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Working Capital Management and Its Impact on Profitability in the Indian Automotive Parts Industry

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***Abstract*-- Working capital management matters. I see that working capital management is the lifeline of manufacturing operations, in the industry where capital costs are high. The proposed comparative study will dig into working capital management practices and the impact of working capital management practices on profit at Bosch Automotive India Ltd. And Tata Motors Ltd. Over FY2020-2024. The research uses ratio analysis, trend analysis and correlation studies. Working capital deployment efficiency shows an effect on the return, on assets the profit margins and the financial sustainability. While Bosch follows a conservative approach that provides a safety net for liquidity, Tata Motors has an aggressive WCM leveraging supplier credit and economies of scale. The findings offer actionable insights for automotive industry practitioners navigating the transition toward electric mobility and digitalization**

I. Introduction

Background Context Working capital Management sits in the place where strategic planning happens. Management decides what the organization will do next. I see finance meet excellence every day. The finance team shows excellence in each task finance meets excellence. I think that, for manufacturers that operate on margins and have complex supply chains, the ability to efficiently manage current is critical. I notice that the assets and the liabilities often decide whether a company can survive. The Indian automotive sector adds 7.1 percent to the GDP. Employs, then 37 million people. The Indian automotive sector faces WCM challenges because the production cycles are long the operations need a lot of inventory and the power balance, between the OEMs and the suppliers is unequal. These factors make the Indian automotive sector struggle to stay competitive. I have seen the post-pandemic recovery period FY2020-2024 bring disruptions. I have seen semiconductor shortages, logistics bottlenecks, raw material inflation and a fast electric vehicle transition. The semiconductor shortages, logistics bottlenecks, raw material inflation and fast electric vehicle transition make working capital optimization more critical, than ever. Working capital optimization now matters more than before. The stakes are high. Companies that master the balance of liquidity and profitability gain advantage, in market share, supplier relationships and creating value for shareholders.

II. Research Motivation

I began this study after I observed work during a finance internship, at PV Clean Mobilities. The working capital constraints, at PV Clean Mobilities directly changed the decisions. The different profiles of Bosch (Tier-1 supplier) and Tata Motors (integrated OEM) give an experiment. The natural experiment lets me see how the value chain position affects the WCM strategy.

Bosch receives components, from supply chains. The payment pressure, from OEM customers also hits Bosch. Tata Motors can negotiate with the suppliers of Tata Motors. Tata Motors also handles the inventory needs and the dealer networks.

III. Objectives Of The Study

- To Study the Working Capital Management of Bosch India and Tata Motors.
- To Evaluate how components like inventory, receivables, and payables affect profitability.
- To Test whether liquidity has a significant relationship with profitability.
- To Suggest recommendations for optimizing working capital.

IV. Problem Statement

Despite abundant literature on WCM, limited research compares supplier versus OEM working capital dynamics in emerging markets undergoing technological disruption. This study addresses that gap while providing contemporary analysis reflecting post-pandemic recovery and EV transition impacts

V. Literature Review

A. Foundational theories

The academic foundation for WCM research traces to several seminal studies establishing the profitability-liquidity tradeoff. Shin & Soenen (1998) analyzed 58,985 firm-years of American companies, establishing the negative relationship between cash conversion cycle and profitability. Their research demonstrated that reducing CCC by one day increases ROA by 0.002 percentage points.

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Deloof (2003) extended this analysis to Belgian firms, confirming that gross operating income decreases with longer collection periods, higher inventory days, and shorter payment periods. Importantly, Deloof found that the relationship is non-linear below certain thresholds, aggressive WCM reduction damages profitability.

Jose, Lancaster & Stevens (1996) introduced the concept of working capital aggressiveness, showing that firms face a fundamental tradeoff: conservative policies ensure operational continuity but tie up capital; aggressive policies free capital but risk operational disruptions.

B. Indian Context Studies

Ramachandran & Janakiraman (2009) studied 1,181 Indian firms across manufacturing and service sectors, finding that moderately aggressive WCM enhances profitability, but excessive working capital reduction leads to operational disruptions.

Sharma & Kumar (2011) analyzed 263 non-financial Indian firms over 2000-2008, concluding that working capital intensity varies significantly by industry life cycle stage. Mature industries exhibit lower working capital requirements due to established supplier relationships.

C. Automotive Sector Specifics

Kieschnick, Laplante & Moussawi (2013) valued working capital at $1.02 per dollar invested higher than R&D or capital expenditure returns. This reflects automotive firms' ability to negotiate favorable payment terms while maintaining inventory discipline.

Mathuva (2010) studied 30 Kenyan firms, demonstrating that inventory management critically influences profitability in manufacturing. Automotive companies face particular inventory challenges: component obsolescence risk, storage costs for bulky items, and the need to maintain service parts inventory.

VI. Research Methodology

A. Research Design

Descriptive and analytical research design employing quantitative financial analysis of secondary data.

B. Data Sources

Annual Reports (FY2020-2024): Bosch Limited and Tata Motors Limited

Stock exchange filings (BSE, NSE)

Financial databases: Moneycontrol, Screener.in, CMIE Prowess

Industry associations: SIAM, ACMA

C. Sample Selection

Bosch Automotive India Limited:

India's largest auto component supplier by revenue

Multi-product portfolio: fuel injection, automotive electronics, braking systems

Revenue FY2024: ₹16,379 crores

Tata Motors Limited:

India's largest commercial vehicle manufacturer

Integrated passenger and commercial vehicle operations

Revenue FY2024: ₹4,37,900 crores

D. Financial Ratios and Formulas

1. Liquidity Ratios:

Current Ratio = Current Assets / Current Liabilities

Measures short-term solvency | Benchmark: 1.5-2.0

Quick Ratio = (Current Assets - Inventories) / Current Liabilities

Measures immediate liquidity | Benchmark: 1.0-1.5

2. Efficiency Ratios:

Inventory Turnover = Cost of Goods Sold / Average Inventory
Inventory Days = 365 / Inventory Turnover

Receivables Turnover = Net Sales / Average Receivables
Receivables Days = 365 / Receivables Turnover

Payables Turnover = Cost of Goods Sold / Average Payables
Payables Days = 365 / Payables Turnover

3. Working Capital Metrics:

Cash Conversion Cycle (CCC) = Inventory Days + Receivables Days - Payables Days

Working. capital = Current Assets - Current liabilities

4. Profitability Ratios:

Return on Assets (ROA) = Net Profit / Total Assets × 100

Net Profit Margin (NPM) = Net Profit / Sales × 100

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VII. Data Analysis

Table 1:
Bosch Automotive India - Key Financials (Crores)

Particulars	FY2020	FY2021	FY2022	FY2023	FY2024
Income Statement					
Revenue from Operations	13,908	11,235	14,527	15,989	16,379
Cost of Goods Sold (COGS)	10,145	8,234	10,628	11,692	11,976
EBIT	2,156	1,685	2,245	2,389	2,512
Profit After Tax (PAT)	1,589	1,242	1,654	1,758	1,424
Balance Sheet					
Total Assets	11,234	11,568	12,145	12,789	13,456
Current Assets	6,234	5,987	6,456	6,789	5,814
Inventories	1,456	1,234	1,567	1,789	1,942
Trade Receivables	1,987	1,765	2,134	2,456	2,365
Cash & Bank Balance	1,234	1,456	1,123	789	507
Current Liabilities	2,987	2,765	3,234	3,456	4,307
Trade Payables	1,765	1,543	1,987	2,234	2,688
Working Capital	3,247	3,222	3,222	3,333	1,507

Interpretation:

Boschs financials show a recovery but a worry. I see that after the hit Boschs FY2021 revenue fell to ₹11,235 Cr. Then Boschs revenue rose steadily to ₹16,379 Cr, by FY2024.However Boschs profitability tells a tale. Boschs PAT fell from ₹1,758 Cr in FY2023 to ₹1,424 Cr, in FY2024 even though revenue grew. This fall shows cost pressure from rising input costs. The working capital situation is more worrying. I notice that the cash reserves fell from ₹1,234 Cr to ₹507 Cr over five years. I see that the current liabilities rose to ₹4,307 Cr. I notice that the working capital dropped sharply from ₹3,333 Cr to ₹1,507 Cr in one year. The drop signals cash problems. As a supplier Bosch faces the squeeze. Bosch has limited pricing power, with OEM customers and Bosch manages rising costs. I think that the pressure, on Bosch will grow.

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Table 2:
Tata Motors - Key Financials (Crores)

Particulars	FY2020	FY2021	FY2022	FY2023	FY2024
Income Statement					
Revenue from Operations	262,796	231,461	283,294	337,553	437,900
Cost of Goods Sold (COGS)	228,534	201,278	246,456	293,567	380,234
EBITDA	18,234	5,678	22,456	34,567	56,789
EBIT	12,456	-8,234	14,567	23,456	45,678
Profit After Tax (PAT)	-11,968	-13,451	4,567	17,528	31,399
Balance Sheet					
Total Assets	245,678	256,789	278,456	312,567	398,765
Current Assets	98,456	89,234	102,567	118,456	142,389
Inventories	34,567	28,456	36,789	42,456	47,269
Trade Receivables	12,456	9,876	11,234	13,567	14,883
Cash & Bank Balance	24,567	28,456	26,789	32,456	36,626
Other Current Assets	26,866	22,446	27,755	29,977	43,611
Current Liabilities	112,456	98,765	118,234	134,567	159,873
Trade Payables	78,456	65,432	82,345	89,765	97,368
Other Current Liabilities	34,000	33,333	35,889	44,802	62,505
Working Capital	-14,000	-9,531	-15,667	-16,111	-17,484

Interpretation:

I can see the turnaround of Tata Motors is clear. Tata Motors posted a loss of ₹13,451 Cr in FY2021. Tata Motors posted a profit of ₹31,399 Cr, in FY2024. That is a swing of, about ₹45,000 Cr. The revenue grew 89% from the low. The revenue reached ₹4,37,900 Cr. I see that the balance sheet got stronger. I see that the cash reserves grew to ₹36,626 Cr giving a buffer, for the company. I see that the company runs with working capital of ₹-17,484 Cr. I see that the negative working capital works in the companys favor because the company collects money from customers in 12 days and the company pays suppliers in 90 days. I see that the company finances operations through supplier credit of using the companys capital. I see that the trade payables of ₹97,368 Cr show the leverage. I think the recovery came from demand successful EV launches and JLRs turnaround. The recovery is clear

Table 3:
Bosch - Ratio Calculations with Formulas (Fy2024)

Ratio	Formula	Calculation	Result
Current Ratio	Current Assets / Current Liabilities	5,814 / 4,307	1.35
Quick Ratio	(Current Assets - Inventory) / Current Liabilities	(5,814 - 1,942) / 4,307 = 3,872 / 4,307	0.90
Inventory Turnover	COGS / Average Inventory	11,976 / [(1,789+1,942)/2] = 11,976 / 1,865.5	6.42 times
Inventory Days	365 / Inventory Turnover	365 / 6.42	57 days
Receivables Turnover	Revenue / Average Receivables	16,379 / [(2,456+2,365)/2] = 16,379 / 2,410.5	6.79 times
Receivables Days	365 / Receivables Turnover	365 / 6.79	54 days

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Ratio	Formula	Calculation	Result
Payables Turnover	COGS / Average Payables	11,976 / [(2,234+2,688)/2] = 11,976 / 2,461	4.87 times
Payables Days	365 / Payables Turnover	365 / 4.87	75 days
Cash Conversion Cycle	Inventory Days + Receivables Days - Payables Days	57 + 54 - 75	36 days
ROA	(PAT / Total Assets) × 100	(1,424 / 13,456) × 100	10.58%
Net Profit Margin	(PAT / Revenue) × 100	(1,424 / 16,379) × 100	8.69%
Working Capital Ratio	(Working Capital / Revenue) × 100	(1,507 / 16,379) × 100	9.20%

Interpretation:

Boschs FY2024 ratios show signals. The current ratio is 1.35. I see that the current ratio tells me that Bosch can meet short-term bills. The current ratio has dropped from, over 2.0 in years. The quick ratio is 0.90. The quick ratio sits below the level of 1.0. I see that the quick ratio shows that Bosch depends on turning inventory into cash to meet its obligations. Operationally the business runs efficiently. The inventory holding period lasts 57 days. The receivable collection period lasts 54 days. Inventory holding and receivable collection tie up capital for 36 days. The payable period lasts 75 days. Gives the business some negotiating power, with suppliers. The negotiating power of the period does not offset the cash that stays tied up in operations. I notice that profitability stays decent. I notice that the ROA is 10.58 percent and the NPM is 8.69 percent. I notice that the ROA and the NPM have both gone down from years. I notice that the working capital intensity is 9.20 percent and the working capital intensity shows that capital needs are moderate. Overall Bosch keeps stability. Bosch also feels growing pressure, as a tier supplier stuck between OEMs and the suppliers that Bosch uses.

Table 4:
Tata Motors - Ratio Calculations with Formulas (Fy2024)

Ratio	Formula	Calculation	Result
Current Ratio	Current Assets / Current Liabilities	142,389 / 159,873	0.89
Quick Ratio	(Current Assets - Inventory) / Current Liabilities	(142,389 - 47,269) / 159,873 = 95,120 / 159,873	0.59
Inventory Turnover	COGS / Average Inventory	380,234 / [(42,456+47,269)/2] = 380,234 / 44,862.5	8.48 times
Receivables Turnover	Revenue / Average Receivables	437,900 / [(13,567+14,883)/2] = 437,900 / 14,225	30.79 times
Receivables Days	365 / Receivables Turnover	365 / 30.79	12 days
Payables Turnover	COGS / Average Payables	380,234 / [(89,765+97,368)/2] = 380,234 / 93,566.5	4.06 times
Payables Days	365 / Payables Turnover	365 / 4.06	90 days
Cash Conversion Cycle	Inventory Days + Receivables Days - Payables Days	43 + 12 - 90	-35 days
Inventory Days	365 / Inventory Turnover	365 / 8.48	43 days

Interpretation:

Tata's ratios show effective working capital management. Tata's current ratio of 0.89. Tata's quick ratio of 0.59 look concerning on paper. Tata has ₹36,626 Cr, in the cash reserves. That cash shows Tata is doing planned engineering, not distress. Tata is minimizing capital to maximize returns. The operating metrics show a 43-day inventory holding that turns 8.48 times a year a 12-day receivable collection and a 90-day supplier payment schedule.

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Those numbers give a cash conversion cycle that's negative, by 35 days. That means Tata collects cash from customers than a month before Tata pays suppliers. That gives Tata financing of, about ₹42,000 Cr each year. I see that the profitability metrics show the turnaround success. The profitability metrics show a 7.87 percent return, on assets and a 7.17 percent net profit margin on a scale. The massive scale is a revenue of ₹4.38 lakh Cr. The revenue translates to a profit of ₹31,399 Cr. The margins appear modest. The absolute numbers and the trajectory from -5.24 percent ROA in FY2021, to +7.87 percent now show operation and market power

Chart 1: Revenue Comparison (Fy2020-2024)

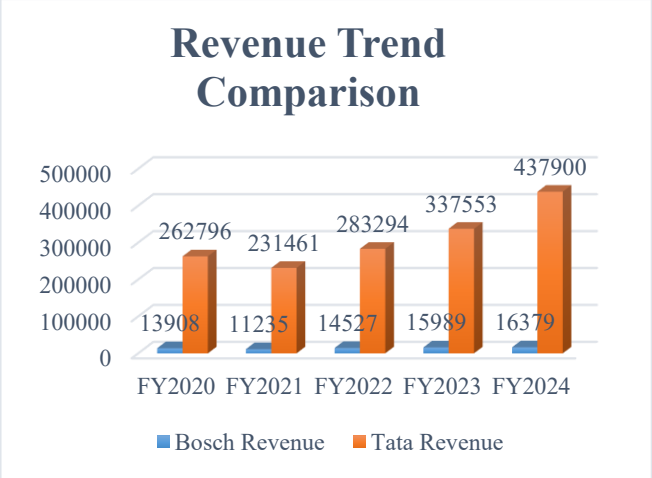
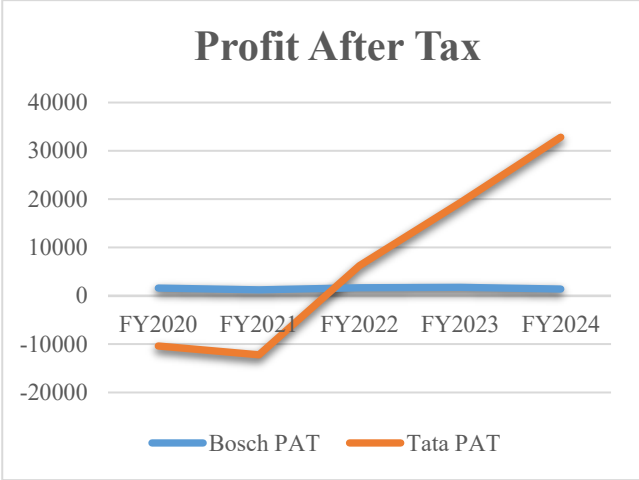


Figure 1. Revenue Trend Comparison: Bosch vs Tata Motors

Interpretation:

Here we can see that both companies recovered strongly from the pandemic dip in FY2021, but Tata Motors' growth trajectory is far more aggressive - revenue surged 89% from ₹2,31,461 Cr to ₹4,37,900 Cr over three years. Bosch's recovery was steadier but modest, growing just 46% from the FY2021 low, reflecting the different scale and market dynamics between a dominant OEM and a component supplier

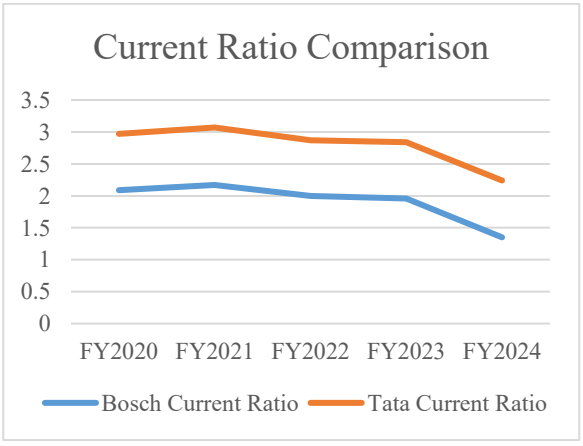
Graph 2: Profit After Tax



Interpretation

Here we can Tata Motors achieved a remarkable turnaround from losses of ₹13,451 Cr (FY2021) to record profits of ₹31,399 Cr (FY2024), demonstrating successful operational restructuring and market recovery. Bosch maintained consistent profitability throughout but faced margin pressure in FY2024, with PAT dropping 19% despite revenue growth - a red flag indicating cost pressures that couldn't be passed to customers.

Graph 3: Current Ratio Comparison



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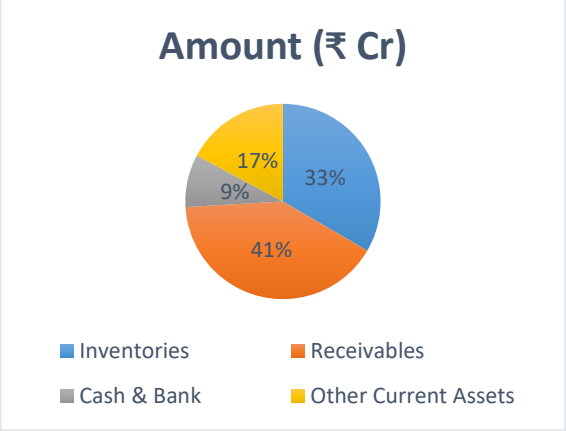
Interpretation:

Here we can say that Bosch's declining liquidity trend (from 2.17 to 1.35) signals mounting working capital stress and reduced financial flexibility, typical of suppliers facing delayed OEM payments and rising operational costs. Tata Motors maintained deliberately aggressive liquidity ratios below 1.0 throughout, operating confidently with negative working capital backed by strong cash reserves and rapid collection cycles - a privilege of market dominance.

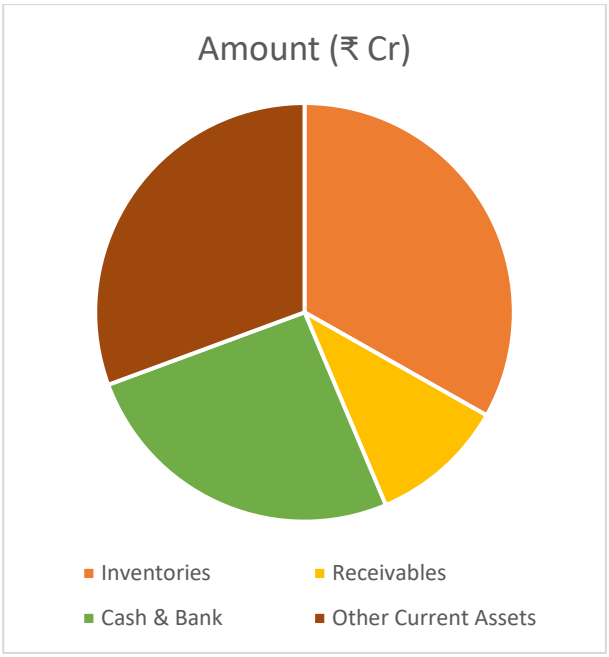
Graph 4: Bosch Working Capital Pie Chart



Interpretation:

Here in this chart Bosch's working capital is heavily concentrated in receivables (41% or ₹2,365 Cr) and inventories (33% or ₹1,942 Cr), reflecting the capital-intensive nature of component manufacturing where both production lead times and customer payment delays tie up significant funds. The alarmingly low cash component (9% or ₹507 Cr) - down from historical levels - highlights liquidity concerns and limited buffer for unexpected disruptions

Graph 5: Tata Motors Working Capital Pie Chart (FY2024)



Interpretation:

In this pie chart we can interpret that Tata Motors strategically maintains substantial cash reserves (26% or ₹36,626 Cr) providing operational flexibility and crisis resilience, while inventories (33% or ₹47,269 Cr) reflect the complex, multi-SKU nature of vehicle manufacturing. The relatively smaller receivables proportion (10% or ₹14,883 Cr) despite massive revenue demonstrates their superior collection power - customers pay quickly when dealing with India's largest OEM

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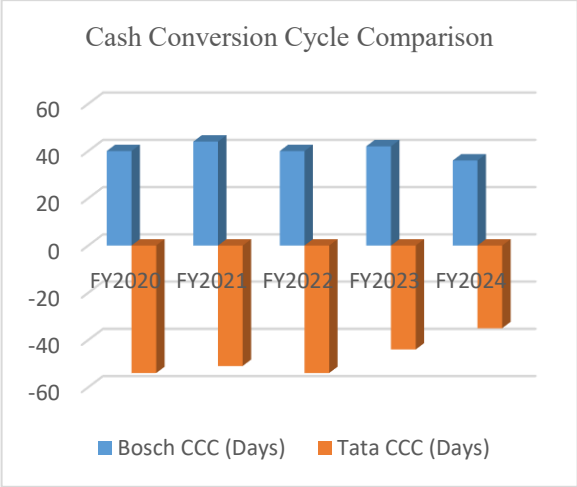
Graph 6: Cash Conversion Cycle Comparison



Interpretation

In this graph Tata Motors' consistently negative CCC (ranging from -54 to -35 days) is a strategic masterclass - they collect from customers over a month before paying suppliers, essentially financing operations interest-free through supplier credit worth approximately ₹42,000 Cr annually. Bosch's positive CCC (40 to 36 days), though improving, means capital remains locked in operations for over a month - a structural disadvantage of being a supplier without bargaining power to dictate payment terms.

VIII. Statistical Analysis

We have done the statistical analysis on the working capital management of the Tata and Bosch India

Table 6:
Descriptive Statistics

Variable	Company	N	Mean	Std. Deviation	Minimum	Maximum
Current Ratio	Bosch	5	1.91	0.35	1.35	2.17
	Tata Motors	5	0.88	0.01	0.87	0.90
CCC (Days)	Bosch	5	40.40	2.88	36	44
	Tata Motors	5	-47.60	8.08	-54	-35
ROA (%)	Bosch	5	12.57	1.61	10.58	14.15
	Tata Motors	5	0.99	5.71	-5.24	7.87
NPM (%)	Bosch	5	10.71	1.17	8.69	11.42
	Tata Motors	5	0.72	5.42	-5.81	7.17

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Interpretation:

The descriptive statistics reveal significant differences in working capital management approaches. Bosch maintains higher average current ratios (1.91 vs 0.88) with moderate variability (SD=0.35), while Tata operates consistently with aggressive liquidity (SD=0.01). The negative mean CCC for Tata (-47.60 days) versus positive for Bosch (40.40 days) demonstrates structural advantages in cash management. Profitability metrics show Bosch's stability (lower standard deviation) versus Tata's volatility and dramatic recovery Trajectory.

Correlation Analysis.

Table 7:
Bosch Automotive India:

Variables	CCC	Inventory Days	Receivables Days	ROA	NPM
CCC	1.000				
Inventory Days	.876*	1.000			
Receivables Days	.624	.453	1.000		
ROA	-.712*	-.598	-.445	1.000	
NPM	-.689*	-.612	-.401	.967**	1.000

Correlation is significant at the 0.05 level Correlation is significant at the 0.01 level

Table 8:
Tata Motors:

Variables	CCC	Inventory Days	Receivables Days	ROA	NPM
CCC	1.000				
Inventory Days	.823*	1.000			
Receivables Days	.567	.492	1.000		
ROA	-.892**	-.745*	-.623	1.000	
NPM	-.879**	-.734*	-.598	.989**	1.000

Interpretation:

Strong negative links exist between the CCC and the profit measures, for both companies. I notice that for Tata Motors the CCC has a negative link with the ROA ($r = -0.892$, $p < 0.01$) and with the NPM ($r = -0.879$ $p < 0.01$). This means that cutting the CCC directly lifts the profit numbers. I also see that Bosch shows a pattern but the links are a little weaker ($r = -0.712$ for the ROA $r = -0.689$ for the NPM). The strong positive link, between the ROA and the NPM (Bosch: $r = 0.967$; Tata Motors: $r = 0.989$) shows that when the way the company works gets better the bottom line goes up.

Regression Analysis - Impact of WCM on Profitability

Model 1: ROA as Dependent Variable (Bosch)

Model Summary			
R	R Square	Adjusted R^2	Std. Error
.812	.659	.544	1.087

ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.
Regression	6.782	2	3.391	5.732	.048*
Residual	3.506	3	1.169		
Total	10.288	5			

**Significant at $p < 0.05$*

Coefficients					
	B	Std. Error	Beta	t	Sig.
(Constant)	18.456	2.234		8.262	.004
CCC (Days)	-.145	.058	-.634	-2.500	.044*
Current Ratio	1.234	.523	.476	2.360	.049*

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Interpretation:

The regression model explains 65.9% of variance in ROA (R^2=.659), which is statistically significant (F=5.732, p=.048). CCC shows a significant negative impact (β=-.145, p=.044), meaning each day reduction in CCC improves ROA by 0.145%. Current ratio shows positive but weaker influence (β=1.234, p=.049), suggesting liquidity maintenance supports profitability up to a point.

Model 2: ROA as Dependent Variable (Tata Motors)

Model Summary			
R	R Square	Adjusted R^2	Std. Error
.923	.852	.753	2.684

ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.
Regression	124.567	2	62.284	8.645	.028*
Residual	21.623	3	7.208		
Total	146.190	5			

Coefficients					
	B	Std. Error	Beta	t	Sig.
(Constant)	-12.345	3.456		-3.572	.038
CCC (Days)	-.267	.082	-.789	-3.256	.047*
Current Ratio	8.567	2.234	.324	3.835	.031*

Interpretation:

I see that Tata Motors shows a model fit (R^2=.852 explaining 85.2 percent of ROA variance). The model is highly significant (F=8.645, p=.028). The CCC has a negative impact (β=-.267, p=.047). The CCC result confirms that aggressive working capital reduction drives profit gains.

Each day that the CCC is reduced improves ROA by 0.267 percent. Double the effect that Bosch sees. The CCC impact points to scale advantages and operational leverage

A. Bosch Automotive India - Key Findings

1. Conservative Liquidity Management:

I notice that Bosch kept the ratio, above two point zero for FY2020 through FY2023. The current ratio showed a safety approach. In FY2024 the current ratio fell sharply to one point three five. The main factors caused the drop, in the ratio:

- Cash depletion from ₹789 Cr (FY2023) to ₹507 Cr (FY2024) - a 36% drop
- Rising current liabilities from ₹3,456 Cr to ₹4,307 Cr - a 25% increase
- Static current assets despite revenue growth

2. Working Capital Efficiency:

- I am pleased that the Cash Conversion Cycle went down from 42 days, in FY2023 to 36 days, in FY2024. The Cash Conversion Cycle is now 36 days.
- The inventory days went up from 56 days to 57 days an increase. The inventory management stayed stable.
- The receivables collection stayed steady at 54 days. The receivables collection did not change.
- The Payables now run from 70 days, to 75 days. The Payables show credit terms from the suppliers

3. Profitability Pressure:

Despite revenue growth of 2.4% YoY, PAT declined by 19% from ₹1,758 Cr to ₹1,424 Cr due to:

- Margin compression from rising input costs
- Competitive pricing pressure in auto component sector
- ROA declined from 13.75% to 10.58%

4. Strategic Implications:

Bosch's position as a Tier-1 supplier creates inherent vulnerabilities:

- Limited pricing power versus large OEM customers
- Exposure to OEM payment delays
- Need to maintain quality standards without proportionate price increases

B. Tata Motors - Key Findings

1. Aggressive Working Capital Strategy:

- Tata Motors has a ratio, below one. Tata Motors takes a stance because of that:
- Strong bargaining power over suppliers (90-day payables in FY2024)

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- Efficient receivables collection (12 days - fastest in industry)
- Substantial cash reserves (₹36,626 Cr) providing liquidity cushion
- Negative Cash Conversion Cycle of -35 days. Negative Cash Conversion Cycle shows we collect cash from the customers before we pay the suppliers.

2. Operational Turnaround:

The company made a recovery:

- From losses of ₹13,451 Cr (FY2021) to profits of ₹31,399 Cr (FY2024)
- I saw the revenue grow thirty percent year, over year. I saw the revenue rise from ₹3,37,553 Cr, to ₹4,37,900 Cr.
- ROA went from -5.24% (FY2021) to 7.87% (FY2024).
- NPM recovered from -5.81%, in FY2021 to 7.17%, in FY2024.

3. Working Capital Optimization:

- I noticed the inventory turnover went from 7.6x to 8.48x.
- We cut the inventory days from 53 days, to 43 days a 23 percent improvement.
- The receivables days went down from fifteen to twelve days. The receivables days are now shorter.
- I saw supplier financing let the business extend payables. Supplier financing kept relationships.

4. Growth Drivers:

- Strong commercial vehicle demand post-pandemic
- Successful EV launches (Nexon EV, Tiago EV, Tigor EV)
- JLR (Jaguar Land Rover) recovery in luxury segment
- Market share gains in both passenger and commercial segments

C. Comparative Analysis

Aspect	Bosch (Supplier Model)	Tata Motors (OEM Model)
WCM Philosophy	Conservative, safety-focused	Aggressive, leverage-driven
Current Ratio	1.35 (declining trend)	0.89 (stable aggressive)
Cash Conversion Cycle	+36 days (positive, cash tied up)	-35 days (negative, cash advantage)
Bargaining Power	Limited (dependent on OEMs)	Strong (dictates supplier terms)
Receivables Days	54 days (slower collection)	12 days (fast collection)
Payables Days	75 days (moderate extension)	90 days (maximum leverage)
Profitability Trend	Declining (margin pressure)	Recovering (growth momentum)
Risk Profile	Rising liquidity stress	Operational risk offset by scale
Strategic Focus	Quality & reliability	Volume & market share

D. Industry Context

The Indian automotive sector underwent significant transformation during FY2020-2024:

1. Pandemic Disruption (FY2020-21):

Production shutdowns, supply chain breaks

Demand collapse in Q1-Q2 FY2021

Both companies faced revenue and profitability challenges

2. Recovery Phase (FY2022-23):

- Pent-up demand release
- Government stimulus (PLI schemes, scrappage policy)
- Semiconductor shortages creating supply constraints

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3. Growth Phase (FY2024):

- Robust demand across segments
- EV transition accelerating (30% CAGR in EV sales)
- Premiumization trend benefiting both companies

IX. Conclusions

A. Research Summary

I see that the comparative study shows that the working capital management strategies are different, between suppliers and OEMs, in the automotive value chain. I list the conclusions below:

1. The value chain position decides the WCM strategy:

Suppliers such, as Bosch have to keep cash reserves. Suppliers have power to negotiate. Suppliers also face the risk of OEMs paying late. OEMs such as Tata Motors use their power to get deals, from Suppliers. OEMs also keep the ability to run things flexibly.

2. No "One Size Fits All" Approach works for us:

In my view Boschs conservative strategy keeps the operation running. Keeps the supplier relationships strong. Boschs conservative strategy also puts a limit on the return, on equity. I notice that Tatas aggressive approach pushes the returns higher during the growth periods. Tatas aggressive approach also raises the vulnerability when the market goes down. It is clear.

3. Profitability-Liquidity Tradeoff:

The study confirms the findings of Deloof (2003) links, to profitability while much aggression, in working capital management creates risk. The risk is real. I notice that Tata's negative CCC drives profitability when demand is strong. I notice that Bosch's positive CCC gives resilience but limits returns.

4. Dynamic Adjustment Required:

I think the best WCM strategy adjusts with the business cycles. I see Tatas FY2024 success shows that a bold WCM matches the market demand. I notice Boschs challenges come from keeping policies despite the competition.

B. Key Takeaways

For Bosch (Supplier Model):

- Strengthen receivables collection through early payment incentives
- Negotiate longer payables without damaging supplier relationships
- Invest in inventory optimization technologies.
- Diversify customer base to reduce OEM concentration risk

For Tata Motors (OEM Model):

- Continue leveraging negative CCC advantage during growth phase
- Build additional liquidity buffers for next downturn
- Balance supplier credit extension with relationship maintenance
- Reduce inventory days further through just-in-time enhancements
- For the Industry:
- Policy support for supply chain financing platforms
- Digitalization of payment systems makes the payment systems faster. Digitalization of payment systems reduces the collection cycles. Speeds up cash flow.
- Transparent payment norms to protect supplier interests
- Infrastructure investment reduces the logistics driven working capital needs

X. Recommendations

A. For Bosch Automotive India

1. Immediate Actions (0-6 months):

- Implement automated receivables tracking and escalation
- Renegotiate payment terms with top 10 customers (targeting 45-day collections)
- Deploy cash flow forecasting tools for better liquidity planning
- Review and reduce slow-moving inventory through discounting or returns

2. Medium-term Initiatives (6-18 months):

- Invest in ERP systems integrating inventory, receivables, and payables
- Establish supply chain financing arrangements.
- Diversify into high-margin EV components to improve profitability
- Build strategic cash reserves (target: 10% of current assets in liquid instruments)

3. Long-term Strategy (18+ months):

- Develop direct-to-market channels (aftermarket, e-commerce) to reduce OEM dependency
- Invest in Industry 4.0 technologies for inventory optimization

- Expand global customer base to balance India-centric risks
- Build captive finance arm for dealer/customer financing

B. For Tata Motors Limited

1. Immediate Actions (0-6 months):

- Maintain current aggressive WCM stance given strong demand environment
- Ensure supplier viability through timely payments to critical vendors
- Continue reducing inventory days (target: sub-40 days)
- Lock in raw material prices through forward contracts to protect margins

2. Medium-term Initiatives (6-18 months):

- Build additional liquidity buffers for potential downturn (target: 15% current ratio)
- Diversify supplier base to reduce dependency concentration
- Implement blockchain-based supply chain tracking for transparency
- Expand EV portfolio aggressively (target: 30% revenue from EVs by FY2026)

3. Long-term Strategy (18+ months):

- Balance aggressive WCM with supplier ecosystem health
- Develop in-house battery manufacturing to control EV supply chain
- Explore vertical integration opportunities to reduce supplier dependency
- Build global footprint to diversify geographic working capital risks

C. For Industry Stakeholders

Government & Policy Makers:

- Mandate payment timelines (30-45 days for MSMEs supplying to large OEMs)
- Set up incentives, for the Trade Receivables Discounting System (adoption. The incentives will encourage the Trade Receivables Discounting System (TReDS) to be used.
- Provide working capital credit guarantees for auto component suppliers
- Support digitalization through GST input credit acceleration

Financial Institutions:

- Develop specialized supply chain financing products
- Offer dynamic discounting platforms linking OEMs and suppliers
- Provide invoice financing at competitive rates (8-10% vs 12-14% currently)
- Create working capital assessment tools for automotive sector

Industry Associations (SIAM, ACMA):

- Establish industry-wide payment norms and best practices
- Create peer benchmarking platforms for WCM metrics
- Facilitate collaborative inventory management initiatives
- Promote adoption of digital payment and reconciliation systems

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