

The Impact of Fundamental Analysis on the IT Industry: A Comparative Study Using Wipro, TCS, and Infosys as Examples

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Abstract: *This research aims to help investors understand how to make smart decisions when trading in the stock market, specifically using fundamental analysis. Fundamental analysis is a method that helps investors figure out how well a company is doing by looking at its basic elements. In India, there are many good chances for investors in the stock market because it's well-developed. One area that stands out for Indian and foreign investors is the information technology (IT) industry. However, the IT market can be unpredictable, with prices changing significantly. So, investors must check how well each investment is doing before putting their money in. This study is like a guide, providing insights into how investors can make informed decisions in the stock market, especially when dealing with IT companies in India.*

Keywords: Investment decision, Fundamental analysis, Intrinsic value, Share price, Indian IT industry, CAGR, P/E ratio

1. Introduction

The information technology (IT) sector plays a vital role in the development of the 21st century's knowledge economy, which is driven by technology. India's IT sector is globally recognized as excellent and has positioned the country as a global knowledge economy. The industry not only enhances the productivity of almost every other sector but also significantly impacts the economy's functioning. Moreover, India's potential for expanding its economic development and growth remains considerable.

Fundamental analysis is a method used to determine the approximate value of a security so that investors can decide whether to purchase it at the current market price. The underlying premise of fundamental analysis is to calculate the return on investment that an investor can expect if they invest one rupee to buy a share in a company. A fundamental analyst compares the stock's underlying value to its market price. If the underlying value is higher than the market price, the share is undervalued and should be purchased. Conversely, if the underlying value is lower than the market price, the share is overpriced and should be sold. Investors can use fundamental analysis to evaluate a company's performance based on its underlying fundamentals.

This study provides investors with valuable insights into the trading methods based on fundamental analysis that they can use. To evaluate a company's performance based on its fundamentals, investors can use fundamental analysis. India's well-developed financial markets offer a wide range of investment opportunities to both domestic and foreign investors. The information technology sector in India is considered a compelling investment opportunity. However, given the highly volatile nature of the IT index, it is essential to assess the performance of each investment before committing funds. As the information technology industry is one of the fastest-growing sectors in the Indian market, this article examines the fundamentals of the top three IT companies listed on Nifty 50 - TCS, Infosys, and Wipro, using secondary data from the past five years (2019-2023).

2. Problem Statement

To examine the performance of IT businesses, with a particular emphasis on three notable firms—Wipro, TCS, and Infosys—and assess the effects of investment decisions made in this industry. To provide insights into the best firms to invest in the IT industry, the research intends to use fundamental analysis to estimate the future worth of these companies and examine their intrinsic value."

Objectives of the study

- To study the growth and performance of the IT sector.
- Compare and evaluate the impact of a better choice of investment. Specifically focusing on three prominent companies - Wipro, TCS, and Infosys.
- To analyze the Intrinsic value and forecast the future value through fundamental analysis.
- To obtain knowledge about how to select the companies for investment.

3. Limitations of the Study

- 1) Since the publisher may have utilized the secondary data for other purposes, it is possible that this study's usage of it may not always represent the actual situation.
- 2) Making decisions based on secondary data is one type of risk since the future is unpredictable.

4. Research Methodology

The study is explanatory research because the researcher wants to prepare and analyze the existing facts, and figures given on the company websites. The research is fully based upon secondary data and the data was collected from the moneycontrol.com, tradingeconomic.com, and the company annual report because the data has already been collected through primary sources and made readily available for researchers to use for their research i.e. IT Companies which are listed in Nifty 50. In fundamental analysis, the data are collected for the past 5 years.

The period of the study: last five years (2019 to 2023).

Sample size: Samples were selected from the Three IT companies which are listed in Nifty.

50. The companies selected are: -

- 1) Tata Consultancy Services Ltd.
- 2) Infosys Ltd.
- 3) Wipro Ltd.

Tools required for the analysis:

For the analysis of data collected from secondary sources, the following tools can be utilized to effectively process and interpret the financial and market-related data for the chosen IT companies:

- Microsoft Excel
- Statistical Software
- Financial Ratios Calculators
- Data Visualization Tools

Stock Market Analysis Tools: To analyze stock market data, platforms like Meta Trader, Bloomberg Terminal, or Yahoo Finance can provide historical stock prices, volume, and other market-related information.

Economy Analysis

India's economic landscape, as of July 2023, exhibits a complex interplay of various factors influencing key indicators. The foreign currency reserves stand at an impressive US\$ 607 billion, indicative of the nation's robust position in the global economic arena. Projections for exports of goods and services in June 2023 are estimated at US\$ 60.09 billion, with a total expected export value for FY23 reaching US\$ 182.70 billion. Conversely, imports are anticipated to be US\$ 205.29 billion, emphasizing the nation's active participation in global trade.

Private equity (PE) and venture capital (VC) investments have seen a substantial influx, totaling US\$ 27.5 billion in

H1 2023, showcasing a vibrant entrepreneurial ecosystem. Outward foreign direct investment (OFDI) from India amounted to US\$ 973.9 million in June 2023, indicating the nation's expanding economic footprint beyond its borders.

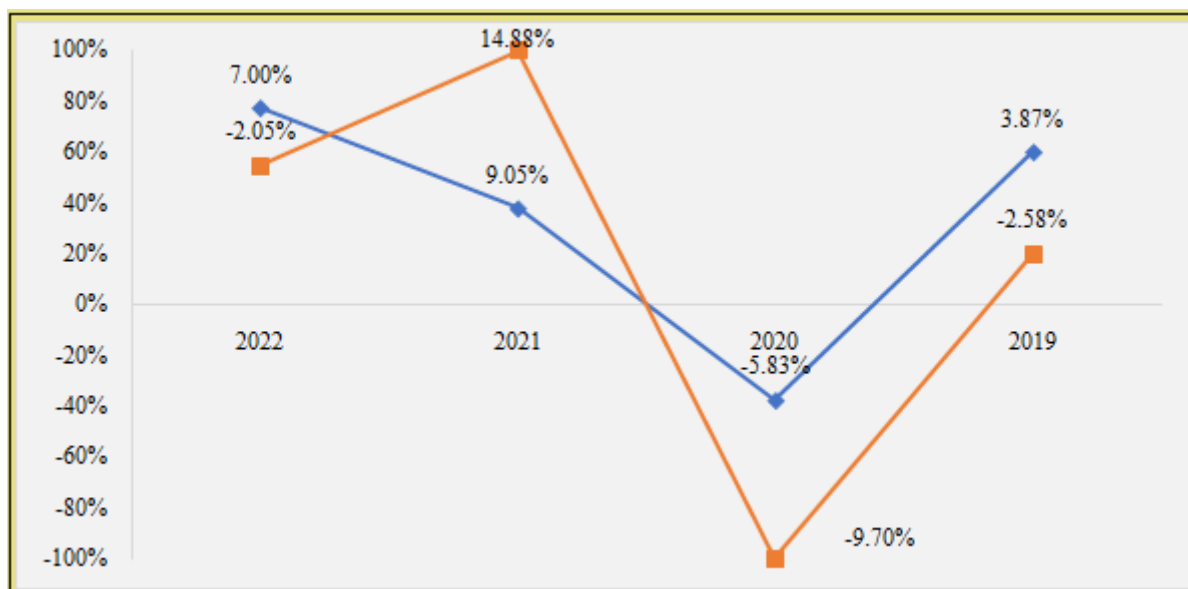
Goods and Services Tax (GST) collections in July 2023 reached Rs. 1,65,105 crore (US\$19.93 billion), contributing significantly to the government's revenue. The asset base of mutual funds as of June 30, 2023, stands at Rs. 44,39,187 crore (US\$ 536.09 billion), reflecting the strength of the financial markets.

Key economic indices also provide insights into India's industrial and economic health. The Index of Industrial Production (IIP) for April to May 2023 is recorded at 142.8, indicating the industrial output's performance. The Wholesale Price Index (WPI) for all commodities in June 2023 is 149.0.

GDP Growth Rate:

India's Gross Domestic Product (GDP) growth rate has experienced notable fluctuations in recent years, primarily influenced by the COVID-19 pandemic and subsequent recovery efforts. In 2019, the growth rate was 3.87%, decreasing to -5.83% in 2020 due to the pandemic. A remarkable rebound occurred in 2021, with a growth rate of 9.05%. However, in 2022, the growth rate slowed to 7.00%.

Forecasting the future, various rating agencies provide projections for 2023 and 2024. Moody's predicts 6.7% growth in 2023, followed by 6.1% in 2024. S&P Global expects 6.6% growth in 2023, followed by 6.3% in 2024. ICRA and CRISIL forecast growth rates of 6% for both years. The economic trajectory appears dynamic, with growth rates shaping the narrative of India's economic performance in the years to come.



Inflation Rate:

Inflation, a critical economic indicator, is anticipated to reach 5.90% by the end of the current quarter. Projections for the long term suggest a gradual decline, with an expected inflation rate of around 4.10% in 2024 and 4.30% in 2025.

Controlling inflation remains a focal point for economic stability, ensuring the purchasing power of the currency is sustained.

Unemployment Rate:

The unemployment rate in India has experienced fluctuations, reaching an all-time high of 23.50% in April 2020 and a low of 6.40% in September 2022. As of the current quarter, the unemployment rate is expected to be 7.90%, with long-term projections hovering around 7.50% in 2024 and 7.70% in 2025. Addressing unemployment challenges remains pivotal for fostering a resilient and inclusive economy.

In conclusion, India's economic landscape exhibits resilience and dynamism, shaped by both domestic and global factors. As the nation navigates the post-pandemic recovery phase, the trajectory of key economic indicators will play a crucial role in shaping policy decisions and the overall economic outlook.

Company Analysis:

Operating Profit Margin: This ratio indicates the proportion of revenue that is turned into operational profit for a business. It is computed by dividing revenue by operating profit.

In 2019, TCS led with a 25.43% operating profit margin, Infosys followed with 22.8%, and Wipro had the lowest at 19.7%. Over the period, TCS maintained a consistently high margin, peaking at 25.49% in 2021 and slightly decreasing to 24.06% in 2023, resulting in a -1% CAGR. Infosys had a good margin, peaking at 24.5% in 2021 but declining to 21% in 2023, with a -2% CAGR. Wipro faced challenges, experiencing a significant drop from 22.44% in 2021 to 16.32% in 2023, resulting in a -5% CAGR. TCS demonstrated commendable performance, Infosys showed reasonable stability, while Wipro's declining trend raises concerns.

Table 1: Showing Operating Profit Margin (%)

Companies	2019	2020	2021	2022	2023	CAGR	Mean	SD
INFOSYS	22.8	21.3	24.5	23	21	-2%	22.52	1.267123
TCS	25.43	23.99	25.49	24.86	24.06	-1%	24.766	0.64413
WIPRO	19.7	20.08	22.44	19.33	16.32	-5%	19.574	1.956217

Return on equity (ROE): This ratio calculates the profit a business makes on the capital invested by its shareholders. It is computed by dividing net profit by equity held by shareholders.

Over the period from 2019 to 2023, Infosys showed a steady growth in Return on Equity (ROE), starting at 23.71% in 2019 and reaching 31.95% in 2023, with a Compound

Annual Growth Rate (CAGR) of 8%. TCS began with a higher ROE of 35.18% in 2019 and consistently increased it to 46.61% in 2023, demonstrating a 7% CAGR. In contrast, Wipro's ROE fluctuated and decreased from 15.95% in 2019 to 14.61% in 2023, resulting in a negative CAGR of -2%. TCS maintained the highest ROE throughout the period, Infosys exhibited consistent growth, while Wipro faced fluctuations and a decline in ROE.

Table 2: Showing Return on Equity (%)

Companies	2019	2020	2021	2022	2023	CAGR	Mean	SD
INFOSYS	23.71	25.35	25.34	29.34	31.95	8%	27.138	3.039246
TCS	35.18	38.44	37.52	42.99	46.61	7%	40.148	4.107045
WIPRO	15.95	17.57	19.66	18.69	14.61	-2%	17.296	1.823904

Earnings per share (EPS) ratio is used to calculate a company's profit per outstanding share of stock. Net profit is divided by the total number of outstanding shares to arrive at this figure.

Over the period from 2019 to 2023, Infosys exhibited a consistent increase in Earnings Per Share (EPS) with a Compound Annual Growth Rate (CAGR) of 13%, rising from 35.44 to 57.63. TCS also experienced steady EPS

growth, though at a slightly lower CAGR of 9%, increasing from 83.05 in 2019 to 115.19 in 2023. Conversely, Wipro's EPS initially increased but declined in 2023, with a CAGR of 8%, going from 14.99 in 2019 to 20.73 in 2023. Infosys and TCS demonstrated robust and consistent EPS growth, with Infosys having the highest CAGR, while Wipro's growth was less stable, recording a slight decline in 2023. TCS had the highest mean EPS for the period, followed by Infosys and Wipro.

Table 3: Showing Earnings Per Share (Rs.)

Companies	2019	2020	2021	2022	2023	CAGR	Mean	SD
INFOSYS	35.44	38.97	45.61	52.52	57.63	13%	46.034	8.232231
TCS	83.05	86.19	86.71	103.62	115.19	9%	94.952	12.41831
WIPRO	14.99	16.67	19.11	22.37	20.73	8%	18.774	2.668914

Price-earnings ratio, or P/E ratio, expresses the amount that investors are prepared to pay for each rupee that a firm generates in profits. It is computed by dividing a company's stock market price by its earnings per share (EPS).

In 2019, Infosys, TCS, and Wipro had P/E ratios of 20.99, 24.1, and 17, respectively. Over the next three years, all three

companies witnessed an increase in their P/E ratios, reaching peaks in 2022 with Infosys at 36.31, TCS at 36.65, and Wipro at 26.46. However, in 2023, there was a slight decrease, with Infosys at 24.52, TCS at 27.83, and Wipro at 17.66. The compound annual growth rate (CAGR) for all three companies during this period is 4%. The mean P/E ratio is highest for Infosys at 25.654, followed by TCS at 29.172,

and Wipro at 18.918. In summary, there was an overall increase in P/E ratios from 2019 to 2022, followed by a slight decrease in 2023. Infosys and TCS maintained higher average P/E ratios compared to Wipro.

Table 4: Showing Price Earnings Ratio (P/E Ratio)

Companies	2019	2020	2021	2022	2023	CAGR	Mean	SD
INFOSYS	20.99	16.46	29.99	36.31	24.52	4%	25.654	6.927044
TCS	24.1	21.19	36.65	36.09	27.83	4%	29.172	6.245281
WIPRO	17	11.8	21.67	26.46	17.66	1%	18.918	4.906781

Dividend per share (DPS): This ratio shows how much each share of an organization's outstanding stock is worth in dividend payments to shareholders. It is computed by dividing the total dividend payments made by the total number of shares that are outstanding.

Between 2019 and 2023, Infosys saw its dividend per share rise from 21.5 Rs. to 34 Rs., reflecting a Compound Annual Growth Rate (CAGR) of 12%, with an average dividend of

26.2 Rs. TCS experienced a substantial increase, growing from 30 Rs. to 115 Rs., boasting an impressive CAGR of 40%, and a mean dividend per share of 59.8 Rs. Conversely, Wipro's dividend per share remained stable at 2 Rs., with no significant changes. TCS demonstrated the highest growth with a remarkable 40% CAGR, while Infosys also had a respectable 12% growth. In contrast, Wipro's dividends remained largely unchanged, positioning TCS and Infosys as more successful in increasing shareholder dividends.

Table 5: Showing Dividend Per Share (Rs.)

Companies	2019	2020	2021	2022	2023	CAGR	Mean	SD
INFOSYS	21.5	17.5	27	31	34	12%	26.2	6.038212
TCS	30	73	38	43	115	40%	59.8	31.19872
WIPRO	1	1	1	6	1	0%	2	2

Dividend payout ratio (%): This ratio indicates the proportion of a business's net earnings that is distributed as dividends to shareholders. DPS is divided by EPS to compute it.

The dividend payout ratios of Infosys, TCS, and Wipro have displayed fluctuations over the years. Infosys started with a high ratio of 89.01% in 2019, gradually decreasing to a relatively stable range of around 57-58% from 2020 to 2023. TCS had a low ratio in 2019 (32.03%), surged in 2020

(116.36%), and then gradually decreased but remained high at 98.1% in 2023. Wipro consistently maintained a low ratio, notably increasing to 26.82% in 2022 and then substantially decreasing to 4.82% in 2023. In conclusion, Infosys maintained a relatively consistent payout ratio, TCS experienced a significant increase in 2020 and sustained a high ratio, while Wipro had notable fluctuations but consistently had a lower ratio compared to the other two companies.

Table 6: Showing Dividend Payout Ratio (%)

Companies	2019	2020	2021	2022	2023	CAGR	Mean	SD
INFOSYS	89.01	57.35	47.12	57.23	56.57	-11%	61.456	14.30619
TCS	32.03	116.36	33.45	34.74	98.1	32%	62.936	36.634
WIPRO	6.03	7.05	5.05	26.82	4.82	-5%	9.954	8.469948

Debt-to-equity ratio: This ratio indicates the amount of debt a business uses to fund its operations. It is computed by dividing total debt by equity held by shareholders.

From 2019 to 2023, Infosys maintained a consistent Debt-Equity Ratio of 0, indicating a debt-free capital structure. In contrast, TCS had a Debt-Equity Ratio of 0.0046 in 2019, which grew to 0.0164 by 2023, showcasing a Compound Annual Growth Rate (CAGR) of 37%. This signifies a

gradual increase in TCS's debt relative to equity over the years. Similarly, Wipro's Debt-Equity Ratio was 0.17 in 2019, slightly increasing to 0.19 by 2023, with a CAGR of 3%, indicating a stable but modest rise in debt compared to equity. Overall, TCS and Wipro demonstrated a gradual increase in their reliance on debt, with TCS experiencing more substantial growth, while Infosys maintained a consistent debt-free capital structure throughout the period.

Table 7: Showing Deb -Equity Ratio

Companies	2019	2020	2021	2022	2023	CAGR	Mean	SD
INFOSYS	0	0	0	0	0	0%	0	0
TCS	0.0046	0	0.0149	0.0163	0.0164	37%	0.01044	0.006824
WIPRO	0.17	0.11	0.12	0.23	0.19	3%	0.164	0.044542

Average retention ratio: This ratio measures what percentage of a company's net profit is retained for reinvestment in the business. It is calculated by subtracting the dividend payout ratio from 100%.

During the period, Infosys demonstrated a remarkable Compound Annual Growth Rate (CAGR) of 60% in its retention ratio, indicating a substantial increase in the proportion of earnings retained by the company. The average retention ratio for Infosys stood at approximately 29.36%. In contrast, TCS experienced a notable negative CAGR of -

46%, signifying a significant decrease in the company's retention ratio, with an average retention ratio of approximately 34.32%. Wipro, however, exhibited a CAGR of 0%, suggesting no significant change in its retention ratio, which remained relatively high with an average of

approximately 74.39%. In summary, Infosys experienced significant growth in its retention ratio, TCS saw a decline, and Wipro's ratio remained stable but at a higher level compared to the other two companies.

Table 8: Showing Average Retention Ratio

Companies	2019	2020	2021	2022	2023	CAGR	Mean	SD
INFOSYS	6.35	38.53	49.25	40.19	41.22	60%	29.35603	14.84528
TCS	66.45	4.1	64.95	65.12	5.73	-46%	34.31532	29.69275
WIPRO	92.83	92.06	94.55	72.89	94.02	0%	74.3922	8.236541

Valuation:

A simplified explanation of how to value a share:

- 1) First, calculate the average dividend per share (DPS) by adding up all the DPS values for the past few years and dividing the total by the number of years.
- 2) Next, calculate the average retention ratio by subtracting the average DPS from 1.
- 3) Then, calculate the average return on equity (ROE) by adding up all the ROE values for the past few years and dividing the total by the number of years.
- 4) To determine the growth in equity, multiply the average retention ratio by the average ROE.
- 5) Calculate the average price-to-earnings (P/E) ratio by adding up all the P/E ratios for the past few years and dividing the total by the number of years.
- 6) Project the earnings per share (EPS) by multiplying the current EPS by (1 + growth in equity).
- 7) Finally, calculate the intrinsic value by multiplying the projected EPS by the average P/E ratio.

Table 9: Showing Valuation

Companies	Average DPR	Average Retention Ratio	Average ROE	Growth in Equity	Avg. P/E Ratio	Projected EPS	Intrinsic Value
INFOSYS	0.6146	0.3511	0.2714	0.0953	25.654	58.7253	1506.5382
TCS	0.6294	0.4127	0.4015	0.1657	29.172	116.3557	3394.3282
WIPRO	0.0995	0.8927	0.173	0.1544	18.918	21.8844	414.0091

Risk Analysis:

The analysis of daily average return, risk, correlation, and beta for Infosys, TCS, and Wipro reveals key insights into their stock market performance. Infosys stands out with the highest daily average return of 0.0007, indicating greater profitability daily. However, Infosys also exhibits the highest risk and beta, making it the riskiest investment among the three. TCS, with a slightly lower daily return of 0.0005, offers lower risk and beta compared to Infosys. Wipro, while having the lowest daily return at 0.0003, shares a beta similar to TCS but slightly higher risk. The positive correlation between TCS and Infosys, as well as Wipro and TCS, highlights the synchronized movement of their stock returns. Investors are advised to consider their risk tolerance and market conditions when making investment decisions, given the distinct risk-return profiles of each company.

Infosys and TCS have recorded a relatively smaller decrease compared to Wipro.

Return on Equity (ROE): TCS has consistently recorded the highest ROE, while Infosys has also demonstrated strong growth in ROE. In contrast, Wipro's ROE has fluctuated and ultimately decreased.

Earnings Per Share (EPS): Infosys and TCS have shown consistent growth in EPS, while Wipro's EPS growth has been less stable.

Price-Earnings Ratio (P/E Ratio): All three companies have seen an overall increase in their P/E ratios, indicating a positive market sentiment. However, Infosys and TCS have recorded higher P/E ratios on average.

Table 10: Showing Risk, Return, correlation, and Beta

Companies	Daily Average Return	Risk	Correlation	Beta
Wipro	0.0003	0.0184	0.7469	0.8983
TCS	0.0005	0.0164	0.8322	0.8922
Infosys	0.0007	0.0188	0.8743	1.0766

Dividend Per Share (DPS): TCS has demonstrated substantial growth in DPS, while Infosys has had a respectable growth rate. Wipro's DPS has remained largely unchanged.

Dividend Payout Ratio (DPR): Infosys has maintained a relatively consistent dividend payout ratio, TCS has recorded a significant increase in 2020, and Wipro has had a low payout ratio with notable fluctuations.

5. Findings

Operating Profit Margin: TCS has consistently maintained the highest operating profit margin of the three companies. However, Wipro has experienced a significant decline in its margin over the years.

Current Ratio: All three companies have experienced a decline in their current ratios, which could indicate potential liquidity challenges.

Net Profit Margin: All three companies have experienced a decline in their net profit margins over time. Nevertheless,

Debt-Equity Ratio: TCS and Wipro have gradually increased their reliance on debt compared to equity, while Infosys has maintained a debt-free capital structure.

Average Retention Ratio: Infosys has experienced significant growth in its retention ratio, while TCS has seen a decline. Wipro's retention ratio has remained relatively stable at a high level.

Valuation: All three companies are considered undervalued, which could present investment opportunities.

TCS and Wipro should take into account the risk and return of each investment. Infosys provides the highest daily average return, but it also comes with the highest risk and beta, making it the riskiest investment among the three. TCS offers a slightly lower daily return but has lower risk and a lower beta compared to Infosys. Wipro has the lowest daily return and a beta like TCS but slightly higher risk than TCS. Investors need to evaluate their risk tolerance and the current market conditions when deciding which company to invest in, as each has its risk-return profile.

6. Conclusion

In fundamental analysis, the fair value of a security is determined by investigating various factors. In company analysis, future earnings capacity is evaluated using accounting ratios and other related parameters.

Based on the study, all three IT companies, Infosys, TCS, and Wipro, are currently undervalued when compared to their intrinsic values. This suggests that investors should consider buying shares as their prices may increase in the future. Conversely, if intrinsic values are lower than market values, the stocks are considered overvalued, and investors should consider selling their shares. The basic theory is that in the long run, the market price tends to move towards its intrinsic or fair value.

Investors may find an attractive opportunity to invest in these companies at a lower cost compared to their estimated true worth, given their undervalued status. Each of these companies has its risk-return profile, with Infosys offering the highest daily average return but also having the highest risk and beta. TCS provides a slightly lower daily return but has lower risk and beta compared to Infosys. Wipro has the lowest daily return and a risk profile like TCS.

When assessing the companies, it is crucial to consider their financial stability, growth prospects, and overall business strategies. Investors should also consider their risk tolerance and investment horizon.

7. Recommendation

Choosing the best stock for long-term investment depends on your investment objectives and risk tolerance. If you prioritize stability and income, TCS may be a good option. If you're willing to accept higher volatility for potentially higher returns, Infosys could be more appealing. For value investors, Wipro may be worth considering, but patience is required for turnaround potential. It's advisable to conduct additional research and consider your financial goals before making a decision. Consulting with a financial advisor is also recommended.

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