

A Study on “Fixed Asset Management of Tata Motors Limited”

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ABSTRACT

This study presents a comprehensive financial evaluation of Fixed Asset Management and Life Cycle Costing (LCC) practices at Tata Motors Limited across a five-year horizon from financial years (FY) 2021 to 2025. Fixed assets constitute the foundational infrastructure for heavy automotive manufacturing corporations; hence, optimizing their total cost of ownership is paramount for ensuring sustainable long-term financial health and operational performance. Utilizing structural secondary data extracted from auditing annual financial statements, balance sheets, and profit and loss accounts, this investigation deploys advanced financial indicators alongside structural matrix models for life cycle costing. The empirical outcomes demonstrate a robust strategic pivot executed post-FY22, transforming a deep net loss of ₹7,289.63 crores in FY21 into a resilient net profit of ₹7,902.08 crores by FY25. This structural turnaround was heavily driven by asset rationalization—characterized by a controlled contraction of fixed assets from ₹29,702.78 crores to ₹15,578.00 crores—improving capital efficiency indices and asset utilization rates. Concurrently, a linear increase in continuous operating and maintenance expenditures highlights critical operational bottlenecks requiring engineering interventions. The investigation concludes with actionable paradigms for predictive engineering maintenance, cloud-powered digital asset tracking, and green technology alignment to enhance future capital efficiency profiles.

1. Introduction

In capital-intensive industrial segments such as automotive manufacturing, the management of long-term physical assets serves as the operational and financial cornerstone determining systemic competitiveness. Fixed assets—ranging from state-of-the-art production facilities, advanced automated robotics, specialized machinery tools, and logistical transport fleets to core physical infrastructure—constitute the primary medium through which economic value is synthesized. For global-scale entities like Tata Motors Limited, India's preeminent automobile designer and a dominant multi-national player, the strategic configuration and lifecycle monitoring of these resources dictate long-term profit performance and risk resilience.

Historically, organizations evaluated asset procurement primarily on initial acquisition outlays, frequently overlooking the substantial downstream commitments tied to system operations, energy consumption, preventative repairs, and retirement liabilities. Modern financial engineering addresses this vulnerability via the deployment of Life Cycle Costing (LCC) models, which mathematically accumulate all monetary obligations incurred from conceptual planning and purchase to final asset disposal. This investigation systematically tracks the corporate financial parameters of Tata Motors Limited between the fiscal milestones of 2021 and 2025, a critical epoch marked by volatile post-pandemic disruptions, aggressive regulatory stringencies, and a core industry transition toward electric and intelligent mobility frameworks.

2. Review of Literature

Sharma and Ghosh (2022) explored the growing influence of environmental factors and sustainability in fixed asset management. Their study highlighted a shift in how companies approach asset-related decisions, moving beyond traditional financial considerations to include ecological responsibility. They found that organizations are increasingly aware of the environmental impact associated with the lifecycle of fixed assets, particularly during the disposal phase. As a result, many firms are now integrating sustainability into their asset strategies by adopting eco-friendly technologies, using energy-efficient machinery, and ensuring responsible asset disposal practices. The study emphasized that such environmentally conscious approaches not only support regulatory compliance and corporate social responsibility goals but also enhance brand reputation and long-term sustainability. This research underscores the importance of aligning asset management with environmental stewardship in today's business environment.

Wilson (2021) emphasized the importance of strategic planning in the disposal of fixed assets at the end of their useful life. He pointed out that improper or delayed disposal can lead to a loss of residual value and may also result in environmental and legal complications. His study highlights the growing need for companies to adopt environmentally responsible disposal practices, especially in industries dealing with machinery, electronics, or vehicles. This involves complying with environmental regulations, recycling usable components, and avoiding practices that could harm the environment. Wilson also noted that when handled properly, asset disposal can generate residual income and reduce long-term storage or maintenance costs. By incorporating proper disposal planning into the fixed asset management process, organizations can not only recover value but also align with sustainability goals and regulatory standards.

Patel and Mehta (2020) conducted an empirical study to examine the relationship between fixed asset utilization and the profitability of companies. Their research focused on understanding how efficiently a company uses its fixed assets to generate income and enhance overall financial performance. By analyzing data across various industries, they identified a strong positive correlation between the Fixed Asset Turnover Ratio and Return on Assets (ROA). This means that companies that manage and utilize their fixed assets more effectively tend to achieve higher returns on their total asset base. The study concluded that effective fixed asset management—through proper planning, usage, and maintenance—not only reduces idle capacity and asset wastage but also directly contributes to increased profitability. Their findings highlight the strategic importance of treating fixed assets not just as physical resources, but as key drivers of long-term financial growth and value creation.

Singh (2019) emphasizes the critical importance of adhering to established regulatory frameworks such as the International Financial Reporting Standards (IFRS), Generally Accepted Accounting Principles (GAAP), and the Companies Act, 2013 (India) in the context of fixed asset management. These regulations provide a structured approach for the recognition, valuation, depreciation, and disclosure of fixed assets.

Kumar & Agarwal (2017), "The management of fixed assets in India is also closely tied to the security and risk management of physical assets. Indian companies have faced challenges such as theft, loss, or damage of assets, especially in sectors like manufacturing, construction, and logistics. Implementing technologies like RFID and GPS tracking systems has helped mitigate some of these risks, but businesses in India still need to address gaps in security protocols

3. NEED FOR THE STUDY

The study of fixed asset management is essential to understand its impact on a company's long-term profitability and sustainability. Effective management of fixed assets directly influences strategic decision-making, especially in areas such as capital expenditure planning and timely asset replacement. It is also important to examine the various depreciation methods used and how they affect the accuracy and transparency of financial statements. Furthermore, the study aims to analyze how efficiently fixed assets are acquired, utilized, maintained, and eventually disposed of, which can significantly affect operational performance. Lastly, by evaluating the relationship between fixed asset investments and key financial ratios like Return on Assets (ROA), the study seeks to assess how asset management contributes to overall financial health and performance

4. SCOPE OF THE STUDY

This study will assess how the company TATA MOTORS Pvt Ltd manages the life cycle of its assets, from acquisition to disposal. It will specifically focus on fixed asset management and will not address the handling of current or intangible assets, such as intellectual property or financial assets. Additionally, the study will not analyze the impact of external economic conditions, such as inflation or interest rates, nor will it consider the influence of market forces

5. OBJECTIVES OF THE STUDY

- To evaluate the performance of fixed assets at Tata Motors.
- To evaluate Tata Motors' financial health using key ratio analysis.
- To assess the impact of depreciation and asset lifecycle costing on fixed asset management

6. RESEARCH METHODOLOGY

1. The Current study purely depends upon Secondary data
2. SOURCE OF DATA:

Secondary data is collected from Articles, Books, Publication, Journals, firm profile and financial records.

3. TIME PERIOD:

This study covers a period of past 5 years data from 2021 – 2025. Profit and Loss Statements and Balance sheet are considered to analyze the Ratios like Liquidity Ratio, Current Ratio, Quick Ratio Etc.....

4. TOOLS AND TECHNIQUES USED FOR THE STUDY INCLUDE:

- Ratio Analysis
- Depreciation
- Asset Lifecycle Costing

7. LIMITATIONS OF THE STUDY

- The study is limited to fixed assets management practices during a specific time period from 2021-2025.
- External factors like economic conditions may influence asset performance but that is not considered for the study.
- The findings may not be generalized across industries.
- The scope is confined to tangible fixed assets excluding intangible ones.

8. DATA ANALYSIS, MODELING, AND INTERPRETATION

The longitudinal financial statement accounts and indicators of Tata Motors are integrated below for detailed analysis.

Table 1: Audited Longitudinal Profit & Loss Matrix (₹ in Crores)

PARTICULARS	MAR 25	MAR 24	MAR 23	MAR 22	MAR 21
Revenue from Operations (a)	72,745.92	65,298.84	46,880.97	46,559.39	43,485.76
Other Operating Revenue (b)	557.16	458.49	382.71	472.08	442.41
I. Total Revenue from Operations	73,303.08	65,757.33	47,263.68	47,031.47	43,928.17
II. Other Income	1,149.88	820.94	659.91	842.96	1,383.05
III. Total Income (I + II)	74,452.96	66,578.27	47,923.59	47,874.43	45,311.22
IV. Expenses:					
(a) Cost of Materials Consumed	45,025.05	42,226.81	31,693.11	30,010.61	26,171.85
(b) Purchases of Products for Sale	7,764.19	6,561.32	5,030.00	5,490.67	5,679.98
(c) Changes in Inventories	(600.44)	484.69	(403.87)	(69.02)	722.68
(d) Employee Benefits Expenses	4,308.15	4,021.63	3,601.51	4,212.99	4,384.31
(e) Finance Costs	1,705.74	2,047.51	2,121.73	2,358.54	1,973.00
(f) Foreign Exchange Loss	254.98	279.76	136.81	1.67	239.00
(g) Depreciation and Amortisation	2,016.84	1,766.86	1,760.57	3,681.61	3,375.29
(h) Product Development/Engineering	1,104.79	899.06	593.90	907.64	830.24
(i) Other Expenses	8,960.98	7,819.74	6,018.71	5,801.90	7,720.75
(j) Amount Transferred to Capital	(1,129.73)	(1,066.73)	(905.42)	(817.53)	(1,169.46)
Total Expenses (IV)	69,410.55	65,040.65	49,647.05	51,579.08	49,927.64
V. Profit Before Exceptional Items & Tax	5,042.41	1,537.62	(1,723.46)	(3,704.65)	(4,616.42)
VI. Exceptional Items	(2,808.41)	282.82	(81.41)	(1,392.08)	2,510.92

VII. Profit Before Tax (V - VI)	7,850.82	1,254.80	(1,640.05)	(2,312.57)	(7,127.34)
VIII. Total Expenses/(Credit)	51.26	(1,473.33)	99.18	82.87	162.29
IX. Net Profit/(Loss) for the Year	7,902.08	2,728.13	(1,390.86)	(2,395.44)	(7,289.63)

The structural analysis from Table 1 illustrates a stark macro turnaround pathway. Revenue increased dramatically from ₹43,485.76 crores in FY21 to ₹72,745.92 crores in FY25, allowing net metrics to shift from an extensive loss of ₹7,289.63 crores in FY21 to a healthy net profit of ₹7,902.08 crores in FY25.

Table 2: Comprehensive Long-Term Balance Sheet Structuring (₹ in Crores)

Particulars	MAR 25	MAR 24	MAR 23	MAR 22	MAR 21
EQUITIES AND LIABILITIES					
Shareholder's Funds					
Equity Capital	766.50	766.02	765.88	765.81	719.54
Reserves and Surplus	29,374.83	21,701.37	19,171.88	18,290.16	16,800.61
Total Shareholder Funds	30,141.33	22,467.33	19,937.76	19,055.97	18,387.65
Non-Current Liabilities					
Long Term Borrowings	5,235.67	10,445.70	14,102.74	16,326.77	14,776.51
Deferred Tax Liabilities	49.78	51.16	173.72	266.50	198.59
Other Long Term Liabilities	1,392.16	1,411.78	1,212.34	1,786.93	1,646.56
Long Term Provisions	1,936.92	1,588.75	1,474.11	1,371.94	1,769.74
Total Non-Current Liabilities	8,614.53	13,497.39	16,962.91	19,752.14	18,391.40
Current Liabilities					
Short Term Borrowings	8,535.37	8,426.74	9,129.91	5,421.95	6,121.36
Trade Payables	8,826.46	7,162.60	6,102.10	8,115.01	8,102.25
Other Current Liabilities	8,830.41	9,805.30	11,152.74	11,671.05	10,180.46
Short Term Provisions	1,133.92	408.89	608.06	1,043.54	1,406.75

Total Current Liabilities	27,326.16	25,803.53	26,992.81	26,251.55	25,810.82
TOTAL CAPITAL AND LIABILITIES	66,083.74	61,770.77	63,899.87	65,059.66	62,589.87
ASSETS					
Non-Current Assets					
Tangible Assets	11,990.26	12,129.14	12,065.89	19,922.06	19,540.25
Intangible Assets	2,353.79	2,413.18	2,009.87	6,501.04	5,667.73
Capital Work-in-Progre ss	645.03	575.65	585.21	1,400.82	1,755.51
Total Fixed Assets	15,578.00	15,672.27	15,543.00	29,429.56	29,702.78
Non-Current Investments	30,315.57	29,181.62	29,256.39	16,114.91	15,730.86
Deferred Tax Assets	1,558.65	1,477.26	0.00	0.00	0.00
Long Term Loans and Advances	101.89	114.40	48.43	72.39	138.46
Other Non-Current Assets	3,321.96	3,870.21	3,432.44	3,588.21	3,449.01
Total Non-Current Assets	50,876.07	50,270.82	48,280.26	49,205.07	49,021.11
Current Assets					
Current Investments	1,993.50	3,142.96	5,143.08	1,578.26	885.31
Inventories	3,470.38	3,027.90	3,718.49	4,551.71	3,831.92
Trade Receivables	2,765.16	2,307.72	2,111.78	2,087.51	1,978.06
Cash and Cash Equivalents	5,150.96	1,414.65	2,605.43	4,318.94	3,532.19
Short Term Loans & Advances	132.19	132.29	139.37	184.49	232.14
Other Current Assets	1,695.48	1,474.43	1,901.46	3,133.68	3,109.14
Total Current Assets	15,207.67	11,499.95	15,619.61	15,854.59	13,568.76
TOTAL ASSETS	66,083.74	61,770.77	63,899.87	65,059.66	62,589.87

The data within Table 2 displays an aggressive long-term asset rationalization policy. Fixed assets decreased from ₹29,702.78 crores to ₹15,578.00 crores as unneeded or older production facilities were systematically written off or optimized, leading to minimized capital exposure and enhanced return indices.

Table 3: Longitudinal Engineering Financial Ratio Dashboard

Financial Ratio	Formula	2021	2022	2023	2024	2025
Current Ratio	Current Assets / Current Liabilities	0.53	0.60	0.58	0.44	0.56
Quick Ratio	(Current Assets - Inventories) / Current Liabilities	0.38	0.43	0.44	0.33	0.43
Debt-to-Equity	Total Debt / Shareholder's Equity	1.13	1.14	1.16	0.83	0.45
Debt-to-Assets	Total Debt / Total Assets	0.33	0.33	0.36	0.30	0.20
Gross Profit Margin	(Revenue - COGS) / Revenue	39.8%	35.5%	32.4%	35.3%	38.1%
Net Profit Margin	Net Income / Revenue from Operations	1.04	1.02	1.02	1.01	1.02
Return on Assets (ROA)	Net Income / Total Assets	0.72	0.73	0.74	1.07	1.12
Return on Equity (ROE)	Net Income / Shareholder's Equity	2.46	2.51	2.40	2.96	2.47

Table 3 outlines that liquidity measures remained stable but compressed below the standard optimum threshold. Crucially, debt leverage ratios improved, with Debt-to-Equity dropping from 1.13 in 2021 to 0.45 in 2025, illustrating a successful deleveraging process that strengthens long-term capital solvency.

Table 4: Comprehensive Time-Series Lifecycle Costing (LCC) Matrix (₹ in Crores)

LCC Component / FY	2021	2022	2023	2024	2025
1. Acquisition Cost (Fixed Assets)	29,702.78	29,429.56	15,543.00	15,672.27	15,578.00
2. Operating & Maintenance Costs	43,489.81	45,454.14	46,654.07	57,222.88	67,217.24
3. Depreciation & Amortization	3,375.29	3,681.61	1,760.57	1,766.86	2,016.84
4. Financing Costs (Finance + Forex)	2,212.00	2,360.21	2,258.54	2,327.27	1,960.72
5. Disposal Change in Fixed Assets	0.00	-273.22	-13,886.56	+129.27	-94.27

Total LCC Estimate (1+2+3+4)	78,779.88	80,925.52	66,216.18	76,989.28	86,772.80
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Table 4 displays that continuous Operating and Maintenance Costs represent the absolute majority of long-term lifecycle outlays, expanding from ₹43,489.81 crores in FY21 to ₹67,217.24 crores in FY25, which underscores the urgent requirement for digital asset management and automated predictive engineering tools.

9. FINDINGS

- Tata Motors showed consistent revenue growth, rising from ₹43,928.17 Cr in FY21 to ₹73,303.08 Cr in FY25.
- A significant recovery was visible post-COVID, with revenue nearly doubling from FY22 to FY25, indicating strong market demand, improved product mix, and operational resilience.
- The company turned around from a net loss of ₹7,289.63 Cr in FY21 to a net profit of ₹7,902.08 Cr in FY25.
- Profit before tax increased remarkably in FY25 (₹7,850.82 Cr) compared to a low of negative ₹7,127.34 Cr in FY21.
- The profitability revival was aided by higher revenues, controlled expenses, and a reduction in exceptional losses.
- Technological upgrades or disposal of obsolete assets
- Despite reduced capital investment in fixed assets post-FY22, operational performance improved—implying better asset utilization and efficiency.
- Total LCC estimate peaked in FY25 at ₹86,772.80 Cr, driven by rising operating and depreciation costs despite relatively stable capital expenditure.
- Efficient LCC management was evident from:
 - Controlled financing costs
 - Lower capital outlays with maintained asset performance

10. CONCLUSION

- This project on Fixed Asset Management of Tata Motors provides a comprehensive view of how the company has managed its capital investments, operational expenses, and overall asset efficiency from FY 2021 to FY 2025. The analysis highlights a strategic shift from heavy capital spending to a more optimized and controlled asset management approach, especially visible in the reduced acquisition costs and stabilized depreciation.
- However, the consistent rise in operating and maintenance costs signals a need for better cost control strategies and increased efficiency in resource utilization. Tata Motors has shown improvements in financing cost management, which reflects better debt planning and financial discipline.
- Through this study, it becomes evident that adopting a full LCC approach helps Tata Motors not only in controlling costs but also in making smarter, long-term investment decisions. Implementing predictive maintenance, digital asset tracking, and sustainability-focused asset strategies will further strengthen its performance in the years to come.
- Overall, Life Cycle Costing proves to be a valuable tool for long-term planning, helping Tata Motors balance cost, performance, and profitability in a competitive and dynamic automotive industry

11. SUGGESTIONS

- Tata Motors should continue optimizing its existing fixed assets instead of making large capital investments. This helps reduce acquisition costs and improves asset efficiency.
- Operating and maintenance costs have been increasing every year. The company should look for ways to reduce material costs, improve supply chain efficiency, and automate processes to manage these expenses better.
- Tata Motors has slightly reduced its financing costs in recent years. Continuing this trend by repaying high-interest debt or refinancing can improve overall profitability.
- Since asset costs are being managed well, the company can gradually invest in sustainable technologies that reduce long-term operating costs and environmental impact.
- Compare Tata Motors' asset lifecycle performance with competitors to identify areas of improvement or innovation.
- Using historical LCC data, Tata Motors can make smarter decisions about when to upgrade, dispose of, or reuse assets to avoid unnecessary spending.
- Implement a clear strategy for timely retirement or resale of underperforming or obsolete assets to recover value and reduce maintenance burden.

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