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Accelerating into an Electric Future

How Global Market Dynamics will
Influence Cash Flows

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Abstract

The following equity research provides a thorough analysis and valuation of Tata Motors. In particular, this report focuses on the group's ambitious EV transition plans, the required investments, and the resulting impact on cash flows in the medium and long term. The individual part provides insights into the target markets of the group, a brief overview of the costs, and an analysis of the profitability of the company. Furthermore, for valuation purposes, the report describes the WACC assumptions, multiples analysis, and scenario and sensitivity analysis, concluding a final price target and recommendation.

Keywords: Automotive | Electric Vehicles | Valuation | Tata Motors

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This report is part of the “Accelerating into an Electric Future” report (annexed), developed by Jessie Cooper Blahak and Henrik Michael Hiller and should be read as an integral part of it.

TATA MOTORS LIMITED

COMPANY REPORT

AUTOMOTIVE INDUSTRY

20 DECEMBER 2023

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Accelerating into an Electric Future

- According to the performed DCF valuation, a **BUY recommendation** is given, considering a **price target of 813 INR** as of 31 December 2024. Shareholders are expected to profit from a **return of 12.2%** (incl. a dividend payment of 6 INR) within the next year.
- Due to **easing supply shortages** the company is expected to **exceptionally perform in FY 2024**, with **revenues being up 23%** YoY and **390 bps EBIT margin improvement**. However, sales are expected to slightly **decrease in the following two years** as a result of **order books being recently worked off** within the Jaguar Land Rover (JLR) segment.
- As for the past years, **JLR** is expected to remain the company's **main driver of value** due to its high operational efficiency. The domestic **passenger vehicle segment** is also presumed to register **high revenue growth**, fueled by rapidly **expanding EV unit sales**, growing at a CAGR of 20% until FY 2035. The **commercial vehicle segment** is expected to **further weaken** in the future due to intensifying competition and a wrongly timed focus shift towards fleet electrification.
- However, **large investments for fleet electrification** will **cut operating margins** in the next 5 years, **posing a risk** for the group, whose stock price is mainly driven by JLR's profitability.

Company description

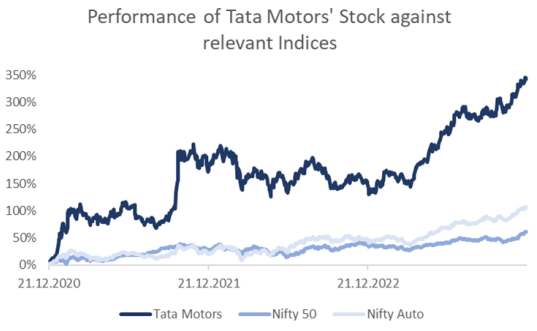
The Tata Motors Group is a global automobile manufacturer based in Mumbai, India. The group produces both commercial and passenger vehicles under its own brand name and owns the iconic British premium brands *Jaguar* and *Land Rover*. The company sells around 1.3 million vehicle p.a. and employs more than 56,000 individuals worldwide.

Recommendation:	**BUY**
Price Target FY24:	**813 INR**
Price (as of 2-Mar-24)	**730 INR**

Reuters: TAMO.NS, Bloomberg: TTMT:IN

52-week range (INR)	375-678
Market Cap (INR bn)	2,671
Outstanding Shares (m)	3,830

Source: Bloomberg, Yahoo Finance



Source: Yahoo Finance

(Values in INR billions)	FY23	FY24E	FY25F
Revenues	3,444	4,264	4,231
Revenue Growth	*25.6%*	*23.3%*	*-0.4%*
Adj. EBITDA	341	496	174
EBITDA Margin	*9.9%*	*11.7%*	*4.1%*
Adj. EBIT	101	289	-59
EBIT Margin	*2.9%*	*6.8%*	*-1.4%*
NOLPLAT	72	229	-46
Operating Margin	*2.1%*	*5.4%*	*-1.1%*
Free Cash Flow	105	-64	-85

Source: Annual Reports & Nova SBE Equity Research – Financials corresponding to Tata Motors' core business

THIS REPORT WAS PREPARED EXCLUSIVELY FOR ACADEMIC PURPOSES BY JESSIE BLAHAK AND HENRIK HILLER, MASTER IN FINANCE STUDENTS OF THE NOVA SCHOOL OF BUSINESS AND ECONOMICS. THE REPORT WAS SUPERVISED BY A NOVA SBE FACULTY MEMBER, ACTING IN A MERE ACADEMIC CAPACITY, WHO REVIEWED THE VALUATION METHODOLOGY AND THE FINANCIAL MODEL. (PLEASE REFER TO THE DISCLOSURES AND DISCLAIMERS AT END OF THE DOCUMENT)

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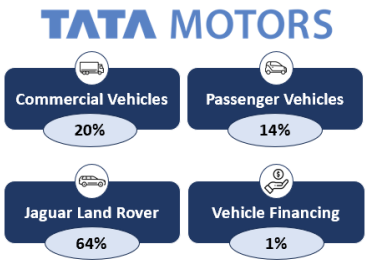
Company Analysis

Company Overview

Figure 1: *Percentage Share of Automotive-related Segments on Total Revenues*

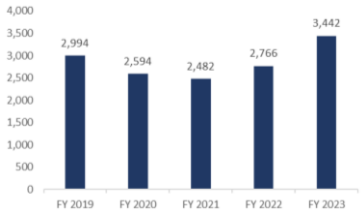


Source: *Annual Reports & Nova SBE Equity Research*

The Tata Motors Group is a worldwide operating automobile manufacturer based in Mumbai, India. The company produces both passenger and commercial vehicles under its own brand name and, since the acquisition from Ford Motor Company in 2008, also operates in the luxury vehicle segment by carrying the brands *Jaguar* and *Land Rover* (JLR). The group has a global network of operations, consisting of 104 subsidiaries, 9 affiliates, 4 joint ventures, and 2 joint operations. Tata Motors is part of the Tata Group, which holds 46% of Tata Motor's ordinary shares and 8% of 'A' ordinary shares[1]. The Tata Group is an Indian multinational conglomerate founded in 1886, which comprises 30 companies across 10 verticals, including consulting services, steel, chemicals, beverages, and automotives.

Tata Motors originally started as a locomotive manufacturer in the 1940s, then first entered the commercial vehicle (CV) market in 1954 in collaboration with Daimler-Benz AG, and finally made its initial foray into the passenger vehicle (PV) sector in 1991. Today, the group ranks among the largest OEMs in the country with over 940,000 vehicles sold in India in fiscal year 2023[2]. The company is the largest producer of CVs in the country with a market share of 41.7%, followed by Mahindra & Mahindra and Ashok Leyland with respective market shares of 24.0% and 16.0%. Within the PV segment, Tata Motors positions itself as the third largest manufacturer in terms of cars sold with a market share of 13.5%, behind Maruti Suzuki (42.1%) and Hyundai (14.5%). The company employs over 56,000 people globally and operates 23 production sites (15 of them in India), as well as 6 R&D centers across the world.

Figure 2: *Tata Motors Consolidated Revenues (INR billion)*

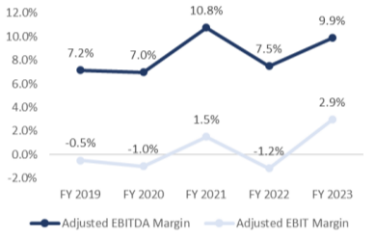


Source: *Annual Reports*

In FY 2023, Tata Motors sold over 1.3 million vehicles worldwide and recorded all-time high revenues of INR 3,442 billion (refer to Figure 2). Compared to the previous year, both unit sales and revenues increased by 23% and 26%, respectively. In profitability terms, Tata Motors recently noted an adjusted EBITDA margin of 9.9%[3], an improvement of 240 basis points compared to the previous fiscal year (refer to Figure 3). The group's adjusted EBIT margin was at 2.9%, enhancing from -1.2% in FY 2022. However, the company registered a

[1] 'A' ordinary shares have voting rights at 10% of ordinary shares but receive a dividend premium of 5%.
[2] In India, the financial year starts on 1st April and ends on 31st March. Therefore, Tata Motors reports is financial statements in periods corresponding to the Indian financial year.
[3] Both EBITDA and EBIT margins were adjusted in the process of reorganizing the income statements to better analyze the profitability of each operating segment. For further details, please refer to the reorganized income statement in Appendix 2.

Figure 3: *Tata Motors Adjusted EBITDA & EBIT Margins*



Source: *Annual Reports & Nova SBE Equity Research*

lack of financial performance starting in 2019. Group revenues declined by 14% in FY 2020 due to COVID-19 pandemic effects and were not able to recover at 2019 level until FY 2023 (refer to Figure 3). In contrast, the group registered a steady and significant revenue growth between FY 2009 and FY 2019 with a nominal CAGR of 15.3%, which decreases to 7.3% in real terms after deducting India's high average inflation during that period of 8.0%. And even though an EBITDA margin of 9.9% seems rather solid, one should take an in-depth view on that: JLR is the main profitability driver within the group with an adjusted EBITDA margin of 11.3%. The two segments mainly operating in India, CV and PV, only show respective margins of 7.8% and 6.2%. Comparing these margins with the group's main competitor within each segment, Mahindra & Mahindra and Maruti Suzuki, which have respective EBITDA margins of 12.3% and 11.9%, there is evidence for a significant lack of operational efficiency in the Indian market. Thus, future growth prospects in the Indian CV and PV markets might not be fully capitalized if operating margins will remain significantly below those of competitors.

In the past decades, Tata Motors has undertaken various acquisitions in order to strengthen its position in the Indian market, internationally expand, or explore new vehicle class markets. The most prominent acquisition was done in 2008, when Tata Motors acquired the brands *Jaguar* and *Land Rover* from Ford Motor Company for USD 2.3 billion in an cash- and debt-free deal. In addition, Ford agreed to add USD 600 million in Tata Motors' pension plans, which decreases the effectively paid consideration to USD 1.7 billion. At that time, Ford was going through difficult times, registering the highest loss in its 105-year history, being urgently in need to raise money to ensure its survival. Although, many analysts were skeptical about the acquisition of two iconic luxury car brands by an Indian low-cost manufacturer and the deal occurring at the worst possible time with the financial crisis appearing shortly after, in hindsight, the acquisition appears to have been highly beneficial for Tata Motors. This can be shown by comparing JLR to Mercedes-Benz Group AG, both focusing on a customer base in the top 1% income spectrum. Using Mercedes-Benz's current EV/EBITDA multiple of 4.47, we end up with a valuation for JLR of GBP 11.5 billion (USD 14.6 billion) today, representing 8.6 times the consideration paid in 2008.

In 2004, the group acquired the Korean CV manufacturer Daewoo Commercial Vehicles (DWCV) for USD 102 million, which was the second largest MHCV manufacturer in South Korea with a market share of 26% at that time. The acquisition was one of the company's major steps towards internationalizing its CV business. Besides the new strong position in the Korean CV market with 4,500 unit sales in the following fiscal year, the company was able to significantly

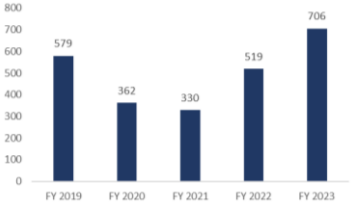
expand its exports to South Africa and the Middle East. Between FY 2005 and FY 2007, exports more than tripled to over 3,000 units, representing a CAGR of 86%. Alongside, profits after tax were increased from USD 10.8 million to USD 18.4 million, proving the acquisition successful in advancing both Tata's internationalization efforts, even outside the Asia-Pacific region, and financial standing.

One major drawback in Tata Motor's acquisition history was the takeover of the Spanish bus and couch manufacturer Hispano Carrocera. In 2005, the group acquired a 21% stake in the company for USD 700 million, followed by the purchase of the remaining 79% in 2009 through existing call-options, with the price for the remaining stake limited to USD 135 million. In contrast to Tata Motor's official statement of further strengthening its position in the European bus market, the takeover in 2009 was primarily an attempt compensate the company's losses, which had built up due to the financial crisis and shrinking demand. But even after the acquisition, losses steadily increased, accumulating to over EUR 60 million between 2008 and 2012. With a loss of more than EUR 14 million in 2012, Tata Motors decided to cease the operation at the subsidiary's main plant in Zaragoza (Spain) in 2013. This decision let to the dismissal of 287 employees and left the group with a failed investment with losses amounting to several hundred million dollars.

Although Tata Motors claims to be a "global" automobile manufacturer, not all of its segments are operating truly international. Cars produced under its own brand name are almost exclusively sold to the Indian market, with only 331 cars being exported. And despite Tata Motors' several strategic acquisitions in the past to internationalize its CV segment, exports today only account for about 5% of unit sales. A truly international footprint was first achieved with the takeover of Jaguar Land Rover, whose vehicles are exported to countries on every continent. This acquisition brought two main advantages for the Indian low-cost manufacturer: With the significant expansion of its international presence, Tata Motors is less dependent on the performance of the Indian market and less vulnerable it terms of stricter regulations in its main sales market. And at the same time, the company had the opportunity to enter the all-new market of luxury vehicles, in which operating margins are usually much higher than for low-cost vehicles, significantly improving profitability and the value of the overall group.

Segment Analysis

Figure 4: *CV Segment Revenues (INR billion)*

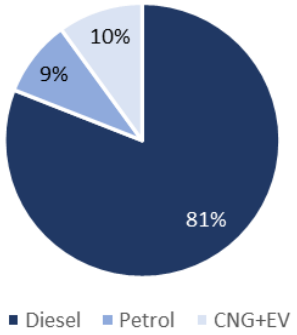


Source: *Annual Reports*

Figure 5: *Adjusted EBITDA & EBIT Margins – CV Segment*

Source: *Annual Reports & Nova SBE Equity Research*

Figure 6: *CV Segment Powertrain Mix in FY 2023 based on Unit Sales*



Source: *Annual Reports*

Commercial Vehicles

With its Commercial Vehicles (CV) segment, Tata Motors positions itself as India's largest CV manufacturer in terms of product range and services. The segment's product range is diverse and includes medium and heavy commercial vehicles (MHCV), buses, small commercial vehicles (SCV) and pickups, as well as light trucks (ICLV).

With around INR 706 billion in sales within the recent fiscal year (refer to Figure 4), the segment accounts for 20.5% of total revenues, selling more than 422,000 vehicles. Compared to FY 2022, revenues for the segment significantly increased by 36% while unit sales improved by 15%, driven by an increase of 21% in domestic unit sales. But as VAHAN[4] registrations increased by 38%, the segment experienced a major drop of its Indian market share from 44.7% to 41.7% within one year. This is due to increased competition, mainly in the MHCV and LCV segments. At the same time, exports decreased by 42%, particularly impacted by reductions in countries part of the South Asian Association for Regional Cooperation (SAARC) of -62%. Main driver was a sharp drop in vehicle sales of -44% in the second half of 2022 in Bangladesh due to the ongoing foreign-exchange reserves crisis. The country is part of the SAARC and one of the main importers of Tata vehicles since 1972. Adjusted EBITDA and EBIT margins for the overall segment stood at 7.8% and 5.6% in FY 2023, representing improvements of 470 bps and 570 bps compared to the previous year (refer to Figure 5), but still being significantly below those of its main competitors Mahindra & Mahindra and Ashok Leyland (12.3% and 12.7%).

The company aims to achieve net-zero emissions for the segment by 2045, mainly driven by an increased electrification of the fleet and green mobility solutions. Hence, the group launched India's first commercial 4-wheeled electric mini truck in FY 2023, which will be primarily used for last-mile delivery. With a starting price of INR 921,000, the new EV is twice as expensive as its ICE counterpart. Which seems like a good strategy at first, being one of the first companies in India to adopt EVs in their CV portfolio, has one major drawback, however. The International Energy Agency (IEA) predicts that only 5% of all CVs sold in India will be electric by 2050, leaving Tata Motors with very little market potential to aggressively roll-out its electric CV portfolio in the short to medium term.

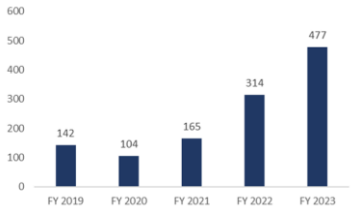
[4] VAHAN is India's web-based vehicle registration platform.

In summary, the group is still the largest CV manufacturer in the country, but the domestic business seems to be weakening. Dropping market shares and profit margins significantly below those of competitors will make it difficult to dominate the market in the future. Competitors have more downward price leeway due to more profitable operations, which will be crucial to retain revenue streams as more competitors enter the market due to India's high growth prospects. In addition, the segment's international business is still low and only focusing on a few regions, making it highly vulnerable to crises in these countries. Moreover, the new electrification strategy is questionable, as the market for electric CVs in India will hardly develop until 2050.

Passenger Vehicles

In the Passenger Vehicle (PV) segment, Tata Motors produces 3 different cars and 4 SUVs that are almost exclusively sold to the Indian market. As a result, the group positions itself as the third-largest player in the overall Indian PV market, while being the number one SUV manufacturer.

Figure 7: *PV Segment Revenues (INR billion)*



Source: *Annual Reports*

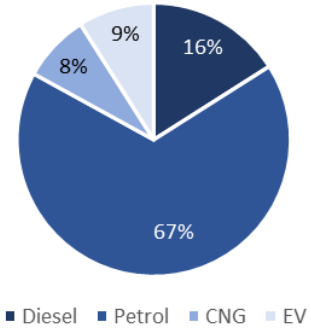
The segment accounts for around 13.8% of consolidated revenues, with net sales of INR 477 billion (refer to Figure 7) and 541,000 vehicles sold in FY 2023. Both revenues and unit sales significantly increased compared to the previous year by 52% and 45%, respectively. Increased sales volumes can be primarily explained by post-crisis demand effects, easing semiconductor shortage, and slightly increased market shares,. However, the PV segment is the most unprofitable segment within the group's automotive related activities. Both adjusted EBITDA and EBIT margins decreased far into the negative area in FY 2019 and FY 2020 and, afterwards, started to recover to respective levels of 6.2% and 0.9% in the recent fiscal year (refer to Figure 8). The main issue were high employee and works operation cost, while revenues significantly decreased during these years. In addition to its recent margin improvement, the company was also able to increase its domestic market shares three consecutive years in a row, from 4.8% in FY 2020 to 13.5% on FY 2023.

Figure 8: *Adjusted EBITDA & EBIT Margins – PV Segment*

Source: *Annual Reports & Nova SBE Equity Research*

The group has a strong focus on the electrification of the PV fleet, launching various new EV models, variants, and options during recent years. With EVs already accounting for 9% of PV sales (refer to Figure 9), Tata Motors emerges as the frontrunner in mainstreaming EVs in India, locking in remarkable market shares above 70% in the past three years. The segment's recent acquisition of Ford India's plant in Sanand (India), which will be primarily used for EV production with a scalable capacity of 420,000 vehicles a year, marks an important step in meeting the rapidly growing demand for EVs. In addition, the company recently worked on the consolidation of its PV vehicle platforms,

Figure 9: *PV Segment Powertrain Mix in FY 2023 based on Unit Sales*



Source: *Annual Reports*

resulting in the "Alpha" and "Omega" architecture. In the past, the group had a clear problem in leveraging its PV platforms. In 2019 for instance, Tata Motors built 7 different models based on 4 vehicle platforms (2 of them modular), resulting in a low ratio of 1.75 vehicle models per platform. In comparison, Hyundai Motors, one of the company's main competitors in India, only had 3 vehicle platforms in 2019 but produced 31 different models based on these, leveraging each platform almost 6 times more than Tata Motors (10.3 models per platform). At the same time, Hyundai Motors in India noted an EBITDA margin of 11.0%, compared to a largely negative one for Tata Motors. This shows that, despite reduced development timelines and greater product variety for customers, highly leveraged vehicle platforms have a direct impact on profit margins, as economies of scale improve. Cost that are directly addressed by consolidation actions are R&D and engineering cost per vehicle, as well as material cost due to greater bargaining power.

In summary, while Tata Motors' PV segment faced profitability challenges in recent years, it concurrently achieved substantial growth in both revenues and market shares. Especially through excessive expansion of Tata brand EVs, which have been well-received in India, and the consolidation of vehicle platforms, the segment is well-positioned to capitalize on future growth prospects. But competition in the Indian PV market remains high, with many international players ramping up EV sales in the country, gradually reducing Tata Motors' currently high EV market share in the future.

Jaguar Land Rover

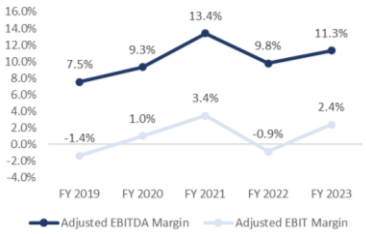
Figure 10: *JLR Revenues (INR billion)*

Source: *Annual Reports*

The JLR segment focusses on producing premium vehicles for customers around the world and is the main value driver for the overall group as well as the only segment not restricted to specific export regions. China is the most important market with around 97,000 unit sales, amounting to 26% of total sales. The Chinese market is operated through a 50/50 joint venture between Tata Motors and the Chinese state-owned carmaker Chery, which was formed in 2012 to allow the production of JLR vehicles and engines in China[5]. Other important markets are North America and Europe, representing a 22% and 20% share of total unit sales, respectively. Due to JLR's strong British brand heritage, there continues to be high demand in the UK, accounting for 17% of unit sales in FY 2023. The *Jaguar* product range comprises 6 different vehicles, including sports cars, sedans, station wagons, and SUVs, while the *Land Rover* fleet covers 7 different SUVs.

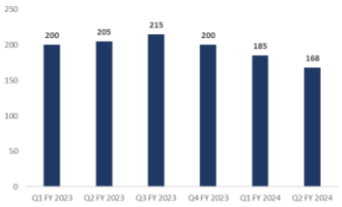
[5] Historically, China often required foreign companies to form joint ventures with local partners in certain industries (including automotive manufacturers) as a condition for market access.

Figure 11: *Adjusted EBITDA & EBIT Margins – JLR*



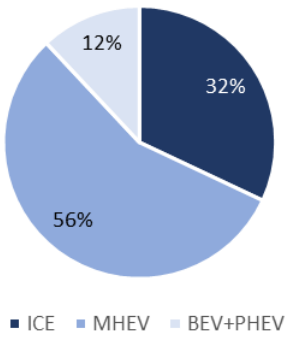
Source: *Annual Reports & Nova SBE Equity Research*

Figure 12: *JLR Order Book (thousand Units)*



Source: *JLR Quarterly Interim Reports*

Figure 13: *JLR Powertrain Mix in FY 2023 based on Unit Sales*



Source: *Annual Reports*

Since the acquisition in 2008, the segment accounts for the majority of Tata Motors' consolidated revenues. In FY 2023, the group sold 372,217 JLR vehicles and registered INR 2,216 billion in revenues, representing 64.4% of the group's total sales. According to our analysis, JLR is the most profitable division across the group's segments directly involved in the sale of vehicles with adjusted EBITDA and EBIT margins of 11.3% and 2.4%, respectively (refer to Figure 11). Even during challenging circumstances such as the COVID-19 pandemic and Brexit, profit margins remained relatively stable. Most recently, the segment recorded a very strong H1 of FY 2024, with revenues being up 42% YoY, as well as EBITDA and EBIT margins standing at 15.6% and 8.0%, respectively. This significant growth in sales was mainly driven by one factor: During FY 2023, the segment's order book significantly increased above the line of 200,000 units as a result of orders not being delivered due to supply shortages. With shortages easing, JLR could now deliver a lot of orders that accumulated in the book before, significantly reducing remaining units in its books (refer to Figure 12). Thus, after another strong H2, we expect sales in FY 2025 to decrease. Despite the strong FY 2023 and first half of FY 2024, Tata Motors has faced challenges in enhancing revenues for the JLR segment over the past few years. Revenues most recently stagnated at the level of FY 2019 net sales, while plummeting by almost one third in FY 2019 to FY 2022 (refer to Figure 10).

In addition, the segment invests a lot, averaging at around GBP 3 billion per annum over the past decade. With 10.3% of revenues invested in the recent fiscal year, JLR invests almost twice as much in relation to sales than Mercedes-Benz. The segment's higher investment-to-sales ratio compared to competitors is due to the brands strategic transformation within the past decade. During the time of the acquisition, both brands were struggling with outdated designs, inefficient engines, and poor cash generation. With the help of large investments, JLR significantly expanded its line-up with multiple powertrain options and shared vehicle platforms, while Free Cash Flows increased from GBP -101 million in FY 2010 to GBP 521 million in FY 2023.

In the recent past, large investments were mainly attributed to electrification affords across the JLR fleet, which is already observable in the powertrain mix of unit sales (refer to Figure 13). In FY 2023, 56% of all vehicles sold were mild-hybrids (MHEV) and 12% were either fully electric (BHEV) or plug-in hybrids (PHEV). In 2021, CEO Thierry Bolloré announced JLR's "Reimagine" strategy, under which JLR intends to invest GBP 3 billion (around INR 300 billion) p.a. over the next five years in order to electrify the fleet, introducing six fully electric models across Land Rover by 2026, kicking-off with the all electric Range Rover

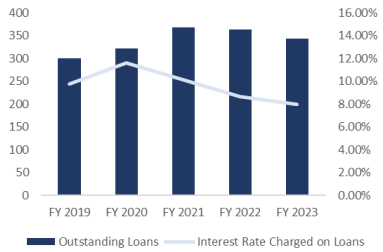
launch in 2024. In addition, the company revealed plans to transition Jaguar into a fully electric brand by 2025.

In summary, the segment's future will be primarily impacted by its ambitious electrification plans. Large investments have to be made in both product development and facility expansion to meet the growing EV demand. However, anticipated large investments will also significantly decrease operating margins and Free Cash Flows in the future. This development could pose a risk to Tata Motors and the stock performance, as the group's valuation is currently mainly dependent on the JLR segment.

Vehicle Financing

The fourth segment of Tata Motors' automotive related activities is the Vehicle Financing (VF) business. Through its fully owned subsidiary TMF Holdings Limited (TMFHL), the group provides financing solutions exclusively for Tata brand vehicles (CV & PV), working together with independent dealers and its branch network. In FY 2023, the VF segment had outstanding vehicle loans of INR 343 billion, a 7% decrease compared to FY 2021 (refer to Figure 14). This decrease is due to significantly increased provisions for the impairment of vehicle loans of 56% compared to the previous year. The interest rate charged on vehicle loans steadily decreased in recent years from 11.6% in FY 2020 to 8.0% in FY 2023. During the COVID-19 pandemic, the Reserve Bank of India (RBI) decided to lower key interest rates in India in order to encourage borrowing and consumer spending. These monetary policies directly influence the interest rate charged on car loans by Tata Motors, as interest rates for customers are primarily calculated based on lending rates for the group. In the most recent past, the RBI started to raise interest rates again as an action to fight rising inflation.

Figure 14: *Outstanding Loans (INR billion) & Charged Interest Rate – Vehicle Financing*



Source: *Annual Reports & Nova SBE Equity Research*

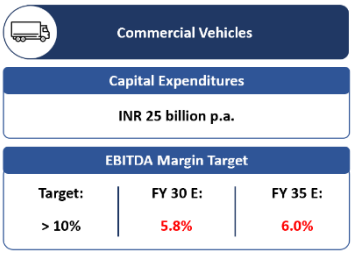
In the short to medium term, it is expected that key interest rates in India will further rise, resulting in a turnaround for the interest rates charged on car loans. At the same time, we expect the share of customers financing their purchased vehicles through TMFHL to expand, as financing solutions will be more attractive and accessible due to India's quickly emerging middle class.

Strategic Positioning

In the recent past, Tata Motors set itself specific targets for each of its automotive-related segments. These strategic roadmaps include anticipated annual investments, profitability targets, as well as EV sales shares and sustainability goals.

Within the CV segment, the group experienced some major drawbacks in the past, including shrinking market shares in domestic sales and high risks in the

Figure 15: *Strategic Targets CV Segment*

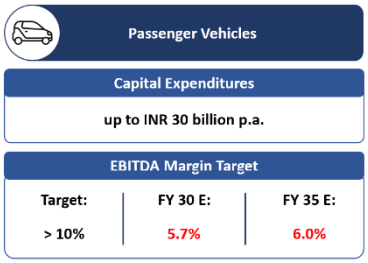


Source: *Tata Motors Corporate Presentation & Nova SBE Equity Research*

export business. Now, the company is beginning to transform its CV portfolio electric as one of the frontrunners across Indian automotive manufacturers. Thus, the group is intending to annually invest INR 25 billion and aims to achieve strong double-digit EBITDA margins in the future. However, the early EV transformation of the CV fleet has some risks. As previously mentioned, electric CVs are not expected to gain substantial market share in India until 2050. One of the reasons for the slow adoption rate, besides the missing charging infrastructure, is the high price premium customers will have to pay for electric CVs. With the newly launched Tata Ace EV in FY 2023, the electric version of the established Ace will be sold at a price premium of almost 120%. In addition, we anticipate Tata Motors' market share for ICE powered CVs to further decline in the future as a result of the focus shift from ICE to EV. The high investments, which are timed too early, combined with continuing erosion of market shares, will make it difficult for the segment to realize its profitability targets. According to our analysis, adjusted EBITDA margins are forecasted to drop from 7.8% in FY 2023 to 5.8% in FY 2030, slightly recovering to 6.0% in FY 2035 (refer to Figure 15).

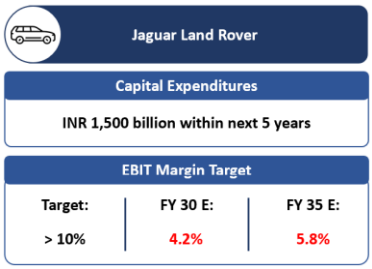
With its PV segment, Tata Motors was one of the first companies in India to establish EVs for personal use. The group targets that EVs will account for more than 30% of vehicles sold under its own brand name by 2030. According to our analysis, this target will be achieved (anticipated EV sales share of 30.2% in FY 2030), as Tata Motors is expected to retain substantial market shares of 35% in the Indian EV market. Following this target, Tata Motors has recently unveiled the "Reimagine PV" strategy, under which annual capital expenditures will be up to INR 30 billion and double-digit EBITDA margins are being aimed. These investments are in line with plans of Hyundai India, one of Tata Motors' key competitors in the PV market, who recently announced to annually invest around INR 20 billion mainly to increase capacity for EV production. As Tata Motors already prepared itself for future EV demand by acquiring a plant from Ford India with a scalable capacity of 420,000 primarily electric vehicles, capital expenditures will not be attributed towards capacity expansion. Instead, the group will allocate the majority of investments towards its planned vehicle platform consolidation, as well as increased leverage of these platforms with new electric PV models. However, as with the CV segment, the profitability target does not appear to be achievable in the medium term. As a result of significantly increased R&D cost in FY 2024 to FY 2028, we forecast adjusted EBITDA margins in the PV segment to decrease from 6.2% in FY 2023 to around 3% for FY 2024-2028, recovering to FY 2023 level by FY 2035, consequently missing its profitability target (refer to Figure 16).

Figure 16: *Strategic Targets PV Segment*



Source: *Tata Motors Corporate Presentation & Nova SBE Equity Research*

Figure 17: *Strategic Targets JLR*



Source: *Tata Motors Corporate Presentation & Nova SBE Equity Research*

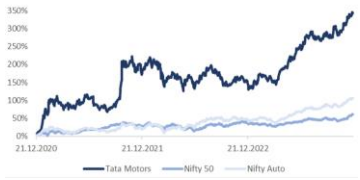
Even more rapidly are the EV transformation plans of the JLR segment. To fund the strategy, JLR plans to invest a total of INR 1,500 billion (GBP 15 billion) over the next 5 years. These investments seem fairly reasonable: Mercedes-Benz, which is also planning to go fully electric by 2030, is planning to invest EUR 60 billion within the next 5 years, amounting to roughly 8% of annual revenues. JLR's planned investments will be higher at an average of 11% of expected revenues. JLR's higher investment ratio seems necessary, as the segment currently only carries one electric model (Jaguar I-Pace), whereas Mercedes-Benz already comprises 9 electric vehicles within its portfolio. At the same time, Tata Motors expects significant increases in profitability with double-digit EBIT margins by FY 2026, more than quadruplicating the margin of the recent fiscal year.[6] However, despite a high adjusted EBIT margin of 7.8% in FY 2024, we expect margins in FY 2025-2028 to turn negative as a result of reduced revenue growth and ongoing high investments. By FY 2035, JLR's EBIT margin will be at 5.8%, still being significantly below the target set for the segment (refer to Figure 17).

In line with the group's plans of prioritizing EVs, Tata Sons Limited, the holding company of the Tata Group, revealed plans in July 2023 to build a 40GW battery cell gigafactory in the UK. Battery production is anticipated to commence in 2026, with Tata Motors and JLR being the anchor customers. With an investment of around GBP 4 billion, the new gigafactory is poised to become one of the most substantial investments in the history of the UK automotive industry. One of the main reasons for the Tata Group to open a new battery factory in Europe is to ensure that JLR vehicles comply with the European "rule of origin". As per the post-Brexit trade agreements between the EU and UK, EVs must contain 45% EU or UK content from 2024 onwards, with a 50% to 60% requirement for batteries. Vehicles not meeting these criteria will incur a 10% import tariff.

Stock Performance

In the past five years, the stock of Tata Motors delivered impressive results. During this period, the stock returned 315%, recovering quickly after the COVID-19 pandemic and gaining significantly in the second half of 2021. In the past 52 weeks, its value increased by around 75%, to the current price of INR 730. This makes the stock one of the top gainers in both the Nifty 50, as well as the Nifty Auto indexes (refer to Figure 18). However, in the last year returns were volatile, with a low of INR 375 and a high of INR 734. The performance of the stock is highly exposed to the performance of its subsidiary JLR, since it operates

Figure 18: *Tata Motors 3Y Stock Return against relevant Indices*



Source: *Yahoo Finance*

[6] JLR's profitability target refers to the segment's reported EBIT margins, which differ from the adjusted EBIT margins obtained in the equity research. However, in FY 2023, both reported and adjusted EBIT margins were similar at 2.4%.

worldwide and generates robust margins. An example of this could be seen recently, after JLR reported its strong results for the first half of FY 2024, which made Tata's stock jump over 4%.

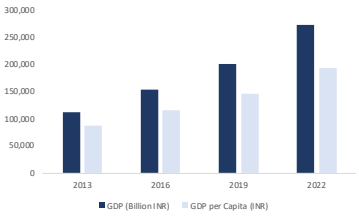
In comparison to the automobile industry in India, the company outperformed significantly. The Nifty Auto index has returned 93% over the past five years and 41% in the recent year. Compared to the Indian economy, the Nifty 50 gained 97% in the past 5 years, and 16% in the last year. In relation to the global automobile industry, measured by the MSCI World Automobiles Index, Tata's performance over the last five years, while still performing above the benchmark, is slightly less impressive, with the index returning 137%. Over the last year, the index returned 45%. The smaller difference in returns compared to the global index is, as mentioned above, due to the exposure to JLR's performance.

Macroeconomic & Market Analysis

Macroeconomic Environment

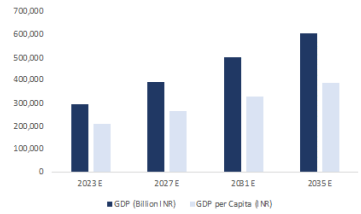
In the following chapter, the macroeconomic environment in India will be analyzed. Since Tata's subsidiary JLR is operating globally, worldwide macroeconomic factors are also highly relevant. However, these will be analyzed later in the "*Market Forecasts & Unit Sales of Vehicles Derivation"* part of this report, in order to direclty link relevant global marcoeconomic fluctuations to the car markets in each region.

Figure 19: *Historical GDP and GDP per capita in India*



Source: *World Bank*

Figure 20: *Projected GDP and GDP per capita in India*



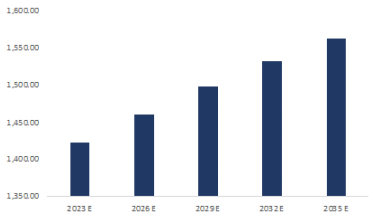
Source: *World Bank*

GDP and Consumer Spending Power

The Indian GDP grew from INR 112 trillion in 2013 to INR 272 trillion in 2022, representing a CAGR of over 10%, recovering quickly from the negative pandemic effects. In the same period, GDP per capita grew with a CAGR of roughly 9%, from INR 87,565 to INR 192,618. Therefore, India's economy grew significantly faster than the world GDP, which showed a CAGR of just 2.99% since 2013. According to data provided by the World Bank, the GDP and GDP per capita in India are expected to continue growing strongly with CAGRs of 6.35% and 5.54% until 2035, respectively.

The consumer market in India is expected to become the third largest in the world by 2027, according to a report by BMI. Driven by the strong growth in household income, the large share of youth in the country, and the ongoing urbanization, household spending is forecasted to reach USD 3 trillion by 2027.

Figure 21: *Projected Population in India (Million)*



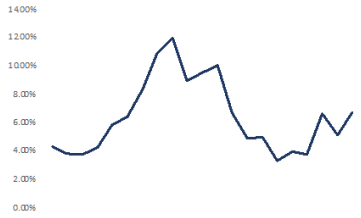
Source: *United Nations*

Population Growth

India has experienced very high population growth rates in the recent past, and surpassed China as the world's most populous country in April 2023. India's population grew from 1.09 billion in 2002 to 1.41 billion in 2022. The UN's medium variant estimate projects the country's population to increase by more than 100 million until 2035, to a total of 1.56 billion, continuing to be one of the fastest growing populations in the world. India has a very young population, with over 42% being under 25 years old and only about 7% over 65. Thus, the median age of the country is low at 28, while in the US it is 38, for instance.

Inflation

Figure 22: *Inflation in India, 2002-2022 (in %)*



Source: *World Bank*

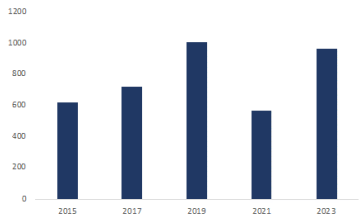
Inflation in India increased significantly after the financial crisis in 2008 and remained at levels between 9% and 12% until 2013, decreasing sharply to roughly 3-4% thereafter. During the COVID-19 pandemic, inflation increased again to around 6%. Inflation in India in 2024 and 2025 is expected to be around 4.1% and 4.3%, respectively, which is within the central bank's target range of 2% to 6%.

The macroeconomic environment in India, showing large growth potential in GDP and household income, the continuingly high population growth with a majority share of people under 25 years old, and the stabilizing inflation is creating an environment for Tata Motors, that indicates high potential in the future.

Market Analysis

Commercial Vehicles

Figure 23: *CV Sales in India (in Million Units)*



Source: *SIAM India*

The commercial vehicle market in India has experienced solid growth with a CAGR of 4.76% in the last 10 years, but lost significantly during the COVID-19 pandemic, dropping below FY 2014 levels in FY 2021. In FY 2023, the market had already recovered to almost pre-pandemic sales.

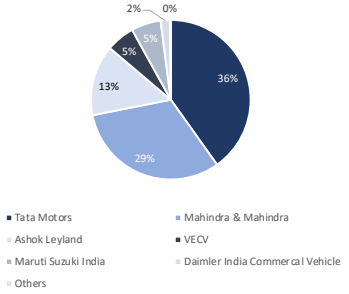
The load transportation vehicle (LTV) segment of the market is expected to grow at a CAGR of approx. 6.79% until 2035, with sales increasing from 800 thousand units in 2022 to 1.88 million units in 2035[7]. This trend is driven by the economic growth in the country, which is creating demand for the transport of goods. Additionally, more and more rural areas are developed into industrial and residential areas. The bus market on the other hand, is forecasted to shrink at a CAGR of -4.64% until 2035, caused by the increasing share of PVs on the roads.

[7] In-depth technical instructions on how individual market forecasts were obtained can be found in the part ***"Market Forecasts & Unit Sales of Vehicles Derivation"*** of this report.

The CV market in India is relatively consolidated, with only a few players dominating the market and high entry barriers for new companies. The biggest players are Tata Motors, Ashok Leyland, Mahinda & Mahindra, VE Commercial Vehicles (VECV), a joint venture between the Volvo Group and Eicher Motors Limited, and Maruti Suzuki. Tata Motors is currently dominating the CV market, with a share of 43% in FY 2023, which has decreased from 48% in FY 2021. The biggest competitor Mahindra & Mahindra had a share of 28% in FY 2021, decreasing to 21% in FY 2022. In FY 2023 sales grew again to a share of 24%. Ashok Leyland's market share has been increasing since FY 2021, from just under 13% to 16% in FY 2023. The same trend can be observed for VECV, who's share has increased from 5.2% to 6.7% between FY 2021 and FY 2023.

The market share of Tata Motors is forecasted to continue its downwards trend, as the company's CV business is struggling to keep competitive parity. The market share in FY 2035 is expected to be 29% for ICE powered CVs and 40% for EVs. As an early mover, we expect Tata's market share in the EV market to increase sharply to current levels of the ICE market share, as the latter drops due to increasing competition and a shift of focus towards EV.

Figure 24: *CV Market Shares FY 2023*



Source: *SIAM India*

Most of the group's share is expected to be picked up by Mahindra & Mahindra, Ashok Leyland, and VECV. Mahindra & Mahindra has implemented a strategy on capital allocation on growth business units, that has already been paying off and is expected to continue this trend. Additionally, it will release its first electric CV in 2025, entering the electric CV market as well. Ashok Leyland has announced a growth strategy for the medium-term, that aggressively focuses on an increase in market shares in the truck segment of the market. This will be implemented along with new vehicle launches and network expansion in India. Eicher Trucks & Buses, a division of VECV, recently partnered with Amazon to incorporate electric middle- and last-mile vehicles into Amazons delivery fleet. The company aims to integrate 10,000 EVs by 2025, posing significant competition for Tata Motors in the EV segment. In addition to the local competition, foreign OEMs like Volvo and Daimler Truck already have businesses in India, which are expected to expand significantly in the future.

An entry barrier into the Indian market for foreign OEMs are the high import duties on CVs, which currently amount to 40% on "completely-built-up" (CBU) vehicles. The import duties on "completely-knocked-down" (CKD) commercial vehicles with preassembled parts are 25% and 15% with no preassembled parts. Therefore, the most cost-effective way for foreign OEMs to enter the Indian market is to build production facilities in the country and assemble the vehicles there or build joint ventures with local companies. Because of the increasing

growth prospects of the Indian CV market, these strategies might still be executed by foreign OEMs in the future.

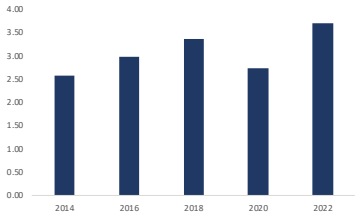
In conclusion, the CV market in India is set for high growth in the future, driven by significant economic development. Tata Motors' market share will likely decrease further, due to strong competition in the country and the possibility of foreign players entering the market.

Passenger Vehicles

The Indian PV market has experienced impressive growth in the recent past. Unit sales more than tripled since 2002, displaying a CAGR of 8.67% until 2022. Unit sales decreased harshly during the pandemic but recovered quickly, surpassing pre-COVID levels in 2022 with sales of 3.7 million units. We forecast the PV market in India to grow at a CAGR of 4.54% until 2035, amounting to unit sales of 6.6 million.

The PV market growth in India is mainly driven by the rising disposable household income. As mentioned before, the country currently has one of the largest growing economies in the world, paired with significant population growth and a large share of citizens under 25 years old. The combination of these factors drive demand, as young people want to increasingly raise their standard of living, which for many includes owning a car as means of transportation.

Figure 25: *PV Sales Historical (in Million Units)*



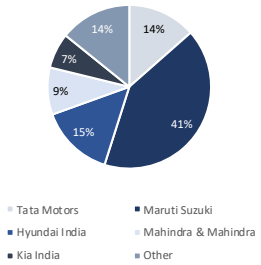
Source: *MORTH Year Book*

A further driver of the market is a recently introduced law regarding the vehicle age. Since the 1st of April 2023, cars older than 15 years have to be deregistered and scrapped. This law aims to reduce pollution, since older cars typically have a higher fuel consumption, while uplifting the car industry and providing cheaper raw materials for the steel industry. It is still possible to drive cars older than 15 years, however the cost of getting it re-registered, including several tests, are typically unproportionally high.

Furthermore, the Bharat Stage Emission Standards VI (BS-VI), which regulate the tailpipe emissions of cars, contribute to the increasing share of EVs on India's roads. The BS-VI are comparable to the Euro 6 standards in the EU, and were introduced nationwide in April of 2020. They also aim to reduce the amount of highly pollutant cars on the roads, and ultimately boost sales of new (electric) vehicles in the country.

The PV market in India is relatively consolidated, being largely occupied by foreign manufacturers, with Indian OEMs only accounting for 23.4% in 2023. The overall market leaders are Maruti Suzuki, Hyundai India, Tata Motors, Mahindra & Mahindra, and Kia India, occupying in total just over 85% of the market in 2023. Tata Motors has gained market share since 2019, from 6.3% to 13.5% in

Figure 26: *PV Market Shares 2023*



Source: *Nova SBE Equity Research*

FY 2023. Currently, the company's market share in the ICE market is 13.3%, but its EV market share is over 80%. Its biggest competitor Maruti Suzuki has lost almost 10% in the same period. Hyundai India also lost market share slightly, dropping from 16.1% in FY 2019 to 14.6% in FY 2023. Tata's market share is expected to increase to just over 15% in the forecast period. In the ICE segments it is expected to decrease to 11% until 2035, due to the company's focus on EVs, with an presumed EV market share of 35% in 2035. As Tata is currently the market leader for EVs in India, we expect its share to still be relatively high compared to the competition. However, as other companies "catch up", the EV share of Tata Motors will be closer to the current ICE market share.

Similar to CVs, there are very high import duties on PVs in India. CBU vehicles with a value of more than USD 40,000 have an import duty of 100%, while vehicles below have a duty of 70%. CKD PVs with pre-assembled parts have a duty of 35%, and CKD vehicles without pre-assembled parts have the same 15% duty as for CVs. This makes it difficult for foreign OEMs to enter the Indian market, as high import tariffs cause consumers to consider locally produced alternatives. However, the "Society of Indian Automobile Manufacturers" (SIAM) has agreed to a potential elimination of these duties for a limited number of cars from the UK, which would reduce the duties step by step to 10% until 2030, for a maximum number of 46,200 vehicles. This proposal is very limited, as it does not include cars from other countries, and the amount compared to the overall Indian market is low, but it could act as a precedent for future negotiations with other regions.

In summary, the Indian PV market has high growth potential until 2035, driven mainly by the rise in household income and the large share of young people in the population with a desire to improve their standard of living. Tata Motors has a high focus on EVs and is currently the market leader in the segment, which is securing strong market shares for the future.

Global Luxury Vehicle Market

Figure 27: *JLR Market Share Forecast*

	2027 E	2031 E	2035 E
UK	7.50%	7.50%	7.50%
North America	0.70%	0.75%	0.75%
Europe (excl. UK)	1.20%	1.25%	1.25%
China	0.60%	0.55%	0.53%
Overseas	0.38%	0.38%	0.37%

Source: *Nova SBE Equity Research*

For the purpose of the performed valuation, the market analyzed was based on the current JLR fleet (incl. luxury cars, sports cars, SUVs, executive cars and, large cars), named "luxury cars" in the following. Further, the market was split into JLRs mains sales regions, namely the UK, North America, Europe (excl. UK), China, and Overseas. The Overseas market includes a broad variety of countries, mainly emerging markets with high growth potential for the adoption of luxury vehicles. The UK luxury car sales decreased between 2014 and 2022, due to Brexit negotiations, followed by the COVID-19 pandemic, with a CAGR of -5.71%. North America also decreased, caused by the pandemic, with a CAGR of

-0.81%. Luxury car sales in Europe were also negatively impacted by the pandemic, but experienced early recovery in 2022, resulting in a CAGR of roughly 3% over the period. China has the largest growth in the period, showing a CAGR of almost 13.5%, while the overseas region grew with 2.34%. In total, the global luxury car market had a growth of 3.25% over the period.

Generally, growth in the luxury vehicle market is driven by the increasing disposable income and the rising number of high-net worth individuals, especially in emerging countries. In addition, the increasing demand for EVs is also driving the market. In the UK specifically, economic growth after several difficult years due to Brexit and the pandemic is expected to increase sharply. Therefore, we forecast the market in the UK to grow at a CAGR of 6.7% until 2035. North America is expected to grow at a CAGR of 3.5%, rebounding after the losses in recent years. Europe will have the lowest growth rate, with only 2.2%, as luxury vehicle sales already recovered to pre-pandemic levels and economic growth is expected to be slightly less steep. China is forecasted to have a CAGR of 3.4% and overseas is expected to note 5.5% annual growth.

The luxury car market is dominated by very few established global players. Some of the biggest include BMW, Mercedes-Benz, Jaguar Land Rover, Porsche, and Tesla. The entry barriers are relatively high, as brand reputation plays a big role in the choice of vehicle for many customers, as well as the history of prestige, quality, and performance, which is difficult to achieve for new market entries. In addition, many customers stay loyal to one brand. Defining market shares in the luxury car market is very difficult, as the definition of a luxury car varies for each customer and region. The forecast of JLRs market share is therefore based on the historical shares of the company of our market forecast. Referring to Figure 27, the market shares in the UK, North America, and Europe are expected to remain roughly the same, with only a slight decrease in the UK due to higher competition after the economy recovers from both the pandemic and Brexit. The market share in China is expected to decrease, due to an expected increase of trade wars with Europe, after the EU launched an investigation into China's financing of the EV industry. Even though JLR is not in the EU anymore, we expect China's response to this action to affect all foreign cars. Finally, JLR will also remain its market share in the Overseas region. It is worth noting, that JLR sold about 15% of its vehicles to overseas in FY 2023, making it a promising market for growth.

In conclusion, the luxury car market worldwide has growth potential, mainly driven by the rise of disposable income, mainly in emerging countries. JLRs market shares are not expected to show substantial changes in the future, as the company has been well established for several decades.

Valuation

Methodology

In order to value Tata Motors as a group and, therefore, obtaining a target stock price, a Discounted Cash Flow (DCF) approach was applied. Due to the distinct markets the group's segments are focused on and the anticipated varying future growth rates, the Free Cash Flows used in the DCF model have been derived for each segment independently. Following that, a DCF valuation was performed for Tata Motors' combined automotive related operations (core business). For the non-core business, which is not related to automotive sales, the value was determined based on the invested capital for the segment. This is due to the fact that non-core cash flows are not expected to grow in perpetuity, making the use of a DCF approach inappropriate. Finally, given the derived equity values for the core and non-core business segments, a stock price target was calculated for the entire group. The obtained price target will be challenged through several scenario and sensitivity analyses and compared to price targets obtained from peer multiples.

Revenue Forecast

For the segments directly involved in the sale of vehicles (CV, PV, and JLR), a top-down approach was adapted. Thus, predictions were made for each automotive market, considering the specific segment and geographic region in which the group operates, and including distinctions among various powertrains. Next, the expected market shares derived in the market analysis section (refer to page 14-18) were applied to obtain Tata Motors' future unit sales. Finally, estimates for the average price per vehicle of each vehicle class and powertrain were evaluated to compute the revenues obtained from the sale of vehicles for each segment. Besides the sale of vehicles, Tata Motors also realizes revenues from the sale of spare parts, services, and miscellaneous parts within the segments mentioned above. These revenues were forecasted by applying individual growth rates to the historical value of additional parts or services sold per unit sale of vehicles.

For the Vehicle Financing segment, it is expected that sales are almost exclusively obtained from the financing of newly sold vehicles. By forecasting the average interest rate on car loans and the share of financed vehicles within the group's automotive segments, a revenue forecast for the Vehicle Financing segment was conducted.

Market Forecasts & Unit Sales of Vehicles Derivation

Figure 28: *Main Figures Top-Down Approach - Indian CV Market*

LTVs:

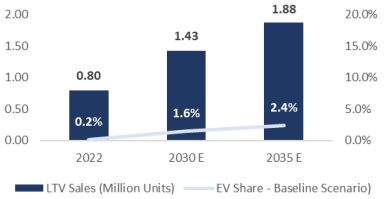
	2022	2030 E	2035 E
Freight Service Demand (Billion tkm)	2,533	4,082	5,364
Freight Modal Share - LTV	65%	65%	65%
Freight Service Demand - LTV (Billion tkm)	**1,646**	**2,653**	**3,487**
LTV per Million tkm	10.0	10.0	10.0
LTV Population (Million Units)	**16.4**	**26.5**	**34.8**

Buses:

	2022	2030 E	2035 E
Population India (Million)	1,412	1,509	1,563
Passenger Transportation Modal Share - Buses	15%	9%	8%
Population using Buses (Million)	217	136	117
Buses per 1000 Capita Using Buses (Units)	9.3	9.3	9.3
Bus Population (Million Units)	**2.0**	**1.3**	**1.1**

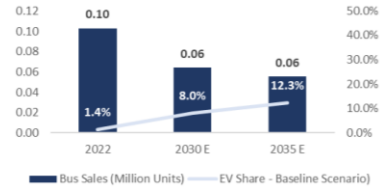
Source: *Nova SBE Equity Research, United Nations & CEEW*

Figure 29: *India LTV Unit Sales Forecast (Million Units) & EV Share*



Source: *Nova SBE Equity Research, United Nations, CEEW & IEA*

Figure 30: *India Bus Unit Sales Forecast (Million Units) & EV Share*



Source: *Nova SBE Equity Research, United Nations, CEEW & IEA*

The market forecast of CVs in India was performed by differentiating between load transportation vehicles (LTV) and buses, as both segments are impacted by different growth drivers (refer to Figure 28). In addition, EV adoption rates were very different in the past and are expected to follow different patterns for each segment in the future. LTV sales account for the majority of Tata Motors' CV sales, representing 91% of unit sales in FY 2023. Key driver for future sales in India is the freight service demand measured in billion tonne-kilometers (tkm)[8]. Due to India's rapidly growing economy and significant infrastructure development, freight service demand is expected to continuously grow, more than doubling from 2,533 billion tkm in 2022 to 5,364 billion tkm in 2035. In the past years, the modal share of freight transport attributed to the use of LTVs was very stable at 65% and it is presumed that trucks will continue to dominate Indian freight transports in the future with a similar share. Next, we calculated the average number of LTVs needed per million tkm, using past data on LTV vehicle population in India. On average, one million tkm are covered by 10 trucks annually. We believe that this ratio will not significantly change in the future as trucks are not expected to gain substantial freight capacity. Hence, using the forecasted freight service demand allocated to LTVs and the ratio of LTVs needed per million tkm, the vehicle population of LTVs in India was forecasted until 2035, growing from 16.4 million vehicles in 2022 to 34.8 million in 2035. In a last step, based on the past pattern of new LTVs sold to the vehicle population, future annual sales of LTVs in India were obtained, increasing from 0.8 million in 2022 to 1.9 million units in 2035 (refer to Figure 29). In terms of EV sales, India will remain a niche market with anticipated EV sales shares only reaching 5% in 2050 in the baseline scenario[9]. Regarding the bus market in India, key drivers are the population growth as well as the development of the transportation modal share of passengers using buses. According to the forecast provided in the macroeconomic section of this report, India's population is expected to grow from 1,412 million in 2022 to 1,563 million in 2035. In the past three years, the bus modal share across different types of passenger transportation already decreased from 17.0% to 15.4%. In the long-term, the modal share is presumed to further decline to 7.5% in 2035. This is due to the fact that the modal share of cars will rapidly increase as a result of the desire for comfortable personal transportation with increasing income and expanding on-demand mobility services. Based on the bus stock in the past, it was obtained that on average there are 9.3 buses needed to transport 1,000 passengers that regularly use

[8] Tonne-kilometers represent a measurement of freight transportation, corresponding the conveyance of one tone of cargo across a distance of one kilometer.

[9] **IEA's Stated Policy Scenario (STEPS)** – baseline scenario: Mirrors the present policy configurations and serves as a standard for evaluating the possible successes and constraints of a country's existing energy and climate policies.
Announced Pledges Scenario (APS) – best case scenario: Assumes that governments will fulfill all their energy and climate commitments, encompassing long-term net zero objectives, completely and on time.

buses during the year. We also expect this ratio to be constant in the future as buses are not expected to gain on size. Hence, as a result of significantly less passengers using buses in the future, the bus stock in India is presumed to drop to 1.1 million in 2035 from 2.0 million in 2022. Accordingly, bus sales will decrease in the same pattern, reaching around 55,000 unit sales in 2035 (refer to Figure 30). Currently, EV sales already account for 1.5% of bus sales in India and it is expected that this share will significantly improve to 12.3% in 2035. Because buses are mainly bought by the Indian government to be used for public transport and the government is aiming to increase the electric bus stock from currently 12,000 to 50,000 vehicles by 2027, the EV share is expected to increase much higher than for LTVs. Exports within Tata Motors' CV segment are still relatively small and mainly located on a few countries part of the SAARC. Thus, we presume CV exports to grow in line with the expected CAGR for vehicle sales in Bangladesh, one of the group's main export regions, of 10% until 2028.

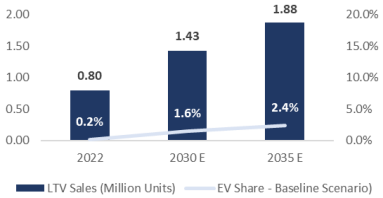
Figure 31: *Main Figures Top-Down Approach - Indian PV Market*

	2022	2030 E	2035 E
Population India (Million)	1,412	1,509	1,563
GDP per Capita (INR)	192,618	313,038	388,435
Cars per 1000 Capita	36	58	63
Car Population (Million Units)	**51.0**	**87.8**	**98.6**

Source: *Nova SBE Equity Research, United Nations, World Bank & MORTH*

The market forecast of PV unit sales was exclusively performed for the Indian market as current exports are negligible and Tata Motors is not expected to internationalize its PV segment in the medium term. The Indian PV market is still poorly developed, with only 36 out of 1,000 citizens owning a car. To put this into perspective, the figure for the US and the EU is currently at 908 and 570 cars per 1,000 capita, respectively. For our forecast model of PV sales in India, we identified the population growth and the GDP per capita development as key drivers for Indian PV sales (refer to Figure 31). In a first step, a regression was performed on cars per 1,000 capita and the GDP per capita in India for 20 years of historical data, indicating a positive correlation with p-values significantly below 5%. Using the population and GDP forecast provided in the macroeconomic section to utilize the GDP per capita forecast, the expected car stock was forecasted using the regression output. In addition, we included a decay factor in early and later year for the vehicle stock calculation. This enables the model to account for market saturation starting to occur in 2030. According to the performed analysis, the car population in India is expected to grow from 51 million in 2022 to almost 100 million in 2035, representing a CAGR of 5.2%. As a result, car ownership will also significantly increase with rising GDP per capita, almost doubling to 63 cars per 1,000 capita in 2035. In order to obtain the annual car sales based on the calculated vehicle stock, a second regression of these two parameters was done for the same set of historical data. In line with the first regression, the results show a positive correlation between unit sales and vehicle stock, being highly significant with very low p-values. After the regression results have been applied to the previously calculated vehicle stock, annual car sales in India are presumed to increase from 3.7 million units in 2022 to 6.6 million in

Figure 32: *India PV Unit Sales Forecast (Million Units) & EV Share*



Source: *Nova SBE Equity Research, United Nations, CEEW & IEA*

2035, growing at CAGR of 4.6% (refer to Figure 32). Regarding the sales of electric PVs, India is still at initial state with an EV sales share of only 1.3% in 2022. However, due to government incentives and regulatory constraints for ICE powered vehicles, it is expected that the EV sales share will continuously increase in the next years to 13% in 2030 and almost 20% in 2035 within the baseline scenario. Tata Motors' PV exports are marginal with only 331 units sold, mainly to countries part of the SAARC. For simplification reasons, we expect those exports to grow in line with CV exports due similar target regions.

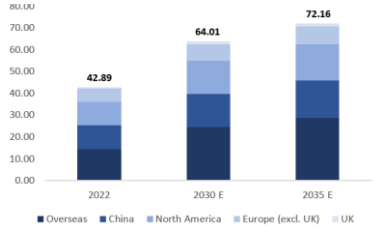
Regarding the JLR segment, market forecasts have been conducted for its main regions of vehicle sales (China, North America, Europe, and UK) as well for vehicles being exported to the rest od the world, primarily including emerging markets. As an estimate for the appropriate target market, we only included vehicles that represent the current fleet of JLR, including SUVs, sports cars, luxury cars, executive cars, and large cars. In order to forecast vehicle sales of these categories, the population growth as well as future real GDP were identified as key drivers for these car markets (refer to Figure 33). The real GDP forecast was based on purchasing power parity (PPP). This helps us to equalize differences in purchasing powers between the regions in the future and make better comparisons between these regions. Following that, the average unit sales of cars in relation to one million USD of real GDP were calculated for the past years prior to the COVID-19 pandemic and Russian-Ukrainian war. These ratios have been utilized as the long term going-forward ratios, once each region overcomes the recent challenges. In China, JLR's most important sales market, real GDP per capita under PPP is expected to grow from USD 18,900 in 2022 to USD 30,400 in 2035. Utilizing the historical average of 0.41 cars per one million USD of GDP, car sales in China are presumed to grow by 3.4% until 2035, from currently 11.2 million to 17.3 million units. In North America, real GDP per capita is expected to increase at a lower rate, from USD 67,900 in 2022 to USD 79,250 in 2035. The average car sales per one million USD of GDP was 0.52. However we expect this ratio to be present from 2024 onwards, being slightly lower in 2023 due to post-crisis effects and supply shortages. Thus, car sales in North America are expected to increase from 10.7 million in 2022 to 16.6 million units in 2035, representing a CAGR of 3.5%. Similar growth prospects are observable in Europe, with real GDP per capita expected to increase by 1.8% per annum and car sales growing by 2.2% to 8.1 million units by 2035. In the UK, significant erosion in vehicle sales was registered during 2018-2022 as a result of Brexit negotiations and the COVID-19 pandemic. We expect these negative effects to fade away in the short term, resulting in higher growth rates for vehicle sales than in North America and Europe of 6.7%, surpassing pre Brexit levels by 2027. In

Figure 33: *Main Figures Top-Down Approach – JLR Target Market by Region*

	2022	2030 E	2035 E
China			
Population (Million)	1,426	1,417	1,401
Real GDP - Ref. 2015 PPP (Billion USD)	26,995	36,977	42,588
Real GDP per Capita (USD)	18,932	26,098	30,387
Car Sales per 1 M$ GDP (Units)	0.41	0.41	0.41
Car Sales (Million Units)	**11.2**	**15.1**	**17.3**
North America			
Population (Million)	376	392	402
Real GDP - Ref. 2015 PPP (Billion USD)	25,510	29,437	31,840
Real GDP per Capita (USD)	67,860	75,036	79,250
Car Sales per 1 M$ GDP (Units)	0.42	0.52	0.52
Car Sales (Million Units)	**10.7**	**15.3**	**16.6**
Europe (excl. UK)			
Population (Million)	677	668	661
Real GDP - Ref. 2015 PPP (Billion USD)	25,962	29,786	31,781
Real GDP per Capita (USD)	38,343	44,586	48,080
Car Sales per 1 M$ GDP (Units)	0.24	0.25	0.25
Car Sales (Million Units)	**6.1**	**7.6**	**8.1**
UK			
Population (Million)	67	69	70
Real GDP - Ref. 2015 PPP (Billion USD)	3,005	3,375	3,588
Real GDP per Capita (USD)	44,593	48,847	51,319
Car Sales per 1 M$ GDP (Units)	0.22	0.42	0.42
Car Sales (Million Units)	**0.7**	**1.4**	**1.5**
Overseas			
Population (Million)	5,395	5,965	6,313
Real GDP - Ref. 2015 PPP (Billion USD)	30,949	42,422	49,345
Real GDP per Capita (USD)	5,736	7,111	7,816
Car Sales per 1 M$ GDP (Units)	0.46	0.58	0.58
Car Sales (Million Units)	**14.3**	**24.6**	**28.7**

Source: *Nova SBE Equity Research, United Nations, OECD & Statista Market Research*

Figure 34: *Global JLR Target Market Unit Sales Forecast (Million Units)*

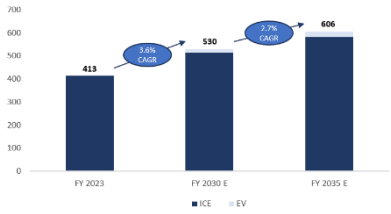


Source: *Nova SBE Equity Research, United Nations, OECD & Statista Market Research*

the rest of the world, the average number of cars sold per one million USD of GDP is relatively high with 0.58. This can be explained by the large number of small SUVs sold in emerging markets, which is not one of JLR's target markets. Hence, as a result of this higher ratio as well as quickly growing population and real GDP, car sales in these regions are presumed to grow at 5.5% p.a., from 14.3 million in 2022 to 28.7 million units in 2035. EV sales shares have not been forecasted for each individual market, but were obtained based on JLR's unit sales in each region, taking into consideration segment specific electrification targets.

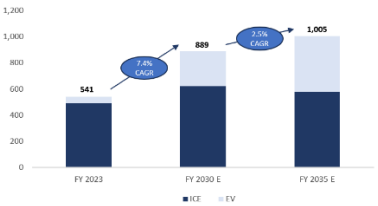
Combining both the market forecast for each segment as well as the market shares obtained in the market analysis part (refer to page 14-18), a forecast of vehicle units sold by Tata Motors has been conducted. CV unit sales are expected to grow by 3.2% until FY 2035, primarily driven by LTV sales in India (3.3% CAGR) and CV exports (10% CAGR). Bus sales are expected to decline by -6.7% p.a. due to dropping demand in the country. Hence, total CV sales will increase from 413,000 units in FY 2023 to 530,000 and 606,000 units in FY 2030 and 2035 respectively, with EVs only representing 4% of unit sales by then (refer to Figure 35). Due to the quickly expanding passenger EV demand in India and expected high market shares for Tata Motors within EV sales, PV sales are presumed to annually grow by 5.3%, from 541,000 units to over 1,000,000 units by FY 2035 (refer to Figure 36). Growth is mainly fueled by rapidly expanding EV sales, increasing almost 20% per year and reaching a sales share of 42% by FY 2035. Although growing at a high rate, exports will remain marginal, only representing 0.1% of total sales by FY 2035. JLR sales will see a sharp increase in FY 2024 of 22% to 455,000 units due to easing supply shortages, with sales slightly declining until FY 2027. Thereafter, unit sales are expected to grow by 2.5% p.a. reaching 527,000 units by FY 2035, mainly driven by positive post-Brexit effects in the UK and strong demand growth in emerging markets (refer to Figure 37). Due to the segment's electrification shift, EVs will account for 63% of unit sales by 2030, while almost all JLR vehicles will be electric by FY 2035 (94% EV share).

Figure 35: *CV Segment Unit Sales Forecast by Powertrain (thousand Units)*



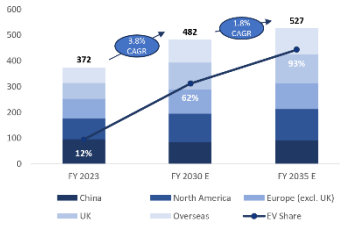
Source: *Nova SBE Equity Research*

Figure 36: *PV Segment Unit Sales Forecast by Powertrain (thousand Units)*



Source: *Nova SBE Equity Research*

Figure 37: *JLR Segment Unit Sales Forecast by Region (thousand Units)*

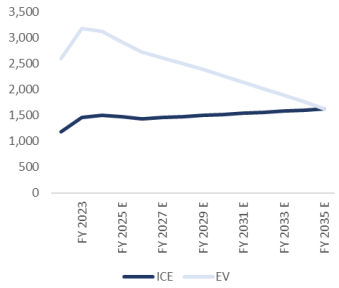


Source: *Nova SBE Equity Research*

Price per Vehicle

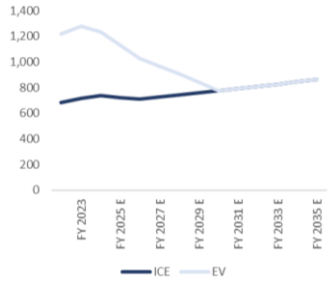
For the forecast of the average price per vehicle sold, individual outlooks were obtained for each segment. EVs are typically sold with a premium compared to ICE powered counterparts, mainly driven by high input prices for batteries, eventually reaching price parity in the future. Thus, we also separated prices for ICE-powered and electric vehicles in our forecast.

Figure 38: *CV Price per Vehicle Forecast by Powertrain (INR thousand)*



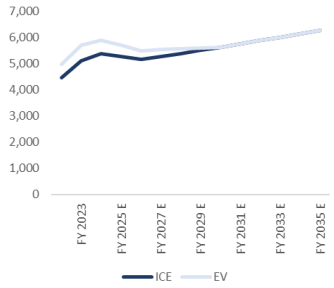
Source: *Nova SBE Equity Research & Office of the Economic Advisor India*

Figure 39: *PV Price per Vehicle Forecast by Powertrain (INR thousand)*



Source: *Nova SBE Equity Research & Office of the Economic Advisor India*

Figure 40: *JLR Price per Vehicle Forecast by Powertrain (INR thousand)*



Source: *Nova SBE Equity Research & Office of the Economic Advisor India*

In FY 2023, Tata Motors sold vehicles from its CV segment for an average price of around INR 1.45 million, an increase of 23% compared to the previous year. This significant price increase can be mainly explained by India's strong economic growth and rising infrastructure construction activity, shared with an ongoing shortage in semiconductors and high input prices for Indian vehicle manufacturers. With the recent introduction of Tata Motors' first electric LTV, the group will start to sell electric LTVs in FY 2024 with a price premium of 119%. In the base case scenario, price parity for CVs is expected to be reached in FY 2035, 5 years later than for cars as CVs typically consist of much larger battery packs[10]. In another scenario, in which higher input prices are expected to be persistent in the future, price parity for CVs will not be reached before FY 2040. It is expected that prices for CVs will further increase in FY 2024 due to ongoing challenges, gradually fading away in FY 2025-2026 with prices annually decreasing by -2%. In the long-term, we presume CV prices of Tata Motors to grow with the average growth rate of the wholesale price index for CVs sold in India prior to the COVID-19 pandemic and the Russian-Ukrainian war (FY 2013-2020), standing at 1.3%.

Tata Motors' PVs were sold for an average price of INR 768,000, around 8% more than in the previous year. This increase can be primarily attributed to expanded EV sales, which the group sells with an average price premium of 78%. In the base case, price parity for electric PVs is assumed to be present by FY 2030, shifting to FY 2035 in the scenario of persisting high input prices for batteries. For the next 3 years, prices for PVs are expected to experience the same development as for CVs due to similar challenges. Thereafter, prices will increase with the average growth rate of the wholesale price index for PVs sold in India of 2.2% (same time horizon as for CV).

The average price for vehicles sold within the JLR segment was INR 5.18 million, almost seven times the price of corresponding vehicles from the group's PV segment. Compared to the previous fiscal year, average JLR prices grew by around 15%. Currently, the Jaguar I-Pace (JLR's only EV model) is sold at a premium of 40% compared to the ICE powered F-Pace. However, due to expected scale effects as more EVs enter the fleet in the future, price premiums will shift towards levels of competitors who already comprise of extensive EV fleets. The average EV premium obtained for luxury vehicles and SUVs of main competitors (incl. BMW, Mercedes-Benz & Audi) is 12%, which is used as the expected premium charged by JLR, with price parity evolving in the same pattern as for the PV segment. Because of similar challenges faced by the CV and PV segment, we expect JLR prices to grow by 5% (200 bps above these of CVs and

[10] Batteries are by far the most expensive part of EVs.

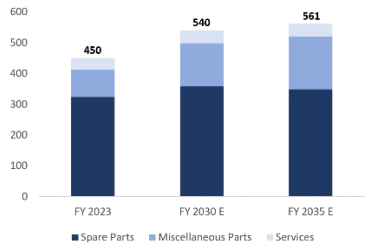
PVs) in FY 2024, as luxury brands usually undergo more substantial price hikes during challenging times compared to non-luxury brands. For FY 2025 and FY 2026, we presume a similar decline in prices as for the CV and PV segments (-2% annually). Although JLR is a British rooted manufacturer, sales for the overall group are transferred to and accounted for in INR. Thus, the average growth rate of the Indian price index, which is used for the PV segment, is also applied for JLR in the long term.

Sale of Spare Parts, Services, and Miscellaneous Parts

Besides the sale of vehicles, Tata Motors also obtains revenues from the sale of spare parts, services, and miscellaneous parts within the CV, PV, and JLR segments. Because these revenues are considered additional to the unit sales of vehicles per segment, they were forecasted based on the value per vehicle sold within each segment.

On average, service cost for electric vehicles are 40% lower than those for ICE-powered vehicles. Thus, we anticipate revenues from spare parts and services per vehicle sold to decline for each segment, as sales of electric vehicles increase. Thus, it is assumed that these revenues per vehicle sold for the CV and PV segments will decrease by -2% annually as the sale share of EVs increases. For JLR, the decline is expected to be steeper, reaching -3%, due to the anticipated swifter fleet electrification. Revenues from miscellaneous parts comprise a range of different products and are not presumed to be directly impacted by the powertrain mix within the segments. Thus, we expect the value per vehicle sold to grow with 2% for each segment. Consequently, revenues from the sale of spare parts, services, and miscellaneous parts are predicted to increase from INR 450 billion in FY 2023 to INR 540 and INR 561 billion in FY 2030 and FY 2035, respectively (refer to Figure 41).

Figure 41: *Sales from Spare Parts, Miscellaneous Parts & Services (INR billion)*



Source: *Nova SBE Equity Research*

Revenues from Vehicle Financing

Tata Motors' Vehicle Financing segment mainly provides financing solutions for purchasers of new vehicles. Hence, revenues from this segments are dependent on the annual interest rate on car loans and the value of financed vehicles, determined by the revenues from vehicles sold.

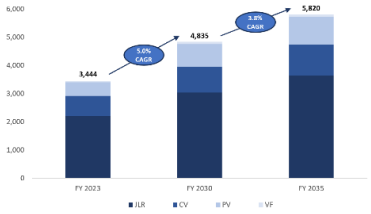
Using the average Indian lending interest rate in FY 2023 of 8.78%, it is presumed that 17.2% of the value of vehicles sold by Tata Motors were financed through TMFHL in FY 2023. Because financing options for vehicles are becoming more appealing in emerging markets, we expect the percentage of financed vehicles to rise to 20% by FY 2035. Given the current historical low lending interest rate in India, we project a consistent increase in interest rates in the

Figure 42: *Forecast of Average Lending Interest Rate in India*

Source: *Nova SBE Equity Research & World Bank*

upcoming years, eventually stabilizing at the historical 10-year average prior to the pandemic (2009-2019) of 10% by 2030 (refer to Figure 42). In summary, revenues from Vehicle Financing are expected to increase at an average rate of 8.6% from INR 44.7 billion in FY 2023 to INR 79.5 billion in FY 2030. Subsequently, the CAGR is projected to be at 5.4%, resulting in revenues above INR 100 billion by FY 2035.

Figure 43: *Revenue Forecast of Automotive-related Segments (INR billions)*



Source: *Nova SBE Equity Research*

Revenue Summary of Automotive Related Segments

Utilizing the insights derived from the above analysis, Tata Motors' revenues from automotive-related segments (incl. CV, PV, JLR, and VF) are projected to increase from INR 3,444 billion in FY 2023 to INR 4,835 billion in FY 2030, resulting in a CAGR of 5.0% (refer to Figure 43). In the aftermath, the CAGR for automotive-related sales will remain at 3.8%, leading to net sales of INR 5,820 billion in FY 2035. By then, JLR is projected to account for 62% of consolidated revenues, with CV and PV contributing 17% and 19%, respectively.

Operating Margins

Operating Expenses

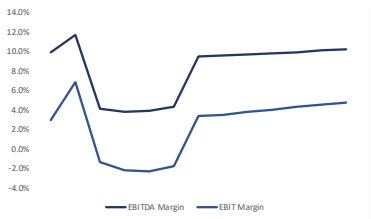
As for the revenue forecast, operating expenses of Tata Motors were split into its core segments.

Tata Motors' material cost is expected to decrease in FY 2024, due to global supply shortages easing. The JLR segments is experiencing the most substantial relief from the material cost decrease, as they secured short-term deals with suppliers. In the long term, the material cost is forecasted to increase again for all segments, caused by the higher share of EVs the company produces, as the materials needed for batteries entail significant cost premiums.

Employee cost are calculated as expenses per 1,000 vehicles produced for each segment. For the CV segment this value is INR 10 million, for PV its INR 3 million, and for JLR its INR 66 million in FY 2023. The significantly larger cost of JLR can be explained firstly by the higher average income of JLR employees, as the company comprises of production facilities mostly in developed countries, and secondly by the higher effort needed to produce a vehicle, as they are more luxurious with higher attention to detail. In the future, we expect the cost per 1,000 cars to remain the same as for the last two years.

Other operating expenses mainly include, amongst others, the share of the announced investments in line with the group's proposed strategic roadmaps, which are attributed to R&D rather than CapEx, being particularly high within the next 5 years.

Figure 44: *EBITDA and EBIT Margin, 2023-2035*



Source: *Nova SBE Equity Research*

Operating Margins

The adjusted EBITDA for the group in FY 2023 was INR 340 billion, representing a margin of 9.9%. The EBITDA for FY 2024 is expected to be around INR 496 billion, after JLR's record breaking first half of the fiscal year, representing a margin of 11.7%. The EBITDA for this segment alone jumps from INR 250 billion in FY 2023 to INR 378 billion in FY 2024. Consequently, the adjusted EBIT behaves similar, jumping from a margin of 2.94% in FY 2023 to 6.81% in FY 2024.

However, due to the substantial investments planned into the development of EVs, the margins are projected to decrease significantly until FY 2028. The adjusted EBITDA margin is expected to average just over 4% during the period, after which it is expected to recover to around 10% for the remaining forecast. The adjusted EBIT margin is expected to turn negative, to around -1.8% to -2% until FY 2028, after which it will increase to roughly 3.4% in FY 2029 and continue this trend to almost 5% at the end of the forecast period.

Similarly, the NOPLAT is expected to jump significantly from INR 72 billion in FY 2023 to a projected INR 229 billion in FY 2024, which is again mainly due to JLR's performance. Even though the NOPLAT is expected to turn negative between FY 2025 and FY 2028, due to the significant R&D expenditures, we forecast a positive turnaround in FY 2029, reaching INR 126 billion, continuing to increase to INR 228 billion by FY 2035. It is worth noting, that the NOPLAT of the CV segment remains profitable, while the PV segment and JLR turn negative. In FY 2029, the NOPLAT turns positive to INR 126 billion, and then increases to INR 228 billion in FY 2035.

Compared to the industry, Tata's profitability margins for its domestic segments are presumed to remain below most of its competitors. Mahindra & Mahindra for example has maintained EBITDA margins between 13% and 15% in the recent past, while Maruti Suzuki was able to achieve between 9% and 15%. And also regarding JLR, in comparison with more international players, its EBITDA margin will be significantly lower. Mercedes-Benz margin recovered quickly after the COVID-19 pandemic, remaining steadily above 15%. BMW's is even higher, at around 17%.

Capital Expenditures

The forecast of Capital Expenditures (CapEx) was carried out by distinguishing between Maintenance CapEx and Growth CapEx.

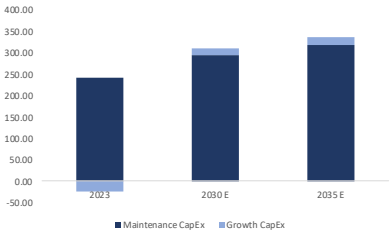
Maintenance CapEx is the portion of the total CapEx that is assumed to be used for maintaining historical revenues and profitability. Thus, it represents

investments needed to preserve the value of PP&E in the previous year, which is represented by the D&A of the current fiscal year. The D&A for all segments was forecasted based on historical averages of the percentage of D&A on PP&E in the previous fiscal year and, therefore, used as an approximation of the Maintenance CapEx for each segment.

The Growth CapEx is the share of investments undertaken to increase revenues and profitability beyond historical levels. In the case of Tata Motors, these investments will mainly be attributed to the group's strategic roadmaps for its automotive related segments (for further information, please refer to the part "Strategic Positioning"). As a result of the group's ambitious electrification targets for its brand vehicles, Tata Motors declared plans to invest INR 25 and INR 30 billion p.a. for the CV and PV segment, respectively. We assume this level of investments to persist until FY 2028, as the primary groundwork for an electrified future will be completed by then. Thus, we expect investments for both segments to drop to 1% of revenue p.a. subsequently until FY 2035. Regarding the JLR segment, the company plans on investing a total of INR 1,500 billion within the next five years to implement JLR's "Reimagine" strategy. We believe that these investments will be evenly spread across each fiscal year, resulting in annual investments of INR 300 billion. After FY 2028, we expect annual investments to decrease to 3% of revenue, which is in line with expectations for competitors. As EV transitions are expected to be completed by the end of the decade, investement needs for the OEMs decrease significantly, which are currently at around 5% of revenues for most competitors. The share of revenue invested into CapEx has historically been lower for the CV and PV segments of Tata Motors, therefore we expect it continue to be lower in the future (1% of revenues). Not all the announced investments will be allocated to the Growth CapEx and, consequently, invested in PP&E. The CV and PV segments are expected to have R&D investments of 75% of the announced investments, with 25% being invested into PP&E directly. For JLR these shares are expected to be 90% and 10%, respectively. The share in PP&E investments for JLR is significantly lower, since the company invested a lot into PP&E in the past years, while CV and PV will need to catch up on those investments afterwards. For the Vehicle Financing and Other Operations segments, Growth CapEx was projected based on the difference in PP&E to each previous fiscal year, which was forecasted in the reformulated balance sheet.

Concludingly, total CapEx of Tata Motors is presumed to quickly grow from INR 217 billion in FY 2023 to INR 323 billion in FY 2028, which is in line with the group's ambitious strategic transformation in the near-term future. Afterwards,

Figure 45: *CapEx Forecast (in Billion INR)*



Source: *Nova SBE Equity Research*

group CapEx is expected to moderately grow to INR 336 billion in FY 2035 (refer to Figure 45).

Net Working Capital Requirements

The net working capital (NWC) for Tata Motors in the past 5 years has fluctuated significantly between INR -17.71 billion and INR 85.79 billion. This is likely due to disruptions in the economic stability caused by the COVID-19 pandemic and the Russian-Ukrainian. However, as the economy recovered and sales stabilized, the NWC decreased to INR 48 billion in FY 2023. JLR, as the largest segment, had the biggest share of that with INR 33 billion, while CV required INR 9.62 billion and PV only INR 8.02 billion. We expect the NWC to stabilize around INR 54 billion for the group until FY 2028, after which it will slowly increase to INR 74 billion in FY 2035, averaging at 1.2% of forecasted revenues. JLR will continue to have the largest share in the NWC requirements, with INR 50 billion in FY 2035.

Other operating assets and liabilities amounted to INR 516 billion in FY 2023, with JLR holding the largest share of INR 341 billion. They are forecasted, similar to the NWC, to remain stable around INR 750 billion until FY 2028 and will then slowly increase to INR 1,026 billion in FY 2035.

Non-Controlling Interests

Tata Motors holds non-controlling interests (NCI) in 17 companies. To calculate the value of the companies, we used an EV/Sales multiple of 1.9 and a P/E of 32.1 corresponding to current valuations of automobile manufacturers in India, multiplied with the minority stake. The largest subsidiary with NCI is Tata Technologies Europe Limited, with an ownership stake of 76.69% and an estimated equity value attributable to the NCI of INR 13.11 billion. The second largest is Tata Technologies Inc., operating in the USA, with an ownership stake of 76.74% and an equity value of the NCI of INR 4.6 billion. The total NCI of Tata, being the total value subtracted from the equity value of the group in order to calculate the stock price, is INR 26.42 billion.

Figure 46: *Relevered Betas of Tata Motors & Competitors (against MSCI World using 3 Years of Weekly Data – both measured in INR)*

Tata Motors	**0.72**
Ashok Leyland	0.60
Eicher Motors	0.57
Ford	0.56
Hyundai	0.38
Mahindra & Mahindra	0.53
Maruti Suzuki	0.39
Mercedes-Benz	0.58
VOW	0.40
VOW3	0.35
Median	**0.54**

Source: *Nova SBE Equity Research & Bloomberg*

Weighted Average Cost of Capital

The overall market risk premium for the Indian market was set at 8.33%. This equity premium reflects the risk premium of the US of 5.00% (considered a mature and additional-risk-free market), adding a country risk premium of 3.33% for India, which is calculated based on CDS spreads[11]. Because Indian government bonds are not considered risk-free due to their low credit rating, the

[11] Both the market risk premium for the US and the country risk premium for India were based on estimates provided by Aswath Damodaran.

Figure 47: *WACC Calculation for Tata Motors*

WACC - Base Case	**7.87%**
WACC - Upper Bound	**9.10%**
WACC - Lower Bound	**6.39%**
Target D/E-Ratio	**0.40**
Target E/EV-Ratio	0.71
Target D/EV-Ratio	0.29
Cost of Equity - Base Case	**9.34%**
Cost of Equity - Upper Bound	11.07%
Cost of Equity - Lower Bound	7.28%
Cost of Debt	**5.27%**
YTM of long-term Bonds	5.70%
Credit Rating S&P	BB+
Average Cumulative Default Rate	7.40%
Annualized Probability of Default	0.72%
Loss given Default	60%

Source: *Nova SBE Equity Research, Bloomberg & S&P Global*

Figure 48: *EV Adoption Rates by Segment and Scenario*

Source: *Nova SBE Equity Research & IEA*

risk-free rate was calculated by deducting the CDS spread in India (2.35%) from the current yield of 10-year government bonds of 7.16%, resulting in a rate of 4.81%.

Next, the company's cost of equity were calculated, taking into consideration the market risk premium and risk-free rate mentioned above. As an estimate for the appropriate equity beta, raw betas against the MSCI World index (2 years of weekly data – both currencies in INR) for Tata Motors and its main competitors were used. In addition to the raw beta, lower and upper bound estimations of each beta were added, calculated by adding/subtracting two times the standard error of each beta. After un-levering these betas and re-levering them with the target D/E ratio of Tata Motors, the median of all betas obtained was chosen as an estimation for the future equity beta, including lower and upper bound restrictions (refer to Figure 46). The target D/E ratio was set 80 bps below the company's current ratio, as the group most recently revealed plans to reduce its debt starting in FY 2024.

Regarding the cost of debt, the effective weighted average interest rate on long-term debt of Tata Motors was taken as a basis (5.7%). The current credit rating provided by S&P for the group stands at BB+. Taking into account the average annualized probability of default based on this rating[12] as well as a loss given default of 60%, the effective cost of debt for Tata Motors reduces to 5.27%.

Combining both the cost of equity (incl. lower and upper bounds), the cost of debt, as well as the target leverage ratio and tax rate, the computed WACC for Tata Motors in the base case is 7.87%, with limits at 6.38% in the lower bound and 9.10% in the upper bound (refer to Figure 47).

Scenario and Sensitivity Analysis

Scenario Analysis

For the scenario analysis, three different scenarios were set up. The chosen scenarios primarily affect drivers related to the sale of EVs and development of vehicle prices, which have been identified as key uncertainties in the forecast period.

The first scenario influences the adoption rates for EVs in the Indian market. In the baseline scenario (STEPS), for which the respective EV sales shares have been already presented for both the PV and CV market in this report, it is expected that EV adoption will develop rather slowly, being significantly below targets set by the Indian government. In a second scenario (APS), it is presumed

[12] This was cacluted based on the aerage cumulative default rates for corporates in emerging markets (10-Year Horizon) by credit rating provided by S&P

Figure 49: *Expected Date of EV Price Parity by Segment & Scenario*

	Expected EV Price Parity	
	Baseline	High Battery Prices
CV	FY 2035	FY 2040
PV	FY 2030	FY 2035
JLR	FY 2030	FY 2035

Source: *Nova SBE Equity Research & The Economic Times India*

Figure 50: *Multiples Valuation*

	P/E	
	Average	Median
EV	1,649,259	1,386,071
Net Debt	1,158,269	1,158,269
Equity Value	490,990	227,802
Price per share	128	59
	P/B	
	Average	Median
EV	5,439,543	3,172,493
Net Debt	1,158,269	1,158,269
Equity Value	4,281,274	2,014,224
Price per share	1,118	526
	P/S	
	Average	Median
EV	18,000,639	12,009,208
Net Debt	1,158,269	1,158,269
Equity Value	16,842,370	10,850,939
Price per share	4,398	2,833
	EV/EBITDA	
	Average	Median
EV	2,850,307	2,714,792
Net Debt	1,158,269	1,158,269
Equity Value	1,692,038	1,556,523
Price per share	442	406
	EV/EBIT	
	Average	Median
EV	1,496,656	852,554
Net Debt	1,158,269	1,158,269
Equity Value	338,387	-305,714
Price per share	88	-80

Figure 50: *Bloomberg & Nova SBE Equity Research*

that the Indian government will fulfil all its energy and climate commitments, resulting in much higher EV shares for both CVs and PVs in the forecast (refer to Figure 48). Due to Tata Motors' expected strong position in the EV market, the second scenario has a positive influence on the group's price target as PV unit sales drastically increase by 37% (compared to the baseline scenario) in FY 2035. The second scenario changes the timeline in which price parity between EVs and ICE powered vehicles is expected to be achieved. In the baseline, price parity for cars is presumed to be present by FY 2030, shifting to FY 2035 for CVs due to larger battery packs per vehicle. In the second case, it is assumed that price parity will only be achieved 5 years later for each segment, particularly due to remaining high input prices for vehicle batteries (refer to Figure 49). The third scenario is based on the price parity scenario, but also takes into consideration how overall vehicle prices will develop in the long-term. Lower and higher growth rates of vehicle prices were obtained by subtracting /adding 20 bps to the long-term rates of the Indian vehicle price indices used in the base case. In the worst case, EV price parity is achieved early on, but overall vehicle prices are presumed to grow slower than in the past, having negative effects on Tata Motors' revenues. In the best case, price parity occurs later and overall vehicle prices grow faster, resulting in positive margin effects (EBITDA margin up 43 BPS in FY 2035 compared to the worst case) and an improved price target.

Sensitivity Analysis

In addition to the scenario analysis, a sensitivity analysis was performed on the calculated WACC and the perpetuity growth rate. The range for the WACC was chosen according to the lower and upper bounds obtained from the derivation of equity betas. In terms of terminal growth rate, restrictions were set 50 bps below and above the baseline rate. In the base case, the perpetuity growth rate in the DCF is set to 4.5%. This is based on the long term Indian GDP forecast, which is expected to grow at an average annual growth rate of 5% in real terms until 2050. To account for the likely case of real GDP growing slower in the period after 2050, we decided to lower our terminal growth assumption by 50 bps in the base case. The output of the performed sensitivity analysis can be examined in Figure 51, and will be further put into perspective in the Valuation Summary.

Multiples Analysis

To perform the multiples analysis, the P/E, P/B, P/S, EV/EBITDA, and EV/EBIT ratios of several comparable companies were used. Using the average and median values of those ratios, a valuation of Tata Motors was conducted. The average valuation for Tata Motors results in a target stock price of INR 992, while the median value is INR 424, showing a large discrepancy between the two

targets. Notice that in Figure 50, the multiples for each comparable company are vastly different, with no apparent trend.

Valuation Summary

In conclusion, Tata Motors has high growth potential, driven by a solid market outlook, promising strategy and product portfolio, and one of the world's leading luxury vehicle manufacturers as subsidiary. Free Cash Flows of the core business are expected to turn negative in the short term due to large investments being deployed, significantly recovering to INR 174 billion by FY 2035. For the valuation we assumed an annuity after FY 2035 of 10% for 5 years, as the company's cash flow growth is only starting to stabilize in the last two years of the forecast period, with 12.7% and 11.5%. Therefore, a growth rate of 10% for 5 years seems appropriate, to afterwards switch to a perpetuity growth of 4.5%.

Additionally, we anticipate dividend payments of INR 6 per share, as the company is expected to have a record-breaking FY 2024 with core NOPLAT being up more than 300% compared to FY 2023. Tata Motors did not pay dividends since 2016, meaning the amount of dividend is very uncertain at this point, however in 2023 the company paid dividends of 2 IRN per share (0.28% dividend yield).

Figure 51: *Sensitivity Analysis of WACC (incl. Lower & Upper Bounds) over Perpetuity Growth Rate*

Growth \ WACC	6.39%	7.13%	7.87%	8.48%	9.10%
4.00%	1207	920	744	643	567
4.25%	1312	974	776	664	582
4.50%	1445	1039	**813**	689	599
4.75%	1619	1117	855	716	618
5.00%	1854	1213	904	748	639

Source: *Nova SBE Equity Research*

Finally, the target stock price obtained through the DCF valuation in the base case is INR 813, indicating that Tata Motors is currently undervalued by about 11.4%. The results obtained from the scenario analysis indicate a range of 773 INR to 1,000 INR for the worst and best case, respectively, resulting in upside potential in every case. Regarding the sensitivity analysis and multiples analysis, the price range is larger, being between 542-1,751 INR and 424-992 INR, respectively.

We believe, that even though Tata's stock price has already significantly gained since JLR's half year result announcement, the company's stock still has potential to increase in the next year. Therefore, we give a BUY recommendation with an estimated shareholder return of 12.2%.

Appendix

1. Reorganized Balance Sheet

	Historical Data							
INR billion	*FY 2018*	*FY 2019*	*FY 2020*	*FY 2021*	*FY 2022*	*FY 2023*	*FY 2024*	*FY 2025*
Operating								
Property, plant and equipment	**838.81**	**752.24**	**804.78**	**813.38**	**777.40**	**755.00**	**800.38**	**844.27**
Inventories	**426.25**	**389.14**	**373.62**	**359.95**	**350.89**	**406.00**	**567.73**	**565.52**
Operating Cash	**59.46**	**59.46**	**51.53**	**49.31**	**54.84**	**68.88**	**84.93**	**84.62**
Accounts receivable	**432.78**	**520.03**	**417.59**	**468.98**	**450.48**	**459.31**	**700.54**	**698.05**
Intangible assets	**677.60**	**574.17**	**657.19**	**608.40**	**539.81**	**524.88**	**888.25**	**884.71**
Right of use assets	-	-	**62.33**	**64.23**	**65.94**	**76.94**	**82.09**	**81.79**
Accounts payable	**795.15**	**750.76**	**697.45**	**732.00**	**640.57**	**749.93**	**1,079.84**	**1,076.00**
Provisions (current + non-current)	**186.67**	**217.90**	**247.70**	**261.74**	**233.93**	**246.59**	**367.83**	**366.38**
Goodwill	**1.16**	**1.08**	**0.99**	**0.99**	**0.99**	**0.99**	**3.27**	**3.55**
Other assets (current + non-current)	**99.44**	**93.04**	**111.28**	**76.07**	**128.10**	**175.81**	**172.54**	**171.91**
Other financial assets (current + non-current)	**46.51**	**49.00**	**52.11**	**63.01**	**60.50**	**68.90**	**88.61**	**88.29**
Income tax assets/liabilities (current + non-current)	**-0.73**	**0.31**	**-0.60**	**1.52**	**-0.16**	**5.10**	**0.10**	**-0.08**
Deferred tax assets/liabilities	**-34.78**	**12.90**	**14.11**	**25.80**	**12.07**	**10.84**	**23.55**	**23.49**
Assets classified as held-for-sale	**14.97**	**1.60**	**1.92**	**2.19**	**4.92**	**8.18**	**5.38**	**5.34**
Investments in equity accounted investees	**44.49**	**42.96**	**33.83**	**31.68**	**31.80**	**33.36**	**47.88**	**46.72**
Other financial liabilities (current + non-current)	**47.80**	**45.44**	**109.94**	**102.54**	**94.45**	**114.58**	**147.49**	**147.67**
Other liabilities (current + non-current)	**154.37**	**196.60**	**136.28**	**186.00**	**156.06**	**163.86**	**257.31**	**256.82**
Total operating invested capital	**1,421.97**	**1,285.22**	**1,389.31**	**1,283.21**	**1,352.56**	**1,319.21**	**1,612.75**	**1,651.31**
Operating invested capital commercial vehicles	272.88	252.37	193.65	158.34	250.94	271.03	302.25	308.85
Operating invested capital passenger vehicles	66.01	62.63	50.84	75.44	150.49	180.90	208.95	224.74
Operating invested capital Jaguar Land Rover	1,081.94	969.77	1,142.00	1,046.36	946.69	864.22	1,098.13	1,114.21
Operating invested capital vehicle financing	1.14	0.45	2.82	3.07	4.44	3.05	3.41	3.51
NWC Commercial vehicles	10.85	22.13	3.03	-4.20	13.74	9.62	11.43	11.45
NWC Passenger vehicles	-2.91	1.72	2.74	-2.69	8.49	8.02	7.60	8.26
NWC Jaguar Land Rover	22.49	61.40	2.76	-7.39	52.93	32.97	38.90	37.96
NWC Vehicle Financing	0.62	0.54	-4.72	-3.43	-1.49	-2.06	-2.98	-3.06
NWC Total	**31.05**	**85.79**	**3.81**	**-17.71**	**73.68**	**48.55**	**54.94**	**54.61**
Other assets/liabilities Commercial vehicles	96.98	82.40	76.29	52.44	88.42	105.35	128.52	128.84
Other assets/liabilities Passenger vehicles	28.58	24.78	15.30	22.96	51.86	67.31	88.28	95.91
Other assets/liabilities Jaguar Land Rover	428.15	342.86	485.62	410.30	359.30	341.12	539.10	526.12
Other assets/liabilities Vehicle Financing	-1.59	-2.85	3.51	1.84	1.91	1.88	1.53	1.57
Other assets/liabilities Total	**552.11**	**447.19**	**580.72**	**487.54**	**501.48**	**515.67**	**757.43**	**752.44**
Non-Operating								
Property, plant and equipment	**11.64**	**10.06**	**10.61**	**9.66**	**11.73**	**10.61**	**16.55**	**18.37**
Inventories	**1.01**	**0.88**	**0.91**	**0.92**	**1.56**	**1.60**	**1.71**	**1.90**
Operating cash	**0.71**	**0.71**	**0.61**	**0.52**	**0.76**	**0.96**	**1.07**	**1.18**
Accounts receivable	**5.14**	**6.18**	**4.92**	**4.96**	**6.25**	**6.40**	**8.62**	**9.57**
Intangible assets	**7.46**	**6.39**	**7.35**	**6.09**	**7.00**	**6.81**	**10.60**	**11.76**
Right of use assets	-	-	**0.74**	**0.68**	**0.92**	**1.07**	**0.86**	**0.95**
Accounts payable	**9.45**	**8.92**	**8.22**	**7.74**	**8.89**	**10.46**	**13.67**	**15.17**
Provisions (current + non-current)	**2.24**	**2.62**	**2.96**	**2.81**	**3.29**	**3.48**	**4.46**	**4.95**
Acceptances	**49.01**	**31.77**	**27.71**	**78.60**	**97.80**	**71.96**	**90.01**	**89.82**
Short-term deposits	**193.62**	**105.74**	**148.29**	**143.46**	**20.38**	**44.87**	**168.67**	**168.30**
Goodwill	**0.00**	**6.40**	**6.78**	**7.05**	**7.08**	**7.42**	**8.82**	**8.80**
Other assets (current + non-current)	**1.19**	**1.11**	**1.32**	**0.81**	**1.78**	**2.46**	**2.11**	**2.34**
Other financial assets (current + non-current)	**62.53**	**33.14**	**62.73**	**84.88**	**59.18**	**67.39**	**41.92**	**41.83**
Income tax assets/liabilities (current + non-current)	**-3.77**	**1.60**	**3.14**	**6.30**	**2.19**	**0.51**	**2.62**	**2.62**
Deferred tax assets/liabilities	**21.69**	**23.70**	**21.05**	**3.85**	**11.06**	**26.94**	**26.27**	**26.24**
Investments	**154.21**	**104.36**	**118.90**	**204.19**	**250.30**	**217.03**	**263.74**	**263.17**
Assets classified as held-for-sale	**0.18**	**0.02**	**0.02**	**0.02**	**0.01**	**0.09**	**0.08**	**0.09**
Investments in equity accounted investees	**-0.59**	**10.39**	**10.36**	**10.33**	**11.70**	**13.40**	**14.01**	**13.98**
Other financial liabilities (current + non-current)	**0.04**	**0.04**	**0.69**	**0.92**	**0.95**	**1.06**	**0.95**	**1.06**
Other liabilities (current + non-current)	**1.83**	**2.33**	**1.54**	**2.26**	**2.17**	**2.20**	**3.18**	**3.53**
Total non-operating invested capital	**392.42**	**265.01**	**356.62**	**391.37**	**278.80**	**318.41**	**455.38**	**456.59**
Total invested capital	**1,814.39**	**1,550.23**	**1,745.93**	**1,674.59**	**1,631.36**	**1,637.62**	**2,068.13**	**2,107.90**
NWC Non-operating	**17.92**	**9.11**	**15.89**	**32.41**	**16.56**	**19.46**	**28.75**	**28.41**
Other assets/liabilities non-operating	**362.86**	**245.83**	**330.12**	**349.30**	**250.51**	**288.34**	**410.08**	**409.81**
Financial invested capital								
Total Debt	**987.87**	**1,147.59**	**1,280.43**	**1,422.62**	**1,516.78**	**1,407.30**	**875.47**	**968.65**
Short-term borrowings and current portion of long-term del	**277.29**	**351.84**	**354.95**	**427.92**	**419.18**	**369.65**	**248.21**	**274.98**
Long-term debt	**611.42**	**708.07**	**833.05**	**931.02**	**977.48**	**886.85**	**558.03**	**619.73**
Other financial liabilities (current)	**99.16**	**87.68**	**92.44**	**63.68**	**120.12**	**150.80**	**69.24**	**73.94**
Excess cash	**87.00**	**155.43**	**132.54**	**267.17**	**325.99**	**249.03**	**306.16**	**305.50**
Net Debt	**900.87**	**992.16**	**1,147.89**	**1,155.45**	**1,190.80**	**1,158.27**	**569.31**	**663.15**
Financial invested capital commercial vehicles	**173.54**	**186.41**	**158.84**	**156.34**	**224.15**	**230.68**	**96.29**	**109.78**
Financial invested capital passenger vehicles	**42.42**	**46.08**	**48.19**	**79.59**	**137.52**	**157.91**	**28.62**	**36.53**
Financial invested capital Jaguar Land Rover	**663.81**	**736.11**	**909.67**	**886.96**	**794.26**	**739.04**	**428.95**	**499.02**
Financial invested capital vehicle financing	**10.52**	**11.91**	**17.93**	**20.26**	**18.56**	**14.92**	**8.55**	**10.13**
Financial invested capital non-operating	**10.58**	**11.64**	**13.27**	**12.30**	**16.30**	**15.72**	**6.91**	**7.69**
Total financial invested capital	**900.87**	**992.16**	**1,147.89**	**1,155.45**	**1,190.80**	**1,158.27**	**569.31**	**663.15**
Non controlling interest	**5.36**	**5.33**	**8.23**	**15.83**	**42.81**	**72.88**	**78.61**	**86.97**
Enterprise value growth rate							8%	11%
Equity (calculated)	**908.16**	**552.74**	**589.80**	**503.30**	**397.76**	**406.48**	**1,420.21**	**1,357.78**

Forecast									
FY 2026	*FY 2027*	*FY 2028*	*FY 2029*	*FY 2030*	*FY 2031*	*FY 2032*	*FY 2033*	*FY 2034*	*FY 2035*
888.09	932.09	976.34	989.80	1,003.63	1,017.93	1,032.80	1,048.22	1,064.19	1,080.72
556.91	564.15	595.71	624.14	644.94	669.98	696.28	722.68	749.15	775.69
83.36	84.48	89.24	93.54	96.69	100.47	104.43	108.41	112.41	116.41
687.65	696.87	736.14	771.57	797.60	828.73	861.43	894.28	927.21	960.24
871.17	882.41	931.67	976.03	1,008.45	1,047.54	1,088.61	1,129.83	1,171.15	1,212.57
80.57	81.64	86.24	90.39	93.43	97.08	100.90	104.75	108.60	112.47
1,059.97	1,074.18	1,134.71	1,189.33	1,229.45	1,277.44	1,327.84	1,378.47	1,429.24	1,480.15
360.79	365.46	385.88	404.27	417.72	433.92	450.94	468.03	485.16	502.33
3.75	3.98	4.22	4.41	4.53	4.66	4.89	5.13	5.37	5.61
169.33	171.58	181.23	189.93	196.31	203.96	211.99	220.06	228.16	236.27
86.98	88.14	93.11	97.59	100.88	104.82	108.96	113.11	117.28	121.45
-0.25	-0.38	-0.39	-0.38	-0.36	-0.34	-0.38	-0.42	-0.45	-0.49
23.17	23.51	24.86	26.09	27.01	28.08	29.21	30.34	31.47	32.62
5.24	5.30	5.60	5.86	6.06	6.30	6.54	6.79	7.04	7.28
45.00	44.63	47.20	49.55	51.20	53.33	55.24	57.19	59.18	61.21
146.09	148.53	156.89	164.37	169.82	176.32	183.39	190.48	197.59	204.71
253.38	257.06	271.57	284.62	294.19	305.61	317.74	329.93	342.16	354.41
1,680.74	1,733.18	1,822.12	1,875.92	1,919.20	1,969.25	2,020.98	2,073.46	2,126.61	2,180.45
315.80	328.21	341.29	349.99	358.40	367.00	376.66	385.98	394.89	403.40
238.01	252.27	266.82	274.41	279.85	285.83	294.80	303.98	313.38	322.98
1,123.36	1,148.97	1,209.93	1,247.10	1,276.22	1,311.43	1,344.26	1,377.96	1,412.51	1,447.93
3.56	3.74	4.08	4.42	4.72	4.98	5.26	5.54	5.83	6.13
11.51	12.01	12.57	13.10	13.60	14.11	14.69	15.24	15.75	16.22
8.71	9.25	9.81	10.26	10.53	10.84	11.38	11.93	12.49	13.05
36.56	36.26	38.35	40.25	41.60	43.33	44.88	46.46	48.08	49.73
-3.11	-3.27	-3.57	-3.87	-4.13	-4.35	-4.60	-4.84	-5.10	-5.35
53.67	54.26	57.16	59.75	61.60	63.93	66.36	68.79	71.22	73.65
129.48	135.14	141.41	147.37	152.98	158.69	165.28	171.47	177.21	182.50
101.22	107.44	113.93	119.14	122.31	125.93	132.20	138.58	145.05	151.62
506.67	502.57	531.45	557.89	576.55	600.54	621.99	643.92	666.32	689.20
1.60	1.67	1.83	1.98	2.12	2.23	2.36	2.48	2.61	2.75
738.97	746.83	788.63	826.38	853.96	887.39	921.83	956.45	991.20	1,026.07
20.39	22.63	23.76	24.95	26.20	27.51	28.88	30.33	31.84	33.43
2.11	2.34	2.46	2.58	2.71	2.85	2.99	3.14	3.29	3.46
1.31	1.46	1.53	1.61	1.69	1.77	1.86	1.95	2.05	2.15
10.62	11.78	12.37	12.99	13.64	14.32	15.04	15.79	16.58	17.41
13.06	14.49	15.21	15.98	16.77	17.61	18.49	19.42	20.39	21.41
1.06	1.18	1.23	1.30	1.36	1.43	1.50	1.57	1.65	1.74
16.84	18.69	19.62	20.60	21.63	22.71	23.85	25.04	26.29	27.61
5.49	6.09	6.40	6.72	7.05	7.40	7.78	8.16	8.57	9.00
88.63	89.95	95.01	99.59	102.98	107.02	111.26	115.52	119.81	124.10
166.09	168.56	178.04	186.62	192.97	200.53	208.48	216.47	224.50	232.55
8.68	8.81	9.31	9.76	10.09	10.48	10.90	11.32	11.74	12.16
2.60	2.88	3.03	3.18	3.34	3.50	3.68	3.86	4.06	4.26
41.28	41.90	44.25	46.38	47.96	49.84	51.82	53.80	55.80	57.80
2.58	2.62	2.77	2.90	3.00	3.12	3.24	3.36	3.49	3.61
25.92	26.33	27.80	29.14	30.14	31.33	32.57	33.82	35.08	36.34
259.70	263.57	278.40	291.80	301.73	313.56	325.99	338.49	351.04	363.63
0.10	0.11	0.12	0.12	0.13	0.13	0.14	0.15	0.16	0.16
13.80	14.00	14.79	15.50	16.03	16.66	17.32	17.98	18.65	19.32
1.17	1.30	1.37	1.43	1.50	1.58	1.66	1.74	1.83	1.92
3.92	4.35	4.56	4.79	5.03	5.28	5.55	5.83	6.12	6.42
453.24	462.28	488.11	511.67	529.55	550.65	572.81	595.17	617.69	640.38
2,133.98	2,195.46	2,310.24	2,387.60	2,448.74	2,519.89	2,593.80	2,668.63	2,744.30	2,820.83
27.70	27.82	29.41	30.82	31.81	33.01	34.28	35.54	36.80	38.05
405.16	411.83	434.95	455.91	471.55	490.13	509.65	529.30	549.05	568.89
1,073.73	1,195.01	1,331.92	1,416.13	1,500.46	1,588.40	1,678.73	1,771.27	1,866.07	1,963.22
301.07	335.74	368.86	392.37	420.17	444.14	468.55	494.10	520.06	547.60
690.72	767.19	851.74	904.03	960.39	1,017.18	1,075.14	1,133.79	1,194.01	1,256.27
81.95	92.08	111.32	119.73	119.90	127.08	135.04	143.39	152.00	159.35
301.48	305.97	323.18	338.74	350.27	364.00	378.43	392.94	407.50	422.12
772.25	889.04	1,008.74	1,077.38	1,150.19	1,224.40	1,300.30	1,378.33	1,458.57	1,541.10
124.38	148.39	179.52	189.75	195.89	209.03	222.78	237.92	252.89	266.65
48.98	66.97	85.25	88.03	84.27	93.55	101.69	109.42	115.78	120.78
578.20	650.28	717.58	772.13	840.69	890.57	942.68	996.01	1,053.07	1,114.93
12.08	13.64	14.66	15.18	16.53	17.59	18.60	19.55	20.52	21.61
8.61	9.76	11.73	12.29	12.81	13.67	14.55	15.43	16.32	17.12
772.25	889.04	1,008.74	1,077.38	1,150.19	1,224.40	1,300.30	1,378.33	1,458.57	1,541.10
96.41	107.30	119.59	127.15	134.73	142.62	150.73	159.04	167.55	176.28
11%	11%	11%	6%	6%	6%	6%	6%	5%	5%
1,265.32	1,199.12	1,181.90	1,183.06	1,163.83	1,152.87	1,142.76	1,131.25	1,118.18	1,103.45

2. Reorganized Income Statement

	Historical Data						
INR billion	*FY 2019*	*FY 2020*	*FY 2021*	*FY 2022*	*FY 2023*	*FY 2024*	*FY 2025*
Core Business							
Revenues	**2,972.93**	**2,576.58**	**2,465.39**	**2,742.10**	**3,443.84**	**4,199.86**	**4,210.39**
Tata Brand Vehicles	**721.15**	**466.01**	**494.84**	**833.47**	**1,182.96**	**1,339.47**	**1,389.95**
Commercial Vehicles	579.50	362.13	329.66	519.02	705.61	772.30	778.22
Passenger Vehicles	141.65	103.88	165.19	314.45	477.35	567.17	611.73
JLR	**2,216.66**	**2,070.32**	**1,926.62**	**1,864.43**	**2,216.13**	**2,803.02**	**2,761.41**
Vehicle Financing	**35.13**	**40.26**	**43.93**	**44.20**	**44.74**	**57.38**	**59.03**
Material Cost	**-1,960.35**	**-1,668.97**	**-1,581.67**	**-1,805.86**	**-2,260.74**	**-2,529.17**	**-2,723.47**
Tata Brand Vehicles	**-525.32**	**-343.22**	**-375.83**	**-658.19**	**-896.61**	**-983.48**	**-1,062.48**
Commercial Vehicles	-422.14	-266.71	-250.37	-399.99	-528.28	-563.78	-591.45
Passenger Vehicles	-103.18	-76.51	-125.46	-258.20	-368.33	-419.70	-471.03
JLR	**-1,432.39**	**-1,323.64**	**-1,203.63**	**-1,143.78**	**-1,360.32**	**-1,541.66**	**-1,656.84**
Vehicle Financing	**-2.64**	**-2.11**	**-2.22**	**-3.89**	**-3.81**	**-4.03**	**-4.14**
Employee Cost	**-339.55**	**-301.95**	**-276.31**	**-295.50**	**-319.98**	**-380.34**	**-381.56**
Tata Brand Vehicles	**-58.53**	**-59.43**	**-57.05**	**-50.17**	**-59.96**	**-64.95**	**-67.80**
Commercial Vehicles	-45.77	-44.60	-35.99	-37.45	-42.73	-45.57	-46.45
Passenger Vehicles	-12.76	-14.83	-21.06	-12.72	-17.23	-19.39	-21.35
JLR	**-274.34**	**-234.02**	**-211.23**	**-230.58**	**-244.58**	**-299.17**	**-296.73**
Vehicle Financing	**-6.68**	**-8.51**	**-8.04**	**-14.74**	**-15.45**	**-16.22**	**-17.03**
Other Expenses	**-657.01**	**-601.10**	**-470.38**	**-579.09**	**-706.76**	**-1,033.00**	**-1,159.92**
Tata Brand Vehicles	**-160.86**	**-131.46**	**-104.84**	**-157.86**	**-205.17**	**-269.03**	**-285.95**
Commercial Vehicles	-107.14	-82.81	-62.11	-92.58	-117.46	-142.32	-151.05
Passenger Vehicles	-53.72	-48.65	-42.72	-65.28	-87.71	-126.71	-134.90
JLR	**-489.50**	**-460.06**	**-354.42**	**-405.82**	**-479.58**	**-746.51**	**-856.01**
Vehicle Financing	**-6.65**	**-9.58**	**-11.12**	**-15.41**	**-22.01**	**-17.45**	**-17.96**
Expenditure Capitalized	**196.60**	**175.03**	**128.49**	**143.97**	**184.35**	**224.82**	**225.38**
Tata Brand Vehicles	**47.69**	**31.66**	**25.79**	**43.76**	**63.32**	**71.70**	**74.40**
Commercial Vehicles	38.32	24.60	17.18	27.25	37.77	41.34	41.66
Passenger Vehicles	9.37	7.06	8.61	16.51	25.55	30.36	32.75
JLR	**146.58**	**140.64**	**100.41**	**97.89**	**118.63**	**150.05**	**147.82**
Vehicle Financing	**2.32**	**2.73**	**2.29**	**2.32**	**2.40**	**3.07**	**3.16**
Adjusted EBITDA	**212.62**	**179.59**	**265.52**	**205.62**	**340.71**	**482.17**	**170.82**
Tata Brand Vehicles	**24.12**	**-36.45**	**-17.08**	**11.01**	**84.54**	**93.70**	**48.12**
Commercial Vehicles	42.77	-7.40	-1.64	16.25	54.91	61.98	30.94
Passenger Vehicles	-18.65	-29.05	-15.44	-5.24	29.63	31.72	17.19
JLR	**167.01**	**193.24**	**257.76**	**182.13**	**250.30**	**365.72**	**99.64**
Vehicle Financing	**21.49**	**22.80**	**24.84**	**12.48**	**5.87**	**22.75**	**23.06**
Depreciation & Amortization	**-227.41**	**-205.66**	**-228.36**	**-237.81**	**-239.30**	**-206.83**	**-233.00**
Tata Brand Vehicles	**-29.79**	**-32.70**	**-36.44**	**-39.17**	**-40.77**	**-50.66**	**-67.08**
Commercial Vehicles	-16.16	-15.97	-16.46	-16.86	-15.65	-18.99	-19.75
Passenger Vehicles	-13.63	-16.73	-19.98	-22.31	-25.12	-31.67	-47.33
JLR	**-197.44**	**-172.45**	**-191.31**	**-198.04**	**-197.95**	**-155.72**	**-165.25**
Vehicle Financing	**-0.19**	**-0.51**	**-0.61**	**-0.60**	**-0.57**	**-0.45**	**-0.68**
Adjusted EBIT	**-14.74**	**-26.13**	**37.11**	**-32.18**	**101.41**	**275.34**	**-62.18**
Tata Brand Vehicles	**-5.62**	**-69.21**	**-53.57**	**-28.16**	**43.77**	**43.04**	**-18.95**
Commercial Vehicles	26.60	-23.37	-18.10	-0.61	39.25	42.99	11.19
Passenger Vehicles	-32.27	-45.78	-35.42	-27.54	4.51	0.05	-30.14
JLR	**-30.42**	**20.80**	**66.45**	**-15.91**	**52.35**	**210.00**	**-65.61**
Vehicle Financing	**21.30**	**22.29**	**24.23**	**11.88**	**5.30**	**22.30**	**22.38**
Statutory Taxes	**2.55**	**6.21**	**-7.20**	**4.36**	**-29.79**	**-56.91**	**12.85**
Tata Brand Vehicles	**0.98**	**16.46**	**10.37**	**3.82**	**-12.86**	**-8.90**	**3.92**
Commercial Vehicles	-4.58	5.56	3.51	0.08	-11.53	-8.89	-2.31
Passenger Vehicles	5.56	10.90	6.86	3.73	-1.32	-0.01	6.23
JLR	**5.24**	**-4.95**	**-12.87**	**2.16**	**-15.38**	**-43.41**	**13.56**
Vehicle Financing	**-3.67**	**-5.31**	**-4.69**	**-1.61**	**-1.56**	**-4.61**	**-4.63**
Core Tax Adjustments	**0.08**	**-0.47**	**-0.05**	**0.04**	**0.50**	**0.02**	**0.02**
Tata Brand Vehicles	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Commercial Vehicles	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Passenger Vehicles	0.00	0.00	0.00	0.00	0.00	0.00	0.00
JLR	**0.08**	**-0.47**	**-0.05**	**0.04**	**0.50**	**0.02**	**0.02**
Vehicle Financing	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
NOPLAT	**-12.16**	**-20.33**	**29.91**	**-27.78**	**72.12**	**218.45**	**-49.31**
Tata Brand Vehicles	**-4.69**	**-52.68**	**-43.15**	**-24.34**	**30.91**	**34.14**	**-15.03**
Commercial Vehicles	22.02	-17.80	-14.59	-0.53	27.72	34.10	8.88
Passenger Vehicles	-26.71	-34.88	-28.55	-23.81	3.19	0.04	-23.91
JLR	**-25.10**	**15.37**	**53.53**	**-13.71**	**37.47**	**166.62**	**-52.03**
Vehicle Financing	**17.63**	**16.98**	**19.53**	**10.27**	**3.74**	**17.69**	**17.75**
Non-Core Business							
Revenues	**20.73**	**17.53**	**16.10**	**24.13**	**-1.37**	**53.40**	**59.25**
Other Operations	35.32	30.38	26.08	38.04	48.01	53.29	59.14
Unallocatable - Tata and other brand vehicles	0.00	0.00	0.16	2.26	2.64	0.00	0.00
Intra-segment eliminations - Automotive and related activity	-1.16	0.00	0.00	-5.28	-37.49	0.00	0.00
Inter-segment eliminations	-13.43	-12.71	-9.99	-11.35	-14.79	0.00	0.00
Total Non-core Cost	**-267.26**	**-11.13**	**-107.44**	**28.42**	**22.49**	**16.76**	**14.82**
Other Operations Cost	-9.66	-8.25	-6.27	-16.43	-21.11	-17.66	-19.60
Defined benefit pension plan amendment cost/ (credit)	-1.48	0.00	-0.85	0.00	14.95	0.00	0.00
Provisions	0.00	-7.77	6.63	-3.42	2.14	0.00	0.00
Impairment losses	-278.38	-7.99	3.71	0.00	0.61	0.00	0.00
Asset write downs	-13.19	-3.13	-153.04	0.56	-4.65	0.00	0.00
Other (income) / loss (net)	35.44	16.01	42.37	47.72	30.55	34.42	34.42
Depreciation & Amortization	**-2.78**	**-1.98**	**-1.28**	**-1.51**	**-1.59**	**-1.80**	**-2.81**
Non-Core Result before Taxes	**-249.31**	**4.42**	**-92.62**	**51.03**	**19.53**	**68.36**	**71.26**
Statutory Taxes	**42.95**	**-1.05**	**17.94**	**-6.92**	**-5.74**	**-14.13**	**-14.73**
Non-Core Tax Adjustments	**-29.37**	**-29.20**	**-47.98**	**-51.76**	**2.80**	**-31.10**	**-31.10**
Other comprehensive income/(loss) for the year, net of tax (i+ii)	**-50.08**	**116.56**	**29.01**	**-4.32**	**-19.15**	**14.41**	**14.41**
Non-core Result	**-285.80**	**90.73**	**-93.64**	**-11.96**	**-2.55**	**37.53**	**39.84**
Financing							
Foreign exchange (gain)/loss (net)	-5.82	-16.99	18.29	-0.81	1.04	0.00	0.00
Interest income	7.86	11.70	4.93	6.25	12.51	6.99	7.01
Interest expense (net)	-57.59	-72.55	-80.84	-93.26	-102.39	-167.94	-178.04
Share of (profit)/loss of equity accounted investees	2.10	-10.00	-3.79	-0.74	3.36	0.00	0.00
Financing Result before Taxes	**-53.45**	**-87.84**	**-61.41**	**-88.56**	**-85.48**	**-160.95**	**-171.02**
Statutory Taxes	**9.21**	**20.91**	**11.90**	**12.01**	**25.11**	**33.27**	**35.35**
Financing Result	**-44.24**	**-66.93**	**-49.51**	**-76.55**	**-60.37**	**-127.68**	**-135.67**
Total Comprehensive Imcome	**-342.20**	**3.47**	**-113.24**	**-116.29**	**9.19**	**128.30**	**-145.14**

Forecast									
FY 2026	*FY 2027*	*FY 2028*	*FY 2029*	*FY 2030*	*FY 2031*	*FY 2032*	*FY 2033*	*FY 2034*	*FY 2035*
4,148.03	**4,212.79**	**4,441.69**	**4,645.91**	**4,800.14**	**4,990.15**	**5,196.43**	**5,401.03**	**5,608.45**	**5,818.67**
1,425.00	**1,501.03**	**1,581.05**	**1,649.87**	**1,701.83**	**1,762.67**	**1,849.96**	**1,931.73**	**2,012.47**	**2,092.16**
786.18	823.76	865.11	901.75	936.71	972.25	1,012.64	1,051.03	1,087.14	1,120.95
638.82	677.28	715.95	748.12	765.12	790.42	837.31	880.71	925.34	971.21
2,663.06	**2,648.85**	**2,791.91**	**2,921.60**	**3,018.85**	**3,143.61**	**3,257.95**	**3,376.01**	**3,497.82**	**3,623.40**
59.97	**62.90**	**68.73**	**74.44**	**79.46**	**83.87**	**88.52**	**93.28**	**98.15**	**103.12**
-2,691.44	**-2,741.29**	**-2,888.73**	**-3,019.57**	**-3,117.93**	**-3,239.59**	**-3,375.33**	**-3,509.08**	**-3,644.32**	**-3,781.03**
-1,089.39	**-1,147.56**	**-1,208.76**	**-1,261.38**	**-1,301.04**	**-1,347.53**	**-1,414.34**	**-1,476.92**	**-1,538.73**	**-1,599.75**
-597.50	-626.05	-657.48	-685.33	-711.90	-738.91	-769.61	-798.78	-826.22	-851.92
-491.89	-521.50	-551.28	-576.05	-589.14	-608.62	-644.73	-678.14	-712.51	-747.83
-1,597.84	**-1,589.31**	**-1,675.15**	**-1,752.96**	**-1,811.31**	**-1,886.17**	**-1,954.77**	**-2,025.61**	**-2,098.69**	**-2,174.04**
-4.21	**-4.42**	**-4.83**	**-5.23**	**-5.58**	**-5.89**	**-6.21**	**-6.55**	**-6.89**	**-7.24**
-379.66	**-377.20**	**-394.18**	**-409.65**	**-420.59**	**-430.87**	**-440.32**	**-449.53**	**-458.50**	**-467.22**
-70.56	**-73.32**	**-76.51**	**-79.42**	**-81.88**	**-83.68**	**-86.36**	**-88.86**	**-91.19**	**-93.33**
-47.43	-48.82	-50.52	-52.11	-53.57	-55.05	-56.85	-58.49	-59.98	-61.31
-23.13	-24.50	-25.98	-27.31	-28.31	-28.63	-29.51	-30.37	-31.21	-32.02
-291.22	**-285.11**	**-297.96**	**-309.53**	**-316.98**	**-324.37**	**-330.00**	**-335.51**	**-340.89**	**-346.15**
-17.88	**-18.78**	**-19.72**	**-20.70**	**-21.74**	**-22.82**	**-23.96**	**-25.16**	**-26.42**	**-27.74**
-1,145.66	**-1,156.99**	**-1,203.26**	**-1,024.67**	**-1,058.92**	**-1,101.25**	**-1,146.15**	**-1,190.95**	**-1,236.52**	**-1,282.84**
-292.28	**-305.73**	**-319.87**	**-303.14**	**-312.59**	**-323.74**	**-339.88**	**-354.99**	**-369.93**	**-384.71**
-152.40	-158.79	-165.82	-160.06	-166.27	-172.57	-179.74	-186.56	-192.97	-198.97
-139.88	-146.95	-154.05	-143.07	-146.32	-151.16	-160.13	-168.43	-176.97	-185.74
-835.14	**-832.12**	**-862.48**	**-698.89**	**-722.15**	**-752.00**	**-779.35**	**-807.59**	**-836.73**	**-866.77**
-18.24	**-19.13**	**-20.91**	**-22.65**	**-24.17**	**-25.51**	**-26.93**	**-28.38**	**-29.86**	**-31.37**
222.04	**225.51**	**237.76**	**248.70**	**256.95**	**267.12**	**278.16**	**289.12**	**300.22**	**311.47**
76.28	**80.35**	**84.63**	**88.32**	**91.10**	**94.36**	**99.03**	**103.41**	**107.73**	**111.99**
42.08	44.10	46.31	48.27	50.14	52.04	54.21	56.26	58.19	60.00
34.20	36.25	38.32	40.05	40.96	42.31	44.82	47.14	49.53	51.99
142.55	**141.79**	**149.45**	**156.39**	**161.60**	**168.28**	**174.40**	**180.72**	**187.24**	**193.96**
3.21	**3.37**	**3.68**	**3.98**	**4.25**	**4.49**	**4.74**	**4.99**	**5.25**	**5.52**
153.31	**162.82**	**193.28**	**440.72**	**459.65**	**485.56**	**512.79**	**540.58**	**569.33**	**599.05**
49.06	**54.77**	**60.55**	**94.25**	**97.42**	**102.07**	**108.41**	**114.36**	**120.35**	**126.36**
30.94	34.19	37.59	52.52	55.12	57.76	60.65	63.46	66.16	68.76
18.12	20.58	22.96	41.73	42.30	44.32	47.76	50.91	54.19	57.61
81.41	**84.10**	**105.77**	**316.62**	**330.01**	**349.35**	**368.23**	**388.03**	**408.75**	**430.40**
22.84	**23.94**	**26.96**	**29.85**	**32.22**	**34.13**	**36.15**	**38.19**	**40.23**	**42.29**
-246.45	**-259.89**	**-273.36**	**-286.86**	**-290.77**	**-294.79**	**-298.96**	**-303.30**	**-307.82**	**-312.51**
-70.97	**-74.87**	**-78.77**	**-82.67**	**-83.73**	**-84.82**	**-85.94**	**-87.12**	**-88.36**	**-89.66**
-20.51	-21.27	-22.03	-22.79	-23.06	-23.35	-23.64	-23.95	-24.27	-24.60
-50.47	-53.61	-56.74	-59.88	-60.67	-61.47	-62.29	-63.17	-64.09	-65.06
-174.78	**-184.31**	**-193.84**	**-203.37**	**-206.16**	**-209.04**	**-212.03**	**-215.14**	**-218.35**	**-221.69**
-0.70	**-0.71**	**-0.74**	**-0.81**	**-0.88**	**-0.94**	**-0.99**	**-1.04**	**-1.10**	**-1.16**
-93.14	**-97.08**	**-80.08**	**153.86**	**168.89**	**190.77**	**213.83**	**237.27**	**261.51**	**286.54**
-21.92	**-20.10**	**-18.22**	**11.58**	**13.69**	**17.26**	**22.47**	**27.24**	**31.98**	**36.70**
10.43	12.92	15.56	29.73	32.06	34.41	37.00	39.50	41.89	44.15
-32.35	-33.03	-33.79	-18.16	-18.37	-17.15	-14.53	-12.26	-9.90	-7.45
-93.37	**-100.21**	**-88.07**	**113.24**	**123.85**	**140.32**	**156.20**	**172.89**	**190.39**	**208.71**
22.15	**23.23**	**26.22**	**29.04**	**31.35**	**33.20**	**35.16**	**37.14**	**39.13**	**41.13**
19.25	**20.07**	**16.55**	**-31.80**	**-34.91**	**-39.43**	**-44.20**	**-49.04**	**-54.05**	**-59.23**
4.53	**4.16**	**3.77**	**-2.39**	**-2.83**	**-3.57**	**-4.64**	**-5.63**	**-6.61**	**-7.59**
-2.16	-2.67	-3.22	-6.15	-6.63	-7.11	-7.65	-8.17	-8.66	-9.13
6.69	6.83	6.98	3.75	3.80	3.54	3.00	2.53	2.05	1.54
19.30	**20.71**	**18.20**	**-23.41**	**-25.60**	**-29.00**	**-32.29**	**-35.74**	**-39.35**	**-43.14**
-4.58	**-4.80**	**-5.42**	**-6.00**	**-6.48**	**-6.86**	**-7.27**	**-7.68**	**-8.09**	**-8.50**
0.02	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**
0.00	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.02	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**	**0.02**
0.00	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
-73.87	**-76.99**	**-63.51**	**122.08**	**134.00**	**151.36**	**169.65**	**188.25**	**207.48**	**227.33**
-17.39	**-15.95**	**-14.46**	**9.18**	**10.86**	**13.69**	**17.83**	**21.61**	**25.37**	**29.12**
8.28	10.25	12.35	23.59	25.43	27.30	29.35	31.34	33.23	35.03
-25.66	-26.20	-26.80	-14.40	-14.57	-13.60	-11.53	-9.73	-7.86	-5.91
-74.05	**-79.48**	**-69.85**	**89.85**	**98.27**	**111.33**	**123.93**	**137.17**	**151.06**	**165.59**
17.57	**18.43**	**20.80**	**23.04**	**24.87**	**26.33**	**27.89**	**29.47**	**31.05**	**32.63**
65.75	**72.96**	**76.54**	**80.37**	**84.38**	**88.60**	**93.03**	**97.68**	**102.56**	**107.68**
65.64	72.85	76.49	80.32	84.33	88.55	92.98	97.63	102.51	107.63
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12.66	**10.28**	**9.07**	**7.80**	**6.47**	**5.07**	**3.61**	**2.06**	**0.45**	**-1.25**
-21.75	-24.14	-25.35	-26.62	-27.95	-29.34	-30.81	-32.35	-33.97	-35.67
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
34.42	34.42	34.42	34.42	34.42	34.42	34.42	34.42	34.42	34.42
-3.12	**-3.46**	**-3.84**	**-4.03**	**-4.23**	**-4.44**	**-4.66**	**-4.90**	**-5.14**	**-5.40**
75.30	**79.78**	**81.77**	**84.14**	**86.62**	**89.23**	**91.97**	**94.84**	**97.86**	**101.03**
-15.56	**-16.49**	**-16.90**	**-17.39**	**-17.90**	**-18.44**	**-19.01**	**-19.60**	**-20.23**	**-20.88**
-31.10	**-31.10**	**-31.10**	**-31.10**	**-31.10**	**-31.10**	**-31.10**	**-31.10**	**-31.10**	**-31.10**
14.41	**14.41**	**14.41**	**14.41**	**14.41**	**14.41**	**14.41**	**14.41**	**14.41**	**14.41**
43.04	**46.59**	**48.18**	**50.05**	**52.02**	**54.09**	**56.26**	**58.55**	**60.94**	**63.45**
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.92	7.04	7.42	7.76	8.02	8.34	8.69	9.03	9.38	9.73
-189.31	-201.74	-211.10	-220.50	-230.28	-240.33	-250.58	-261.06	-271.76	-282.80
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-182.39	**-194.70**	**-203.68**	**-212.74**	**-222.26**	**-231.99**	**-241.90**	**-252.03**	**-262.38**	**-273.06**
37.70	**40.24**	**42.10**	**43.97**	**45.94**	**47.95**	**50.00**	**52.09**	**54.23**	**56.44**
-144.69	**-154.46**	**-161.58**	**-168.77**	**-176.32**	**-184.04**	**-191.90**	**-199.94**	**-208.15**	**-216.62**
-175.52	**-184.86**	**-176.91**	**3.36**	**9.70**	**21.42**	**34.02**	**46.86**	**60.27**	**74.17**

3. Forecasted Cash Flow Map by Operating Segment

	Historical Data						
INR billion	*FY 2019*	*FY 2020*	*FY 2021*	*FY 2022*	*FY 2023*	*FY 2024*	*FY 2025*
Core							
Commercial Vehicles							
NOPLAT	**22.02**	**-17.80**	**-14.59**	**-0.53**	**27.72**	**34.10**	**8.88**
Depreciation	16.16	15.97	16.46	16.86	15.65	18.99	19.75
Gross Cash Flow	**38.18**	**-1.83**	**1.87**	**16.33**	**43.38**	**53.09**	**28.62**
Capex	-1.04	-17.54	12.23	55.55	22.93	25.24	26.00
Increase in Net Working Capital	11.28	-19.10	-7.23	17.94	-4.20	1.86	0.09
Increase in Other Operating Assets and Liabilities	-14.58	-6.11	-23.85	35.98	16.67	23.30	0.98
Unlevered Free Cash Flow	**42.52**	**40.92**	**20.72**	**-93.13**	**7.97**	**2.69**	**1.55**
Passenger Vehicles							
NOPLAT	**-26.71**	**-34.88**	**-28.55**	**-23.81**	**3.19**	**0.04**	**-23.91**
Depreciation	13.63	16.73	19.98	22.31	25.12	31.67	47.33
Gross Cash Flow	**-13.09**	**-18.15**	**-8.58**	**-1.50**	**28.31**	**31.71**	**23.42**
Capex	9.42	13.39	42.35	57.28	40.55	39.17	54.83
Increase in Net Working Capital	4.63	1.02	-5.43	11.18	-0.46	-0.54	0.59
Increase in Other Operating Assets and Liabilities	-3.80	-9.48	7.66	28.90	15.52	19.65	6.84
Unlevered Free Cash Flow	**-23.33**	**-23.08**	**-53.16**	**-98.86**	**-27.31**	**-26.57**	**-38.84**
JLR							
NOPLAT	**-25.10**	**15.37**	**53.53**	**-13.71**	**37.47**	**166.62**	**-52.03**
Depreciation	197.44	172.45	191.31	198.04	197.95	155.72	165.25
Gross Cash Flow	**172.34**	**187.82**	**244.83**	**184.33**	**235.42**	**322.33**	**113.22**
Capex	131.64	260.56	181.14	89.05	153.63	185.72	195.25
Increase in Net Working Capital	38.91	-58.63	-10.16	60.33	-19.91	5.37	-0.57
Increase in Other Operating Assets and Liabilities	-85.28	142.76	-75.32	-51.00	-17.94	190.63	-7.90
Unlevered Free Cash Flow	**87.07**	**-156.86**	**149.17**	**85.96**	**119.64**	**-59.38**	**-73.56**
Vehicle Financing							
NOPLAT	**17.63**	**16.98**	**19.53**	**10.27**	**3.74**	**17.69**	**17.75**
Depreciation	0.19	0.51	0.61	0.60	0.57	0.45	0.68
Gross Cash Flow	**17.82**	**17.49**	**20.15**	**10.87**	**4.31**	**18.14**	**18.43**
Capex	0.83	1.80	1.24	-0.05	-0.21	2.08	0.82
Increase in Net Working Capital	-0.08	-5.27	1.29	1.95	-0.57	-0.92	-0.09
Increase in Other Operating Assets and Liabilities	-1.25	6.35	-1.67	0.07	-0.05	-0.34	0.04
Unlevered Free Cash Flow	**18.32**	**14.61**	**19.28**	**8.90**	**5.15**	**17.32**	**17.66**
Total Core Business							
NOPLAT	**-12.16**	**-20.33**	**29.91**	**-27.78**	**72.12**	**218.45**	**-49.31**
Depreciation	227.41	205.66	228.36	237.81	239.30	206.83	233.00
Gross Cash Flow	**215.25**	**185.32**	**258.27**	**210.02**	**311.42**	**425.27**	**183.69**
Capex	140.85	258.20	236.96	201.82	216.90	252.21	276.89
Increase in Net Working Capital	54.74	-81.98	-21.53	91.39	-25.13	5.77	0.02
Increase in Other Operating Assets and Liabilities	-104.92	133.53	-93.18	13.94	14.20	233.25	-0.03
Unlevered Free Cash Flow	**124.59**	**-124.42**	**136.01**	**-97.13**	**105.45**	**-65.94**	**-93.19**
Reinvestment Rate	*1125%*	*-512%*	*-355%*	*-250%*	*-46%*	*130%*	*-89%*
ROIC	*-1%*	*-2%*	*2%*	*-2%*	*5%*	*17%*	*-3%*

Non-core							
Non-operating Result	**-285.80**	**90.73**	**-93.64**	**-11.96**	**-2.55**	**37.53**	**39.84**
Depreciation	2.78	1.98	1.28	1.51	1.59	1.80	2.81
Gross Cash Flow	**-283.02**	**92.71**	**-92.36**	**-10.45**	**-0.97**	**39.33**	**42.65**
Capex	1.21	2.53	0.32	3.59	0.47	7.74	4.63
Increase in Net Working Capital	-8.80	6.77	16.52	-15.85	2.90	8.95	-0.15
Increase in other Operating Assets and Liabilities	-117.04	84.29	19.19	-98.79	37.81	117.39	2.14
Change in NCI	-0.03	2.90	7.60	26.98	30.07	4.00	5.11
Unlevered Free Cash Flow	**-158.42**	**2.02**	**-120.80**	**127.59**	**-12.08**	**-90.74**	**41.14**
Reinvestment Rate	*45%*	*98%*	*-29%*	*1167%*	*-373%*	*342%*	*-3%*
ROIC	*-73%*	*34%*	*-26%*	*-3%*	*-1%*	*12%*	*9%*

Financing							
Financing Result	**-44.24**	**-66.93**	**-49.51**	**-76.55**	**-60.37**	**-127.68**	**-135.67**
Change in Financial Invested Capital	91.30	155.73	7.55	35.35	-32.53	1,150.73	172.49
Net Cash Flow from Debt Holders	47.05	88.81	-41.96	-41.20	-92.90	1,023.05	36.82
Change in Equity	-355.42	37.06	-86.50	-105.55	8.72	-738.07	-129.92
Total Comprehensive Income	-342.20	3.47	-113.24	-116.29	9.19	128.30	-145.14
Net Cash Flow from Equity Holders	-13.22	33.59	26.74	10.75	-0.47	-866.37	15.22
Cash Flow from Financing	**33.83**	**122.40**	**-15.22**	**-30.46**	**-93.37**	**156.68**	**52.04**

Forecast									
FY 2026	*FY 2027*	*FY 2028*	*FY 2029*	*FY 2030*	*FY 2031*	*FY 2032*	*FY 2033*	*FY 2034*	*FY 2035*
8.28	**10.25**	**12.35**	**23.59**	**25.43**	**27.30**	**29.35**	**31.34**	**33.23**	**35.03**
20.51	21.27	22.03	22.79	23.06	23.35	23.64	23.95	24.27	24.60
28.78	**31.52**	**34.38**	**46.38**	**48.49**	**50.64**	**53.00**	**55.29**	**57.50**	**59.63**
26.76	27.52	28.28	25.04	25.41	25.78	26.18	26.58	26.99	27.41
0.12	0.55	0.61	0.54	0.52	0.52	0.60	0.57	0.53	0.50
1.32	6.25	6.87	6.09	5.81	5.91	6.72	6.38	6.00	5.62
0.58	**-2.80**	**-1.39**	**14.70**	**16.76**	**18.43**	**19.51**	**21.76**	**23.98**	**26.10**
-25.66	**-26.20**	**-26.80**	**-14.40**	**-14.57**	**-13.60**	**-11.53**	**-9.73**	**-7.86**	**-5.91**
50.47	53.61	56.74	59.88	60.67	61.47	62.29	63.17	64.09	65.06
24.80	**27.41**	**29.94**	**45.48**	**46.10**	**47.86**	**50.77**	**53.44**	**56.24**	**59.15**
57.97	61.11	64.24	61.75	62.58	63.44	64.39	65.37	66.41	67.49
0.36	0.51	0.51	0.43	0.22	0.33	0.62	0.57	0.59	0.61
4.16	5.90	5.93	4.94	2.61	3.88	7.20	6.66	6.85	7.04
-37.68	**-40.11**	**-40.75**	**-21.64**	**-19.32**	**-19.80**	**-21.44**	**-19.16**	**-17.61**	**-15.98**
-74.05	**-79.48**	**-69.85**	**89.85**	**98.27**	**111.33**	**123.93**	**137.17**	**151.06**	**165.59**
174.78	184.31	193.84	203.37	206.16	209.04	212.03	215.14	218.35	221.69
100.73	**104.84**	**124.00**	**293.23**	**304.43**	**320.37**	**335.97**	**352.31**	**369.41**	**387.28**
204.78	214.31	223.84	212.14	215.21	218.47	221.81	225.27	228.85	232.56
-1.35	-0.19	1.96	1.78	1.33	1.71	1.57	1.62	1.67	1.72
-18.66	-2.70	27.15	24.61	18.46	23.68	21.70	22.41	23.12	23.83
-84.04	**-106.58**	**-128.96**	**54.70**	**69.42**	**76.52**	**90.89**	**103.02**	**115.78**	**129.17**
17.57	**18.43**	**20.80**	**23.04**	**24.87**	**26.33**	**27.89**	**29.47**	**31.05**	**32.63**
0.70	0.71	0.74	0.81	0.88	0.94	0.99	1.04	1.10	1.16
18.26	**19.14**	**21.54**	**23.85**	**25.75**	**27.27**	**28.88**	**30.51**	**32.15**	**33.79**
0.78	0.96	1.24	1.29	1.30	1.31	1.38	1.45	1.51	1.58
-0.05	-0.15	-0.30	-0.30	-0.26	-0.23	-0.24	-0.25	-0.25	-0.26
0.02	0.08	0.15	0.15	0.13	0.12	0.12	0.13	0.13	0.13
17.51	**18.26**	**20.45**	**22.70**	**24.57**	**26.07**	**27.62**	**29.18**	**30.76**	**32.34**
-73.87	**-76.99**	**-63.51**	**122.08**	**134.00**	**151.36**	**169.65**	**188.25**	**207.48**	**227.33**
246.45	259.89	273.36	286.86	290.77	294.79	298.96	303.30	307.82	312.51
172.58	**182.90**	**209.85**	**408.93**	**424.76**	**446.15**	**468.61**	**491.55**	**515.29**	**539.84**
290.28	303.89	317.60	300.23	304.50	309.00	313.75	318.66	323.76	329.03
-0.92	0.72	2.78	2.45	1.81	2.34	2.54	2.51	2.54	2.57
-13.16	9.53	40.11	35.79	27.01	33.59	35.73	35.57	36.10	36.62
-103.62	**-131.24**	**-150.64**	**70.46**	**91.44**	**101.22**	**116.59**	**134.80**	**152.90**	**171.62**
-40%	*-70%*	*-137%*	*42%*	*32%*	*33%*	*31%*	*28%*	*26%*	*25%*
-4%	*-5%*	*-4%*	*7%*	*7%*	*8%*	*9%*	*9%*	*10%*	*11%*
43.04	**46.59**	**48.18**	**50.05**	**52.02**	**54.09**	**56.26**	**58.55**	**60.94**	**63.45**
3.12	3.46	3.84	4.03	4.23	4.44	4.66	4.90	5.14	5.40
46.16	**50.05**	**52.01**	**54.08**	**56.25**	**58.53**	**60.93**	**63.44**	**66.08**	**68.85**
5.13	5.70	4.97	5.22	5.48	5.75	6.04	6.34	6.66	6.99
-0.71	0.19	1.52	1.33	0.96	1.21	1.32	1.30	1.31	1.33
-4.59	7.51	22.26	19.97	15.30	18.71	20.28	20.17	20.48	20.79
5.49	6.06	6.57	4.83	4.90	5.07	5.21	5.32	5.44	5.56
51.81	**42.71**	**29.84**	**32.39**	**39.41**	**37.93**	**38.49**	**40.95**	**43.07**	**45.31**
-20%	*8%*	*38%*	*35%*	*24%*	*30%*	*32%*	*30%*	*29%*	*29%*
9%	*10%*	*10%*	*10%*	*10%*	*10%*	*10%*	*10%*	*10%*	*10%*
-144.69	**-154.46**	**-161.58**	**-168.77**	**-176.32**	**-184.04**	**-191.90**	**-199.94**	**-208.15**	**-216.62**
190.55	200.63	206.78	149.33	155.11	158.53	161.86	165.80	169.66	173.55
45.86	46.17	45.20	-19.44	-21.20	-25.51	-30.03	-34.14	-38.48	-43.07
-169.58	-142.50	-101.31	-80.05	-99.94	-92.24	-91.02	-94.76	-97.22	-99.69
-175.52	-184.86	-176.91	3.36	9.70	21.42	34.02	46.86	60.27	74.17
5.94	42.35	75.60	-83.42	-109.64	-113.65	-125.04	-141.62	-157.49	-173.86
51.80	**88.52**	**120.80**	**-102.86**	**-130.84**	**-139.16**	**-155.08**	**-175.75**	**-195.97**	**-216.93**

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Buy	Expected total return (including expected capital gains and expected dividend yield) of more than 10% over a 12-month period.
Hold	Expected total return (including expected capital gains and expected dividend yield) between 0% and 10% over a 12-month period.
Sell	Expected negative total return (including expected capital gains and expected dividend yield) over a 12-month period.

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Introduction

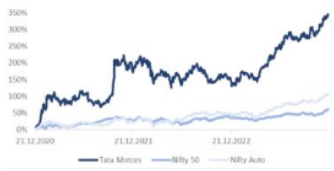
This part of the equity research “Accelerating into and Electric Future” was conducted by Henrik Michael Hiller (56190), as part of the joint report written together with Jessie Cooper Blahak about the valuation of Tata Motors Limited. In this part, the stock performance in the past will be analyzed, the macroeconomic parameters in the Indian automotive market will be examined, the commercial vehicle, passenger vehicle, and luxury car market will be investigated, and the operating margins of the company will be reviewed. In addition, the reader will get insights into the capital expenditures the company is planning in the future, in order to transition to an electric future, the net working capital requirements, the non-controlling interest, and the cost of capital calculations will be highlighted.

Furthermore, the actual valuation results using a DCF, with scenario and sensitivity analysis, and multiple analysis will be explored. Finally, in the valuation summary, the conclusions from the report will be highlighted and our opinion, whether to buy, hold, or sell the stock will be given.

Stock Performance

In the past five years, the stock of Tata Motors delivered impressive results. During this period, the stock returned 315%, recovering quickly after the COVID-19 pandemic and gaining significantly in the second half of 2021. In the past 52 weeks, its value increased by around 75%, to the current price of INR 730. This makes the stock one of the top gainers in both the Nifty 50, as well as the Nifty Auto indexes (refer to Figure 18). However, in the last year returns were volatile, with a low of INR 375 and a high of INR 734. The performance of the stock is highly exposed to the performance of its subsidiary JLR, since it operates worldwide and generates robust margins. An example of this could be seen recently, after JLR reported its strong results for the first half of FY 2024, which made Tata's stock jump over 4%.

Figure 18: *Tata Motors 3Y Stock Return against relevant Indices*



Source: *Yahoo Finance*

In comparison to the automobile industry in India, the company outperformed significantly. The Nifty Auto index has returned 93% over the past five years and 41% in the recent year. Compared to the Indian economy, the Nifty 50 gained 97% in the past 5 years, and 16% in the last year. In relation to the global automobile industry, measured by the MSCI World Automobiles Index, Tata's performance over the last five years, while still performing above the benchmark, is slightly less impressive, with the index returning 137%. Over the last year, the index returned 45%. The smaller difference in returns compared to the global index is, as mentioned above, due to the exposure to JLR's performance.

Macroeconomic & Market Analysis

Macroeconomic Environment

In the following chapter, the macroeconomic environment in India will be analyzed. Since Tata's subsidiary JLR is operating globally, worldwide macroeconomic factors are also highly relevant. However, these will be analyzed later in the "*Market Forecasts & Unit Sales of Vehicles Derivation"* part of this report, in order to direclty link relevant global marcoeconomic fluctuations to the car markets in each region.

GDP and Consumer Spending Power

Figure 19: *Historical GDP and GDP per capita in India*

Source: *World Bank*

The Indian GDP grew from INR 112 trillion in 2013 to INR 272 trillion in 2022, representing a CAGR of over 10%, recovering quickly from the negative pandemic effects. In the same period, GDP per capita grew with a CAGR of roughly 9%, from INR 87,565 to INR 192,618. Therefore, India's economy grew significantly faster than the world GDP, which showed a CAGR of just 2.99% since 2013. According to data provided by the World Bank, the GDP and GDP per capita in India are expected to continue growing strongly with CAGRs of 6.35% and 5.54% until 2035, respectively.

Figure 20: *Projected GDP and GDP per capita in India*

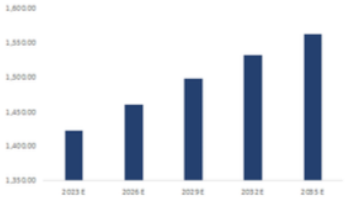
Source: *World Bank*

The consumer market in India is expected to become the third largest in the world by 2027, according to a report by BMI. Driven by the strong growth in household income, the large share of youth in the country, and the ongoing urbanization, household spending is forecasted to reach USD 3 trillion by 2027.

Population Growth

India has experienced very high population growth rates in the recent past, and surpassed China as the world's most populous country in April 2023. India's population grew from 1.09 billion in

Figure 21: *Projected Population Growth India*



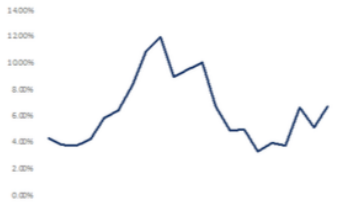
Source: *United Nations*

2002 to 1.41 billion in 2022. The UN's medium variant estimate projects the country's population to increase by more than 100 million until 2035, to a total of 1.56 billion, continuing to be one of the fastest growing populations in the world. India has a very young population, with over 42% being under 25 years old and only about 7% over 65. Thus, the median age of the country is low at 28, while in the US it is 38, for instance.

Inflation

Inflation in India increased significantly after the financial crisis in 2008 and remained at levels between 9% and 12% until 2013, decreasing sharply to roughly 3-4% thereafter. During the COVID-19 pandemic, inflation increased again to around 6%. Inflation in India in 2024 and 2025 is expected to be around 4.1% and 4.3%, respectively, which is within the central bank's target range of 2% to 6%.

Figure 22: *Inflation in India, 2002-2022 (in %)*



Source: *World Bank*

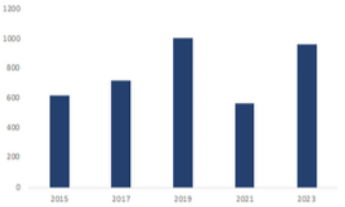
The macroeconomic environment in India, showing large growth potential in GDP and household income, the continuingly high population growth with a majority share of people under 25 years old, and the stabilizing inflation is creating an environment for Tata Motors, that indicates high potential in the future.

Market Analysis

Commercial Vehicles

The commercial vehicle market in India has experienced solid growth with a CAGR of 4.76% in the last 10 years, but lost significantly during the COVID-19 pandemic, dropping below FY 2014 levels in FY 2021. In FY 2023, the market had already recovered to almost pre-pandemic sales.

Figure 23: *CV Sales in India (in Million Units)*



Source: *SIAM India*

The load transportation vehicle (LTV) segment of the market is expected to grow at a CAGR of approx. 6.79% until 2035, with sales increasing from 800 thousand units in 2022 to 1.88 million units in 2035[1]. This trend is driven by the economic growth in the country, which is creating demand for the transport of goods. Additionally, more and more rural areas are developed into industrial and residential areas. The bus market on the other hand, is forecasted to shrink at a CAGR of -4.64% until 2035, caused by the increasing share of PVs on the roads.

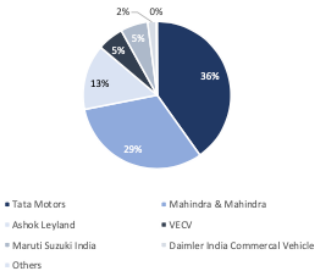
The CV market in India is relatively consolidated, with only a few players dominating the market and high entry barriers for new companies. The biggest players are Tata Motors, Ashok Leyland, Mahinda & Mahindra, VE Commercial Vehicles (VECV), a joint venture between the Volvo Group and Eicher Motors Limited, and Maruti Suzuki. Tata Motors is currently dominating the CV market, with a share of 43% in FY 2023, which has decreased from 48% in FY 2021. The biggest competitor Mahindra & Mahindra had a share of 28% in FY 2021, decreasing to 21% in FY 2022. In FY 2023 sales grew again to a share of 24%. Ashok Leyland's market share has been increasing since FY 2021, from just under 13% to 16% in FY 2023. The same trend can be observed for VECV, who's share has increased from 5.2% to 6.7% between FY 2021 and FY 2023.

The market share of Tata Motors is forecasted to continue its downwards trend, as the company's CV business is struggling to keep competitive parity. The market share in FY 2035 is expected to be 29% for ICE powered CVs and 40% for EVs. As an early mover, we expect Tata's market

[1] In-depth technical instructions on how individual market forecasts were obtained can be found in the part *"**Market Forecasts & Unit Sales of Vehicles Derivation**"* of this report.

share in the EV market to increase sharply to current levels of the ICE market share, as the latter drops due to increasing competition and a shift of focus towards EV.

Figure 24: *CV Market Shares FY 2023*



Source: *SIAM India*

Most of the group's share is expected to be picked up by Mahindra & Mahindra, Ashok Leyland, and VECV. Mahindra & Mahindra has implemented a strategy on capital allocation on growth business units, that has already been paying off and is expected to continue this trend. Additionally, it will release its first electric CV in 2025, entering the electric CV market as well. Ashok Leyland has announced a growth strategy for the medium-term, that aggressively focuses on an increase in market shares in the truck segment of the market. This will be implemented along with new vehicle launches and network expansion in India. Eicher Trucks & Buses, a division of VECV, recently partnered with Amazon to incorporate electric middle- and last-mile vehicles into Amazons delivery fleet. The company aims to integrate 10,000 EVs by 2025, posing significant competition for Tata Motors in the EV segment. In addition to the local competition, foreign OEMs like Volvo and Daimler Truck already have businesses in India, which are expected to expand significantly in the future.

An entry barrier into the Indian market for foreign OEMs are the high import duties on CVs, which currently amount to 40% on "completely-built-up" (CBU) vehicles. The import duties on "completely-knocked-down" (CKD) commercial vehicles with preassembled parts are 25% and 15% with no preassembled parts. Therefore, the most cost-effective way for foreign OEMs to enter the Indian market is to build production facilities in the country and assemble the vehicles there or build joint ventures with local companies. Because of the increasing growth prospects of the Indian CV market, these strategies might still be executed by foreign OEMs in the future.

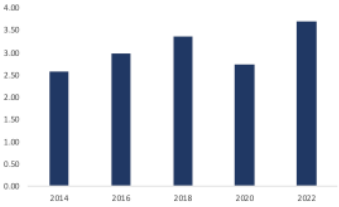
In conclusion, the CV market in India is set for high growth in the future, driven by significant economic development. Tata Motors' market share will likely decrease further, due to strong competition in the country and the possibility of foreign players entering the market.

Passenger Vehicles

The Indian PV market has experienced impressive growth in the recent past. Unit sales more than tripled since 2002, displaying a CAGR of 8.67% until 2022. Unit sales decreased harshly during the pandemic but recovered quickly, surpassing pre-COVID levels in 2022 with sales of 3.7 million units. We forecast the PV market in India to grow at a CAGR of 4.54% until 2035, amounting to unit sales of 6.6 million.

The PV market growth in India is mainly driven by the rising disposable household income. As mentioned before, the country currently has one of the largest growing economies in the world, paired with significant population growth and a large share of citizens under 25 years old. The combination of these factors drive demand, as young people want to increasingly raise their standard of living, which for many includes owning a car as means of transportation.

Figure 25: *PV Sales Historical (in Million Units)*



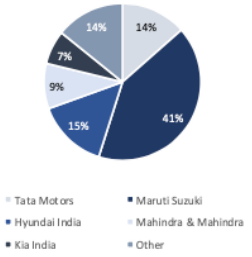
Source: *MORTH Year Book*

A further driver of the market is a recently introduced law regarding the vehicle age. Since the 1st of April 2023, cars older than 15 years have to be deregistered and scrapped. This law aims to reduce pollution, since older cars typically have a higher fuel consumption, while uplifting the car industry and providing cheaper raw materials for the steel industry. It is still possible to drive cars older than 15 years, however the cost of getting it re-registered, including several tests, are typically unproportionally high.

Furthermore, the Bharat Stage Emission Standards VI (BS-VI), which regulate the tailpipe

emissions of cars, contribute to the increasing share of EVs on India's roads. The BS-VI are comparable to the Euro 6 standards in the EU, and were introduced nationwide in April of 2020. They also aim to reduce the amount of highly pollutant cars on the roads, and ultimately boost sales of new (electric) vehicles in the country.

Figure 26: *PV Market Shares 2023*



Source: *Nova SBE Equity Research*

The PV market in India is relatively consolidated, being largely occupied by foreign manufacturers, with Indian OEMs only accounting for 23.4% in 2023. The overall market leaders are Maruti Suzuki, Hyundai India, Tata Motors, Mahindra & Mahindra, and Kia India, occupying in total just over 85% of the market in 2023. Tata Motors has gained market share since 2019, from 6.3% to 13.5% in FY 2023. Currently, the company's market share in the ICE market is 13.3%, but its EV market share is over 80%. Its biggest competitor Maruti Suzuki has lost almost 10% in the same period. Hyundai India also lost market share slightly, dropping from 16.1% in FY 2019 to 14.6% in FY 2023. Tata's market share is expected to increase to just over 15% in the forecast period. In the ICE segments it is expected to decrease to 11% until 2035, due to the company's focus on EVs, with an presumed EV market share of 35% in 2035. As Tata is currently the market leader for EVs in India, we expect its share to still be relatively high compared to the competition. However, as other companies "catch up", the EV share of Tata Motors will be closer to the current ICE market share.

Similar to CVs, there are very high import duties on PVs in India. CBU vehicles with a value of more than USD 40,000 have an import duty of 100%, while vehicles below have a duty of 70%. CKD PVs with pre-assembled parts have a duty of 35%, and CKD vehicles without pre-assembled parts have the same 15% duty as for CVs. This makes it difficult for foreign OEMs to enter the Indian market, as high import tariffs cause consumers to consider locally produced alternatives. However, the "Society of Indian Automobile Manufacturers" (SIAM) has agreed to a potential elimination of these duties for a limited number of cars from the UK, which would reduce the duties step by step to 10% until 2030, for a maximum number of 46,200 vehicles. This proposal is very limited, as it does not include cars from other countries, and the amount compared to the overall Indian market is low, but it could act as a precedent for future negotiations with other regions.

In summary, the Indian PV market has high growth potential until 2035, driven mainly by the rise in household income and the large share of young people in the population with a desire to improve their standard of living. Tata Motors has a high focus on EVs and is currently the market leader in the segment, which is securing strong market shares for the future.

Global Luxury Vehicle Market

Figure 27: *JLR Market Share Forecast*

	2027 E	2031 E	2035 E
UK	7.50%	7.50%	7.50%
North America	0.70%	0.75%	0.75%
Europe (excl. UK)	1.20%	1.25%	1.25%
China	0.60%	0.55%	0.53%
Overseas	0.38%	0.38%	0.37%

Source: *Nova SBE Equity Research*

For the purpose of the performed valuation, the market analyzed was based on the current JLR fleet (incl. luxury cars, sports cars, SUVs, executive cars and, large cars), named "luxury cars" in the following. Further, the market was split into JLRs mains sales regions, namely the UK, North America, Europe (excl. UK), China, and Overseas. The Overseas market includes a broad variety of countries, mainly emerging markets with high growth potential for the adoption of luxury vehicles. The UK luxury car sales decreased between 2014 and 2022, due to Brexit negotiations, followed by the COVID-19 pandemic, with a CAGR of -5.71%. North America also decreased, caused by the pandemic, with a CAGR of -0.81%. Luxury car sales in Europe were also negatively impacted by the pandemic, but experienced early recovery in 2022, resulting in a CAGR of roughly 3% over the period. China has the largest growth in the period, showing a CAGR of

almost 13.5%, while the overseas region grew with 2.34%. In total, the global luxury car market had a growth of 3.25% over the period.

Generally, growth in the luxury vehicle market is driven by the increasing disposable income and the rising number of high-net worth individuals, especially in emerging countries. In addition, the increasing demand for EVs is also driving the market. In the UK specifically, economic growth after several difficult years due to Brexit and the pandemic is expected to increase sharply. Therefore, we forecast the market in the UK to grow at a CAGR of 6.7% until 2035. North America is expected to grow at a CAGR of 3.5%, rebounding after the losses in recent years. Europe will have the lowest growth rate, with only 2.2%, as luxury vehicle sales already recovered to pre-pandemic levels and economic growth is expected to be slightly less steep. China is forecasted to have a CAGR of 3.4% and overseas is expected to note 5.5% annual growth.

The luxury car market is dominated by very few established global players. Some of the biggest include BMW, Mercedes-Benz, Jaguar Land Rover, Porsche, and Tesla. The entry barriers are relatively high, as brand reputation plays a big role in the choice of vehicle for many customers, as well as the history of prestige, quality, and performance, which is difficult to achieve for new market entries. In addition, many customers stay loyal to one brand. Defining market shares in the luxury car market is very difficult, as the definition of a luxury car varies for each customer and region. The forecast of JLRs market share is therefore based on the historical shares of the company of our market forecast. Referring to Figure 27, the market shares in the UK, North America, and Europe are expected to remain roughly the same, with only a slight decrease in the UK due to higher competition after the economy recovers from both the pandemic and Brexit. The market share in China is expected to decrease, due to an expected increase of trade wars with Europe, after the EU launched an investigation into China's financing of the EV industry. Even though JLR is not in the EU anymore, we expect China's response to this action to affect all foreign cars. Finally, JLR will also remain its market share in the Overseas region. It is worth noting, that JLR sold about 15% of its vehicles to overseas in FY 2023, making it a promising market for growth.

In conclusion, the luxury car market worldwide has growth potential, mainly driven by the rise of disposable income, mainly in emerging countries. JLRs market shares are not expected to show substantial changes in the future, as the company has been well established for several decades.

Operating Margins

Operating Expenses

As for the revenue forecast, operating expenses of Tata Motors were split into its core segments.

Tata Motors' material cost is expected to decrease in FY 2024, due to global supply shortages easing. The JLR segments is experiencing the most substantial relief from the material cost decrease, as they secured short-term deals with suppliers. In the long term, the material cost is forecasted to increase again for all segments, caused by the higher share of EVs the company produces, as the materials needed for batteries entail significant cost premiums.

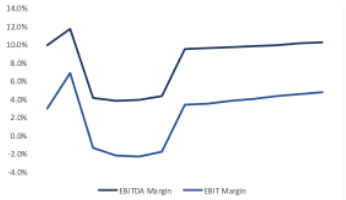
Employee cost are calculated as expenses per 1,000 vehicles produced for each segment. For the CV segment this value is INR 10 million, for PV its INR 3 million, and for JLR its INR 66 million in FY 2023. The significantly larger cost of JLR can be explained firstly by the higher average

income of JLR employees, as the company comprises of production facilities mostly in developed countries, and secondly by the higher effort needed to produce a vehicle, as they are more luxurious with higher attention to detail. In the future, we expect the cost per 1,000 cars to remain the same as for the last two years.

Other operating expenses mainly include, amongst others, the share of the announced investments in line with the group's proposed strategic roadmaps, which are attributed to R&D rather than CapEx, being particularly high within the next 5 years.

Operating Margins

Figure 44: *EBITDA and EBIT Margin, 2023-2035*



Source: *Nova SBE Equity Research*

The adjusted EBITDA for the group in FY 2023 was INR 340 billion, representing a margin of 9.9%. The EBITDA for FY 2024 is expected to be around INR 496 billion, after JLR's record breaking first half of the fiscal year, representing a margin of 11.7%. The EBITDA for this segment alone jumps from INR 250 billion in FY 2023 to INR 378 billion in FY 2024. Consequently, the adjusted EBIT behaves similar, jumping from a margin of 2.94% in FY 2023 to 6.81% in FY 2024.

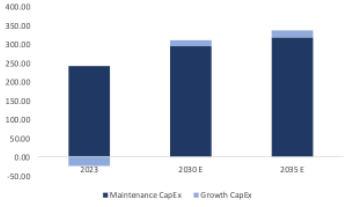
However, due to the substantial investments planned into the development of EVs, the margins are projected to decrease significantly until FY 2028. The adjusted EBITDA margin is expected to average just over 4% during the period, after which it is expected to recover to around 10% for the remaining forecast. The adjusted EBIT margin is expected to turn negative, to around -1.8% to -2% until FY 2028, after which it will increase to roughly 3.4% in FY 2029 and continue this trend to almost 5% at the end of the forecast period.

Similarly, the NOPLAT is expected to jump significantly from INR 72 billion in FY 2023 to a projected INR 229 billion in FY 2024, which is again mainly due to JLR's performance. Even though the NOPLAT is expected to turn negative between FY 2025 and FY 2028, due to the significant R&D expenditures, we forecast a positive turnaround in FY 2029, reaching INR 126 billion, continuing to increase to INR 228 billion by FY 2035. It is worth noting, that the NOPLAT of the CV segment remains profitable, while the PV segment and JLR turn negative. In FY 2029, the NOPLAT turns positive to INR 126 billion, and then increases to INR 228 billion in FY 2035.

Compared to the industry, Tata's profitability margins for its domestic segments are presumed to remain below most of its competitors. Mahindra & Mahindra for example has maintained EBITDA margins between 13% and 15% in the recent past, while Maruti Suzuki was able to achieve between 9% and 15%. And also regarding JLR, in comparison with more international players, its EBITDA margin will be significantly lower. Mercedes-Benz margin recovered quickly after the COVID-19 pandemic, remaining steadily above 15%. BMW's is even higher, at around 17%.

Capital Expenditures

Figure 45: *CapEx Forecast (in Billion INR)*



Source: *Nova SBE Equity Research*

The forecast of Capital Expenditures (CapEx) was carried out by distinguishing between Maintenance CapEx and Growth CapEx.

Maintenance CapEx is the portion of the total CapEx that is assumed to be used for maintaining historical revenues and profitability. Thus, it represents investments needed to preserve the value of PP&E in the previous year, which is represented by the D&A of the current fiscal year. The D&A for all segments was forecasted based on historical averages of the percentage of D&A on PP&E in the previous fiscal year and, therefore, used as an approximation of the Maintenance CapEx for each segment.

The Growth CapEx is the share of investments undertaken to increase revenues and profitability beyond historical levels. In the case of Tata Motors, these investments will mainly be attributed to the group's strategic roadmaps for its automotive related segments (for further information, please refer to the part "Strategic Positioning"). As a result of the group's ambitious electrification targets for its brand vehicles, Tata Motors declared plans to invest INR 25 and INR 30 billion p.a. for the CV and PV segment, respectively. We assume this level of investments to persist until FY 2028, as the primary groundwork for an electrified future will be completed by then. Thus, we expect investments for both segments to drop to 1% of revenue p.a. subsequently until FY 2035. Regarding the JLR segment, the company plans on investing a total of INR 1,500 billion within the next five years to implement JLR's "Reimagine" strategy. We believe that these investments will be evenly spread across each fiscal year, resulting in annual investments of INR 300 billion. After FY 2028, we expect annual investments to decrease to 3% of revenue, which is in line with expectations for competitors. As EV transitions are expected to be completed by the end of the decade, investement needs for the OEMs decrease significantly, which are currently at around 5% of revenues for most competitors. The share of revenue invested into CapEx has historically been lower for the CV and PV segments of Tata Motors, therefore we expect it continue to be lower in the future (1% of revenues). Not all the announced investments will be allocated to the Growth CapEx and, consequently, invested in PP&E. The CV and PV segments are expected to have R&D investments of 75% of the announced investments, with 25% being invested into PP&E directly. For JLR these shares are expected to be 90% and 10%, respectively. The share in PP&E investments for JLR is significantly lower, since the company invested a lot into PP&E in the past years, while CV and PV will need to catch up on those investments afterwards. For the Vehicle Financing and Other Operations segments, Growth CapEx was projected based on the difference in PP&E to each previous fiscal year, which was forecasted in the reformulated balance sheet.

Concludingly, total CapEx of Tata Motors is presumed to quickly grow from INR 217 billion in FY 2023 to INR 323 billion in FY 2028, which is in line with the group's ambitious strategic transformation in the near-term future. Afterwards, group CapEx is expected to moderately grow to INR 336 billion in FY 2035 (refer to Figure 45).

Net Working Capital Requirements

The net working capital (NWC) for Tata Motors in the past 5 years has fluctuated significantly between INR -17.71 billion and INR 85.79 billion. This is likely due to disruptions in the economic stability caused by the COVID-19 pandemic and the Russian-Ukrainian. However, as the economy recovered and sales stabilized, the NWC decreased to INR 48 billion in FY 2023. JLR, as the largest segment, had the biggest share of that with INR 33 billion, while CV required INR 9.62 billion and PV only INR 8.02 billion. We expect the NWC to stabilize around INR 54 billion for the group until FY 2028, after which it will slowly increase to INR 74 billion in FY 2035, averaging at 1.2% of forecasted revenues. JLR will continue to have the largest share in the NWC requirements, with INR 50 billion in FY 2035.

Other operating assets and liabilities amounted to INR 516 billion in FY 2023, with JLR holding the largest share of INR 341 billion. They are forecasted, similar to the NWC, to remain stable around INR 750 billion until FY 2028 and will then slowly increase to INR 1,026 billion in FY 2035.

Non-Controlling Interests

Figure 46: *Relevered Betas of Tata Motors & Competitors (against MSCI World using 3 Years of Weekly Data – both measured in INR)*

Tata Motors	**0.72**
Ashok Leyland	0.60
Eicher Motors	0.57
Ford	0.56
Hyundai	0.38
Mahindra & Mahindra	0.53
Maruti Suzuki	0.39
Mercedes-Benz	0.58
VOW	0.40
VOW3	0.35
Median	**0.54**

Source: *Nova SBE Equity Research & Bloomberg*

Figure 47: *WACC Calculation for Tata Motors*

WACC - Base Case	**7.87%**
WACC - Upper Bound	**9.10%**
WACC - Lower Bound	**6.39%**
Target D/E-Ratio	**0.40**
Target E/EV-Ratio	0.71
Target D/EV-Ratio	0.29
Cost of Equity - Base Case	**9.34%**
Cost of Equity - Upper Bound	11.07%
Cost of Equity - Lower Bound	7.28%
Cost of Debt	**5.27%**
YTM of long-term Bonds	5.70%
Credit Rating S&P	BB+
Average Cumulative Default Rate	7.40%
Annualized Probability of Default	0.72%
Loss given Default	60%

Source: *Nova SBE Equity Research, Bloomberg & S&P Global*

Figure 48: *EV Adoption Rates by Segment and Scenario*

Source: *Nova SBE Equity Research & IEA*

Tata Motors holds non-controlling interests (NCI) in 17 companies. To calculate the value of the companies, we used an EV/Sales multiple of 1.9 and a P/E of 32.1 corresponding to current valuations of automobile manufacturers in India, multiplied with the minority stake. The largest subsidiary with NCI is Tata Technologies Europe Limited, with an ownership stake of 76.69% and an estimated equity value attributable to the NCI of INR 13.11 billion. The second largest is Tata Technologies Inc., operating in the USA, with an ownership stake of 76.74% and an equity value of the NCI of INR 4.6 billion. The total NCI of Tata, being the total value subtracted from the equity value of the group in order to calculate the stock price, is INR 26.42 billion.

Weighted Average Cost of Capital

The overall market risk premium for the Indian market was set at 8.33%. This equity premium reflects the risk premium of the US of 5.00% (considered a mature and additional-risk-free market), adding a country risk premium of 3.33% for India, which is calculated based on CDS spreads[2]. Because Indian government bonds are not considered risk-free due to their low credit rating, the risk-free rate was calculated by deducting the CDS spread in India (2.35%) from the current yield of 10-year government bonds of 7.16%, resulting in a rate of 4.81%.

Next, the company's cost of equity were calculated, taking into consideration the market risk premium and risk-free rate mentioned above. As an estimate for the appropriate equity beta, raw betas against the MSCI World index (2 years of weekly data – both currencies in INR) for Tata Motors and its main competitors were used. In addition to the raw beta, lower and upper bound estimations of each beta were added, calculated by adding/subtracting two times the standard error of each beta. After un-levering these betas and re-levering them with the target D/E ratio of Tata Motors, the median of all betas obtained was chosen as an estimation for the future equity beta, including lower and upper bound restrictions (refer to Figure 46). The target D/E ratio was set 80 bps below the company's current ratio, as the group most recently revealed plans to reduce its debt starting in FY 2024.

Regarding the cost of debt, the effective weighted average interest rate on long-term debt of Tata Motors was taken as a basis (5.7%). The current credit rating provided by S&P for the group stands at BB+. Taking into account the average annualized probability of default based on this rating[3] as well as a loss given default of 60%, the effective cost of debt for Tata Motors reduces to 5.27%.

Combining both the cost of equity (incl. lower and upper bounds), the cost of debt, as well as the target leverage ratio and tax rate, the computed WACC for Tata Motors in the base case is 7.87%, with limits at 6.38% in the lower bound and 9.10% in the upper bound (refer to Figure 47).

Scenario and Sensitivity Analysis

Scenario Analysis

For the scenario analysis, three different scenarios were set up. The chosen scenarios primarily affect drivers related to the sale of EVs and development of vehicle prices, which have been identified as key uncertainties in the forecast period.

The first scenario influences the adoption rates for EVs in the Indian market. In the baseline

[2] Both the market risk premium for the US and the country risk premium for India were based on estimates provided by Aswath Damodaran.
[3] This was cacluted based on the aerage cumulative default rates for corporates in emerging markets (10-Year Horizon) by credit rating provided by S&P

Figure 49: *Expected Date of EV Price Parity by Segment & Scenario*

	Expected EV Price Parity	
	Baseline	High Battery Prices
CV	FY 2035	FY 2040
PV	FY 2030	FY 2035
JLR	FY 2030	FY 2035

Source: *Nova SBE Equity Research & The Economic Times India*

Figure 50: *Multiples Valuation*

	P/E	
	Average	Median
EV	1,649,259	1,386,071
Net Debt	1,158,269	1,158,269
Equity Value	490,990	227,802
Price per share	128	59
	P/B	
	Average	Median
EV	5,439,543	3,172,493
Net Debt	1,158,269	1,158,269
Equity Value	4,281,274	2,014,224
Price per share	1,118	526
	P/S	
	Average	Median
EV	18,000,639	12,009,208
Net Debt	1,158,269	1,158,269
Equity Value	16,842,370	10,850,939
Price per share	4,398	2,833
	EV/EBITDA	
	Average	Median
EV	2,850,307	2,714,792
Net Debt	1,158,269	1,158,269
Equity Value	1,692,038	1,556,523
Price per share	442	406
	EV/EBIT	
	Average	Median
EV	1,496,656	852,554
Net Debt	1,158,269	1,158,269
Equity Value	338,387	-305,714
Price per share	88	-80

Source: *Bloomberg & Nova SBE Equity Research*

Figure 51: *Sensitivity Analysis of WACC (incl. Lower & Upper Bounds) over Perpetuity Growth Rate*

		WACC				
	INR	6.39%	7.13%	7.87%	8.48%	9.10%
Growth	4.00%	1207	920	744	643	567
	4.25%	1312	974	776	664	582
	4.50%	1445	1039	813	689	599
	4.75%	1619	1117	855	716	618
	5.00%	1854	1213	904	748	639

Source: *Nova SBE Equity Research*

scenario (STEPS), for which the respective EV sales shares have been already presented for both the PV and CV market in this report, it is expected that EV adoption will develop rather slowly, being significantly below targets set by the Indian government. In a second scenario (APS), it is presumed that the Indian government will fulfil all its energy and climate commitments, resulting in much higher EV shares for both CVs and PVs in the forecast (refer to Figure 48). Due to Tata Motors' expected strong position in the EV market, the second scenario has a positive influence on the group's price target as PV unit sales drastically increase by 37% (compared to the baseline scenario) in FY 2035. The second scenario changes the timeline in which price parity between EVs and ICE powered vehicles is expected to be achieved. In the baseline, price parity for cars is presumed to be present by FY 2030, shifting to FY 2035 for CVs due to larger battery packs per vehicle. In the second case, it is assumed that price parity will only be achieved 5 years later for each segment, particularly due to remaining high input prices for vehicle batteries (refer to Figure 49). The third scenario is based on the price parity scenario, but also takes into consideration how overall vehicle prices will develop in the long-term. Lower and higher growth rates of vehicle prices were obtained by subtracting /adding 20 bps to the long-term rates of the Indian vehicle price indices used in the base case. In the worst case, EV price parity is achieved early on, but overall vehicle prices are presumed to grow slower than in the past, having negative effects on Tata Motors' revenues. In the best case, price parity occurs later and overall vehicle prices grow faster, resulting in positive margin effects (EBITDA margin up 43 BPS in FY 2035 compared to the worst case) and an improved price target.

Sensitivity Analysis

In addition to the scenario analysis, a sensitivity analysis was performed on the calculated WACC and the perpetuity growth rate. The range for the WACC was chosen according to the lower and upper bounds obtained from the derivation of equity betas. In terms of terminal growth rate, restrictions were set 50 bps below and above the baseline rate. In the base case, the perpetuity growth rate in the DCF is set to 4.5%. This is based on the long term Indian GDP forecast, which is expected to grow at an average annual growth rate of 5% in real terms until 2050. To account for the likely case of real GDP growing slower in the period after 2050, we decided to lower our terminal growth assumption by 50 bps in the base case. The output of the performed sensitivity analysis can be examined in Figure 51, and will be further put into perspective in the Valuation Summary.

Multiples Analysis

To perform the multiples analysis, the P/E, P/B, P/S, EV/EBITDA, and EV/EBIT ratios of several comparable companies were used. Using the average and median values of those ratios, a valuation of Tata Motors was conducted. The average valuation for Tata Motors results in a target stock price of INR 992, while the median value is INR 424, showing a large discrepancy between the two targets. Notice that in Figure 50, the multiples for each comparable company are vastly different, with no apparent trend.

Valuation Summary

In conclusion, Tata Motors has high growth potential, driven by a solid market outlook, promising strategy and product portfolio, and one of the world's leading luxury vehicle manufacturers as subsidiary. Free Cash Flows of the core business are expected to turn negative in the short term

INR	WACC				
	6.39%	7.13%	7.87%	8.48%	9.10%
4.00%	1207	920	744	643	567
4.25%	1312	974	776	664	582
4.50%	1445	1039	**813**	689	599
4.75%	1619	1117	855	716	618
5.00%	1854	1213	904	748	639

due to large investments being deployed, significantly recovering to INR 174 billion by FY 2035. For the valuation we assumed an annuity after FY 2035 of 10% for 5 years, as the company's cash flow growth is only starting to stabilize in the last two years of the forecast period, with 12.7% and 11.5%. Therefore, a growth rate of 10% for 5 years seems appropriate, to afterwards switch to a perpetuity growth of 4.5%.

Additionally, we anticipate dividend payments of INR 6 per share, as the company is expected to have a record-breaking FY 2024 with core NOPLAT being up more than 300% compared to FY 2023. Tata Motors did not pay dividends since 2016, meaning the amount of dividend is very uncertain at this point, however in 2023 the company paid dividends of 2 IRN per share (0.28% dividend yield).

Finally, the target stock price obtained through the DCF valuation in the base case is INR 813, indicating that Tata Motors is currently undervalued by about 11.4%. The results obtained from the scenario analysis indicate a range of 773 INR to 1,000 INR for the worst and best case, respectively, resulting in upside potential in every case. Regarding the sensitivity analysis and multiples analysis, the price range is larger, being between 542-1,751 INR and 424-992 INR, respectively.

We believe, that even though Tata's stock price has already significantly gained since JLR's half year result announcement, the company's stock still has potential to increase in the next year. Therefore, we give a BUY recommendation with an estimated shareholder return of 12.2%.

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