

Dupont Analysis of 5 Major Players of Indian IT Industry

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Abstract

The Information Technology sector is the pillar of the world's economy. TCS, INFOSYS, WIPRO, LTIMINDTREE, TECH MAHINDRA are major players in creating the Indian IT Sector. This research intends to do a Dupont analysis of these IT companies to analyze their financial performance and provide and understanding on what is that driving their profitability. This research aims to deliver a comprehensive view on TCS, INFOSYS, WIPRO, LTIMINDTREE, TECH MAHINDRA's financial performance, allowing the readers to take informed decisions as well as encourage in understanding of financial dynamics in the IT sector.

Keywords: Dupont Analysis, Revenue, Net Income, Total Assets, Python

Introduction

The worldwide environment is changing significantly. At the same time, the world is managing three major shifts: the power sector transition, the logistics transition, and the AI transition. These shifts are certain to require major expenditures in technology and innovation, but they will also present an enormous chance for growth for the IT industry. Technology and developments are boosting interaction and allowing digital and hybrid job styles. To effectively engage and collaborate with this talent, a strategy that capitalizes on technology such as AI and the cloud are relied on. Substantial investments are made in the development of AI abilities, including AI-powered systems and products. In the recent past, the industries have used collaborations to create and operate an almost wholly homegrown software-defined 4G/5G network architecture. 5G technology together with IoT, edge computing, and AI will offer uncommon digital change opportunity among sectors, particularly industrial and consumer. The effects of AI and Machine learning will be enormous. Predictive AI is already giving way to generative AI. Many firms are still embracing predictive AI and are currently on the path of acquiring enormous volumes of data while leveraging the capabilities of cloud and IoT. Using generative AI would necessitate further technological innovation and expenditure. In addition to these contemporary areas of focus, technologies such as 5G, IoT, generative AI, virtual reality/metaverse, virtual twins, and many more are receiving prominence and are anticipated to draw investments in the near to medium term and are important for the development of country's economy. In India IT sector has been receiving high finances and are mostly maintained by the private enterprises. The IT sector receives finances from different sources. The growth of the IT sector depends on the efficient use of the finances. Hence, it is important to analyze the financial performances of the IT enterprises to get to know how the investments are turning out or helping in development of the sector. In this study major five companies TCS, INFOSYS, WIPRO, LTIMINDTREE, TECH MAHINDRA financials are analyzed and Dupont analysis is conducted to understand the Return on Equity

that is driven by factors like Net Profit Margin, Total Asset Turnover and Equity Multiplier. The companies are chosen for the study based on their high market capital.

REVIEW OF LITERATURE

Finding ROE to forecast the values ahead of time can be well achieved by DuPont Analysis (Jin, 2017). DuPont analysis along with Multiple Linear Regression is a method to evaluate components of the model considered (ACKIGOZ, 2021). It can also be used to assess the quality of the ERP system in order to check its efficiency (Pavkovic, 2022). It can be used to sort and verify the underrated or overrated stocks (Abdullah, 2020). Not just quantitative but also the qualitative data can be analyzed using this model such as influence of social media (Jeppson, 2021). Return on Equity is the return that an equity shareholder may get on his investments (Markonah, 2023). ROE also has a huge impact on attractive new potential investors (Radoi, 2023). The ROE also depends on the size of the firm and Debt-Equity ratio (Junaidi, 2021). The studies shows that the ROE depicts the efficiency and performance of the company (Carvalho, 2017).

Any company to perform well, the core competencies such as resources, infrastructure and organizational performance are the essentials which can make a huge difference between the competitors in the same industry (Sharma R. K.). Apart from these, the studies have also showed that having a rightful corporate governance also increases the productivity and performance of the organization (Kumar). TCS is rated among the top companies in the world's IT industries (Andra). The innovations like providing private 5G networks are some of the services of TCS which makes them outperform others in terms of creativity and innovation (Anonymous). These factors directly impact on the Return on Equity for the shareholders.

OBJECTIVES OF THE STUDY

The research has set following objectives

1. Application and analyzes of Dupont on TCS, INFOSYS, WIPRO, LTIMINDTREE, TECH MAHINDRA
2. To analyze the financial performance over a period.

RESEARCH METHODOLOGY

This research applies and analyzes Dupont analysis for the IT companies like TCS, INFOSYS, WIPRO, LTIMINDTREE, TECH MAHINDRA. The data for the analysis is collected from yahoo financials with help of python. Four years financial statements are collected for the years 2020, 2021, 2022, and 2023 of the IT companies viz. TCS, INFOSYS, WIPRO, LTIMINDTREE, TECH MAHINDRA. The ROE is calculated using following model:

Three Step Dupont Analysis Model

$$\text{ROE} = \text{Net_Profit_Margin} * \text{Asset_Turnover} * \text{Equity_Multiplier}$$

TOOLS USED:

Python for fetching the data and Power BI for visualization.

The financial data is gathered for Dupont calculation through python code for the five IT companies, given below is the code where the company tickers are used for the different companies and Figure 1 given below is the code applied for TCS and the same is applied for all the other four companies with their ticker reference.

```

1 import yfinance as yf
2 import pandas as pd
3 tcs = yf.Ticker("TCS.NS")
4 infy = yf.Ticker("INFY.NS")
5 wipro = yf.Ticker("WIPRO.NS")
6 ltim = yf.Ticker("LTIM.NS")
7 techm = yf.Ticker("TECHM.NS")
8
9 df = tcs.income_stmt
10 df_bs = tcs.balance_sheet
11 df_t = df.transpose()
12 df_bs_t = df_bs.transpose()
13 df_t_tcs = df_t[['Total Revenue', 'EBIT', 'Net Income From Continuing And Discontinued Operation']]
14 df_bs_t_tcs = df_bs_t[['Common Stock Equity', 'Total Assets']]
15 df_tcs_combine = pd.concat(objs=[df_t_tcs, df_bs_t_tcs], axis=1)
16 print("Key Financial Data For TCS")
17 print(df_tcs_combine)
18 df_t['Net_Profit_Margin'] = df_t['Net Income From Continuing And Discontinued Operation'] / df_t['Total Revenue']
19 df_bs_t['Asset_Turnover'] = df_t['Total Revenue'] / df_bs_t['Total Assets']
20 df_bs_t['Equity_Multiplier'] = df_bs_t['Total Assets'] / df_bs_t['Common Stock Equity']
21 df_bs_t['ROE'] = df_t['Net_Profit_Margin'] * df_bs_t['Asset_Turnover'] * df_bs_t['Equity_Multiplier']
22 df_tcs = df_t[['Net_Profit_Margin']]
23 df_tcs_bs = df_bs_t[['Asset_Turnover', 'Equity_Multiplier', 'ROE']]
24 df_combine = pd.concat(objs=[df_tcs, df_tcs_bs], axis=1)
25 print("Dupont Analysis - TCS")
26 print(df_combine)

```

Figure 1: Python Code

Executing the python code, the below key financial data is collected for the calculation of ROE for all the 5 companies (Figure 2). The data is collected for the period of 4 Financial years starting from 2019-2020 to 2022-2023.

TCS					
	Total Revenue	EBIT	Net Income From Continuing And Discontinued Operation	Common Stock Equity	Total Assets
31 March 2023	225458000000	57686000000	42147000000	90424000000	143651000000
31 March 2022	191754000000	52471000000	38327000000	89139000000	141514000000
31 March 2021	164177000000	44397000000	32430000000	86433000000	130759000000
31 March 2020	156949000000	43172000000	32340000000	84126000000	120899000000
INFOSYS					
	Total Revenue	EBIT	Net Income From Continuing And Discontinued Operation	Common Stock Equity	Total Assets
31 March 2023	18212000000	4160000000	2981000000	9172000000	15312000000
31 March 2022	16311000000	4063000000	2963000000	9941000000	15555000000
31 March 2021	13561000000	3622000000	2613000000	10442000000	14825000000
31 March 2020	1278000000	3119000000	2331000000	8646000000	12260000000
WIPRO					
	Total Revenue	EBIT	Net Income From Continuing And Discontinued Operation	Common Stock Equity	Total Assets
31 March 2023	904876000000	157734000000	113500000000	781164000000	1175822000000
31 March 2022	790934000000	156600000000	122191000000	658158000000	1079182000000
31 March 2021	619430000000	144095000000	107946000000	553095000000	831434000000
31 March 2020	610232000000	127648000000	97218000000	557458000000	817062000000
LTIM					
	Total Revenue	EBIT	Net Income From Continuing And Discontinued Operation	Common Stock Equity	Total Assets
31 March 2023	331830000000	59419000000	44083000000	165921000000	234961000000
31 March 2022	156687000000	31647000000	22968000000	88146000000	124693000000
31 March 2021	123698000000	26660000000	19361000000	73034000000	107091000000
31 March 2020	108786000000	20836000000	15201000000	54040000000	88249000000
TECHM					
	Total Revenue	EBIT	Net Income From Continuing And Discontinued Operation	Common Stock Equity	Total Assets
31 March 2023	532902000000	67711000000	48313000000	279245000000	461533000000
31 March 2022	446460000000	75932000000	55661000000	268857000000	448707000000
31 March 2021	378551000000	60995000000	44280000000	248650000000	396780000000
31 March 2020	368677000000	52497000000	40330000000	218131000000	373535000000

Figure 2: Financial Data

From the data collected ROE formula is applied using the code for each company which is broken into three main components that are Net Profit Margin, Asset Turnover, Equity Multiplier. Net Profit measures efficiency of the business in generating profits computed as part of its sales. Asset Turnover measures how the company makes use of its assets for revenue generation. Equity Multiplier measures the extent to which the company utilizes its debt for financing its operations.

FINDINGS

```

1 C:\Users\krish\PycharmProjects\pythonProject\venv\Scripts\python.exe "C:\Users\krish\PycharmProjects\
pythonProject\Dupont to excel.py"
2 Key Financial Data For TCS
3      Total Revenue    ...      Total Assets
4 2023-03-31  2254588000000.0    ...  1436510000000.0
5 2022-03-31  1917540000000.0    ...  1415140000000.0
6 2021-03-31  1641778000000.0    ...  1387590000000.0
7 2020-03-31  1569498000000.0    ...  1288990000000.0
8
9 [4 rows x 5 columns]
10 Dupont Analysis - TCS
11      Net_Profit_Margin  Asset_Turnover  Equity_Multiplier    ROE
12 2023-03-31    0.186939    1.569484    1.588638    8.466184
13 2022-03-31    0.199876    1.355018    1.587565    8.429969
14 2021-03-31    0.197531    1.255569    1.512837    8.375284
15 2020-03-31    0.206054    1.298183    1.437118    8.384423
16 Key Financial Data For INFOSYS
17      Total Revenue    EBIT    ...  Common Stock Equity    Total Assets
18 2023-03-31  18212000000.0  4160000000.0    ...  9172000000.0  15312000000.0
19 2022-03-31  16311000000.0  4063000000.0    ...  9941000000.0  15555000000.0
20 2021-03-31  13561000000.0  3622000000.0    ...  10442000000.0  14825000000.0
21 2020-03-31  12780000000.0  3119000000.0    ...  8646000000.0  12260000000.0
22
23 [4 rows x 5 columns]
24 Dupont Analysis - INFOSYS
25      Net_Profit_Margin  Asset_Turnover  Equity_Multiplier    ROE
26 2023-03-31    0.163683    1.189394    1.669429    8.325011
27 2022-03-31    0.181657    1.048602    1.564732    8.298059
28 2021-03-31    0.192685    0.914739    1.419747    8.250239
29 2020-03-31    0.182394    1.042414    1.417997    8.269684
30 Key Financial Data For WIPRO
31      Total Revenue    EBIT    ...  Common Stock Equity    Total Assets
32 2023-03-31  984870000000.0  157734000000.0    ...  781164000000.0  1175822000000.0
33 2022-03-31  790934000000.0  156600000000.0    ...  658150000000.0  1079182000000.0
34 2021-03-31  619430000000.0  144095000000.0    ...  553095000000.0  831434000000.0
35 2020-03-31  610232000000.0  127648000000.0    ...  557450000000.0  817062000000.0
36
37 [4 rows x 5 columns]
38 Dupont Analysis - WIPRO
39      Net_Profit_Margin  Asset_Turnover  Equity_Multiplier    ROE
40 2023-03-31    0.125432    0.769569    1.505218    8.145296
41 2022-03-31    0.15449    0.732901    1.6397    8.185656
42 2021-03-31    0.174267    0.745014    1.503239    8.195167
43 2020-03-31    0.159313    0.746861    1.465692    8.174395
44 Key Financial Data For LTIM
45      Total Revenue    EBIT    ...  Common Stock Equity    Total Assets
46 2023-03-31  331830000000.0  59419000000.0    ...  165921000000.0  234961000000.0
47 2022-03-31  156687000000.0  31647000000.0    ...  88146000000.0  124693000000.0
48 2021-03-31  123698000000.0  26660000000.0    ...  73034000000.0  187091000000.0
49 2020-03-31  108780000000.0  20836000000.0    ...  54040000000.0  88249000000.0
50
51 [4 rows x 5 columns]
52 Dupont Analysis - LTIM
53      Net_Profit_Margin  Asset_Turnover  Equity_Multiplier    ROE
54 2023-03-31    0.132848    1.412277    1.416102    8.265687
55 2022-03-31    0.146585    1.256582    1.414619    8.260568
56 2021-03-31    0.156518    1.155074    1.466317    8.265096
57 2020-03-31    0.139733    1.232717    1.633031    8.281292
58 Key Financial Data For TECHM
59      Total Revenue    EBIT    ...  Common Stock Equity    Total Assets
60 2023-03-31  532902000000.0  67711000000.0    ...  279245000000.0  461533000000.0
61 2022-03-31  446460000000.0  75932000000.0    ...  268857000000.0  448787000000.0
62 2021-03-31  378551000000.0  60995000000.0    ...  248650000000.0  396700000000.0
63 2020-03-31  368677000000.0  52497800000.0    ...  218131000000.0  373535000000.0
64
65 [4 rows x 5 columns]
66 Dupont Analysis - TECHM
67      Net_Profit_Margin  Asset_Turnover  Equity_Multiplier    ROE
68 2023-03-31    0.090666    1.154635    1.652709    0.173013
69 2022-03-31    0.124672    0.994992    1.668943    0.207028
70 2021-03-31    0.116972    0.954058    1.595737    0.178882
71 2020-03-31    0.109391    0.986995    1.712434    0.184889
72
73 Process finished with exit code 0
74

```

Figure 3: Python Code Output

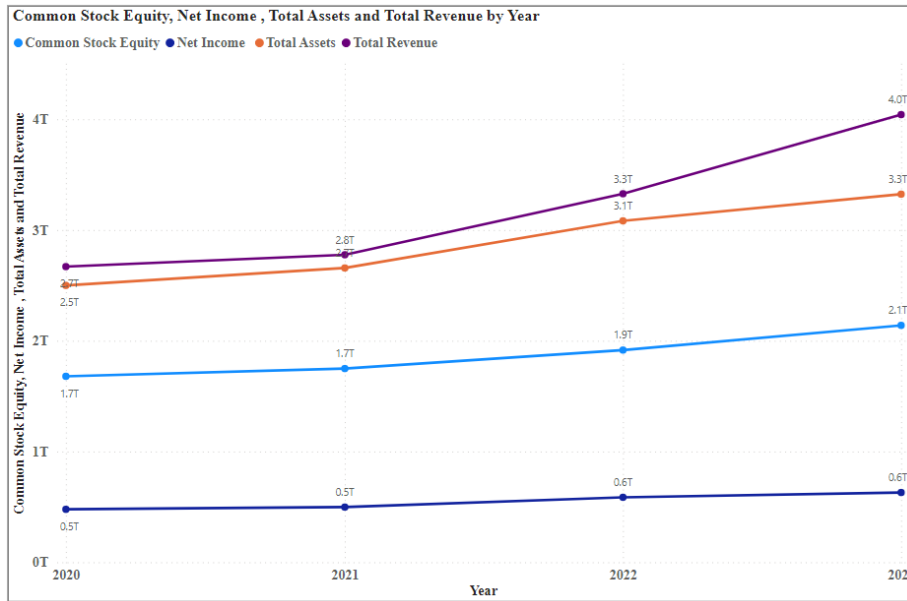


Figure 4: Line Chart indicating Key Financials during the period of study

India has got a flourishing IT industry and has received a well-deserved position in the overall global market. In the Indian IT industry TCS, INFOSYS, WIPRO, LTIMINDTREE, TECH MAHINDRA have been the major players. Based on Figure 4 we can observe the 5 companies have contributed Total Revenue of 4.0T in the year 2023, Total Assets of 3.3T in the year 2023, Net Income (Net Income from Continuing and Discontinued Operations is referred to as Net Income) of 0.6T in the year 2023 and Common Stock Equity constituted to 2.1T for the year 2023.

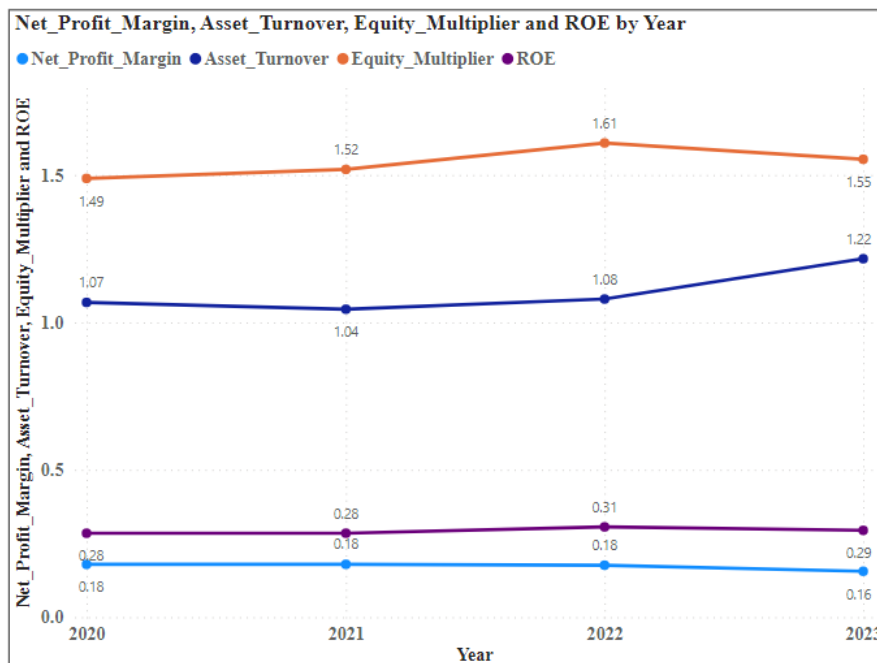


Figure 5: Line Chart for ROE And ROE Components

In Figure 5 it is observed that, the 5 players in the study had an average Net Profit Margin of 0.18 for the years 2020 to 2022 and a slight decline to 0.16 during 2023 indicating the percentage of Net Income generated as a percentage of Revenue. Equity Multiplier, a financial ratio determining portions of a

company’s assets being financed through own funds, was 1.49 in 2020, increased to 1.52 in 2021, a further increase to 1.61 and then a decline to 1.55, indicating its dependencies on borrowed funds. Assets Turnover ratio of 1.22 during 2023, indicating the efficiency of the industry players in using its assets in generating revenue. Return On Equity stood at 0.28 for the years 2020 to 2021 and had a rise to 0.31 during 2022 and then a decline to 0.29 during 2023 each indicating the efficiency of the industry players in converting its equity financing into profits.

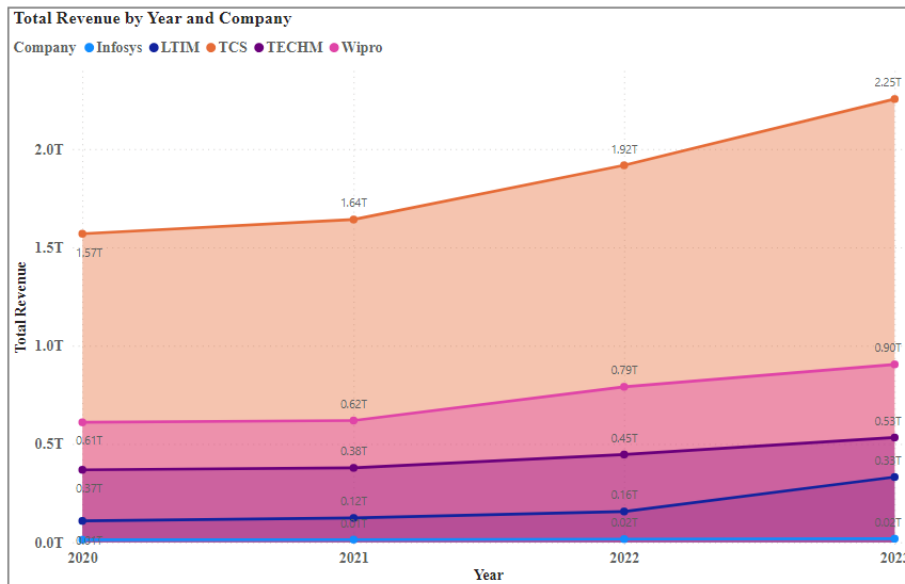


Figure 6: Total Revenue of the 5 Companies

While looking at the Total Revenue of all the 5 Companies in Figure 6 it is observed that revenue for all the 5 Companies increased over the four years and TCS stood above all the other 4 companies with higher revenue generation of INR 2.25T in the year 2023, followed by WIPRO having earned 0.90T revenue, followed by TECHM having earned 0.53T, followed by LTIM having earned 0.33T revenue, followed by INFOSYS standing fifth in revenue generation having earned 0.02T revenue.

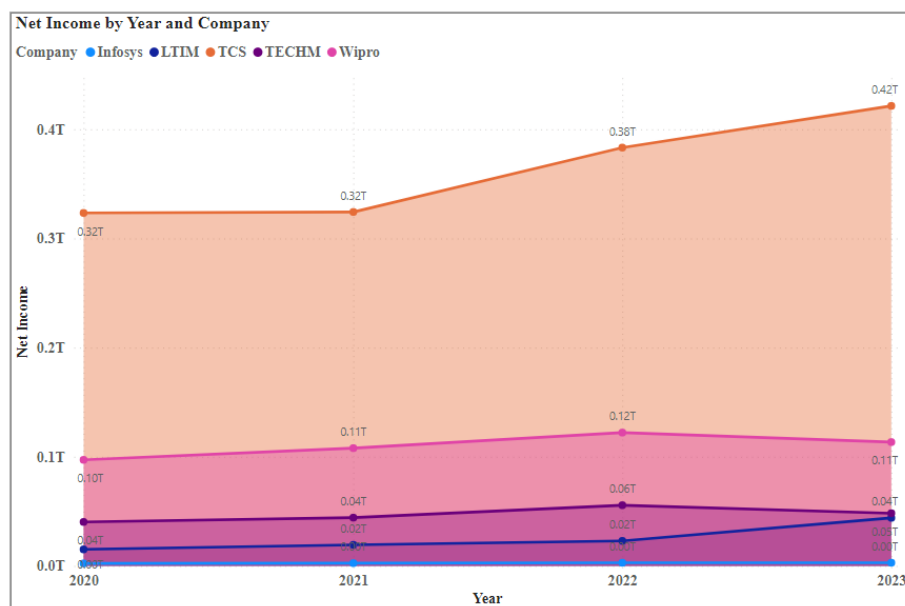


Figure 7: Net Income of the 5 Companies

While looking at the Net Income of the companies TCS, INFOSYS, WIPRO, LTIM, TECHM in Figure 7 it is observed that TCS stand above all the other 4 companies and in the year 2023 TCS has earned Net Income of 0.42T, WIPRO stands next and in the year 2023 WIPRO has earned Net Income of 0.11T, following WIPRO, TECHM stands third and in the year 2023 TECHM has earned Net Income of 0.048T, following TECHM, LTIM stands fourth and in the year 2023 LTIM has earned Net Income of 0.044T, following LTIM, INFOSYS stands fifth and in the year 2023 INFOSYS has earned Net Income of 0.02T.

RESULTS

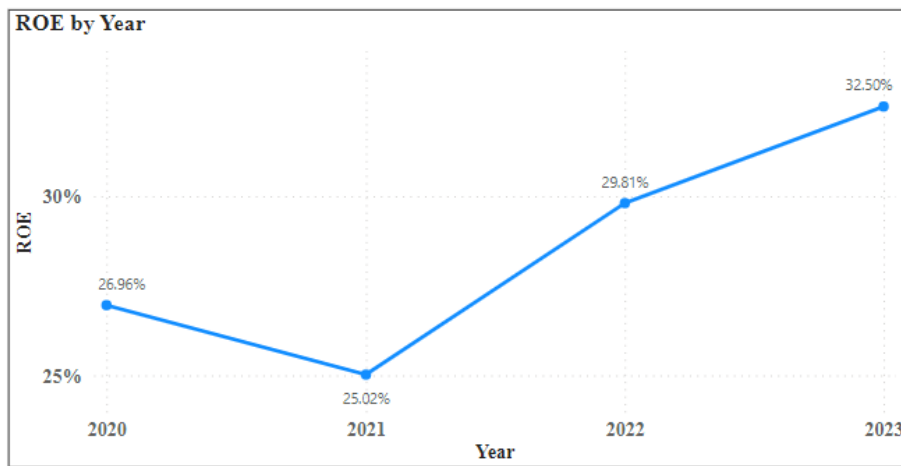


Figure 8: ROE - INFOSYS

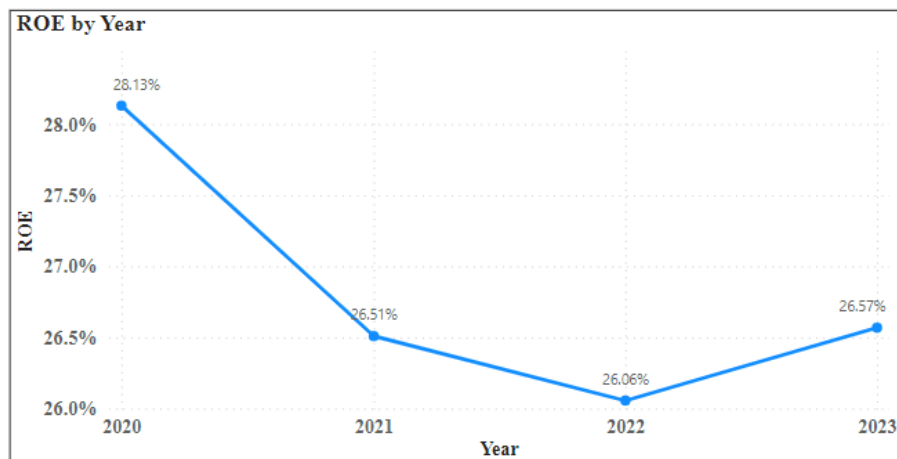


Figure 9: ROE - LTIM

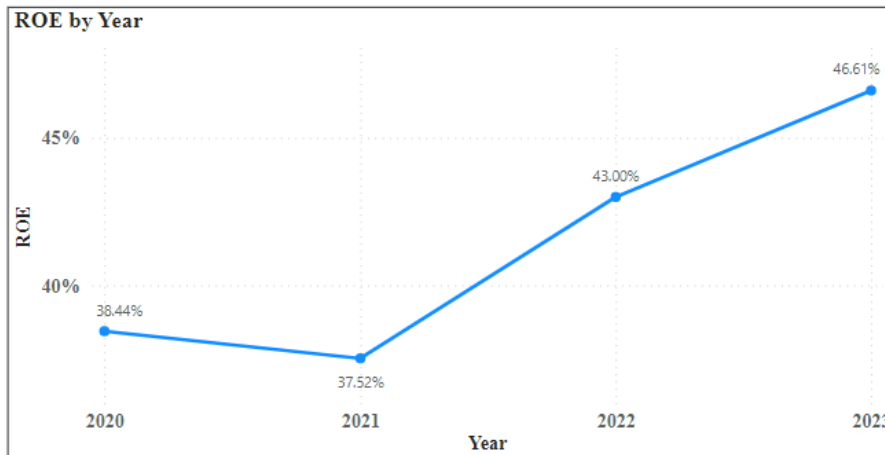


Figure 10: ROE - TCS

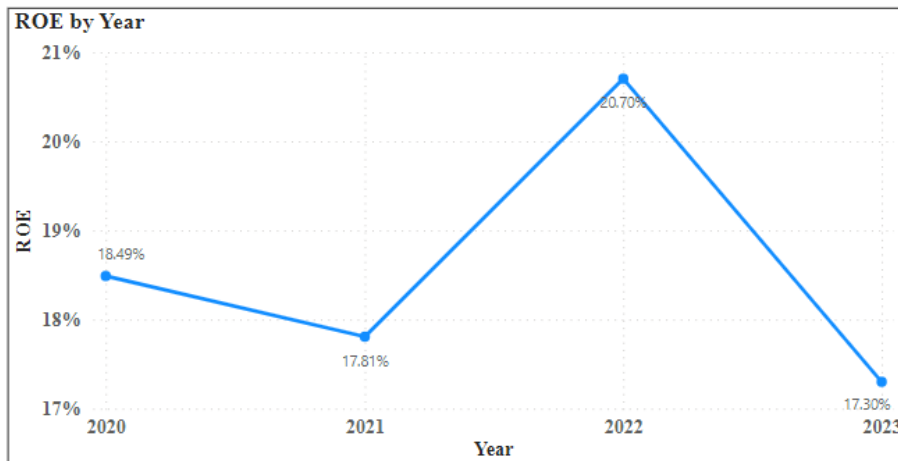


Figure 11: ROE - TECHM

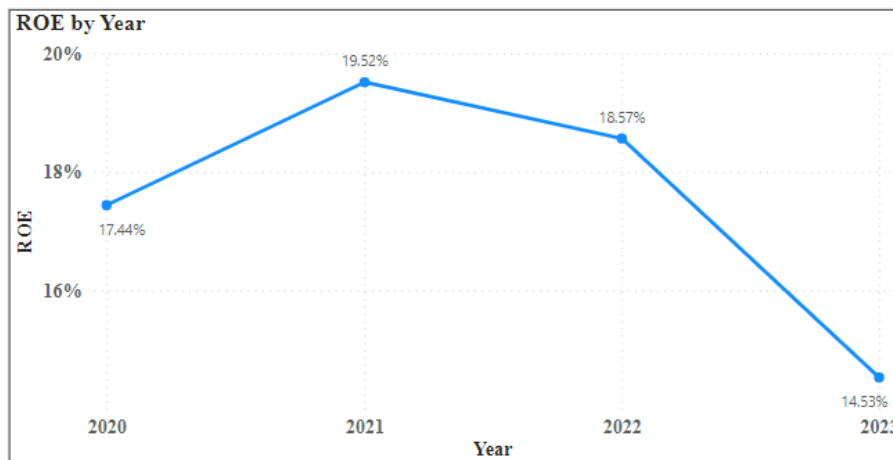


Figure 12: ROE - WIPRO

After analyzing the Financial Performance and ROE of the 5 Companies over the period of 4 years from 2020 to 2023 we can observe the following:

After analyzing the TCS financial performance over the 4 years, it is observed that the Total Revenue that is sales has been increasing significantly from 2020 to 2023, Net Income has also seen a significant increase from 2020 to 2023 and Total Assets have had a consistent increase from 2020 to 2023. ROE has seen an increasing trend over the period that is 2020 it had 38.4% to 2023 it had 46.6%, Net Profit Margin has decreased trend over the period that is 2020 it had 0.20 to 2023 it had 0.18, Asset Turnover and Equity Multiplier has increased over the period, Asset Turnover was 1.29 in the year 2020 and 1.56 in the year 2023 and Equity Multiplier was 1.43 in the year 2020 and 1.58 in the year 2023 which has impacted in the increase towards ROE.

For INFOSYS it is observed that there is significant increase in Total Revenue, Consistent increase in Net Income and Total Assets. ROE has increased over the period in 2020 it was 26.9% and 2023 it was 32.5%, Net Profit Margin has gone through ups and downs over the period the same with Asset Turnover, Equity Multiplier has increased as it was 1.41 in the year 2020 and 1.66 in the year 2023 which has impacted in ROE increase.

For WIPRO it is observed that there is increase in Total Revenue especially 2023 has seen significant increase from 2022, Net Income has seen increase trend from 2020 to 2022 but a dip in 2023, and significant increase in Total Assets. There have been fluctuations in ROE from 2020 to 2022 there was increase but a dip in 2023 in 2020 the ROE was 17.4% and in 2023 the ROE was 14.5%, Net Profit Margin has seen fluctuations there was an increase from 2020 to 2021 but from 2021 there was decreasing trend in 2020 it had Net Profit Margin of 0.15 but in 2023 it had Net Profit Margin of 0.12, Asset Turnover has increased over the period in 2020 it was 0.74 and in 2023 it was 0.76, Equity Multiplier had increase from 2020 to 2022 and dipped in 2023 in 2020 the Equity Multiplier was 1.46 in 2022 it was 1.63 but in 2023 it was 1.50, Asset Turnover has impacted in increase of ROE.

For LTIM there has been significant increase in Total Revenue from 2022 to 2023, Net Income has also seen a significant increase from 2022 to 2023, Total Assets have also increased from 2022 to 2023. ROE was high in 2020 with 28.1% but decreased in 2021 coming down to 26.5% and 2022 it was 26%, and saw a slight increase in 2023 with 26.5%ROE, Net Profit Margin has been fluctuating over the 4 years but had a dip in 2023 that is in 2020 it was 0.13 in 2021 it was 0.15 in 2022 it was 0.14 and in 2023 it came down to 0.13, Asset Turnover has increased from 2020 to 2023 as in 2020 it was 1.23 and in 2023 it was 1.41, Equity Multiplier has decreased from 2020 to 2022 as in 2020 it was 1.63 and in 2022 it was 1.41 but had a slight increase in 2023 that is it increased from 1.414 to 1.416.

For TECHM there has been increase in Total Revenue over the 4 years, Net Income had increase from 2020 to 2022 but decreased in 2023, Total assets have increased over the 4 years. ROE was 18.4% in 2020 then it decreased to 17.8% in 2021 and increased to 20.7% in 2022 but again decreased to 17.3% in 2023, Net Profit Margin increased from 2020 to 2022 as it was 0.10 in 2020 and 0.12 in 2022 but decreased in 2023 to 0.09, Asset Turnover had a decrease trend from 2020 to 2021 as in 2020 the turnover was 0.98 and in 2021 it was 0.95 but then it had a increasing trend from 2021 to 2023 as in 2021 the turnover was 0.99 and in 2023 it was 1.15, Equity Multiplier has had a decreasing trend from 2020 to 2023 that is in 2020 the Equity Multiplier was 1.71 and in 2023 it was 1.65.

CONCLUSION

From the research it can be concluded that, all the companies under study represent the Indian IT Sector. The major players generated a total revenue of INR 4T. TCS had good financial performance compared to other 4 companies, with revenue of 2.25T, Net Income of 0.42T and Total Assets of 1.43T for the year 2023. The ROE being the highest among all at 41.6% in the year 2023 which primarily is a result of efficient use of own funds and leverage benefits of the borrowed funds and a progressive Assets Turnover ratio signifies efficient utilization of Assets contributing towards an increased ROE.

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