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Financial Performance and Growth Analysis of Indian Manufacturing and Service Companies: A Sectoral Study of Pharmaceutical and IT Companies

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ABSTRACT: This study analyses the financial performance and growth trajectories of five leading Indian pharmaceutical companies and five major IT companies over the period 2017–2025. Using 18 key financial indicators spanning profitability, liquidity, solvency, efficiency, and growth dimensions, the research provides a rigorous comparative evaluation of how these two economically significant sectors differ in their financial management practices and sustainability.

The analysis employs descriptive statistics, ratio analysis, trend analysis, regression modelling, and independent sample t-tests. Results consistently demonstrate that IT companies outperform pharmaceutical firms across most financial metrics: the IT sector records a mean ROE of 24.5% versus 13.8% for pharmaceuticals, and a higher net profit margin (15.3% vs 12.9%). Pharmaceutical companies, however, exhibit higher gross profit margins (55.4% vs 39.8%) owing to the product-based, patent-driven nature of their revenues.

Regression analysis identifies Operating Margin ($R^2 = 0.943$) and Asset Turnover as the dominant drivers of ROE across both sectors. T-test results confirm statistically significant sectoral differences in ROE and net profit margin ($p < 0.001$), while revenue growth differences are not statistically significant ($p = 0.385$), suggesting convergence in top-line expansion despite divergent profitability structures.

KEYWORDS: Financial Performance, Pharmaceutical Sector, IT Sector, Ratio Analysis, ROE, Profitability, Liquidity, Revenue Growth, India, Quantitative Study

I. INTRODUCTION

1.1 Background and Context

Financial performance analysis is a cornerstone of corporate evaluation, providing investors, managers, regulators, and policymakers with a systematic basis for decision-making. India's corporate landscape is characterised by remarkable sectoral diversity: manufacturing-intensive industries such as pharmaceuticals operate under fundamentally different economic conditions compared to asset-light service industries such as information technology. Understanding these divergences is essential for sound portfolio allocation, strategic management, and policy formulation.

The pharmaceutical industry is capital-intensive, heavily regulated, and R&D-driven, with revenues contingent on patent cycles, regulatory approvals, and global pricing dynamics. By contrast, the IT sector thrives on skilled labour, intellectual capital, and the global demand for digital transformation, cloud computing, and outsourcing services. These structural differences translate into distinct financial profiles that reward separate analytical frameworks.



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1.2 Problem Statement

Despite access to abundant financial data, most sectoral analyses in India focus either on isolated ratios or single-industry studies, limiting cross-sectoral insights. A holistic comparative study—covering profitability, liquidity, solvency, efficiency, and growth across an eight-year horizon—is absent from the literature for this specific pair of strategically important sectors. This study addresses that gap directly.

1.3 Research Objectives

- Compare the financial performance of Indian pharmaceutical and IT companies using 18 key financial indicators (2017–2025).
- Identify sector-specific trends in profitability, liquidity, solvency, efficiency, and growth.
- Determine the primary drivers of Return on Equity (ROE) through regression analysis.
- Test whether sectoral differences in key financial metrics are statistically significant.

1.4 Scope and Significance

The study covers ten listed Indian companies—five pharmaceutical (Sun Pharma, Dr. Reddy's, Cipla, Lupin, Aurobindo) and five IT (TCS, Infosys, Wipro, HCL Technologies, Tech Mahindra)—selected for their market leadership and data availability. The eight-year horizon (FY2017–FY2025) captures pre-pandemic, pandemic, and post-pandemic financial behaviour, providing a longitudinal perspective of significant analytical depth.

The findings are of direct relevance to equity investors assessing sector rotation, CFOs benchmarking operational efficiency, and regulators evaluating industry-level financial health. Academically, the integrated multi-metric approach contributes a replicable framework applicable to other sectoral comparisons.

II. LITERATURE REVIEW

2.1 Financial Performance via Ratio Analysis

Ratio analysis remains the dominant tool for corporate financial assessment. Kariyawasam (2019) demonstrated that liquidity and firm size positively influence profitability, while leverage exerts a negative effect, using panel data from the Colombo Stock Exchange. Egiyi and Okafor (2022) confirmed the diagnostic power of profitability, liquidity, and solvency ratios in Nigerian manufacturing firms. Lestari et al. (2023) and Usu et al. (2023) further reinforced the utility of multi-dimensional ratio analysis in evaluating operational efficiency and financial recovery in emerging markets.

2.2 Pharmaceutical Sector Studies

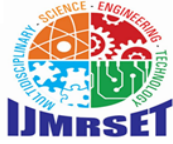
Panigrahi (2019) found profitability and operational efficiency to be the key determinants of financial stability in selected Indian pharma companies. Murti et al. (2023) established a significant positive relationship between ROE and firm value in Indonesian pharmaceutical firms. Mahalakshmi and Ganesan (2025) concluded that consistent monitoring of liquidity, profitability, and solvency ratios is essential for maintaining pharmaceutical sector competitiveness, specifically for NSE-listed firms including Sun Pharma, Cipla, and Dr. Reddy's. Maleki and Ghahari (2024) highlighted the sensitivity of pharmaceutical financial performance to macroeconomic and global health events.

2.3 IT Sector Studies

Nayak (2023) and Karani (2023) found high profitability and financial stability in Indian IT majors, attributing performance to global market access and efficient operations. Kaur and Poonam (2024) compared TCS, Infosys, and Wipro, finding TCS the most profitable while Infosys demonstrated superior liquidity. Raju et al. (2025) confirmed that net profit margin is the strongest determinant of ROE in IT companies, with asset utilisation playing a secondary role—consistent with the asset-light service delivery model of the sector.

2.4 Comparative Manufacturing vs. Service Studies

Patta (2023) showed that manufacturing firms excel in asset management and shareholder returns while service firms maintain stronger liquidity. Fernandez-Jardon et al. (2021) found that firm-level variables dominate profitability in manufacturing, whereas industry-level factors drive service firm performance. Prasad (2021) demonstrated that COVID-19 impacted manufacturing firms (pharma) more severely than IT firms, whose flexible service models allowed operational continuity.



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2.5 Research Gap

Existing literature lacks a comprehensive, multi-metric, cross-sectoral study covering both pharmaceutical and IT industries over a multi-year horizon using an integrated analytical toolkit. This study fills that gap by employing 18 financial KPIs, trend analysis (2017–2025), regression modelling, and hypothesis testing in a single unified framework.

III. RESEARCH METHODOLOGY

3.1 Research Design

This study adopts a quantitative, secondary research design. Financial data were sourced from published annual reports, official company websites, and reputable financial databases (Moneycontrol, Economic Times, AnnualReports.com) for fiscal years 2016–17 through 2024–25. No primary data collection was undertaken.

3.2 Sample

Ten NSE/BSE-listed companies were selected based on market capitalisation, sectoral representation, and data completeness:

Pharmaceutical Companies	IT Companies
Sun Pharmaceutical Industries Ltd.	Tata Consultancy Services Ltd.
Dr. Reddy's Laboratories Ltd.	Infosys Ltd.
Cipla Ltd.	Wipro Ltd.
Lupin Ltd.	HCL Technologies Ltd.
Aurobindo Pharma Ltd.	Tech Mahindra Ltd.

3.3 Financial Variables

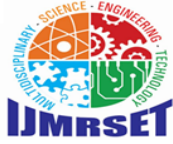
Eighteen financial KPIs were computed across five analytical dimensions:

Dimension	Key Financial Indicators
Profitability	Gross Profit Margin, Operating Margin, Net Profit Margin, ROA, ROE, ROCE
Liquidity	Current Ratio, Quick Ratio
Solvency	Debt–Equity Ratio, Interest Coverage Ratio
Efficiency	Asset Turnover, Receivables Turnover, Inventory Turnover
Growth	Revenue Growth, Profit Growth, EPS Growth, Revenue CAGR, Profit CAGR

3.4 Analytical Techniques

The study employs the following methods in sequence:

- Descriptive Statistics: Mean and sector averages for initial profiling.
- Ratio Analysis: Computation and sector-wise benchmarking of all 18 KPIs.
- Trend Analysis: Year-on-year tracking of revenue, net profit, ROE, and operating margin (2017–2025).
- Regression Analysis: ROE as dependent variable; Asset Turnover, Debt–Equity, Operating Margin, and Revenue Growth as independent variables.
- Independent Sample t-Test: Testing significance of sectoral differences in ROE, Net Profit Margin, and Revenue Growth.
- Tools: Microsoft Excel / Google Sheets for ratio calculation; SPSS for regression and hypothesis testing.



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IV. DATA ANALYSIS AND FINDINGS

4.1 Descriptive Statistics — Sectoral Profitability Overview

The table below presents the mean values of core profitability indicators for each sector over the 2017–2025 study period:

Indicator	Pharmaceutical Sector	IT Sector
Mean ROE (%)	13.8%	24.5%
Mean ROA (%)	8.6%	17.0%
Mean Net Profit Margin (%)	12.9%	15.3%
Mean Gross Profit Margin (%)	55.4%	39.8%

The IT sector consistently outperforms pharmaceuticals in return-based metrics. The notably higher gross profit margin of pharmaceutical firms (55.4%) reflects premium product pricing enabled by patent protection and regulatory barriers, but high operating costs—R&D expenditure, manufacturing compliance, and distribution—erode these gains at the operating and net profit level.

4.2 Ratio Analysis

Profitability Ratios

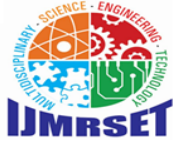
Ratio	Pharma (Mean)	IT (Mean)
Gross Profit Margin	55.4%	39.8%
Operating Profit Margin	20.6%	21.8%
Net Profit Margin	12.9%	15.3%
Return on Assets (ROA)	8.6%	17.0%
Return on Equity (ROE)	13.8%	24.5%
Return on Capital Employed (ROCE)	16.7%	29.8%

IT companies demonstrate superior capital efficiency (ROE: 24.5% vs 13.8%; ROCE: 29.8% vs 16.7%), a direct consequence of their asset-light service model and lower capital expenditure requirements.

Liquidity and Solvency Ratios

Ratio	Pharma (Mean)	IT (Mean)
Current Ratio	2.15	2.58
Quick Ratio	1.65	2.52
Debt–Equity Ratio	0.42	0.05
Interest Coverage Ratio	9.8x	58.3x

Both sectors maintain liquidity ratios comfortably above the 1.0 benchmark, indicating adequate short-term financial health. However, pharmaceutical firms carry significantly higher leverage (D/E: 0.42 vs 0.05), necessitated by capital expenditure on manufacturing plants, R&D facilities, and regulatory infrastructure. The IT sector's near-zero debt profile and extraordinary interest coverage (58.3x) signal very low financial risk.



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Efficiency Ratios

Ratio	Pharma (Mean)	IT (Mean)
Asset Turnover	0.72	1.09
Receivables Turnover	4.8	6.7
Inventory Turnover	3.9	N/A

IT companies convert their asset base into revenue more efficiently (Asset Turnover: 1.09 vs 0.72), consistent with their service-based model. Higher receivables turnover in IT further reflects faster billing cycles and stronger client payment discipline in the outsourcing business model.

Growth Indicators

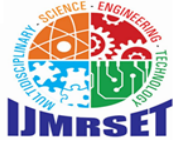
	Pharma (Mean)	IT (Mean)
Average Revenue Growth	8.9%	10.4%
Average Profit Growth	7.3%	8.8%
Average EPS Growth	7.8%	9.1%
Revenue CAGR (2017–2025)	8.5%	9.6%
Profit CAGR (2017–2025)	7.0%	8.2%

4.3 Trend Analysis (2017–2025)

Revenue Trends

Year	Pharma Revenue (₹ Cr)	Growth	IT Revenue (₹ Cr)	Growth
2017	20,450	—	46,000	—
2018	21,780	+6.5%	48,960	+6.4%
2019	23,650	+8.6%	53,350	+9.0%
2020	25,420	+7.5%	59,150	+10.9%
2021	27,880	+9.7%	64,940	+9.8%
2022	31,560	+13.2%	78,800	+21.3%
2023	35,400	+12.2%	88,300	+12.1%
2024	38,920	+9.9%	89,330	+1.2%
2025	42,150	+8.3%	90,780	+1.6%

Both sectors demonstrate sustained revenue expansion. IT sector revenues grew from ₹46,000 Cr to ₹90,780 Cr—nearly doubling—while pharmaceutical revenues grew from ₹20,450 Cr to ₹42,150 Cr, also approximately doubling over the eight-year period. IT growth was more pronounced in FY2022 (post-pandemic digital acceleration), while pharma growth remained steadier, supported by healthcare demand and generic drug exports.



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ROE and Operating Margin Trends

Year	Pharma ROE (%)	IT ROE (%)	Pharma Op. Margin	IT Op. Margin
2017	12.2%	23.5%	19.1%	22.6%
2019	13.4%	25.6%	20.0%	22.5%
2021	14.2%	25.8%	20.7%	22.1%
2023	14.9%	26.8%	21.6%	21.3%
2025	13.9%	23.6%	20.7%	21.1%

A notable trend is the convergence in operating margins: pharmaceutical operating margins improved from 19.1% in 2017 to a peak of 21.6% in 2023, while IT margins gradually declined from 22.6% to 21.1%. This convergence suggests improving pharmaceutical cost efficiency alongside modest margin compression in IT, likely from wage inflation and global talent competition.

4.4 Comparative Sector Analysis

Financial Metric	Pharmaceutical	IT Sector
Profitability		
ROE (%)	13.8%	24.5%
Net Profit Margin (%)	12.9%	15.3%
Operating Margin (%)	20.6%	21.8%
Liquidity & Solvency		
Current Ratio	2.15	2.58
Debt–Equity Ratio	0.42	0.05
Interest Coverage	9.8x	58.3x
Efficiency & Growth		
Asset Turnover	0.72	1.09
Revenue CAGR (%)	8.5%	9.6%
Profit CAGR (%)	7.0%	8.2%

4.5 Regression Analysis — Drivers of ROE

A multiple regression analysis was conducted with ROE as the dependent variable and four financial indicators as independent variables, using sector average data for 2017–2025:



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Independent Variable	R ²	Adj. R ²	Coefficient (β)	p-value	Interpretation
Operating Margin (%)	0.943	0.935	1.146	0.000	Very strong positive effect — dominant ROE driver
Asset Turnover	0.540	0.474	13.32	0.024	Positive and significant — asset efficiency matters
Revenue Growth (%)	0.517	0.448	0.205	0.029	Positive and significant — top-line growth drives returns
Debt–Equity Ratio	0.398	0.312	14.90	0.068	Marginally significant — leverage has limited ROE impact

Operating Margin emerges as the overwhelmingly dominant predictor of ROE ($R^2 = 0.943$), confirming that cost efficiency is the primary lever for shareholder returns in both sectors. Asset Turnover and Revenue Growth are significant secondary drivers, while financial leverage (Debt–Equity) exerts only a marginal effect.

4.6 Hypothesis Testing (Independent Sample t-Test)

Variable	t-Statistic	p-Value	Significance	Conclusion
Return on Equity (ROE)	-55.34	0.000	Significant ✓	Reject H_0 — IT significantly higher
Net Profit Margin	-28.03	0.000	Significant ✓	Reject H_0 — IT significantly higher
Revenue Growth	0.88	0.385	Not Significant	Fail to reject H_0 — no difference

The t-test results present a nuanced picture: while IT companies are statistically significantly more profitable (ROE and NPM), both sectors are growing their revenues at statistically indistinguishable rates. This indicates that pharmaceutical companies are closing the growth gap even while their profitability structural constraints persist.

V. CONCLUSIONS AND RECOMMENDATIONS

5.1 Key Findings

This study has generated six major findings:

- IT sector superiority in profitability: IT companies consistently outperform pharmaceutical firms across ROE, ROA, net profit margin, and ROCE, primarily due to asset-light operations, high-margin service delivery, and lower capital expenditure obligations.
- Pharmaceutical gross margin advantage: Despite lower return ratios, pharmaceutical companies record higher gross profit margins (55.4% vs 39.8%), reflecting the premium pricing power associated with patented pharmaceutical products.
- Liquidity and solvency divergence: IT companies maintain stronger liquidity and near-zero debt levels, while pharmaceutical firms carry higher leverage necessitated by capital-intensive manufacturing and R&D requirements.
- Operating margin convergence: Pharmaceutical operating margins improved from 19.1% (2017) to 21.6% (2023), narrowing the gap with IT companies whose margins showed a modest declining trend—a sign of improving pharmaceutical cost discipline.



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- Operating Margin as the dominant ROE driver: Regression analysis conclusively identifies Operating Margin ($R^2 = 0.943$) as the primary determinant of shareholder returns across both sectors, followed by Asset Turnover and Revenue Growth.
- Revenue growth parity: Despite profitability differences, both sectors are growing at statistically similar rates (pharma CAGR: 8.5%; IT CAGR: 9.6%), reflecting robust underlying demand in healthcare and digital technology markets.

5.2 Recommendations

For Pharmaceutical Companies

- Invest in continuous cost optimisation to close the operating margin gap with IT companies. Adoption of lean manufacturing, automation, and supply chain digitalisation can improve efficiency ratios.
- Reduce financial leverage progressively as profitability improves, targeting a Debt–Equity ratio below 0.25 to enhance financial stability and reduce interest burden.
- Accelerate biosimilar and specialty product development to diversify the revenue base beyond commoditised generics and protect margins post-patent expiry.

For IT Companies

- Manage wage inflation proactively through a balanced onshore–offshore delivery model and selective automation of high-volume, low-complexity tasks.
- Pursue disciplined revenue diversification into high-growth verticals (healthcare IT, fintech, industrial AI) to sustain double-digit revenue growth as traditional outsourcing markets mature.
- Maintain the strong liquidity position that gives IT firms strategic flexibility for acquisitions and talent investments.

For Investors and Policymakers

- Portfolio managers should weight IT companies for return maximisation and pharmaceutical companies for gross-margin resilience, combining both sectors for a balanced India equity portfolio.
- Policymakers should continue incentivising pharmaceutical R&D through fiscal measures (PLI schemes, patent extensions) to support innovation-led margin improvement and reduce import dependence.

5.3 Limitations

- The sample of ten companies, while representative, does not capture the full sectoral diversity of Indian pharmaceuticals and IT.
- Secondary data dependency means analysis is subject to the reporting practices and accounting policies of individual companies.
- The study does not quantify the impact of specific external shocks (e.g., COVID-19, geopolitical disruptions) as separate variables, though the 2017–2025 timeframe naturally encompasses their effects.
- Qualitative factors such as management quality, corporate governance ratings, and brand equity are not incorporated into the quantitative framework.

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