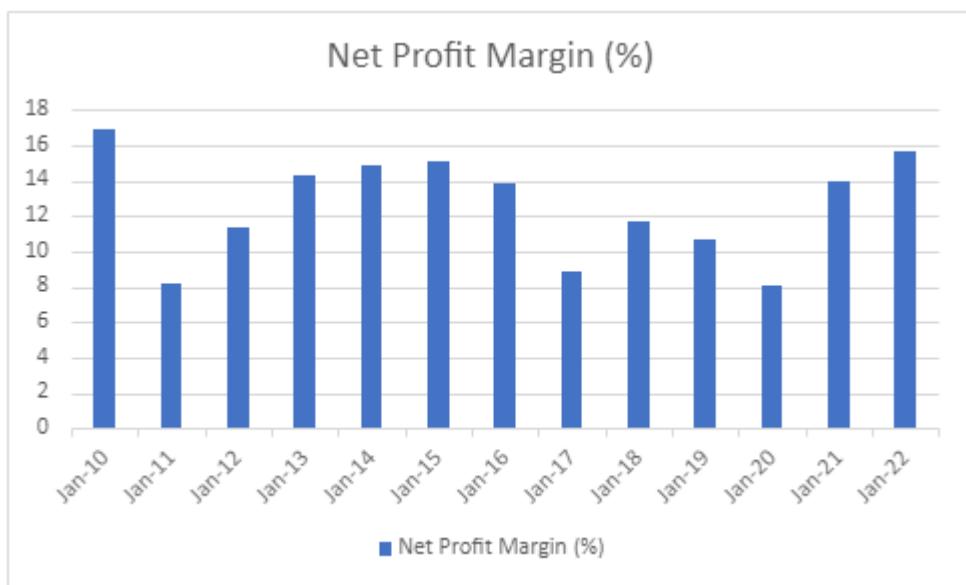
KEY FINANCI AL RATIOS OF MINDTR EE (in Rs. Cr.)	Mar-22	Mar-21	Mar-20	Mar-19	Mar-18	Mar-17	Mar-16	Mar-15	Mar-14	Mar-13	Mar-12	Mar-11	Mar-10
	PER SHARE RATIOS												
Basic EPS (Rs.)	100.3	67.43	38.35	45.94	37.69	26.56	36.08	63.9	108.5	82.7	54.27	30.93	52.66
Diluted EPS (Rs.)	100.3	67.43	38.33	45.94	37.58	26.51	35.99	63.62	107.7	81.66	54.18	30.1	52.66
Cash EPS (Rs.)	114.98	83.18	55.05	55.91	47.6	36.68	43.85	75.99	127.6	96.7	71.16	48.58	68.11
Book Value [ExclRev alReserv e]/Share (Rs.)	332.12	262.21	191.77	201.34	173.16	155.96	144	240.24	393.5	316.55	236.44	194.1	163.48
Book Value [InclReva lReserve] /Share (Rs.)	332.12	262.21	191.77	201.34	173.16	155.96	144	240.24	393.5	316.55	236.44	194.1	163.48

Dividend / Share(Rs.)	37	25	13	33	11	10	16	17	25	12	4	2.5	3
Revenue from Operations/Share (Rs.)	638.67	483.78	471.71	427.62	324.89	299.98	259.62	423.82	727	569.11	472.89	377.25	312.1
PBDIT/Share (Rs.)	151.87	109.79	70.29	70.26	58.96	46.06	53.92	94.32	158.27	117.35	81.9	56.05	78.04
PBIT/Share (Rs.)	137.18	94.03	53.56	60.27	49.49	35.92	46.11	82.17	138.87	102.31	64.74	38.25	62.59
PBT/Share (Rs.)	134.14	90.97	50.35	60.09	48.46	34.79	46.1	82.16	138.78	102.07	64.62	38.15	61.95
Net Profit/Share (Rs.)	100.29	67.41	38.32	45.92	38.13	26.55	36.05	63.84	108.2	81.66	54	30.78	52.66
<b>PROFITABILITY RATIOS</b>													
PBDIT Margin (%)	23.77	22.69	14.9	16.43	18.14	15.35	20.76	22.25	21.77	20.61	17.31	14.85	25
PBIT Margin (%)	21.47	19.43	11.35	14.09	15.23	11.97	17.76	19.38	19.1	17.97	13.69	10.13	20.05
PBT Margin (%)	21	18.8	10.67	14.05	14.91	11.59	17.75	19.38	19.08	17.93	13.66	10.11	19.84

Net Profit Margin (%)	15.7	13.93	8.12	10.73	11.73	8.84	13.88	15.06	14.88	14.34	11.41	8.15	16.87
Return on Networth / Equity (%)	30.19	25.7	19.98	22.8	22.01	17.02	25.03	26.57	27.49	25.79	22.83	15.85	32.21
Return on Capital Employed (%)	37.95	32.47	23	29.77	21.95	16.84	23.95	26.1	27.17	25.62	22.67	15.36	32.06
Return on Assets (%)	20.26	17.45	12.23	18.04	16.42	13.13	18.46	20.19	21.48	20.04	16.37	12.12	22.08
Total Debt/Equity (X)	0	0	0	0	0.11	0.04	0.02	0	0	0.02	0.05	0.01	0
Asset Turnover Ratio (%)	1.45	1.38	150.57	168.01	139.93	148.37	132.96	134.06	144.38	139.66	143.43	148.68	130.87
<b>LIQUIDITY RATIOS</b>													
Current Ratio (X)	2.76	2.87	2.46	3.23	2.57	2.7	2.18	3.05	3.34	3.12	2.57	2.98	1.54
Quick Ratio (X)	2.76	2.87	2.46	3.23	2.57	2.7	2.18	3.05	3.34	3.12	2.57	2.98	1.54

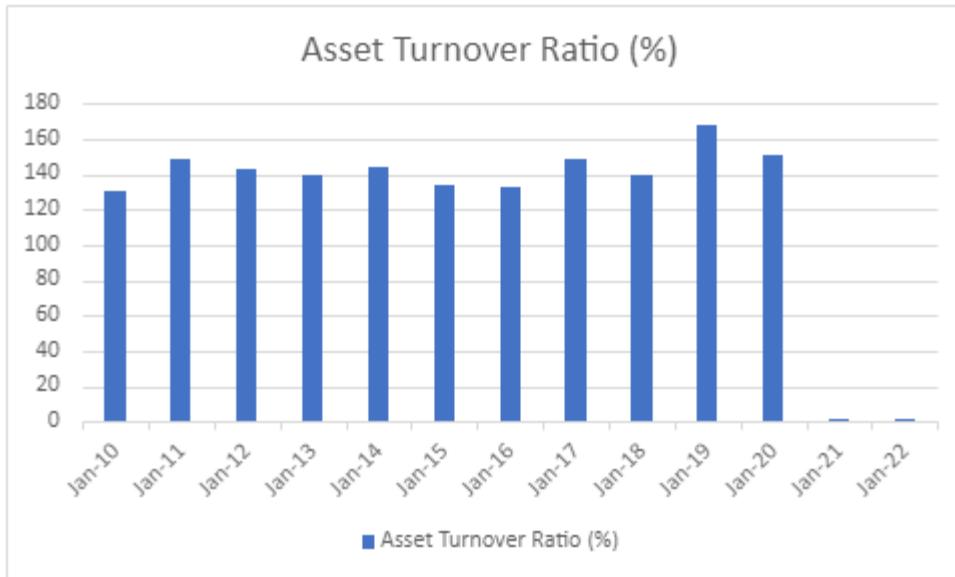
Inventory Turnover Ratio (X)	0	0	0	0	0	0	0	0	0	0	0	0	0
Dividend Payout Ratio (NP) (%)	27.41	25.94	78.2	23.93	23.81	37.64	29.12	26.65	23.07	14.66	7.4	8.12	5.68
Dividend Payout Ratio (CP) (%)	23.91	21.03	54.43	19.66	19.07	27.24	23.94	22.38	19.56	12.38	5.62	5.14	4.39
Earnings Retention Ratio (%)	72.59	74.06	21.8	76.07	76.19	62.36	70.88	73.35	76.93	85.34	92.6	91.88	94.32
Cash Earnings Retention Ratio (%)	76.09	78.97	45.57	80.34	80.93	72.76	76.06	77.62	80.44	87.62	94.38	94.86	95.61
<b>VALUATION RATIOS</b>													
Enterprise Value (Cr.)	#####	#####	#####	#####	#####	7,449.02	#####	#####	5,383.97	3,684.45	1,960.28	1,532.10	2,295.04

EV/Net Operatin g Revenue (X)	6.64	4.21	1.68	2.17	2.38	1.48	2.48	2.97	1.78	1.56	1.02	1.02	1.86
EV/EBIT DA (X)	27.91	18.57	11.28	13.21	13.1	9.63	11.93	13.37	8.16	7.57	5.91	6.83	7.44
MarketCa p/Net Operatin g Revenue (X)	6.74	4.31	1.76	2.21	2.38	1.51	2.51	3.08	1.81	1.6	1.03	1.04	1.89
Retention Ratios (%)	72.58	74.05	21.79	76.06	76.18	62.35	70.87	73.34	76.92	85.33	92.59	91.87	94.31
Price/BV (X)	12.95	7.95	4.32	4.69	4.47	2.9	4.53	5.43	3.35	2.88	2.06	2.02	3.6
Price/Net Operatin g Revenue	6.74	4.31	1.76	2.21	2.38	1.51	2.51	3.08	1.81	1.6	1.03	1.04	1.89
Earnings Yield	0.02	0.03	0.05	0.05	0.05	0.06	0.06	0.05	0.08	0.09	0.11	0.08	0.09



This graph shows that the Net profit/share was fluctuating initially and there was a constant increase in profit per share till 2016 but in 2016 its net profit per share decreased, and again the net profit increased after 2020

and again there is a very good increase in net profit per share.



The efficiency of the company in utilizing the assets is good but we can see there is a slight fluctuation in efficiency after 2015.

## DECISION

- WIPRO: Intrinsic Value > Market Value, it is undervalued, so it is recommended to buy the stock as value of share may increase in future.
- INFOSYS: Intrinsic Value > Market Value, it is undervalued, so it is recommended to buy the stock as value of share may increase in future.
- TCS: Intrinsic Value > Market Value, it is undervalued, so it is recommended to buy the stock as value of share may increase in future.
- HCL TECH: Intrinsic Value < Market Value, it is overvalued, so it is recommended to sell the stock as value of share may fall in future.
- MINDTREE: Intrinsic Value < Market Value, it is overvalued, so it is recommended to sell the stock as value of share may fall in future.

## FINDINGS

- In concern with EPS, Wipro is maintaining a constant increase whereas Infosys, HCL Technologies and Mindtree is showing increasing trend initially and then falls down. On the other hand TCS is showing increasing trend throughout the five years.

- In case of Price earnings ratio, Infosys and HCL Technologies are showing decreasing trend in opening three years and gradually increased in next two years. Wipro showed decreasing trend whereas TCS is having fluctuating price earnings ratio, but Mindtree is having an increasing pattern.
- Mindtree is having an increasing trend in dividend payout ratio throughout the five year. On the other hand TCS, Infosys and HCL Technologies showed an increasing trend in initial four years and finally declined. Wipro have a fluctuating dividend payout ratio
- Book value of Wipro is maintaining a consistency with minute increase in each year. HCL Technologies, Infosys and Mindtree initially showed an increase in the book value and decreased in last two years. TCS is showing increasing trend throughout the last five years.
- TCS is showing decreasing trend in case of Return on equity. Mindtree and Infosys is having considerable line of consistency during last five years. HCL Technologies and Wipro is showing increasing trend in initial three years and decreasing trend in last two years.

## SUGGESTIONS

- It is recommended to buy and hold the shares which are undervalued such as Wipro, TCS, and Infosys as their share prices have a propensity to raise in the future.
- Every investor is recommended to make a thorough analysis of the capital market, about the company and industry before making any investment decisions.
- It is suggested to sell the overvalued shares such as HCL Technologies and Mindtree as their shares prices have a tendency to decrease in the future.

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## **Conclusions-**

- The growth of the IT industry in India will witness new dimensions in the years to come. However, a challenge has been posted before the industry's development amid the Covid-19 pandemic. The work from home culture is most prevalent during the pandemic in the IT industry that has a lot of impact on the companies that have dealings with the international market.
- Many tech conferences have been cancelled recently owing to the spread of the deadly disease followed by the lockdown. The future of the IT Industry in India is still expected to move in an upward direction. IT sector analysis estimates that there will be an enormous increase in the sector by the year 2025.
- The IT sector's growth is attributed to the rise in the demand for software and social media platforms such as WhatsApp video Call, Google Hangouts, to name a few. The trend of teleconferencing has taken a new dimension, and people are even opting for telehealth assistance.
- Investing in one share alone is not suggested as returns may not be favorable always. Investing in multiple or diversified shares reduces the risk and provides a stable returns.

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**SECURITIES ANALYSIS AND PORTFOLIO MANAGEMENT**

**PROJECT REPORT**

**ON**

**INDUSTRIAL ANALYSIS**



**SCHOOL OF MANAGEMENT**

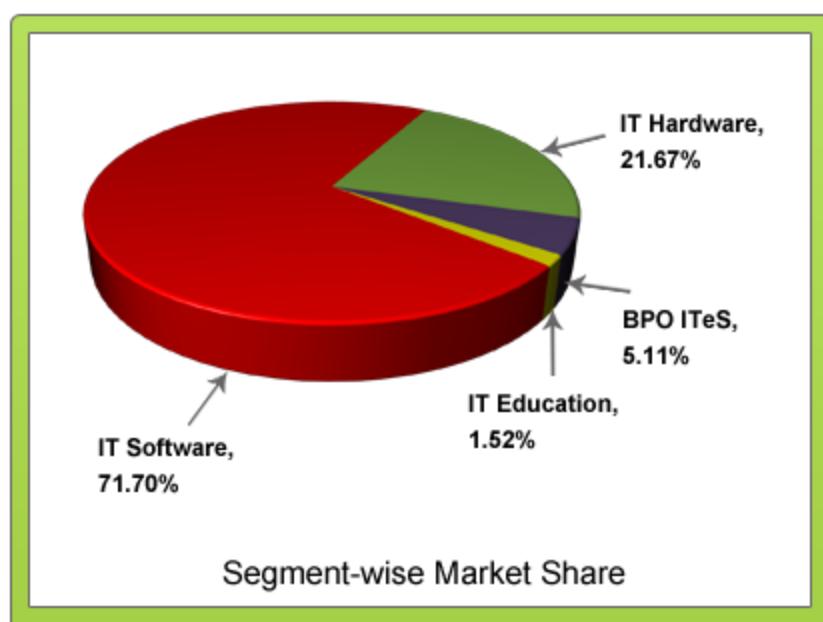
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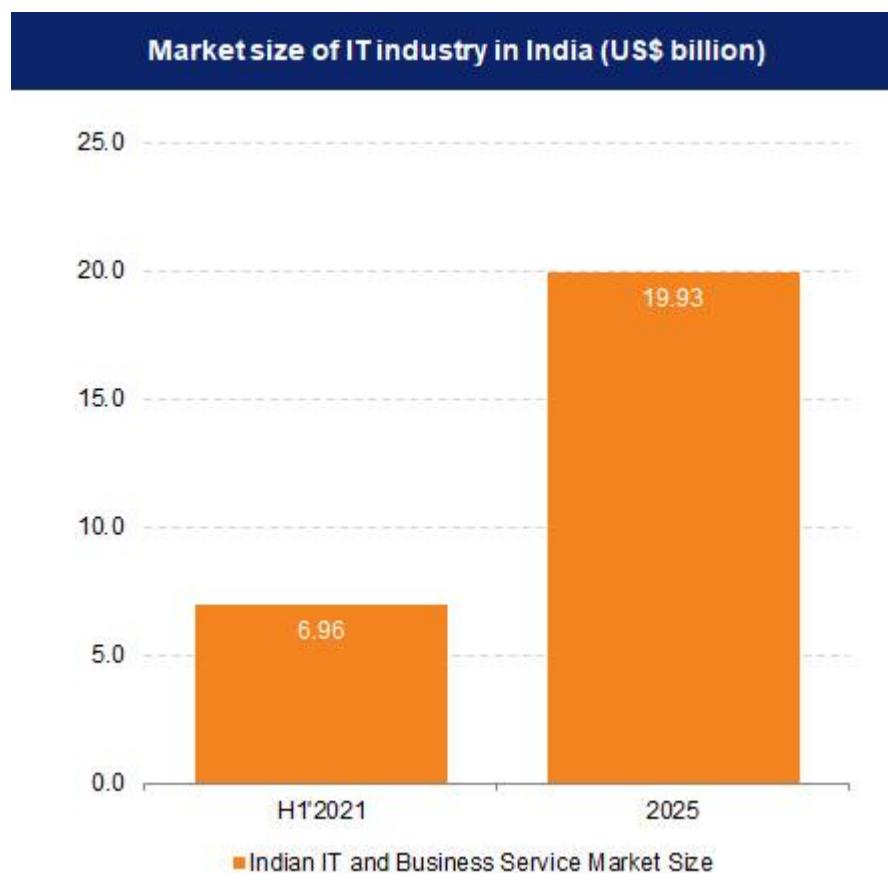
## **INTRODUCTION:**

- Industry analysis is a tool that facilitates a company's understanding of its position relative to other companies that produce similar products or services. Understanding the forces at work in the overall industry is an important component of effective strategic planning. Industry analysis enables small business owners to identify the threats and opportunities facing their businesses, and to focus their resources on developing unique capabilities that could lead to a competitive advantage.
- In the last ten years the IT sector in India has grown at an average annual rate of 28%. India has emerged as the preferred destination for IT services owing to the cost advantage and talent-pool.
- India accounts for almost 51% of the global sourcing market. Exports contribute around 75% of the total revenue of the IT sector in India. However due to increased export-orientation and lesser domestic consumption the sector suffered major hit in the recession that shook the globe in 2008-09.
- In the year 2010, different economies began seeing recovery, but at varying pace. Indian companies have subsequently begun tapping other geographical markets and domestic consumption has also relatively increased.



## MARKET SIZE

- India is the leading sourcing destination across the world, accounting for approximately 55% market share of the US\$ 200-250 billion global services sourcing business in 2019-20.
- According to National Association of Software and Service Companies the Indian IT industry's revenue touched US\$ 227 billion in FY22, a 15.5% YoY growth.
- According to Gartner estimates, IT spending in India is expected to increase to US\$ 101.8 billion in 2022 from an estimated US\$ 81.89 billion in 2021.
- Indian software product industry is expected to reach US\$ 100 billion by 2025. Indian companies are focusing to invest internationally to expand their global footprint and enhance their global delivery centres.
- The data annotation market in India stood at US\$ 250 million in FY20, of which the US market contributed 60% to the overall value. The market is expected to reach US\$7 billion by 2030 due to accelerated domestic demand for AI.



- The IT industry added 4.45 lakh new employees in FY22, bringing the total employment in the sector to 50 lakh employees.

## **PORTER'S FIVE FORCE MODEL**

Porter's five force models consist of five major indicators to analyze an industry i.e. existing competition, availability of substitutes, threat of new entrants, bargaining power of suppliers and bargaining power of customers.

- EXISTING COMPETITION: IT services such as network management services, data-center services, infrastructure management services, application development and maintenance etc which leads to competition. Many companies in the industry are offering the similar services and therefore difficult to differentiate each other.
- BARGAINING POWER OF CUSTOMERS: Buyers bargaining power is large and chance of pressure on rates prevails in the industry. Both the international and Indian IT firms have negated the advantages all the way through global delivery and mature procurement.
- BARGAINING POWER OF SUPPLIERS: Supplier's bargaining power is very low and as high standardization prevails in the industry there is modest chance for the suppliers to have any thump.
- THREAT OF NEW ENTRANTS: Industry is also characterized by high people dependence and consequently can observe veterans isolate from prevailing companies to devote in new ventures. The innovative technology allows the opportunity of entrants to new niche players which are not dependant on experience constraints or size.
- AVAILABILITY OF SUBSTITUTES: IT sector has been a mixed bag for newer services as well since internal specialization is low and most of the work is outsourced generally. Therefore there is no substantial substitute to information technology industry from internal perspective, and are thinner in numbers and significance.

## **INVESTMENTS/ DEVELOPMENTS**

Indian IT's core competencies and strengths have attracted significant investment from major countries and companies.

- The computer software and hardware sector in India attracted cumulative foreign direct investment (FDI) inflows worth US\$ 85.51 billion between April 2000-March 2022. The sector ranked 2nd in FDI inflows as per the data released by Department for Promotion of Industry and Internal Trade (DPIIT). Computer software and hardware make up 14.53% of the cumulative FDI inflows.
- In July 2022, the Union Bank of India (UBI) launched a Metaverse Virtual Lounge and Open Banking Sandbox environment in partnership with Tech Mahindra.
- In June 2022, ZStack International, a worldwide market leader in cloud computing, IaaS and PaaS solutions, announced that they were entering into India and the SAARC Region.
- In June 2022, Redington India, an IT provider, entered into a multi-year strategic agreement with Amazon Web Services (AWS) to drive cloud technology adoption in India.
- American-Irish consumer credit reporting company Experian is planning a major expansion of its global innovation centre (GIC) in Hyderabad to about 4,000 employees over the next three to five years. According to sources, GIC will concentrate on employing emerging technologies in the BFSI (banking, financial services, and insurance) sector, including cloud computing, big data analytics, artificial intelligence, and machine learning.
- In 2021, PE investments in the IT sector stood at US\$ 23.4 billion.
- India's IT startup ecosystem has received record investments of nearly US\$ 36 billion in privately held companies in 2021, up from US\$ 11 billion in 2020.
- In March 2022, Licious, India's largest tech-first, fresh animal protein brand, raised US\$ 150 million in a Series F2 funding round.

- In March 2022, Byju's raised US\$ 800 million in funding as part of a pre-IPO round, which values the Bengaluru-based company at about US\$ 22 billion.
- In March 2022, debt marketplace CredAvenue raised US\$ 137 million in a funding round led by Insight Partners, B Capital Group and Dragoneer Investment Group, which propelled the startup's valuation to US\$ 1.3 billion.
- In February 2022, Hasura, a software company which helps developers with tools, raised US\$ 100 million in a fresh funding round led by Greenoaks Capital, which elevate the company into a unicorn.
- In January 2022, Google announced plans to invest US\$ 1 billion in India's Bharti Airtel Ltd. to push India's digital ecosystem.
- Amazon has partnered with Airtel to sell Amazon Web Services (AWS) to its customers and intends to inject US\$ 1.6 billion in their two upcoming data centres in Hyderabad.
- In November 2021, Wipro partnered with TEOCO to build solutions for communication service providers (CSPs) to improve network automation, efficiency, flexibility and reliability.
- In August 2021, Tata Consultancy Services was adjudged a leader in the NelsonHall NEAT for CX Services in Banking, Financial Services and Insurance (BFSI).

## **IT INDUSTRY BOOSTING INDIA'S GROWTH**

- Indian IT industry has grown rapidly with an exponential growth rate after the economic reform of 1991-92. Indian IT companies have set up thousands of centres within Indian and around 80 countries across the world. The majority of global corporations are sourcing IT-ITES from the Indian IT industry, it accounts for approximately 55 percent of the global service sourcing market (US\$ 200-250 billion) in 2019-20.
- The market size (especially export) of the IT industry has grown manifold from approx. 67 billion US dollars in 2008-09 to 191 billion US dollars in 2019-20 (Graph

- 1). The revenue is further expected to grow in the coming years with an accelerating growth rate and expected to reach 350 billion US dollars by 2025.
- The remarkable feature of India's IT industry is that along with its expansion in terms of market size it is also incrementally adding a significant share to India's gross domestic product (GDP) and consequently boosting the growth and development of the country. From a minuscule 0.4 percent in 1991-92, the IT industry contributed around eight percent in 2017-18 to the total GDP of India (Graph 2). This share is expected to increase to ten percent by 2025.
  - India's digitally skilled pool has grown over the period and accounted for around 75 percent of global digital talent. India's four large IT companies (TCS, Infosys, Wipro, HCL Tech) have employed more than one million employees. New IT-based technologies such as telemedicine, remote monitoring, etc. are expanding and boosting the demand in the digital economy.
  - The rollout of fifth-generation (5G) communication technology, growing adoption of artificial intelligence, Big Data analytics, cloud computing and the Internet of Things (IoT) will further expand the size of the IT industry in India. As the size of India's digital economy is increasing, IT companies are establishing their centres in tier II and tier III cities which will further enhance the growth and reduce the existing disparities.

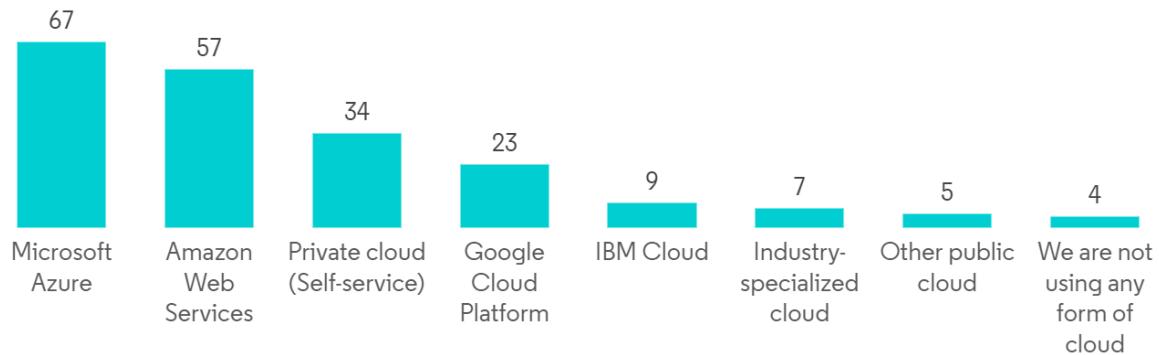
## **Current trend-**

### **Cloud Services is Gaining Traction Due to the Emergence of Cloud-based Platform**

- There has been a significant breakthrough in cloud computing over the past few years, as cloud solutions offer various advantages but expose data hosted to substantial risks, including privacy identity theft, among others. Organizations adopting cloud computing should consider implementing IT services that can analyze all executions, applications, and network connections.
- Due to advancements in the IT operation across the cloud-based platform, IT services have become more data-driven as well as real-time, creating greater value for the business, especially in the areas of operational efficiency, business opportunity discovery, and remote access optimization.

- According to a report published by Cloudward in 2022, with an overwhelming 94.44%, Google Drive was by far the most used cloud storage service globally. In next place is Dropbox, used for cloud storage for collaboration, with a still impressive 66.2%, followed by OneDrive (39.35%), iCloud (38.89%), MEGA (5.09 %), Box (4.17%), and pCloud (1.39%).
- As the demand for cloud services is expected to grow over the next few years, with immense demand from the IT and telecommunication industry across the ever-growing corporate sector, the scope for IT infrastructure services from these end users is expected to grow rapidly.
- Due to substantial complexity and concerns about security, risk, governance, and control, a significant proportion of banking and financial services organizations are aiming to deploy core systems to the cloud. Various market vendors are driving their investments to accelerate the digital transformation. For instance, in May 2021, EY and IBM announced the establishment of a Center of Excellence to assist financial institutions in accelerating digital transformation through hybrid cloud solutions. The Center of Excellence is a unified virtual center that provides offerings in regulatory compliance, digital trust, and security to assist clients in leveraging the cloud at scale.

Global Use of Cloud Providers by Organizations, in %, By Vendor, 2021



Source: Turbonomic

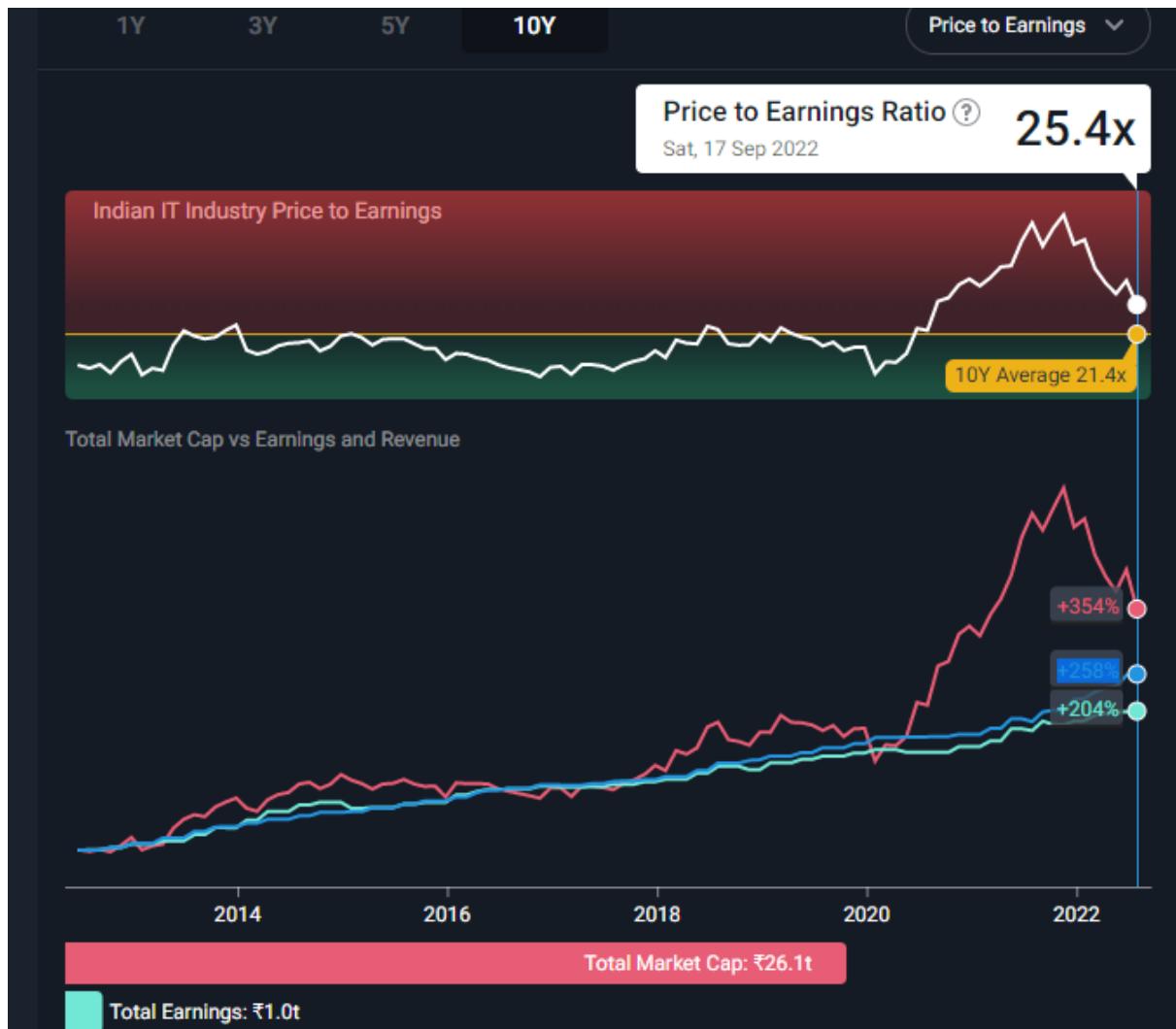


## **Current Industry PE**

- Investors are relatively neutral on the Indian IT industry at the moment, indicating that they anticipate long term growth rates to remain steady.
- The industry is trading close to its 3-year average PE ratio of 26.7x.
- The 3-year average PS ratio of 4.4x is higher than the industry's current PS ratio of 3.8x.

### Past Earnings Growth

- The earnings for companies in the IT industry have grown 8.5% per year over the last three years.
- Revenues for these companies have grown 13% per year.
- This means that more sales are being generated by these companies overall, and subsequently their profits are increasing too.



## FUTURE OF IT INDUSTRY

- After recession, the year 2010 has seen steady recovery by the sector. Global markets have seen a growth of 5% in GDP, with developing nations growing faster than developed nations. IT spend in 2011 is expected to grow nearly 4%. Worldwide IT spending will also benefit from the accelerated recovery in emerging market.
- According to NASSCOM, India can reach \$ 1 TRILLION in IT revenue by 2030, with CAGR of 14%. With this, it would be contributing to 7% of annual GDP and creating 14.3 million employment opportunities.
- With the government taking active measures to stimulate the growth of IT

sector and emergence of BPO and KPO over last few years, India is expected to climb the global value and knowledge chain. In long-term we can expect the Indian IT sector to see good growth. Different segments of the sector are set to experience different growth rates. BPO industry will experience high growth but the Software and ITeS segment is expected to see slower growth. However, on company basis each company has to compete against other domestic as well as global player. They have to adapt new business models to compete with global players e.g. Cloud, On-demand services, and SaaS. With increased threat from countries like China, the companies will suffer loss unless they change business models.

- It is very important that while investing in a company, an investor selects a sector, where the long-term future prospects are bright. In the above case, we have seen that the IT sector is expected to have good growth in the long run. Also, it is equally important that the company has an excellent financial track record( i.e. Green 10 Year X-Ray) and its long-term future prospects are Green (Very Good).
- The 10 YEAR X-RAY facilitates analysis of the financial performance of the company considering the five most important parameters. A 10 Year period will normally encompass an entire business cycle. Analysing the performance over this time frame is essential to understand how a company has fared during the good as well as bad times. The five most important parameters that one needs to look at are Net Sales Growth Rate, EPS Growth Rate, Book Value Per Share (BVPS) Growth Rate, Return on Invested Capital (ROIC) and Debt to Net Profit Ratio.
- Given below is the MoneyWorks4me assessment for a few IT companies: At MoneyWorks4me we have assigned colour codes to the 10 YEAR X-RAY and Future Prospects of the companies, as Green (Very Good), Orange ('Somewhat Good') and Red (Not Good).

<b>Company Name</b>	<b>10 Year X-ray</b>	<b>Future prospects</b>
Infosys Technologies Ltd.	<b>Green</b>	<b>Green</b>
Tata Consultancy Services Ltd.	<b>Green</b>	<b>Green</b>
Wipro Ltd.	<b>Green</b>	<b>Green</b>
Educomp Solutions Ltd.	<b>Green</b>	<b>Orange</b>
Firstsource Solutions Ltd.	<b>Orange</b>	<b>Orange</b>
HCL Infosystems Ltd.	<b>Orange</b>	<b>Orange</b>
NIIT Ltd.	<b>Orange</b>	<b>Orange</b>

## Conclusion

- TCS has historically traded at a premium because of better business model, size, higher margins, and governance, however, this premium narrowed post-July 2019. But now, Investors may prefer TCS to be a safer option over Infosys. As a result, TCS will regain its earlier premium valuation shortly.
- Marketing strategy aims to recognize markets and to prepare for it all, including emerging customers. To understand the marketing strategy of Tata Consultancy Services, we must go through the four Ps that make up the entire marketing plan and then examine the positioning of this global corporation under the company position section.
- The recognition of the target audience is as important as the products and services to be developed for every company and the same applies to TCS. The firm has been quite successful in doing so.
- Software like Customer Intelligence & Insights is a fully integrated software that has been designed specifically for retailers, banks and communication service providers.
- Product Strategy-The firm's product strategy will help us know how the organization manages to strategize its product diversity and expands in the same incremental way it does. With a vast variety of products and services, TCS serves the ever-changing demands of customers by combining our local and regional expertise.

- Overall, Tata Consultancy Services has been functioning and growing exponentially. The product strategy appears to be capable of identifying potential consumer markets and preparing for future products and services to enter those markets. This offers the company a strategic advantage that is not only lucrative in the long term but also tactful in offering an expanding market.

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21SMG1R22**

**SECURITIES ANALYSIS AND PORTFOLIO MANAGEMENT**

**PROJECT REPORT**

**ON**

**TECHNICAL ANALYSIS**



**SCHOOL OF MANAGEMENT**

**National Institute of Technology**  
**Warangal**

Submitted by

**SOUMYA RANJAN RATH**  
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## **TECHNICAL ANALYSIS**

- Technical analysis is a trading discipline employed to evaluate investments and identify trading opportunities by analyzing statistical trends gathered from trading activity, such as price movement and volume. Unlike fundamental analysis, which attempts to evaluate a security's value based on business results such as sales and earnings, technical analysis focuses on the study of price and volume.
- Technical analysis is a trading discipline employed to evaluate investments and identify trading opportunities in price trends and patterns seen on charts.
- Technical analysts believe past trading activity and price changes of a security can be valuable indicators of the security's future price movements.
- Technical analysis may be contrasted with fundamental analysis, which focuses on a company's financials rather than historical price patterns or stock trends.
- Technical analysis tools are used to scrutinize the ways supply and demand for a security will affect changes in price, volume, and implied volatility. It operates from the assumption that past trading activity and price changes of a security can be valuable indicators of the security's future price movements when paired with appropriate investing or trading rules.
- It is often used to generate short-term trading signals from various charting tools, but can also help improve the evaluation of a security's strength or weakness relative to the broader market or one of its sectors. This information helps analysts improve their overall valuation estimate.
- Technical analysis as we know it today was first introduced by Charles Dow and the Dow Theory in the late 1800s.<sup>1</sup> Several noteworthy researchers including William P. Hamilton, Robert Rhea, Edson Gould, and John Magee further contributed to Dow Theory concepts helping to form its basis. Nowadays technical analysis has evolved to include hundreds of patterns and signals developed through years of research.

## **Technical Analysis Indicators**

- There are hundreds of patterns and signals that have been developed by researchers to support technical analysis trading. Technical analysts have also developed numerous types of trading systems to help them forecast and trade on price movements.
- Some indicators are focused primarily on identifying the current market trend, including support and resistance areas, while others are focused on determining the strength of a trend and the likelihood of its continuation. Commonly used technical indicators and charting patterns include trendlines, channels, moving averages, and momentum indicators.

In general, technical analysts look at the following broad types of indicators:

- Price trends
- Chart patterns
- Volume and momentum indicators
- Oscillators
- Moving averages
- Support and resistance levels

## **COMPANY-1 (TATA CONSULTING SERVICES)**



- Single Candlestick pattern

**Doji:** Doji candlestick pattern has their opening and closing price are very close to each other. The candle thus looks like a plus sign with a chance that the highs and lows wicks of the candle being of different lengths.

Dojis often indicate indecision in the market. Doji is shown by above figure. It indicated indecision in the market before going to down trend. The reverse is true for D3. Whereas D2 indicates indecision in the market before the next big move.

- Inverted Hammer: Inverted hammer is one candle pattern with a shadow at least two times greater than the body. This pattern is identified by the small body. They are found at the bottom of the decline which is evidence that bulls are stepping in but still selling is going on. The color of the small body is not important but the green body has more bullish indications than a red body.
- Two-candlestick pattern a. Bullish Engulfing: The bullish engulfing pattern is a two candlestick pattern which appears at the bottom of the down trend. As the name suggests, this is a bullish pattern which prompts the trader to go long.
- Three-candlestick Pattern a. Morning Star: The morning star is a bullish candlestick pattern which evolves over a three-day period. It is a downtrend reversal pattern. The pattern is formed by combining 3 consecutive candlesticks.

### **BAR CHART( TCS 10 YEAR DATA)**

A bar chart or bar graph is a chart or graph that presents categorical data with rectangular bars with heights or lengths proportional to the values that they represent. The bars can be plotted vertically or horizontally.

Here we can see current high price 3767.52.23 (3 jan 2022) and price in 2010 (364.15).



## INFOSYS

- Three white soldiers is a bullish candlestick pattern that is used to predict the reversal of the current downtrend in a pricing chart. The pattern consists of three consecutive long-bodied candlesticks that open within the previous candle's real body and a close that exceeds the previous candle's high. These candlesticks should not have very long shadows and ideally open within the real body of the preceding candle in the pattern.
- Three white soldiers are considered a reliable reversal pattern when confirmed by other technical indicators like the relative strength index (RSI).
- The size of the candles and the length of the shadow is used to judge whether there is a risk of retracement.
- The opposite pattern of three white soldiers is three black crows, which indicates a reversal of an uptrend.



## WIPRO



## MORNING STAR-

- A morning star is a visual pattern made up of a tall black candlestick, a smaller black or white candlestick with a short body and long wicks, and a third tall white candlestick.

- The middle candle of the morning star captures a moment of market indecision where the bears begin to give way to bulls. The third candle confirms the reversal and can mark a new uptrend.
- The opposite pattern to a morning star is the evening star, which signals a reversal of an uptrend into a downtrend.

## HCL

- A bullish engulfing pattern is a candlestick pattern that forms when a small black candlestick is followed the next day by a large white candlestick, the body of which completely overlaps or engulfs the body of the previous day's candlestick.



## MINDTREE



## FALLING 3 METHOD

- ❖ Falling three methods occurs when a downtrend stalls as bears lack the impetus, or conviction, to keep pushing the security's price lower. This leads to a counter move that is often the result of profit-taking and, possibly, an attempt by eager bulls anticipating a reversal. The subsequent failure at making new highs, or closing above the opening price of the long down candle, emboldens bears to re-engage, leading to a resumption of the downtrend.
- ❖ The falling three methods pattern forms when the five candlesticks meet the following criteria that are depicted in the image below:
- ❖ The long bearish candlestick within the defined downtrend is the first in the pattern.
- ❖ It's followed by the three ascending small-bodied candlesticks that trade below the open, or high, price and above the close, or low, price of the first candlestick.
- ❖ The fifth, and final, candlestick should be a long bearish one that pierces the lows established since the first candlestick, indicating that the bears are back.

## SHOOTING STAR

A shooting star candlestick pattern occurs when an asset's market price is pushed up quite significantly, but then rejected and closed near the open price. It could be a possible signal of bearish reversal, meaning an uptrend might not continue.



## TECHNICAL INDICATOR

The gap between the current price and the historical average price is calculated using a technical indicator called the Commodity Channel Index (CCI). When the CCI is more than zero, the price is higher than the historical average. When the CCI is below zero, however, the price is lower than the historical average. The CCI is an unbounded oscillator, which means it can go higher or lower indefinitely. As a result, for each

individual asset, overbought and oversold levels are frequently determined by looking at prior extreme CCI levels where the price reversed from.

## Leading indicator: Relative Strength Index (RSI)

- The relative strength index (RSI) is a technical indicator that can act as both a leading and lagging indicator. In its absolute sense, it is a lagging indicator, because the price has to move first for the indicator to start moving in that direction. It basically moves with the price, with a slight delay.
- That said, it can be a leading indicator. When the RSI reaches extreme levels, it can signal that the price is overextended and may soon reverse in the other direction. But because the indicator lags price, traders could consider waiting for the price to actually start reversing before acting on the signal. As discussed above, divergence can also transform the RSI into a leading indicator, providing insight on when trends may be running out of steam and are ready to reverse.

## RELATIVE STRENGTH INDEX

- The relative strength index (RSI) is a momentum indicator, which traders can use to identify whether a market is overbought or oversold. When the RSI gives a signal, it is believed that the market will reverse – this provides a leading sign that a trader should enter or exit a position.
- The RSI tends to remain above 30 and should frequently reach 70 during an uptrend. Rarely does the RSI rise above 70 while the market is in a decline. The indicator frequently falls to 30 or lower, in reality. These guidelines can assist traders in assessing the strength of a trend and identifying potential reversals.
- Thus by examining statistical trends gleaned from trading activity, such as price movement and volume, technical analysis is a trading discipline used to assess investments and spot trading opportunities.

## **Lagging indicator: simple moving average (SMA)**

- Moving averages are considered lagging indicators because the average simply follows the price, with a delay. For example, if the price is dropping and then comes back higher, the moving average could start moving higher after the price does.
- Moving averages can also be leading indicators as they may signify where the price may find support or resistance in the future. The price will often move back to the moving average because of mean reversion, which is where the price moves back to more normal or average levels after pulling away from the average.
- The following chart shows that a simple moving average (SMA) is both lagging and leading in that it moves with price, but in a delayed fashion, and it also acts as a moving target (leading) for where the price could go next because of the tendency for the price to return to the average.
- The longer the moving average — the more periods used in its calculation — the less frequently the price will revisit the moving average. The shorter the moving average, the more frequently the price will revisit the moving average.

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