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AN ANALYTICAL STUDY OF PROFITABILITY, EMPLOYEE COST EFFICIENCY, AND FINANCE COST IMPACT IN INDIAN VS US AUTOMOBILE FIRMS

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ABSTRACT

This study presents a comparative analysis of profitability, employee cost efficiency, and finance cost impact across four major automobile companies: Tata Motors and Mahindra & Mahindra (India), and Ford Motor Company and General Motors (USA). Using five years of secondary financial data (2021–2025), the research evaluates Return on Assets (ROA), Return on Equity (ROE), and Net Profit Margin (NPM), alongside Employee Cost Ratio (ECR) and Finance Cost Ratio (FCR). Correlation analysis is applied to examine how cost structures influence profitability. The findings offer actionable insights for investors, analysts, and management on the key drivers of financial performance in the global automobile industry.

KEYWORDS

Profitability, Employee Cost, Finance Cost, ROA, ROE, Net Profit Margin, Correlation Analysis, Automobile Industry.

1. INTRODUCTION

The automobile industry is a critical driver of economic growth, employment, and technological innovation worldwide. Companies such as Tata Motors, Mahindra & Mahindra, Ford Motor Company, and General Motors represent the competitive landscape of this sector across emerging and developed economies. Profitability ratios—ROA, ROE, and NPM—are central indicators of financial health, yet profitability is significantly shaped by cost structures, particularly employee costs and finance costs. This study aims to compare the cost efficiency and profitability of selected Indian and US automobile companies over five years and examine how these cost components influence overall performance.

2. BACKGROUND & OBJECTIVES

The global automobile industry faces increasing cost pressures from electrification, automation, and regulatory shifts. Indian firms like Tata Motors and Mahindra & Mahindra operate in a cost-sensitive, high-growth market, while US giants Ford and General Motors function in a mature, capital-intensive environment with higher labor costs. This divergence makes a cross-country comparison particularly valuable.

The key objectives of the study are:

1 To analyze and compare the financial performance of selected Indian and US automobile firms over five years.

2 To examine the relationship between cost structure (employee cost & finance cost) and financial performance.

3 To evaluate the impact of employee and finance costs on profitability indicators.

3. RESEARCH METHODOLOGY

The study adopts a descriptive and analytical research design based on secondary data for 2021–2025. Data was sourced from annual reports, Screener.in, Yahoo Finance, and SEC filings. The following financial ratios were computed:

4 Return on Assets (ROA) = Net Profit / Total Assets

5 Return on Equity (ROE) = Net Profit / Shareholders' Equity

6 Net Profit Margin (NPM) = Net Profit / Revenue

7 Employee Cost Ratio (ECR) = Employee Cost / Revenue

8 Finance Cost Ratio (FCR) = Finance Cost / Revenue

Descriptive statistics (mean, standard deviation), comparative ranking, and Pearson correlation analysis were applied to understand cost-profitability relationships.

4. DATA ANALYSIS & FINDINGS

4.1 Profitability Analysis – ROA

ROA measures how efficiently a company uses its assets to generate profit. The table below summarizes the five-year trend:

Company	2021	2022	2023	2024	2025	Avg.
Mahindra & Mahindra	1.09%	3.78%	4.99%	4.77%	4.66%	3.86%
Tata Motors	0.74%	1.28%	0.21%	-1.09%	2.79%	0.79%
Ford Motor Co.	N/A	-0.77%	1.52%	2.06%	-2.83%	0.00%
General Motors	N/A	3.76%	3.71%	2.15%	0.96%	2.64%

Mahindra & Mahindra leads with the highest average ROA of 3.86%, reflecting the most stable and efficient asset utilization. General Motors follows at 2.64%. Tata Motors shows moderate performance (0.79%), while Ford records the weakest average (0.00%), driven by sharp losses in 2022 and 2025.

4.2 Return on Equity (ROE)

ROE indicates how effectively management generates earnings from shareholders' funds.

Company	2021	2022	2023	2024	2025	Avg.
Mahindra & Mahindra	4.36%	13.96%	18.24%	17.02%	16.78%	14.07%
Tata Motors	4.60%	9.50%	1.55%	-4.74%	9.04%	3.99%
Ford Motor Co.	N/A	-4.58%	10.16%	13.11%	-22.76%	-1.02%
General Motors	N/A	14.65%	15.75%	9.53%	4.41%	11.09%

Mahindra & Mahindra dominates with a 14.07% average ROE, peaking at 18.24% in 2023. General Motors is second at 11.09%. Tata Motors shows a recovery (9.04% in 2025) after a weak 2024 (-4.74%). Ford's average of -1.02% signals poor returns for shareholders, with a dramatic fall to -22.76% in 2025.

4.3 Net Profit Margin (NPM)

Company	2021	2022	2023	2024	2025	Avg.
Mahindra & Mahindra	2.44%	7.29%	8.48%	8.10%	8.12%	6.89%
Tata Motors	1.02%	1.52%	0.20%	-0.93%	2.39%	0.84%
Ford Motor Co.	N/A	-1.25%	2.47%	3.18%	-4.37%	0.01%
General Motors	N/A	6.34%	5.89%	3.21%	1.46%	4.22%

Mahindra & Mahindra consistently maintains margins above 8%, reflecting the highest profit-per-revenue efficiency. General Motors follows at 4.22%. Tata Motors and Ford operate on thin margins, with Ford moving into negative territory in 2025 (-4.37%).

4.4 Cost Analysis – ECR & FCR

Company	Avg. ECR	Rank	Avg. FCR	Rank
Mahindra & Mahindra	8.49%	2	5.94%	1
Tata Motors	10.48%	1	2.37%	2
Ford Motor Co.	6.08%	3	0.72%	3
General Motors	5.72%	4	0.50%	4

Indian companies carry significantly higher employee and finance cost ratios than their US peers. Tata Motors has the highest ECR at 10.48%, reflecting greater labour-intensity. Mahindra & Mahindra's FCR of 5.94% indicates heavier reliance on debt financing. In contrast, US firms—Ford (ECR 6.08%, FCR 0.72%) and GM (ECR 5.72%, FCR 0.50%)—demonstrate better cost containment, benefiting from higher workforce productivity and lower debt burdens.

5. Correlation Analysis

Company	ECR vs ROA	ECR vs ROE	FCR vs NPM
Mahindra & Mahindra	-0.902	-0.891	-0.979
Tata Motors	0.730	0.854	-0.442
Ford Motor Co.	-0.229	-0.142	-0.399
General Motors	0.851	0.803	0.945

For Mahindra & Mahindra, strong negative correlations (ECR vs ROA: -0.902; FCR vs NPM: -0.979) confirm that as costs declined, profitability surged — an efficient cost optimization story. Tata Motors shows a mixed picture: positive ECR–ROE correlation (0.854) suggests higher employee spending has yielded some returns, while the negative FCR–NPM link (-0.442) signals finance costs are squeezing margins. Ford's weak correlations reflect chaotic, unpredictable cost management. General Motors presents an interesting positive correlation pattern (FCR vs NPM: 0.945), indicating that its overall profitability and cost trends have moved in parallel — as both declined, it reflects a structural top-line challenge rather than cost mismanagement.

6. Key Findings

1 Mahindra & Mahindra is the top performer across all three profitability metrics (ROA, ROE, NPM), demonstrating the most consistent financial discipline.

2 General Motors shows stable and second-best profitability, though a clear declining trend is visible from 2022 to 2025.

3 Tata Motors exhibits moderate, volatile performance with a notable dip in FY2024 followed by partial recovery.

4 Ford Motor Company records the weakest performance, with negative profitability in 2022 and 2025, reflecting structural challenges.

5 Indian firms carry higher ECR and FCR than US counterparts, indicating greater operational and financial cost pressure.

6 Finance cost negatively impacts Net Profit Margin across most companies, especially in Indian firms with higher debt reliance.

7 Effective cost management — particularly reducing ECR and FCR — is a strong predictor of improved ROA, ROE, and NPM.

7. SUGGESTIONS

Based on the analysis, the following strategic recommendations are made:

1 Tata Motors and Mahindra & Mahindra should reduce debt exposure and explore refinancing options at lower rates to lower FCR and improve NPM.

2 Indian companies should invest in automation, digital tools, and skill-based training to improve output per employee and reduce ECR.

3 Ford must address its structural financial weaknesses through a comprehensive cost-restructuring programme and better asset utilization.

4 All companies should adopt lean operational strategies, monitor cost KPIs regularly, and benchmark against industry best practices.

5 Maintaining an optimal debt-equity balance will reduce financial risk and improve long-term earnings stability.

6 Companies should invest strategically in EV technology and innovation to sustain competitive advantage and future profitability.

8. CONCLUSION

This study provides a comprehensive five-year comparative analysis of profitability, employee cost efficiency, and finance cost impact across Tata Motors, Mahindra & Mahindra, Ford Motor Company, and General Motors. The findings clearly establish that Mahindra & Mahindra leads in overall profitability, driven by consistent improvement in cost efficiency and asset utilization. General Motors demonstrates stable but declining performance, while Tata Motors reflects moderate volatility. Ford remains the weakest performer, with recurring losses and inconsistent financial management.

A key structural difference emerges between Indian and US firms: Indian companies operate with higher employee and finance cost ratios, exerting greater pressure on margins. Correlation analysis confirms that reducing costs — particularly finance costs — directly and meaningfully improves profitability ratios. In contrast, US firms benefit from lower cost structures, though their absolute profitability advantage depends on revenue scale and capital efficiency.

The study concludes that strategic cost management is a decisive driver of financial performance in the capital-intensive automobile sector. Companies that optimize their cost structures while maintaining revenue growth and asset productivity are best positioned to achieve sustainable profitability in an increasingly competitive and electrifying global market.

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