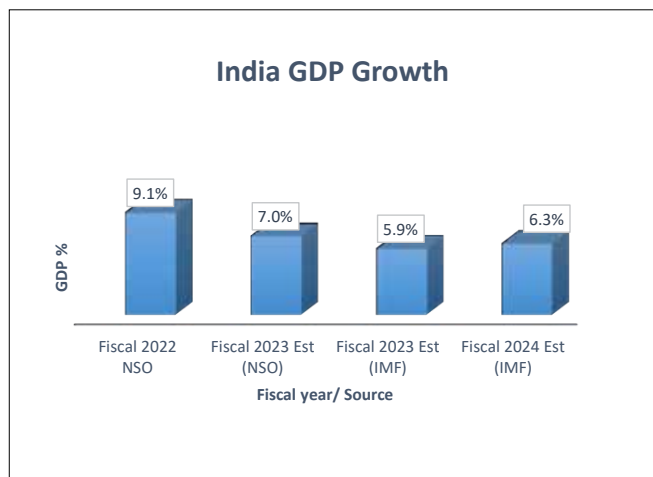


Management Discussion and Analysis

Economy Overview

India



Source: NSO, IMF

GDP Growth: The estimates for the Indian economic growth are as below:

National Statistical Office (“NSO”): The growth in the real GDP during FY 2022-23 is estimated at 7.0%, compared to 9.1% in FY 2021-22. This is driven by the accentuated headwinds from prolonged geopolitical tensions, tightening global financial conditions and slowing external demand.

International Monetary Fund (“IMF”): Import and export volumes estimates based on the volumes computed from the current price data, deflated by the WEO price indexes and the NSO price indexes are as below:

Particulars	FY 2022-23	FY 2021-22
Import of goods and services	7.5%	9.6%
Export of goods and services	23.1%	22.1%

Inflation: As per the Monetary Policy Committee (the “MPC”) of the RBI, the inflation outlook will be influenced by several factors, both global and domestic. While crude oil and

commodity prices have been stabilized in recent months, their future trajectories remain uncertain, given the lingering geopolitical hostilities and the likelihood of a rebound in demand from countries reopening from pandemic-related lockdowns. Global financial markets are exhibiting volatility. Domestically, the expectations of a bumper rabi harvest augur well for the future trajectory of food inflation. On the other hand, adverse weather shocks are becoming more frequent and there is heightened uncertainty about the south-west monsoon rains. Considering the initial conditions, signals from forward-looking surveys and estimates from structural and other time-series models, CPI inflation is projected to average 5.2% in FY 2023-24, assuming a normal monsoon, a progressive normalization of supply chains, and no further exogenous or policy shocks.

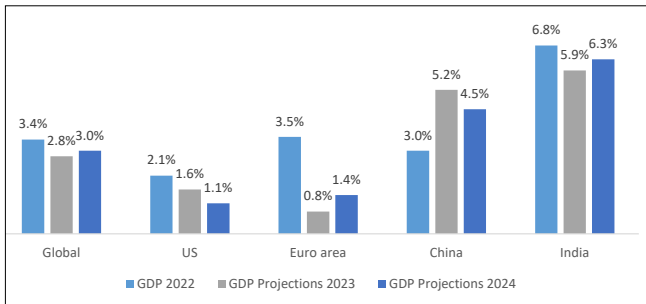
Automobile Industry: According to data released by SIAM, the rate of change in industry volumes is depicted in the below table:

Segment	FY 2022-23	FY 2021-22	FY 2022-23	FY 2021-22
Domestic industry	48,51,241	37,86,547	28.1%	15.4%
Commercial vehicle	9,62,347	7,18,155	34.0%	26.0%
Passenger vehicle	38,88,894	30,68,392	26.7%	13.2%

The Passenger Vehicle segment posted its highest ever domestic sales surpassing the previous peak in FY 2018-19 while the Commercial Vehicles segment posted its second highest domestic sales and was close to the previous peak of FY 2018-19. While FY 2022-23 began with supply chain disruptions from the Russia-Ukraine conflict, such disruptions were alleviated by efficient supply chain management. The commodity prices have also moderated. Over the longer term, favorable policy initiatives including significant investments in infrastructure called out in the Budget, the new PLI schemes to accelerate investments by the private sector, forward looking logistic & foreign trade policies and recently announced gas pricing guidelines are expected to further encourage the growth in coming years.

World

Global economy GDP



Source: IMF

Economic Growth: The global economy appears to be poised for a gradual recovery from the powerful blows of the pandemic and of Russia's war on Ukraine. China has reopened its economy. Supply-chain disruptions are unwinding, while the dislocations to energy and food markets caused by the war are receding. Simultaneously, the massive and synchronous tightening of monetary policy by most central banks has started to tame inflation. Conversely, the rapid rise in interest rates has contributed to stresses in parts of the financial system raising financial stability concerns. The unanticipated failures of two regional banks in the United States and the collapse of the Credit Suisse have exerted significant pressure on financial markets. The fall in fuel and energy prices, particularly in the United States, Euro area and Latin America has contributed to the decline in global headline inflation.

Commodities: Primary commodity prices declined 28.2% between August 2022 and February 2023. The decrease was led by energy commodities, down 46.4%.

Crude Oil: Crude oil prices retreated by 15.7% between August 2022 and February 2023 as the slowing global economy weakened demand. European natural gas prices declined by 76.1% amid lower consumption and high storage levels. China experienced its first annual decline in oil consumption in this century. Risks of price spikes remain somewhat elevated, however, for next winter.

Metals: Base and precious metal prices rebounded by 19.7% and 3.3%, respectively as compared to FY 2021-22. Prices had surged after the invasion but experienced a broad-based retreat amid slowing Chinese metal demand (accounting for roughly half of global consumption of major metals) and monetary policy tightening. With China's reopening and increased infrastructure spending the prices rebounded.

China: The lifting of COVID restrictions after many months of lockdown resulted in a surge of COVID infections in the last quarter of the year which compounded the headwinds from property market stresses in China. Declining property sales and real estate investment posed a drag on economic activity. In January 2023, high frequency economic indicators started picking up as COVID-19 waves subsided.

United States: The US Federal Reserve has been raising interest rates to restore price stability and to bring balance to the labor market. The demand for new hires is exceeding the supply of available workers in the US, as the unemployment rate has fallen to its lowest level in over 50 years, and this has contributed to higher inflation. To help bring the economy back into balance, IMF analysis shows that staying the course and keeping interest rates elevated this year will tame inflation. Although these higher rates will temporarily increase unemployment, they will pave the way for stable inflation and sustainable economic growth, which will ultimately help create more jobs in the future.

Europe: GDP is projected to fall to 0.8% in 2023 and 1.4% in 2024. Headline inflation is forecasted to fall from 9.2% in 2022 to 6.4% in 2023 and 2.8% in 2024 in the EU. In the euro area, it is projected to decelerate from 8.4% in 2022 to 5.6% in 2023 and to 2.5% in 2024. The EU economy has seen several positive developments including the fall in the Europe's main gas benchmark price to pre-war levels, aided by a sharp fall in gas consumption as well as continued diversification of supply sources. Despite the energy shock the economy managed a broad stagnation instead of the expected 0.5% contraction. The unemployment rate remains at its all-time low of 6.1%. However, core inflation increased in January and consumers and businesses continue to face high energy costs and with more than 90% of the core items in the harmonized index of consumer prices ("HICP") basket registering above-average price increases. Domestic demand could turn out higher than projected, if the recent declines in wholesale gas prices pass through to consumer prices more strongly. Risks to inflation remain largely linked to developments in energy markets in the short run, but upside risks dominate in the outer quarters, as a still tight labor market could result in stronger than anticipated wage pressure.

United Kingdom: Following a contraction of 0.4% in 2023, GDP is projected to increase by 0.2% in 2024. Consumer price inflation will peak at around 10% in late 2023 due to high energy prices and continuing labor and goods supply shortages, before gradually declining to 2.7% by the end of 2024. Private consumption is expected to slow, owing to rising living costs, but will be aided by a 9.7% increase in the

MANAGEMENT DISCUSSION AND ANALYSIS

minimum wage and the usual uprating of welfare benefits and pensions in April 2023

(Source: RBI, World Bank, IMF, DEA, OECD etc.)

Automotive Operations

Automotive operations are the Company's most significant segment, which include:

- All activities relating to the development, design, manufacture, assembly and sale of vehicles as well as related spare parts and accessories:
- Distribution and service of vehicles; and
- Financing of the Company's vehicles in certain markets.

The automotive operation is further divided into four reporting segments:

- Tata and other brand vehicles - Commercial Vehicles;
- Tata and other brand vehicles - Passenger Vehicles;
- Jaguar Land Rover; and
- Vehicle Financing.

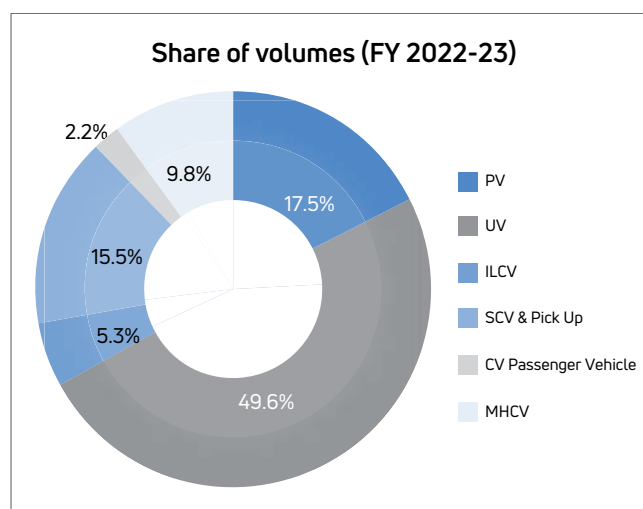
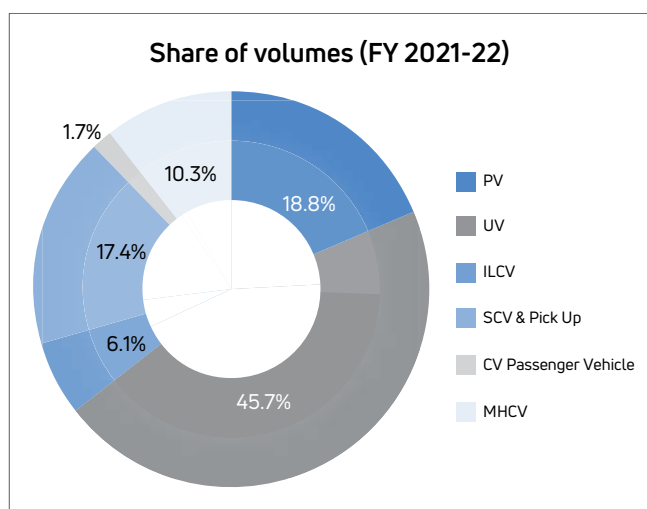
Overview of Automotive Operations

The total vehicle sales (excluding China joint venture) for FY 2022-23 and FY 2021-22 are set forth in the table below:

	FY 2022-23		FY 2021-22	
	Units	%	Units	%
Passenger cars	2,24,450	17.5%	1,94,185	18.8%
Utility vehicles	6,37,877	49.6%	4,72,154	45.7%
Intermediate and Light Commercial Vehicles	68,606	5.3%	63,097	6.1%
SCV & Pick Up	1,99,769	15.5%	1,80,222	17.4%
CV Passenger Vehicle	28,374	2.2%	17,699	1.7%
Medium and Heavy Commercial Vehicles	1,25,888	9.8%	1,06,547	10.3%
Total	12,84,964	100.0%	10,33,904	100.0%

We sold 9,31,602 units of Tata Commercial Vehicles and Tata Passenger Vehicles and 3,21,362 units (excluding wholesales from the China Joint Venture) of Jaguar Land Rover vehicles in FY 2022-23.

In India, we sold 9,31,429 and 6,93,036 units, during FY 2022-23 and FY 2021-22, respectively (constituting 72.5% and 67.0% of total sales in FY 2022-23 and FY 2021-22, respectively). In North America, we sold 81,629 units and 79,360 units in FY 2022-23 and FY 2021-22, respectively (constituting 6.4% and 7.7% of total sales in FY 2022-23 and FY 2021-22, respectively).



Tata and other brand vehicles

The following table sets forth our total wholesale sales worldwide of Tata Commercial Vehicles and Tata Passenger Vehicles:

	FY 2022-23		FY 2021-22	
	Units	%	Units	%
Tata Passenger Vehicles	5,40,965	56.1%	3,72,157	50.3%
Tata Commercial Vehicles	4,22,637	43.9%	3,67,565	49.7%
Total	9,63,602	100.0%	7,39,722	100.0%

We sold a total of 9,63,602 units in FY 2022-23, of which 9,31,429 units were sold by Tata and other brand vehicles in India and 32,173 units outside India. There were 7,39,722 units sold overall in FY 2021-22, with 6,93,036 units and 46,686 units, respectively.

We maintained our leadership position in the Commercial Vehicle category in India, which was characterized by

increased competition during the year. In the Passenger Vehicle category, the Company is now the third largest automotive company in India.

The following table sets forth our market share in various categories in the Indian market based on Vahan Registration volumes:

	FY 2022-23	FY 2021-22
	%	%
Passenger Vehicles	13.5%	11.4%
Heavy Goods and Motor Vehicles (HGV+MGV)	49.6%	52.6%
Medium Goods Vehicles	44.2%	48.6%
Light Goods Vehicles	37.8%	41.4%
CV Passenger Vehicles	38.4%	35.9%
Total Commercial Vehicles	41.7%	44.7%

Source: Society of Indian Automobile Manufacturers Report and our internal analysis.

The following table sets forth our total domestic wholesales and retails of Tata Commercial Vehicles and Tata Passenger Vehicles:-

	Wholesale Volume (In Units)			Retail Volume (In Units)		
	FY 2022-23	FY 2021-22	% Change	FY 2022-23	FY 2021-22	% Change
Tata Commercial Vehicles	3,92,911	3,22,682	21.7%	3,97,229	3,19,141	24.5%
Tata Passenger Vehicles	5,38,518	3,70,354	45.4%	5,23,547	3,63,061	44.2%
Total	9,31,429	6,93,036	34.4%	9,20,776	6,82,202	35.0%

Passenger Vehicles in India

Industry sales of Passenger Vehicles increased by 27% to 37,57,703 units in FY 2022-23 from 29,60,047 units in FY 2021-22. The following table sets forth the breakup of the wholesale sales in various categories.

Category	Industry Sales			Tata Passengers Vehicles Sales		
	FY 2022-23 (In Units)	FY 2021-22 (In Units)	% Change	FY 2022-23 (In Units)	FY 2021-22 (In Units)	% Change
Passenger Cars	17,47,392	14,67,061	19.1%	1,81,407	1,44,226	25.8%
Utility Vehicles	20,10,311	14,92,986	34.7%	3,57,111	2,26,128	57.9%
Total	37,57,703	29,60,047	26.9%	5,38,518	3,70,354	45.4%

Industry-wide sales of Passenger Cars in India increased by 19.1% in FY 2022-23 as compared to the 4.9% decline in FY 2021-22. While Utility Vehicles sales increased by 34.7% in FY 2022-23, which is lower with respect to the 40.5% increase in FY 2021-22. The overall industry sales are on the rise at an increasing rate since FY 2020-21. Our Passenger Vehicle sales in India increased by 45.4% from 370,354 units in FY 2021-22 to 5,38,518 units this fiscal year, reflecting a strong response for the New Forever Range.

We sold 1,81,407 units in the Passenger Car category (Tata-brand vehicles in India) in FY 2022-23, compared to the 1,44,226 units in FY 2021-22, representing a strong demand of Tiago, Altroz and Tigor. Our market share for Passenger Cars in India rose to 10.4% in FY 2022-23, as compared to 9.8% in FY 2021-22.

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In the Utility Vehicles category, we sold 3,57,111 units in FY 2022-23, an increase of 57.9% from 226,128 units in FY 2021-22, representing a strong demand for Tata Nexon, Punch and Tata Harrier. Our market share of Utility Vehicles in India has increased to 16.7% in FY 2022-23, as compared to 14.1% in FY 2021-22.

At Auto Expo in January 2023, we displayed promising future products which include Curvv, Altroz and Punch CNG with twin cylinder technology, and Altroz racer. In February 2023, we launched #DARK (Red Hot Dark) version for Nexon, Harrier and Safari. Extending the lineage of the iconic #DARK

philosophy and already established strong design, these SUVs exude dynamism through the newly added Carnelian Red highlights, giving its customers an exclusive feel of premium-ness combined with a bold look. Harrier and Safari are further enhanced with a desirable larger infotainment screen and new ADAS features.

Commercial Vehicles in India

Industry sales of commercial vehicles rose by 34.0% to total 962,347 units in FY 2022-23 compared to the sales of 718,155 units in FY 2021-22. The following table sets forth the breakup of the wholesale sales in various categories.

Category	Industry Sales			Tata Commercial Vehicles Sales		
	FY 2022-23 (In Units)	FY 2021-22 (In Units)	% Change	FY 2022-23 (In Units)	FY 2021-22 (In Units)	% Change
Medium and Heavy Commercial Vehicles (MHCV)	2,30,720	1,51,546	52.2%	1,22,440	88,191	38.8%
Intermediate and Light Commercial Vehicles (ILCV)	1,24,388	1,09,997	13.1%	54,636	53,847	1.5%
SCVs and Pickups	5,23,923	4,23,560	23.7%	1,81,715	1,65,822	9.6%
CV Passenger Vehicles	83,316	33,052	152.1%	34,120	14,822	130.2%
Total	9,62,347	7,18,155	34.0%	3,92,911	3,22,682	21.8%

MHCVs in India

Industry saw a significant increase of 52.2% in the sale of medium and heavy commercial vehicles in FY 2022-23 compared to FY 2021-22. We sold 1,22,440 units in FY 2022-23, compared to 88,191 units in FY 2021-22 in this segment, a growth of 38.8%. The quarter-on-quarter improvement was observed, due to increase in infrastructure projects, housing construction and the mining segments in India.

ILCVs in India

Our sales in the ILCVs in India increased to 54,636 units in FY 2022-23, compared to the 53,847 units in FY 2021-22, representing an increase of 1.5%.

SCVs and Pickups in India

Our sales in SCVs and Pickups segment in India increased by 9.6% from 1,65,822 units in FY 2021-22 to 1,81,715 units in FY 2022-23. Among all segments in commercial vehicles, the SCV and pickup category has experienced increased demand from e-commerce players primarily due to the necessity for last-mile distributions to retail consumers by such companies.

CV Passenger Vehicles in India

Our sales in CV Passenger Vehicles segment in India increased by 130.2% in FY 2022-23 compared to FY 2021-22,

from 14,822 units in FY 2021-22 to 34,120 units in FY 2022-23, largely due to increased demand for public transport due to the recommencement of face-to-face learning in school and colleges and return to office work.

Tata Commercial Vehicles and Tata Passenger Vehicles — Exports

With a global presence in 39 countries, including most South Asian Association for Regional Cooperation ("SAARC") countries, South Africa, Africa, Middle East and Southeast Asia, we offer a range of products, including M&HCV trucks, LCV trucks, buses, pickups and small commercial vehicles. As international business is an integral part of our business portfolio, since our inception in 1961, we strive to maintain, improve and expand our relations with the nations of the world.

Our overall sales in these International Markets dropped by 42% to 20,222 units in FY 2022-23 compared to 34,791 units in FY 2021-22. A major drop was witnessed in SAARC region (down by 62%) driven by total industry volumes softening, forex shortages and liquidity crunch in the latter half of the year. MENA and ASEAN regions witnessed 6% year on year growth in shipments. Non-SAARC markets contributed to 57% of total shipments in FY 2022-23 as compared to 34% in

FY 2021-22. Democratic Republic of Congo achieved highest ever shipments of 1,005 units in FY 2022-23; Saudi Arabia hits highest ever shipments of 1,292 units and retails of 1,401 units in FY 2022-23; Vietnam achieves highest ever retails of 998 units in FY 2022-23.

TDCV, a subsidiary company engaged in the manufacturing of MHCVs and LCVs, reported an increase of 0.4%, with total units sold reaching 9,493, in FY 2022-23. This is almost flat compared to 9,454 units in FY 2021-22. Domestic volume witnessed a degrowth of 13.8% from 7,400 units in FY 2021-22 to 6,381 units in FY 2022-23, mainly due to a downturn in the domestic economy during the second half of the year. However, this decline in domestic was compensated by strong export growth of 51.5% from 2,054 units in FY 2021-22 to 3,112 units in FY 2022-23. During the year, TDCV launched LCV range of product "DEXEN" to strengthen its portfolio.

Tata Commercial Vehicles and Tata Passenger Vehicles — Sales and Distribution

Our sales and distribution network in India as at March 2023 comprised over 6,800 touch points for sales and service for our Passenger Vehicles and Commercial Vehicles businesses. We use a network of service centre's on highways and a toll-free customer assistance centre to provide 24-hour roadside assistance, including replacement of parts, to vehicle owners.

We have a customer relations management system at all of our dealerships and offices across India, which supports users both at our Company and among our distributors in India and abroad.

With a global presence in 39 countries, including most South Asian Association for Regional Cooperation ("SAARC") countries, South Africa, Africa, Middle East and Southeast Asia, we offer a range of products, including M&HCV trucks, LCV trucks, buses, pickups and small commercial vehicles. Such distributors have created a network of dealers and branch offices and facilities for sales and after-sales servicing of our products in their respective markets. We have also stationed overseas resident sales and service representatives in various countries to oversee our operations in the respective territories.

Tata Commercial Vehicles and Tata Passenger Vehicles—Competition

We face competition from various domestic and foreign automotive manufacturers in the Indian automotive market. Improving infrastructure and robust growth prospects

compared to other mature markets have attracted strong international companies to India that have either formed joint ventures with local partners or have established independently owned operations in India. Global competitors bring with them their international experience, global scale, advanced technology, and significant financial resources, and as a result, competition is likely to further intensify in the future. We have designed our products to suit the requirements of the Indian market based on specific customer needs, such as safety, driving comfort, fuel efficiency and durability. By moving to Bharat Stage 6 ("BS6") successfully and subsequently the BS6 Phase 2 norms, we have demonstrated our ability to compete with the global players successfully. We believe that our vehicles are suited to the general conditions of Indian roads and the local climate. We also offer a wide range of optional configurations to meet the specific needs of our customers. We intend to develop and are developing products to strengthen our product portfolio in order to meet the increasing customer expectation of owning world-class vehicles.

Tata Commercial Vehicles and Tata Passenger Vehicles—Seasonality

Demand for our vehicles in the Indian market is subject to seasonal variations. Demand generally peaks in the last quarter of each financial year, i.e., between January and March each year, although there tends to be a decrease in demand in February just before release of the Government of India's fiscal budget. Demand is usually at a moderate level from April to July but gains momentum again from September onwards, due to the festival season, with a decline in December due to year-end.

Tata Commercial Vehicles and Tata Passenger Vehicles—Challenges

Tata Commercial Vehicles - Elevated levels of inflation continue to be a challenge with commodity prices increasing and impacting margins. Other macroeconomic factors, such as fuel price increases and rate hikes, are also a key concern as these play an important role in determining freight rates and therefore transporter profitability. While freight rates have been improving, going forward, too, it would need to keep pace with the fuel price increases and impending rate hikes.

Tata Passenger Vehicles - Business environment continues to be challenging, with inflation and commodity price increases impacting profitability, consumer spending power

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and competitive nature of the industry. We aim to mitigate these risks by innovating, ensuring the portfolio remains "NEW FOREVER" by means of introducing exciting new variants, multiple powertrain options and fast tracking our cost reduction efforts to improve profitability.

Vehicle Financing

Through our wholly-owned subsidiary TMF Holdings Ltd and its step-down subsidiaries Tata Motors Finance Ltd ("TMFL") and Tata Motors Finance Solutions Ltd ("TMFSL"), we provide financing services to purchasers of our vehicles through independent dealers, who act as our agents for financing transactions, and through our branch network.

TMF group disbursed ₹18,334 crores and ₹16,329 crores in vehicle financing during FY 2022-23 and FY 2021-22, respectively. Approximately 17% and 27% of our commercial vehicle unit sales in India were made by the dealers through financing arrangements with the Company's captive financing subsidiary during FY 2022-23 and FY 2021-22, respectively.

TMF group's customer finance receivable portfolio comprised over seven lakhs, contracts as at March 31, 2023.

During FY 2022-23 TMF group revenue stood at ₹4,927 crores as compared to ₹4,827 crores in FY 2021-22. The profit before tax for FY 2022-23 was a loss of ₹993 crores as compared to a profit of ₹101 crores in FY 2021-22. The reason for increase in loss in Fiscal 2023 was due to an increased provision for finance receivable.

Our portfolio contains ways to follow specified internal procedures, including quantitative guidelines, for selection of our finance customers and assist in managing default and repayment risk. We originate all the contracts through our authorized dealers and direct marketing agents with whom we have agreements. All our marketing, sales and collection activities are undertaken through dealers or by the TMF group.

Jaguar Land Rover's Performance Analysis

Total wholesale and retail volume of Jaguar Land Rover vehicles (excluding Chery Jaguar Land Rover) with a breakdown between Jaguar and Land Rover brand vehicles, in FY 2022-23 and FY 2021-22 are set forth in the table below:

	Wholesale Volume (in units excluding CJLR)			Retail Volume (in units excluding CJLR)		
	FY 2022-23	FY 2021-22	% change	FY 2022-23	FY 2021-22	% change
Jaguar	42,720	49,510	(13.7)	62,521	77,381	(19.2)
UK	11,239	13,822	(18.7)	12,076	17,016	(29.0)
North America	11,930	11,469	4.0	10,755	13,785	(22.0)
Europe	12,350	15,178	(18.6)	12,832	17,841	(28.1)
China	2,374	2,887	(17.8)	22,370	21,858	2.3
Overseas	4,827	6,154	(21.6)	4,488	6,881	(34.8)
Land Rover	278,642	244,672	13.9	292,141	299,000	(2.3)
UK	50,903	43,371	17.4	51,935	46,422	11.9
North America	69,699	67,881	2.7	66,771	77,520	(13.9)
Europe	61,999	49,983	24.0	58,874	54,227	8.6
China	42,544	38,529	10.4	68,628	73,927	(7.2)
Overseas	53,497	44,908	19.1	45,933	46,904	(2.1)
Jaguar Land Rover	321,362	294,182	9.2	354,662	376,381	(5.8)
UK	62,142	57,193	8.7	64,011	63,438	0.9
North America	81,629	79,350	2.9	77,526	91,305	(15.1)
Europe	74,349	65,161	14.1	71,706	72,068	(0.5)
China	44,918	41,416	8.5	90,998	95,785	(5.0)
Overseas	58,324	51,062	14.2	50,421	53,785	(6.3)
CJLR	50,855	53,468	(4.9)	50,904	54,035	(5.8)

Jaguar Land Rover's performance on a wholesale basis:

Wholesales (excluding our China Joint Venture) for the FY 2022-23 were 3,21,362 up 9.2%, compared to FY 2021-22. Compared to the prior year, wholesale volumes were higher in all markets led by Overseas 14.2%, Europe 14.1%, UK 8.7%, China 8.5% and North America 2.9%. This increase was driven by the gradual improvement in the supply of semiconductor during the year though constraints on the supply of commercial semiconductor was not completely removed. Given these restrictions on availability of [our products], we have been able to increase our revenue per unit reflecting the prioritisation of higher margin products giving us a strong mix, particularly in the Range Rover and Defender families.

Jaguar Land Rover's performance on a retail basis:

Retail sales for FY 2022-23 were 3,54,662 down 5.8% compared to FY 2021-22. Compared to the prior year, retail volumes were higher in the UK 0.9% and down in North America 15.1%, Europe 0.5%, China 5.0% and Overseas 6.3%. This reduction reflected the impact of the chip shortages during FY 2022-23 while retail volumes in FY 2021-22 were supported by destocking of inventories. Demand remains strong with the client order book at around 200,000 units as at March 31, 2023.

Retails by powertrain

The electrified mix, which includes mild hybrid, plug-in hybrid and battery electric vehicles ("BEV"), increased slightly from 66% in FY 2021-22 to 67% in FY 2022-23. Within this, plug-in hybrid sales increased from 8% to 10%. During FY 2022-23, JLR commenced handover to customers of the new Range Rover and Range Rover Sport PHEV models while we are planning to launch a new Range Rover BEV model in 2024.

Jaguar Land Rover's Sales and Distribution

In FY 2022-23, Jaguar Land Rover distributed its vehicles in 123 markets globally. Sales locations for vehicles are operated as independent franchises. Jaguar Land Rover is represented in its key markets through its National Sales Company's ("NSC's") as well as third party importers. Jaguar Land Rover has regional offices in certain select countries that manage customer relationships and vehicle supplies and provide marketing and sales support to its regional importer markets. The remaining importer markets are managed from the United Kingdom.

Jaguar Land Rover products are sold through a variety of sales channels: through its dealerships for retail sales; for

sale to fleet customers, including daily rental car companies, commercial fleet customers, leasing companies and governments. Jaguar Land Rover does not depend on a single customer or small group of customers to the extent that the loss of such a customer or group of customers would have a material adverse effect on its business.

Jaguar Land Rover — Competition

Jaguar Land Rover operates in a globally competitive environment and faces competition from established premium and other vehicle manufacturers who aspire to move into the premium performance car and premium SUV markets, some of which are much larger than they are. Jaguar vehicles compete primarily against other European brands such as Audi, Porsche, BMW and Mercedes Benz as well as Tesla. Land Rover and Range Rover vehicles compete largely against SUVs from companies such as Audi, BMW, Infiniti, Lexus, Mercedes Benz, Porsche, Volvo and Volkswagen.

Jaguar Land Rover — Seasonality

Jaguar Land Rover volumes are impacted by the biannual change in age related registration plates of vehicles in the United Kingdom, where new age-related plate registrations take effect in March and September each year. This has an impact on the resale value of the vehicles because sales are clustered around the time of the year when the vehicle registration number change occurs. Seasonality in most other markets is driven by the introduction of new model year vehicles and derivatives. Furthermore, Western European markets tend to be impacted by summer and winter holidays, and the Chinese market tends to be affected by the Lunar New Year holiday in either January or February, the PRC National Day holiday, and the Golden Week holiday in October. The resulting sales profile influences operating results on a quarter-to-quarter basis.

Jaguar Land Rover — Challenges

Semiconductors and general supply constraints

The ongoing supply chain challenges, particularly around semiconductors, continued to limit our ability to build cars in line with customer demand during FY 2022-23. We saw significant volatility in raw material commodity markets during the year leading to abnormal pricing levels and elements of scarcity in some markets. Supply constraints were caused by various external factors, namely Covid-19 recovery, the conflict in Russia-Ukraine and energy inflation.

In response to these challenges, we focused production on higher margin products and improved our organisational

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capabilities and processes to more proactively manage our supply chain. We put in place long-term supply agreements directly with a number of semiconductor manufacturers to protect both current and future product programs. As a result of our actions, our wholesale volumes for the year were 3,21,362 up 9.2% compared to the prior year. Whilst general supply chain challenges are likely to continue in the coming year, we anticipate that the actions we have taken this year will minimise the impacts on our volumes.

Global inflation

Inflationary pressures have increased during the past year with energy prices in Europe, where we produce the majority of our cars, rising as a result of the Russian invasion of Ukraine. We have seen cost increases coming from higher commodity prices, energy costs, labour rates and semiconductor prices.

We have taken steps to offset these impacts under our Refocus program which has delivered over ₹1 billion of value to the business through actions taken to optimise sales, lower costs and to prioritise investment spending.

Geopolitics

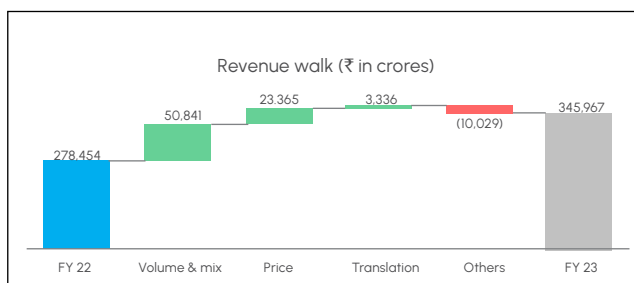
Geopolitical challenges including increasing geopolitical tensions and regulatory and legislative changes such as the US inflation reduction act have a global reach and can impact global of supply chains. While we have not observed any direct impacts on our business in the last year as a result of specific events, we proactively scenario plan against a range of outcomes to ensure we remain well balanced as a business.

A. Operating Results

All financial information discussed in this section is derived from our Audited Consolidated Financial Statements.

Overview

In FY 2022-23 consolidated income from operations including finance revenues increased by 24.2% to ₹345,967 crores from ₹278,454 crores in FY 2021-22. This increase was mainly attributable to increased vehicle volumes, mainly for Tata Commercial and Passenger vehicles and Jaguar Land Rover.



The net profit (attributable to shareholders of our Company) was ₹2,414 crores in FY 2022-23, compared to a loss of ₹11,441 crores in FY 2021-22. Tata Motors on a standalone basis recorded deferred tax asset of ₹1,615 crores in FY 2022-23, on carry forward losses (unabsorbed depreciation), as it is probable, profits will be available against which these will be utilized in coming years. The profit before tax was ₹3,058 crores in FY 2022-23 as against the loss before tax of ₹7,003 crores in FY 2021-22. Excluding the exceptional items, profit before tax was ₹1,467 crores in FY 2022-23, as compared to loss before tax of ₹6,374 crores in FY 2021-22. Increase in volumes, better management of costs, softening of commodity prices, have resulted in profits for the year.

Automotive operations

Automotive operations are our most significant segment, accounting for 99.0% of our total revenues in FY 2022-23 and FY 2021-22. In FY 2022-23, revenue from automotive operations before inter-segment eliminations was ₹342,641 crores compared to ₹275,780 crores in FY 2021-22.

Particulars	FY 2022-23	FY 2021-22	Change (%)
Total Revenues (₹ in crores)	3,42,641	2,75,780	24.2%
Earnings before other income, interest & Tax (₹ in crores)	9,041	1,424	535.0%
Earnings before other income, interest & Tax (% of revenue)	2.6%	0.5%	

Our automotive operations segment is further divided into four reporting segments: Tata Commercial Vehicles, Tata Passenger Vehicles, Jaguar Land Rover and Vehicle financing.

Category	Total Revenues (₹ in crores)		EBIT (₹ in crores)		EBIT (% of revenue)	
	FY 2022-23	FY 2021-22	FY 2022-23	FY 2021-22	FY 2022-23	FY 2021-22
CV	70,816	52,287	3,693	210	5.2%	0.4%
PV	47,868	31,515	542	(660)	1.1%	(2.1%)
JLR	2,22,860	1,87,697	3,482	(439)	1.6%	(0.2%)
Financing	4,595	4,585	1,499	2,466	32.6%	53.8%
Unallocable	360	314	(158)	(62)	(43.8%)	(19.9%)
Inter-Segment eliminations	(3,858)	(618)	(18)	(90)	0.5%	14.6%
Total	3,42,641	2,75,780	9,041	1,424	2.6%	0.5%

In FY 2022-23, Jaguar Land Rover contributed 64% of our total automotive revenue compared to 68% in FY 2021-22 (before intra-segment elimination) and the remaining 36% was contributed by Tata and other brand vehicles and Vehicle Financing in FY 2022-23, compared to 32% in FY 2021-22. This is reflecting higher growth of Tata branded vehicles as compared to Jaguar Land Rover.

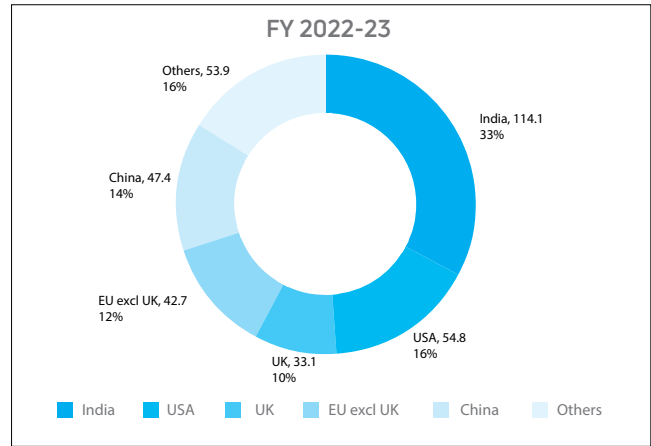
Other operations

Our other operations business segment mainly includes information technology services, machine tools and factory automation solutions. The following table sets forth selected data regarding our other operations for the periods indicated and the percentage change from period to period (before inter-segment eliminations).

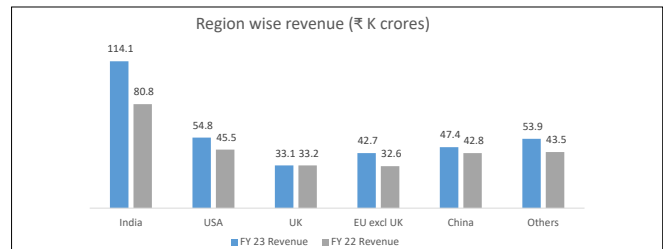
Particulars	FY 2022-23	FY 2021-22	Change (%)
Total Revenues (₹ in crores)	4,809	3,809	26.2%
Earnings before other income, interest & Tax (₹ in crores)	826	625	32.5%
Earnings before other income, interest & Tax (% of revenue)	17.2%	16.4%	

Geographical Breakdown

In FY 2022-23, volume and percentage of revenues in India have improved from FY 2021-22 levels. The revenue of Jaguar Land Rover increased across most geographical markets in FY 2022-23. Jaguar Land Rover wholesale volumes increased in all regions including in China (increased 8.5% year-on-year), Europe (increased 14.1%), North America (increased 2.9%) and in the UK (increased 8.7%) in FY 2022-23. Further we are present across the Globe with well diversified product portfolio.



The following chart sets forth our revenue from key geographical markets:



The "EU" market is geographic Europe, excluding the United Kingdom and Russia. The "Others Rest of World" market is any regions not included above.

The following table sets forth selected items from our consolidated statements of income for the year indicated and shows these items as a percentage of total revenue:

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Particulars	FY 2022-23 (%)	FY 2021-22 (%)	Difference (Bps)
Revenue from operations	100.0%	100.0%	-
Expenditure:			
Cost of material consumed (including change in stock)	65.5%	65.0%	50
Employee Cost	9.7%	11.1%	(134)
Product development/Engineering expenses	3.1%	3.3%	(22)
Other expenses (net)	17.9%	16.9%	93
Amount transferred to capital and other accounts	(5.3%)	(5.2%)	(16)
Total Expenditure	90.8%	91.1%	(29)
Profit before other income, Depreciation and amortization, Finance costs, Foreign exchange (gain)/loss, exceptional item and tax	9.2%	8.9%	29
Other Income	1.3%	1.1%	24
Profit before Depreciation and Amortization, Finance costs, Foreign exchange (gain)/loss, exceptional item and tax	10.5%	10.0%	53
Depreciation and Amortization	7.2%	8.9%	(173)
Finance costs	3.0%	3.3%	(39)
Foreign exchange loss (gain)/ Loss (net)	(0.0%)	0.0%	(6)
Exceptional Item (gain)/loss (net)	(0.5%)	0.2%	(69)
Profit/(loss) before tax	0.9%	(2.5%)	340
Tax expense / (credit)	0.2%	1.5%	(131)
Profit/(loss) after tax	0.7%	(4.0%)	471
Share of profits/(loss) of equity accounted investees (net)	0.1%	(0.0%)	12
Profit/(loss) for the year	0.8%	(4.1%)	483
EBITDA	10.7%	9.6%	110
EBIT	3.6%	0.7%	290

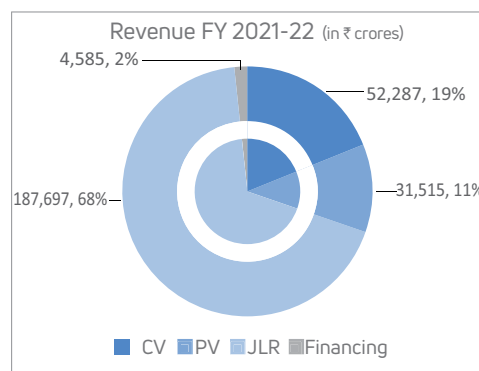
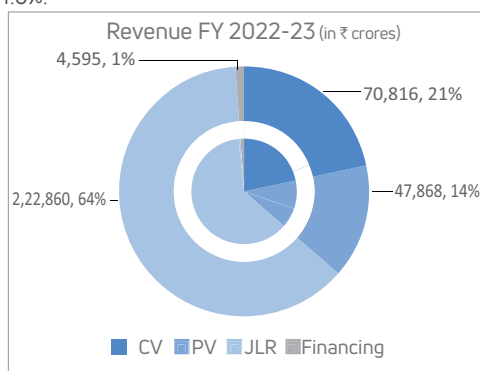
*Less than 0.0%

EBITDA is defined to include the product development expenses charged to P&L and realised FX and commodity hedges but excludes the revaluation of foreign currency debt, revaluation of foreign currency other assets and liabilities, MTM on FX and commodity hedges, other income (except government grant) as well as, exceptional items.

EBIT is defined as reported EBITDA plus profit from equity accounted investee less depreciation and amortization.

Revenue Analysis:

Our total consolidated revenue from operations including finance revenue increased by 24.2% to ₹3,45,967 crores in FY 2022-23 from ₹2,78,454 crores in FY 2021-22. Revenue from the sale of vehicle increased to ₹2,90,006 crores in FY 2022-23, compared to ₹2,27,179 crores, an increase of 27.7%. We sold 12,84,898 vehicles in FY 2022-23, compared to 10,33,904 vehicles in FY 2021-22, an increase of 24.3%.



The revenue of our Tata brand vehicles including vehicle finance increased by 39.4% to ₹1,23,639 crores in FY 2022-23 from ₹88,701 crores in FY 2021-22, mainly due to increased volumes both in commercial vehicles and passenger vehicle segment.

Tata Commercial Vehicles:

The revenue from Tata commercial vehicle was ₹70,816 crores in FY 2022-23, compared to ₹52,287 crores in FY 2021-22, an increase of 35.4%.

Our revenues from sales of vehicles and spare parts of Commercial Vehicles manufactured in India increased by 38.7% to ₹64,029 crores in FY 2022-23 from ₹46,171 crores in FY 2021-22. The revenue from Commercial Vehicle in ILCVs category increased by 40.3% to ₹8,746 crores in FY 2022-23 from ₹6,233 crores in FY 2021-22. The SCVs and Pickups category in India increased by 20.2% to ₹7,416 crores in FY 2022-23 from ₹6,169 crores in FY 2021-22. Revenues from MHCVs category increased by 44.4% to ₹31,429 crores in FY 2022-23 from ₹21,759 crores in FY 2021-22 and CV Passenger Vehicles category revenue increased by 135.5% to ₹4,659 crores in FY 2022-23 from ₹1,978 crores in FY 2021-22. The revenue of commercial vehicle at overall level increased, due to an increase in infrastructure projects, housing construction and the mining segments in India, increased demand from e-commerce players due necessity for last-mile distributions.

Revenue attributable to TDCV, increased marginally by 3.1% to ₹5,520 crores in FY 2022-23 from ₹5,352 crores in FY 2021-22. TDCV witnessed flat sales of 9,493 units in FY 2022-23 from 9,454 units in FY 2021-22. In South Korea market, volume witnessed a degrowth of 13.8% from 7,400 units in FY 2021-22 to 6,381 units in FY 2022-23 mainly due to downturn in domestic economy in second half of the year. Decline in domestic was compensated by strong export growth of 51.5% from 2,054 units in FY 2021-22 to 3,112 units in FY 2022-23.

Tata Passenger Vehicles:

The revenue from Tata Passenger Vehicles was ₹47,868 crores in FY 2022-23, compared to ₹31,515 crores in FY 2021-22, an increase of 51.9%.

Our revenues from sales of vehicles and spare parts of Passenger Vehicles manufactured in India increased by 49.2% to ₹48,226 crores in FY 2022-23 from ₹32,324 crores in FY 2021-22. The revenue from Passenger Cars in India has increased by 26.6% to ₹8,331 crores in FY 2022-23 from ₹6,579 crores in FY 2021-22, Electric vehicle increased to ₹6,586 crores in FY 2022-23 from ₹2,577 crores in FY 2021-22 and Utility Vehicles increased by 45.2% to ₹23,935 crores in FY 2022-23

from ₹16,490 crores in FY 2021-22. The increase in Passenger Vehicles was mainly on account of pent-up demand, better products and safety features of our New Forever Range of vehicles.

Vehicle financing:

Revenue from our Vehicle Financing operations was flat at ₹4,595 crores in FY 2022-23, compared to ₹4,585 crores in FY 2021-22.

Jaguar & Land Rover:

The revenue of our Jaguar Land Rover business increased by 18.7% to ₹2,22,860 crores in FY 2022-23 from ₹1,87,697 crores in FY 2021-22. This increase was after an unfavorable translation of ₹11,380 crores from GBP to Indian rupees in FY 2022-23. Excluding currency translation, the revenue of Jaguar Land Rover increased by 24.5% to GBP 22,938 million in FY 2022-23 from GBP 18,454 million in FY 2021-22. Jaguar Land Rover wholesale volumes improved across all key regions in FY 2022-23, up 9.2% year on year compared to FY 2021-22. Jaguar brand vehicles sales were 42,720 units in FY 2022-23 from 49,510 units in FY 2021-22, a decrease of 13.7%. However, Land Rover vehicles sales increased from 244,672 units in FY 2021-22 to 278,642 units in FY 2022-23, an increase of 13.9% (volumes excluding the China Joint Venture). The increase in revenue is also driven by product mix improvement.

Others:

Revenue from other operations (before inter-segment eliminations) increased by 26.2% to ₹4,809 crores in FY 2022-23 compared to ₹3,809 crores in FY 2021-22. This is mainly on account of increase in revenue of Tata Technologies post recovery from the COVID-19 pandemic.

Cost and Expenses

Raw Materials, Components and Purchase of Products for Sale (including change in inventories of finished goods and work-in-progress)

Material costs increased by 25.2% to ₹2,26,470 crores in FY 2022-23 from ₹1,80,886 crores in FY 2021-22, in line with increase in revenue. As a percentage of revenue material costs are 65.5% in FY 2022-23, compared to 65.0% in FY 2021-22.

Tata Commercial Vehicles:

Material costs for Tata Commercial Vehicles increased by 32.1% to ₹52,828 crores in FY 2022-23 from ₹39,999 crores in FY 2021-22, due to increased volumes. The material costs as

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a percentage of total revenue decreased to 74.6% in FY 2022-23, compared to 76.5% in FY 2021-22, primarily due to a improved product mix.

Material costs for ILCVs category increased by 32.6% to ₹7,166 crores in FY 2022-23, compared to ₹5,404 crores in FY 2021-22 and for SCVs and Pickups increased by 16.4% to ₹6,339 crores in FY 2022-23, compared to ₹5,444 crores in FY 2021-22 mainly due to increase in volumes. Material costs for MHCVs category increased by 37.0% to ₹24,624 crores in FY 2022-23, compared to ₹17,978 crores in FY 2021-22 and for CV Passenger Vehicles category substantially increased to ₹3,974 crores in FY 2022-23, compared to ₹1,707 crores in FY 2021-22 mainly due to increase in volumes. The material costs as a percentage of revenue decreased to 80.6% in FY 2022-23, compared to 84.5% in FY 2021-22.

Material costs remained flat at ₹3,528 crores in FY 2022-23, compared to ₹3,522 crores in FY 2021-22 for TDCV. As a percentage of total revenue, material costs increased to 62.0% in FY 2022-23, compared to 62.5% in FY 2021-22, reflecting commodity price increases, offset by product mix.

Tata Passenger Vehicles:

Material costs for Tata Passenger Vehicles increased by 42.7% to ₹36,833 crores in FY 2022-23 from ₹25,820 crores in FY 2021-22, due to increased volumes. The material costs as a percentage of total revenue decreased to 76.9% in FY 2022-23, compared to 81.9% in FY 2021-22, primarily due to a improved product mix.

For our India operations, material costs of Passenger Cars increased to ₹7,383 crores in FY 2022-23, compared to ₹6,072 crores in FY 2021-22, electric vehicles increased to ₹6,213 crores in FY 2022-23, compared to ₹2,301 crores in FY 2021-22 and Utility vehicles increased by 54.4% to ₹11,554 crores in FY 2022-23, compared to ₹7,483 crores in FY 2021-22. The increase in material costs is mainly due to increased sales volumes and increase price under BS6. The material costs as a percentage of revenue decreased to 85.5% in FY 2022-23, compared to 86.5% in FY 2021-22, primarily due to better product mix.

Jaguar & Land Rover:

At our Jaguar Land Rover operations, material costs in FY 2022-23 increased by 19.0% to ₹1,36,032 crores, from ₹1,14,340 crores in FY 2021-22. The increase was partially offset by a favourable currency translation from GBP to Indian rupees of ₹6,949 crores. Excluding currency translation, material costs attributable to our Jaguar Land Rover operations increased by 24.7% to GBP 14,007 million in FY 2022-23 from GBP 11,235

million in FY 2021-22, mainly due to a 9.2% increase in sales volume and change in product mix. Material costs at our Jaguar Land Rover operations as a percentage of revenue remains almost constant 61% in FY 2022-23 and FY 2021-22 (in GBP terms). The mix and pricing improvement have offset the impact of material cost pressures.

Employee Costs

Our employee costs increased by 9.2% in FY 2022-23 to ₹33,655 crores from ₹30,809 crores in FY 2021-22, including the foreign currency translation impact from GBP to Indian rupees as discussed below.

Our permanent employee headcount increased by 11.1% as at March 31, 2023, to 81,811 employees from 73,608 employees as at March 31, 2022. The average temporary headcount has decreased to 36,082 employees in FY 2022-23 from 40,717 employees in FY 2021-22.

Tata Commercial Vehicles:

The employee costs for Tata Commercial Vehicles increased by 10.4% to ₹5,073 crores in FY 2022-23 from ₹4,595 crores in FY 2021-22, mainly due to yearly increments and various wage settlements during the year. The employee costs as a percentage of revenue decreased to 7.1% in FY 2022-23 from 8.7% in FY 2021-23, due to increase in revenue.

Employee costs at Tata Motors Ltd, increased by 11.6% to ₹3,867 crores in FY 2022-23 from ₹3,466 crores in FY 2021-22, mainly due to annual increments and production Linked Incentive. The permanent headcount decreased by 4% as at March 31, 2023 to 35,332 employees from 36,854 employees as at March 31, 2022

Employee costs at TDCV were increased to ₹832 crores in FY 2022-23, compared to ₹787 crores in FY 2021-22 primarily due annual increments given during FY 2022-23.

Tata Passenger Vehicles:

The employee costs for Tata Passenger Vehicles increased by 35.5% to ₹1,723 crores in FY 2022-23 from ₹1,272 crores in FY 2021-22, mainly due to yearly increments and various wage settlements during the year. The employee costs as a percentage of revenue decreased to 3.6% in FY 2022-23 from 4.0% in FY 2021-22, due to increase in revenue.

Employee costs of Tata Motors Passenger Vehicles Limited increased by 34.0% to ₹1,309 crores in FY 2022-23 from ₹977 crores in FY 2021-22, mainly due to increase in headcount by 26.5%, annual increments and increase in production.

Jaguar & Land Rover:

The employee costs at Jaguar Land Rover increased by 6.2% to ₹24,502 crores (GBP 2,524 million) in FY 2022-23 from ₹23,058 crores (GBP 2,265 million) in FY 2021-22. Increase is driven by rise in average headcount and also annual increments. The average headcount increased by 6.6% (FY 2022-23 average 38,379 vs FY 2021-22 average 36,031). The increase was partially offset by favourable foreign currency translation impact from GBP to Indian rupees of ₹1,252 crores. The employee costs as a percentage of revenue increased to 11.0% in FY 2022-23 from 12.3% in FY 2021-22 (in GBP terms).

Product development/Engineering expenses

Product development/Engineering expenses represent research costs and costs pertaining to minor product enhancements, refreshes, and upgrades to existing vehicle models. These cost stood at 3.1% and 3.3% of total revenues ₹10,662 crores and ₹9,210 crores for FY 2022-23 and FY 2021-22, respectively.

Other Expenses

Other expenses increased by 31.0% to ₹61,786 crores in FY 2022-23 from ₹47,134 crores in FY 2021-22. There was favourable foreign currency translation of GBP to Indian rupees of ₹2,436 crores. As a percentage of total revenues, these expenses increased to 17.9% in FY 2022-23 from 16.9% in FY 2021-22.

The major components of expenses are as follows:

(₹ in crores.)

	FY 2022-23	FY 2021-22	Change	% of Revenue	
				FY 2022-23	FY 2021-22
Processing charges	1,786	1,406	27.0%	0.5%	0.5%
Stores, spare parts and tools consumed	1,610	1,446	11.3%	0.5%	0.5%
Freight, transportation, port charges, etc.	7,548	6,278	20.2%	2.2%	2.3%
Power and fuel	2,513	2,178	15.4%	0.7%	0.8%
Warranty charges and Product Liabilities	10,497	8,775	19.6%	3.0%	3.2%
Publicity	6,035	4,864	24.1%	1.7%	1.7%
Information technology/computer expenses	3,970	3,544	12.0%	1.1%	1.3%
Provision and write off of sundry debtors, vehicle loans and advances (net)	2,086	1,427	46.2%	0.6%	0.5%
Engineering expenses	4,401	3,031	45.2%	1.3%	1.1%
MTM (gain)/loss on commodity derivatives	1,415	(1,371)	(203.2%)	0.4%	(0.5%)
Works operation and other expenses	19,926	15,556	27.9%	5.8%	5.6%
Other Expenses	61,786	47,134	31.0%	17.9%	16.9%

- Freight and transportation expenses increased by 20.2% to ₹7,548 crores in FY 2022-23. This is partially offset favourable currency translation of ₹313 crores from GBP to INR. At Jaguar Land Rover freight and transportation expenses were increased from GBP 485 million in FY 2021-22 to GBP 630 million in FY 2022-23, mainly due to increase in sales volume. For India operations, expenses increased by 7.3% from ₹1,254 crores in FY 2021-22 to ₹1,346 crores in FY 2022-23, offset by decrease in Passenger Vehicles expenses by 10.7% from ₹228 crores in FY 2021-22 to ₹204 crores in FY 2022-23. As a % to revenue, freight and transportation expenses was 2.2% in FY 2022-23, as compared to 2.3% in FY 2021-22.
- Our works operation and other expenses represented 5.8% and 5.6% of total revenue in FY 2022-23 and FY 2021-22, respectively. Other expenses mainly relate to volume-related expenses at Jaguar Land Rover and Tata Commercial and Passenger Vehicles. On absolute terms, the expenses increased to ₹19,926 crores in FY 2022-23 from ₹15,556 crores in FY 2021-22, mainly on account of miscellaneous contract job/outsourcing expenses.
- Publicity expenses remains constant at 1.7% of our total revenues in FY 2022-23 as well as FY 2021-22, respectively. The publicity expenses at Jaguar Land Rover decreased to GBP 509 million (2.2% of the revenue) in FY 2021-22, compared to GBP 402 million (2.2% of revenue) in FY 2021-22. In addition to routine product and

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brand campaigns, we incurred expenses relating to new product introduction campaigns in FY 2022-23, mainly the new Range Rover at Jaguar Land Rover and the new dark variants at Tata Motors India operations.

4. The allowances for finance receivables are related to Vehicle Financing segment. These allowances mainly reflect provisions for the impairment of vehicle loans which increased by 55.9% to ₹2,039 crores for FY 2022-23, compared to ₹1,308 crores in FY 2021-22. The increase is mainly due to higher provisions for restructured portfolio. The allowances for trade and other receivables were ₹81 crores in FY 2022-23, compared to ₹151 crores in FY 2021-22.
5. Warranty and product liability expenses represented 3.0% and 3.2% of our total revenues in FY 2022-23 and FY 2021-22, respectively. The warranty expenses at Jaguar Land Rover increased to GBP 885 million (3.9% of the revenue) in FY 2022-23, compared to GBP 748 million (4.1% of revenue) in FY 2021-22, mainly due to increased retailer guidance, guided diagnostics enhancement, proactive issue detection, prioritisation and resolution coming from charge initiatives, quality improvements in vehicles and the implementation of other business enhancement activities. For Tata Motors' Indian operations, Commercial Vehicles remains at 1.5% in FY 2022-23 and FY 2021-22, Passenger Vehicles partially decreased from 0.7% in FY 2021-22 to 0.5% in FY 2022-23, thereby on overall level represent 1.2% and 1.1% of the revenue for FY 2022-23 and FY 2021-22, respectively, due to quality improvements and product mix.
6. Engineering expenses increased by 45.2% to ₹4,401 crores in FY 2022-23, compared to ₹3,031 crores in FY 2021-22. These expenses represent 1.3% and 1.1% of our total revenues in FY 2022-23 and FY 2021-22, respectively and are attributable mainly to increased expenditure at Jaguar Land Rover.
7. There was loss of ₹1,415 crores in FY 2022-23 for commodity derivative as compared to gain of ₹1,371 crores in FY 2021-22.

Expenditure capitalized

This represents employee costs, stores and other manufacturing supplies and other work expenses incurred mainly toward product development projects. Considering the nature of our industry, we continually invest in the development of new products to address safety, emission, and other regulatory standards. The expenditure capitalized

increased by 28.0% to ₹18,435 crores in FY 2022-23 from ₹14,397 crores in FY 2021-22. The increase partially offset by unfavourable foreign currency translation impact from GBP to Indian rupees of ₹839 crores pertaining to Jaguar Land Rover.

Other income

There was a net gain of ₹4,633 crores in FY 2022-23, compared to ₹3,054 crores in FY 2021-22, representing increase of 51.7%.

- Interest income increased to ₹1,251 crores in FY 2022-23, compared to ₹625 crores in FY 2021-22, mainly increased in short term fixed deposit at Tata Motors Limited (including Passenger and Electric Vehicles) and Jaguar Land Rover. Further, at Tata Motors Limited, most of the dealers were Cash and carry, reducing the credit period.
- Incentive from government has increased to ₹2,913 crores in FY 2022-23, compared to ₹2,125 crores in FY 2021-22. Government incentive includes exports and other incentives of ₹780 crores and ₹2,133 crores received by foreign subsidiaries on Tax credit on qualifying expenditure for research and development in FY 2022-23.
- MTM gain on investments fair valued through profit or loss of ₹93 crores in FY 2022-23, compared to ₹53 crores in FY 2021-22.
- Profit on sale of investments measured at fair value through profit or loss is ₹329 crores in FY 2022-23, compared to ₹217 crores in FY 2021-22.

Depreciation and Amortization

Our depreciation and amortization expenses were flat in FY 2022-23, the breakdown of which is as follows:

(₹ in crores)			
Particulars	FY 2022-23	FY 2021-22	Change
Depreciation	11,799	11,068	6.6%
Amortization	11,954	12,652	(5.5%)
Amortization of Leased Assets (RTU)	1,107	1,116	(0.8%)
Total	24,860	24,836	0.1%

Finance Cost (interest expenses)

Our interest expense (net of interest capitalized) increased by 10% to ₹10,225 crores in FY 2022-23 from ₹9,312 crores in FY 2021-22. As a percentage of total revenues, interest expense represented 3.0% and 3.3% in FY 2022-23 and FY 2021-22, respectively. The interest expense (net) for Jaguar Land Rover was GBP 507 million (₹4,898 crores) in FY 2022-23, compared to GBP 369 million (₹3,757 crores) in FY 2021-22. The increase in interest expense primarily reflects interest

accrued on increased indebtedness which included the new EUR€500 million and US\$500 million unsecured bonds issued in FY 2021-22. For Tata Commercial Vehicles and Tata Passenger Vehicles, interest expense remained flat at ₹2,795 crores in FY 2022-23 from ₹2,792 crores in FY 2021-22, reflecting decrease in borrowings. For the Vehicle Financing business, interest expense increased by 6.1% to ₹2,885 crores in FY 2022-23 from ₹2,719 crores in FY 2021-22, mainly due to higher cost of borrowings.

Foreign exchange (gain)/loss (net)

We had a net foreign exchange gain of ₹104 crores in FY 2022-23, compared to a loss of ₹79 crores in FY 2021-22.

- Jaguar Land Rover recorded an exchange gain of ₹154 crores in FY 2022-23, compared to ₹61 crores in FY 2021-22, on account of foreign exchange and fair value adjustments.
- For our India operations, we incurred a net exchange loss of ₹308 crores in FY 2022-23, compared to ₹166 crores in FY 2021-22, mainly attributable to foreign currency denominated borrowings.

Exceptional Item (gain)/loss (net)

Particulars	₹ in crores)	
	FY 2022-23	FY 2021-22
Employee separation cost	1	10
Defined benefit pension plan amendment past service cost	(1,495)	-
Write off/provision for tangible intangible assets (including under development (net))	230	-
Reversal for Onerous Contracts and related supplier claims	(61)	-
Reversal for costs of closure of operation of a subsidiary	-	(21)
Reversal of impairment in subsidiaries	(214)	(86)
Provision for Russia market	-	429
Others	(60)	(3)
Cost of scrap sale of Passenger vehicle undertaking	9	301
Total	(1,591)	630

FY 2022-23

Defined benefit pension plan amendment past service cost

During FY 2022-23, Jaguar Land Rover has recognized a pension past service credit of ₹1,495 crores (€155million) due to change in inflation index from RPI to CPI.

Reversal of impairment in subsidiaries

As part of slump sale (passenger vehicle undertaking), the investments in wholly owned subsidiaries of the Company engaged in designing services namely Tata Motors European Technical Centre PLC (TMETC) and Trilix S.r.l (Trilix) have been transferred to Tata Motors Passenger Vehicle Limited, a wholly owned subsidiary of the Company, w.e.f. January 1, 2022. These subsidiaries were then transferred to Tata Passenger Electric Mobility Ltd., another wholly owned subsidiary of the Company. During the year ended March 31, 2023, the Company reassessed the recoverable value of assets belonging to Tata Motors European Technical Centre PLC (TMETC) and accordingly provision for impairment towards the assets is reversed amounting to ₹214 crores. (€23.57 million). During, the previous year the Company reassessed the recoverable value of TMETC business and accordingly reversed the provision of impairment of ₹38 crores (€3.8 million) and also reversed the impairment to the tune of ₹48 crores (€5.6 million) with respect to Trilix.

Write off/provision for tangible/intangible assets (including under development (net))

Due to quick migration of Indian Emission Regulations norms and limited market availability of new products, some of the Company's undergoing projects are delayed. Hence, the Company has made provision of ₹277 crores for intangible assets under development.

FY 2021-22

Provision for Russia market

₹429 crores (GBP 43 million) were in relation to customer liabilities arising from sanctions imposed against Russia by many countries, preventing the shipment of vehicles and certain parts to the market.

Cost of scrap sale of Passenger vehicle undertaking

Expenses in relation to transfer charges of land at Sanand and Pune for PV undertaking and stamp duty as per the scheme of arrangement.

Tax expenses / (credit)

Our income tax expenses were ₹704 crores in FY 2022-23, compared to ₹4,231 crores in FY 2021-22, resulting in consolidated effective tax rates of 20.0% and 60.4%, for FY 2022-23 and FY 2021-22, respectively. Tax rates applicable to individual entities increased to 36.5% for FY 2022-23, compared to 13.5% in FY 2021-22.

MANAGEMENT DISCUSSION AND ANALYSIS

There is significant decrease in tax expense as referred to above due to the following reasons:

- During FY 2022-23, Tata Motors Limited recognised Deferred Tax Assets on previously unrecognised unused unabsorbed depreciation and long term capital losses incurred in the current year based on the probability of sufficient taxable profit in future periods, mostly those arising from planned divestments which will yield capital gains against which such unabsorbed depreciation and capital loss will be set off. Accordingly, ₹ 1,615 crores deferred tax has been recognised as at March 31, 2023.
- During FY 2022-23, Tata Motors Ltd utilized tax losses of ₹365 crores, whereas in FY 2021-22, business losses for Tata Motors Limited was offset against the capital gains on sale of PV Business and thus resulted in utilization of tax losses amounting to ₹585 crores. The tax losses utilized in FY 2021-22 for certain subsidiaries and joint operations was ₹183 crores as compared to ₹140 crores in FY 2021-22.
- In FY 2022-23, deferred tax assets not recognized because realization is not probable was ₹692 crores as compared to ₹3,528 crores in FY 2022-23. Of this, amount pertains to JLR GBP 34 million (₹345 crores) for FY 2022-23, as compared to GBP 331 million (₹3,380 crores) in FY 2021-22, mainly due to inability to recognize deferred tax assets arising in the years due to current UK loss profile.
- There is tax charge on undistributed earnings of subsidiaries amounting to ₹602 crores in FY 2022-23 as compared to ₹407 crores in FY 2021-22, due to increased profitability.
- During FY 2021-22, Tata Motors Ltd has transferred its Passenger Vehicle Business to a subsidiary on a slump sale basis as per defined under section 2(42C) of the Indian-tax Act, 1961. This has resulted in Capital gain tax of ₹1,283 crores. However, due to set-off of brought forward unabsorbed depreciation against the capital gains, there is no capital gains tax payable on the same.

Profit/(loss) after tax

Our consolidated net profit in FY 2022-23, excluding shares of non-controlling interests, is ₹2,414 crores, as compared to loss of ₹11,441 crores in FY 2021-22. This was mainly the result of the following factors:

- Earnings before other income (excluding Incentives), finance cost, foreign exchange gain/(loss) (net), exceptional items and tax for Jaguar Land Rover is profit of ₹3,482 crores in

FY 2022-23, compared to loss of ₹439 crores in FY 2021-22. During FY 2022-23, Jaguar Land Rover has recognized a pension past service credit of ₹1,495 crores (₹155million) due to change in inflation index from RPI to CPI.

- Earnings before other income (excluding Incentives), finance cost, foreign exchange gain/(loss) (net), exceptional items and tax for Tata Commercial Vehicles amounted to ₹3,693 crores in FY 2022-23, compared to ₹210 crores in FY 2021-22, primarily due to higher volumes and product mix.
- Earnings before other income (excluding Incentives), finance cost, foreign exchange gain/(loss) (net), exceptional items and tax for Tata Passenger Vehicles amounted to ₹542 crores in FY 2022-23, compared to loss of ₹660 crores in FY 2021-22, due to increased sales volume in cars and Utility Vehicle segment.
- Earnings before other income (excluding Incentives), finance cost, foreign exchange gain/(loss) (net), exceptional items and tax for Vehicle Financing amounted to ₹1,499 crores in FY 2022-23, compared to ₹2,466 crores in FY 2021-22. Profit was reduced mainly due to higher provisioning of impairment of vehicle loans.

Share of profit/(loss) of equity-accounted investees and non-controlling interests in consolidated subsidiaries, net of tax

In FY 2022-23, our share of equity-accounted investees reflected a profit of ₹336 crores, compared to loss of ₹74 crores in FY 2021-22. Our share of profit (including other adjustments) in the China Joint Venture in FY 2021-22 was of ₹144 crores, compared to loss of ₹206 crores in FY 2021-22. Further profits were increased mainly due to profits of ₹192 crores in other immaterial associates mainly Tata Autocomp Systems Ltd. and Tata Hitachi Construction Machinery Company Ltd in FY 2022-23. The profit was mainly due to increase in sales volumes and better business performance.

The share of non-controlling interests in consolidated subsidiaries was increased to ₹276 crores in FY 2022-23 from ₹133 crores in FY 2021-22, mainly due to increased profits of Tata Technologies.

B. Balance Sheet

Below is a discussion of major items and variations in our consolidated balance sheet as at March 31, 2023, and 2022, included elsewhere in this annual report.

₹ in crores

	As at March 31,		Change	Translation of JLR	Net Change
	2023	2022			
ASSETS					
(a) Property, plant and equipment and intangible assets	1,45,514	1,48,299	(2,786)	2,519	(5,305)
(b) Goodwill	841	807	33	-	33
(c) Investment in equity accounted investees	4,676	4,349	326	73	253
(d) Financial assets	1,18,279	1,22,867	(4,589)	1,192	(5,781)
(e) Deferred tax assets (net)	5,185	3,871	1,314	79	1,235
(f) Current tax assets (net)	1,816	1,457	359	3	356
(g) Other assets	18,189	13,205	4,984	299	4,686
(h) Inventories	40,755	35,240	5,515	719	4,796
(i) Assets classified as held-for-sale	828	524	304	14	290
TOTAL ASSETS	3,36,081	3,30,620	5,461	4,899	562
EQUITY AND LIABILITIES					
EQUITY	52,600	48,832	3,767	942	2,826
LIABILITIES					
(a) Financial liabilities:	2,35,516	2,35,953	(437)	3,110	(3,547)
(b) Provisions	25,007	23,722	1,285	487	798
(c) Deferred tax liabilities (net)	1,407	1,558	(151)	28	(180)
(d) Other liabilities	20,297	19,297	1,001	307	693
(d) Current tax liabilities (net)	1,254	1,254	0	24	(24)
(e) Liabilities directly associated with Assets held-for-sale	-	3	(3)	-	(3)
TOTAL LIABILITIES	2,83,482	2,81,788	1,694	3,958	(2,264)
TOTAL EQUITY AND LIABILITIES	3,36,081	3,30,620	5,461	4,899	562

Our total assets were ₹3,36,081 crores and ₹3,30,620 crores as at March 31, 2023, and 2022, respectively. The increase by 1.7% in assets as at March 31, 2023, considers favourable foreign currency translation from GBP into Indian rupees as described below.

Our total current assets were flat at ₹1,51,528 crores as at March 31, 2023, compared to ₹1,46,978 crores as at March 31, 2022.

Cash and cash equivalents decreased by 16.4% to ₹31,887 crores as at March 31, 2023, compared to ₹38,159 crores as at March 31, 2022. We hold cash and cash equivalents principally in Indian rupees, GBP, Chinese Renminbi, EURO and USD. Out of cash and cash equivalents as at March 31, 2023, Jaguar Land Rover held the GBP 2,248 million equivalent of ₹22,852

crores, which consists of surplus cash deposits for future use. As at March 31, 2023, we had short-term deposits of ₹4,487 crores, compared to ₹2,038 crores as at March 31, 2022, increase of 120.2%, due to increase in the value of deposits invested over a term of three months or longer mainly at Tata Passenger Electric Mobility Limited.

As at March 31, 2023, we had finance receivables, including the non-current portion (net of allowances for credit losses), of ₹30,834 crores, compared to ₹33,231 crores as at March 31, 2022, a decrease of 7.2%, due to lower financing during the year. Gross finance receivables were ₹32,741 crores as at March 31, 2023, compared to ₹35,039 crores as at March 31, 2022. Vehicle financing is integral to our automotive operations in India.

MANAGEMENT DISCUSSION AND ANALYSIS

Trade receivables (net of allowance for doubtful receivables) were ₹15,738 crores as at March 31, 2023, representing increase of 26.5% over March 31, 2022. There was favourable foreign currency translation of ₹225 crores from GBP to Indian rupees. Trade receivables at Tata and other brand vehicles (including vehicle finance) increased by 1.4% to ₹4,813 crores as at March 31, 2023, from ₹4,748 crores as at March 31, 2022, primarily on account of higher sales volume due to pent up demand. The trade receivables of Jaguar Land Rover were ₹10,229 crores as at March 31, 2023, compared to ₹7,183 crores as at March 31, 2022, and increase of 43.4%. The past dues for more than six months (gross) decreased from ₹1,503 crores as at March 31, 2023 to ₹1,441 crores as at March 31, 2022. These mainly represent dues from government-owned transport undertakings and Passenger Vehicle dealers, for which we are pursuing recovery.

As at March 31, 2023, inventories were at ₹40,755 crores, compared to ₹35,240 crores as at March 31, 2022, an increase of 15.6%. The increase in finished goods inventory was ₹5,286 crores from ₹23,885 crores as at March 31, 2022, to ₹29,171 crores as at March 31, 2023, mainly due to an increase in volumes both at Tata Motors and Jaguar Land Rover. This increase was also due to favourable currency translation of ₹719 crores from GBP to Indian rupees. In terms of number of days to sales, finished goods represented 20 inventory days in sales in FY 2022-23, compared to 31 inventory days in FY 2021-22.

Our investments (current and non-current investments) decreased to ₹21,704 crores as at March 31, 2023, from ₹25,030 crores as at March 31, 2022, representing an increase of 13.2%. Our investments mainly comprise mutual fund of ₹18,704 crores as at March 31, 2023, compared to ₹21,972 crores as at March 31, 2022. Investments attributable to Jaguar Land Rover were ₹15,065 crores as at March 31, 2023, compared to ₹16,518 crores as at March 31, 2022, a decrease of 8.8% mainly on account of mutual fund. Tata Motors Limited on Standalone basis has investments in mutual funds of ₹3,143 crores as at March 31, 2023, compared to ₹5,143 crores as at March 31, 2022.

Our other assets (current and non-current) increased by 37.7% to ₹18,189 crores as at March 31, 2023, from ₹13,205 crores as at March 31, 2022.

Our other financial assets (current and non-current) increased to ₹9,814 crores as at March 31, 2023, from ₹8,979 crores as at March 31, 2022. This increase is mainly due to deposits of surplus cash of Tata Passenger Electric Mobility limited with financial institution amounting to ₹900 crores as at March 31, 2023.

Income tax assets (both current and non-current) increased by 24.6% to ₹1,816 crores as at March 31, 2023, from ₹1,457 crores as at March 31, 2022. Tata Passenger Electric Mobility Limited, Tata Motors Passenger Vehicles Limited, Tata Motors Limited and TMF Group.

Property, plants and equipment (net of depreciation) decreased by 5.3% from ₹80,900 crores as at March 31, 2022, to ₹76,641 crores as at March 31, 2023. The decrease is partly offset by favourable foreign currency translation of ₹1,211 crores from GBP to Indian rupees. After adjusting for the foreign currency translation impact, decrease of ₹5,470 crores is mainly due to lower addition during the year as compared to previous year.

Goodwill as at March 31, 2023, was ₹841 crores, compared to ₹807 crores as at March 31, 2022. The increase was attributable to a favourable translation impact pertaining to software consultancy and the services of our subsidiary, Tata Technologies Limited.

Intangible assets decreased by 2.3% from ₹57,184 crores as at March 31, 2022, to ₹55,851 crores as at March 31, 2023. This decrease is mainly due to amortization charge for the year and lower capitalization of product development costs. This decrease is partially offset by favourable foreign currency translation of ₹1,080 crores from GBP to Indian rupees. As at March 31, 2023, there were product development projects in progress amounting to ₹9,055 crores compared to ₹6,722 crores as at March 31, 2022.

The carrying value of investments in equity-accounted investees increased by 7.5% to ₹4,676 crores as at March 31, 2023, from ₹4,349 crores as at March 31, 2022. The value of investments in equity-accounted investees increased mainly due to profit for the year FY 2022-23 from the associates and joint ventures.

A deferred tax asset (net) of ₹2,554 crores was recorded in our income statement and a deferred tax liability of ₹964 crores in other comprehensive income which mainly includes ₹1,123 crores towards cash flow hedges in FY 2022-23. The net deferred tax asset of ₹1,590 crores was recorded as at March 31, 2023, compared to net deferred tax liability ₹652 crores as at March 31, 2022.

Accounts payable (including acceptances) were ₹79,214 crores as at March 31, 2023, compared to ₹69,750 crores as at March 31, 2022, an increase of 13.6%, reflecting increase in operations at Jaguar land Rover and an unfavourable foreign currency translation of ₹1,237 crores from GBP to Indian rupees.

Other financial liabilities (current and non-current) were ₹22,151 crores as at March 31, 2023, compared to ₹19,754 crores as at March 31, 2022 (net of unfavourable currency translation impact of ₹407 crores), reflecting liabilities towards vehicles sold under repurchase arrangements, derivative instruments, and interest accrued but not due on loans and lease liabilities. Liability toward vehicles sold under repurchasing arrangements increased to ₹3,022 crores as at March 31, 2023, from ₹2,658 crores as at March 31, 2022, mainly due to increase in the repurchase business at Jaguar Land Rover. Further Derivative financial instruments (representing options and other hedging arrangements, mainly related to Jaguar Land Rover) increased by 24.3% to ₹9,766 crores as at March 31, 2023, from ₹7,859 crores as at March 31, 2022.

Provisions (current and non-current) increased by 6% to ₹25,007 crores as at March 31, 2023, from ₹23,722 crores as at March 31, 2022. Provisions for warranties increased by 4.3% or ₹758 crores to ₹18,492 crores as at March 31, 2023, compared to ₹17,734 crores as at March 31, 2022 mainly at Jaguar Land Rover increased from GBP 1630 million to GBP 1,672 million as at March 31, 2023. Provision for emission has increased from ₹255 crores to ₹325 crores as March 31, 2023.

Other liabilities (current and non-current) increased by 5.2% to ₹20,297 crores as at March 31, 2023, compared to ₹19,297 crores as at March 31, 2022.

Our total debt was ₹1,25,660 crores as at March 31, 2023, compared to ₹1,39,677 crores as at March 31, 2022, a decrease of 10.0%. It includes an unfavourable currency translation of ₹1,335 crores from GBP to Indian rupees. Short-term debt (including the current portion of long-term debt) decreased to ₹36,965 crores as at March 31, 2023, compared to ₹41,918 crores as at March 31, 2022. Long-term debt (excluding the current portion) decreased by 9.3% to ₹88,696 crores as at March 31, 2023, from ₹97,759 crores as at March 31, 2022. Long-term debt (including the current portion) decreased by 8.75% to ₹1,11,594 crores as at March 31, 2023, compared to ₹122,299 crores as at March 31, 2022.

Total equity was ₹52,600 crores as at March 31, 2023, and ₹48,832 crores as at March 31, 2022, respectively.

Equity attributable to shareholders of Tata Motors Limited increased to ₹45,322 crores as at March 31, 2023, compared to ₹44,561 crores as at March 31, 2022. This increase was mainly due to profit of ₹2,414 crores in FY 2022-23. Further, hedging reserve loss of ₹1,356 crores compared to loss of ₹6,938 crores, currency translation reserve gain of ₹723 crores compared to loss of ₹111 crores.

C. Cash Flow

The following table sets forth selected items from consolidated cash flow statement:

(₹ in crores)

	FY 2022-23	FY 2021-22	Change
Cash from operating activity	35,388	14,283	21,105
Profit/Loss for the year	2,690	(11,309)	
Adjustments for cash flow from operations	39,004	38,252	
Changes in working capital	(3,127)	(10,750)	
Direct taxes paid	(3,179)	(1,910)	
Cash from investing activity	(16,804)	(4,775)	(12,029)
Payment for Assets	(18,647)	(14,938)	
Net investments, short term deposit, margin money and loans given	801	9,478	
Dividend and interest received	1,042	685	
Net Cash from / (used in) Financing Activities	(26,243)	(3,380)	(22,863)
Proceeds/(buy back) from issue of share to minority shareholders	(395)	-	
Dividend Paid (including paid to minority shareholders)	(141)	(100)	
Interest paid	(9,336)	(9,251)	
Net Borrowings (net of issue expenses)	(16,371)	5,971	
Net increase / (decrease) in cash and cash equivalent	(7,659)	6,128	(13,787)
Cash and cash equivalent, beginning of the year	38,159	31,700	
Effect of exchange fluctuation on cash flows	1,387	331	
Cash and cash equivalent, end of the year	31,887	38,159	(6,272)
Free Cash flow*	9,237	(9,254)	17,654

*Free cash flow means cash flow from operating activities less payment for property, plant and equipment and intangible assets, add proceeds from sale of property, plant and equipment, excluding M&A linked asset purchase less interest paid, add interest received, add dividend from equity accounted investees of core auto entities and less Investment in Equity Accounted investees of core auto entities.

MANAGEMENT DISCUSSION AND ANALYSIS

Cash and cash equivalents decreased by ₹6,272 crores in FY 2022-23 to ₹31,887 crores from ₹38,159 crores in FY 2021-22. The decrease in cash and cash equivalents resulted from the changes to our cash flows in FY 2022-23 when compared to FY 2021-22 as described below.

Net cash provided by operating activities totalled ₹35,388 crores in FY 2022-23, an increase of ₹21,105 crores, compared to ₹14,283 crores in FY 2021-22. The net profit for the FY 2022-23 is ₹2,690 crores, compared to the loss of ₹11,309 crores in FY 2021-22. The cash flows from operating activities before changes in operating assets and liabilities is of ₹41,694 crores in FY 2022-23, compared to ₹26,943 crores in FY 2021-22. The changes in operating assets and liabilities resulted in a net outflow of ₹3,127 crores in FY 2022-23, compared to ₹10,750 crores in FY 2021-22.

In FY 2022-23, the net inflow in vehicle finance receivables was ₹617 crores compared to a net outflow of ₹76 crores in FY 2021-22. For Tata Commercial Vehicles and Tata Passenger Vehicles there was an inflow of ₹134 crores in FY 2022-23 on account of changes in operating assets and liabilities, compared to ₹3,755 crores in FY 2021-22. For Jaguar Land Rover brand vehicles, there was a net outflow of cash on account of changes in operating assets and liabilities accounting to ₹3,475 crores in FY 2022-23, compared to ₹13,830 crores in FY 2021-22.

Income tax paid has increased to ₹3,179 crores in FY 2022-23, compared to ₹1,910 crores in FY 2021-22, which was primarily attributable to tax payments by Jaguar Land Rover's foreign subsidiaries in their respective tax jurisdictions.

Net cash used in investing activities totalled of ₹16,804 crores in FY 2022-23, compared to ₹4,775 crores for FY 2021-22, an increase of ₹12,029 crores.

The following table sets forth a summary of our cash flow on property, plants and equipment and intangible assets for the periods indicated.

	(₹ in crores)	
	FY 2022-23	FY 2021-22
Tata Commercial Vehicles & Tata Passenger Vehicles	5,056	2,902
Jaguar Land Rover	13,591	11,974
Total	18,647	14,876

Jaguar Land Rover had positive free cash flow of GBP 521 million in FY 2022-23, after total investment spending of GBP 1.4 billion. In FY 2022-23, payments for capital expenditures at Jaguar Land Rover decreased by 13.3% to ₹13,591 crores from ₹11,999 crores in FY 2021-22. Investment spending in FY 2022-23 was GBP 2.4 billion (10.3% of revenue), higher than GBP 2.0

billion (11.1% of revenue) in the prior year. Of the GBP 2.4 billion investment spending, GBP 966 million was expensed through profit and loss statement and the remaining GBP 1.4 billion was capitalised.

Further, in FY 2022-23, payments for capital expenditures at Tata Commercial Vehicles and Tata Passenger Vehicles increased to ₹4,942 crores from ₹2,902 crores in FY 2021-22. These capital expenditures are related to new products under development. Payment for acquisition of Ford plant by Electric vehicle was ₹836 crores.

Our net investment in short-term deposit margin moneys and loans resulted in an inflow of ₹487 crores in FY 2022-23, compared to inflow of ₹9,478 crores in FY 2021-22. This is mainly due to lower realisation of fixed deposit in FY 2022-23, compared to FY 2021-22.

Net cash outflow from financing activities totalled ₹26,243 crores in FY 2022-23, compared to ₹3,380 crores in FY 2021-22. Net repayment of borrowings (net of issue expenses) done during FY 2022-23 of ₹18,623 crores, compared to a net proceed of ₹5,971 crores during FY 2021-22. For Tata Commercial Vehicles and Tata Passenger Vehicles excluding vehicle financing, the short-term debt (net) decreased by ₹1,973 crores, whereas long-term debt (net) decreased by ₹4,261 crores, due to repayments. There was a decrease in debt (short-term and long-term) of ₹2,499 crores in FY 2022-23 at Vehicle Financing, compared to ₹76 crores in FY 2021-22 on account of repayments.

For Jaguar Land Rover, short term debt decreased to GBP 1,478 million in FY 2022-23 (GBP 1,779 million in FY 2021-22) however, Long-term debt (excluding lease liabilities) increased to GBP 4,600 million in FY 2022-23 (GBP 5,248 million in FY 2021-22), including repayment of US\$500 million & GBP 400 million bond and GBP 125 million of the UKEF-backed loan which amortized over the course of the year. As at March 31, 2023, the Group has a fully undrawn revolving credit facility of GBP 1,520 million (2022: GBP 2,015 million). The facility was renewed on December 16, 2022 with a new maturity date of April 2026 and includes a covenant requiring the Group to maintain a minimum quarter-end liquidity of GBP 1 billion. Lease obligations payments totalled GBP 72 million in FY 2022-23 compared to GBP 71 million in FY 2021-22.

Interest paid in FY 2022-23 was ₹9,335 crores, compared to ₹9,251 crores in FY 2021-22. For Jaguar Land Rover, interest paid was ₹4,288 crores in FY 2022-23, compared to ₹3,454 crores in FY 2021-22 primarily because of the higher indebtedness as well as lower yield on cash balances, resulting from central banks interest rate cuts to help tackle the economic effects of the COVID-19 pandemic. For Tata Commercial Vehicles and

Tata Passenger Vehicles, interest paid was ₹2,090 crores in FY 2022-23, compared to ₹2,744 crores in FY 2021-22. For Vehicle Financing, interest paid was ₹2,502 crores in FY 2022-23, compared to ₹3,053 crores in FY 2021-22.

D. KEY FINANCIAL RATIOS

The details of significant changes (25% or more) in the key financial ratios in FY 2022-23 compared to FY 2021-22 is as follows:

Particulars	Year ended Mar 31,		Change	Favourable/ Unfavourable	Reason for change
	2023	2022			
Debt Equity Ratio (number of times)	2.77	3.13	(11.5%)	Favourable	With the reduction in total debt during the year and increase in shareholders' equity on account of profit during the year, the ratio has decreased compared to previous year
Debt Service Coverage Ratio (number of times)	0.23	0.04	475.0%	Favourable	Due to repayment of borrowings in current year as compared to net proceeds from borrowings in previous year
Interest Service Coverage Ratio (number of times)	1.17	0.19	515.8%	Favourable	Due to higher Earnings before finance costs, exceptional items and Tax.
Current ratio (number of times)	0.98	0.98	0.0%	Favourable	
Long term debt to working capital (number of times)	5.30	5.42	(2.2%)	Favourable	
Debtors' turnover (in times)	24.25	21.84	11.0%	Unfavourable	
Inventory turnover (in times)	5.96	5.07	17.6%	Unfavourable	
Operating margin (%)	9.2%	8.7%	5.9%	Favourable	
Net profit margin (%)	0.8%	(4.1%)	(119.1%)	Favourable	Due to net profit after tax during the year

E. Liquidity and Capital Resources

We finance our capital expenditures and research and development investments through cash generated from operations, cash and cash equivalents, and debt and equity funding. We also raise funds through the sale of investments, including divestments in stakes of subsidiaries on a selective basis.

The key element of the financing strategy is maintaining a strong financial position that allows us to fund our capital expenditures and research and development investments efficiently even if earnings are subject to short-term fluctuations. Our treasury policies for liquidity and capital resources are appropriate for automotive operations and are set through business specific sensitive analysis and by benchmarking our competitors. These are reviewed periodically by the Board.

(i) Principal Sources of Funding Liquidity

Our funding requirements are met through a mixture of equity, convertible or non-convertible debt securities and other long- and short-term borrowings. We access funds from debt markets through commercial paper programs, convertible and non-convertible debentures, and other debt instruments. We regularly monitor funding options available in the debt and equity capital markets with a view to maintain financial flexibility.

See Note 41 to our audited consolidated financial statements included elsewhere in this annual report for additional disclosures on financial instruments related to liquidity, foreign exchange and interest rate exposures and use of derivatives for risk management purposes.

The following table sets forth our short- and long-term debt position:

	(₹ in crores)	
	As of March 31,	
	2023	2022
Short-term debt (excluding current portion of long-term debt)	14,067	17,378
Current portion of long-term debt	22,898	24,539
Long-term debt net of current portion	88,696	97,759
Total Debt	1,25,660	1,39,677

During FY 2022-23 and FY 2021-22, the effective weighted average interest rate on our long-term debt was 5.77% and 5.23% per annum, respectively.

The following table sets forth a summary of long-term debt (including current maturities of long-term borrowings) outstanding as of March 31, 2023.

MANAGEMENT DISCUSSION AND ANALYSIS

Details of Long-term debt	Currency	Initial Principal amounts (millions)	Redeemable On	Interest Rate	Amount Repaid during FY 2022-23 (₹ crores)	Outstanding (₹ crores)	
						31-03-2023	31-03-2022
Non-convertible debenture	₹			Various		13,061	14,831
Collateralized debt Obligations	₹			Various		75	1,183
Buyers from credit bank	Various			Various		-	4,058
Loans from banks/financial institutions	Various			Various		45,225	44,250
Compulsory convertible Preference shares	₹			Various		11	11
Others	₹			Various		276	344
Senior Notes							
Tata Motors Limited	US\$	250	due 2024	5.750%		2,043	1,877
Tata Motors Limited	US\$	300	due 2025	5.875%		2,466	2,274
TML Holdings Pte. Limited	US\$	425	due 2026	5.350%		3,486	3,199
Jaguar Land Rover	US\$	500	due 2023	5.625%	3,777	-	3,777
Jaguar Land Rover	GB£	400	due 2023	3.875%	3,972	-	3,972
Jaguar Land Rover	US\$	500	due 2027	4.500%		4,086	3,762
TML Holdings Pte. Limited	GB£	98	due 2023	4.000%		988	960
TML Holdings Pte. Limited	US\$	300	due 2024	5.500%		2,466	2,261
Jaguar Land Rover	EU€	500	due 2029	5.500%		4,081	3,757
Jaguar Land Rover	US\$	700	due 2025	7.750%		5,715	5,256
Jaguar Land Rover	US\$	650	due 2028	5.875%		5,298	4,874
Jaguar Land Rover	EU€	500	due 2024	5.875%		4,457	4,198
Jaguar Land Rover	EU€	500	due 2028	4.500%		4,444	4,189
Jaguar Land Rover	EU€	650	due 2024	2.200%		5,807	5,473
Jaguar Land Rover	EU€	500	due 2026	4.500%		3,109	3,537
Jaguar Land Rover	EU€	500	due 2026	6.875%		4,500	4,256
Total Long-term debt					7,749	1,11,594	1,22,299

The following graph sets forth a summary of the maturity profile for our outstanding long-term debt obligations (including current maturities of long-term borrowings) as of March 31, 2023.



- Including interest.
- As at March 31, 2023, Jaguar Land Rover's long-term debt obligations were senior notes and bank loans of ₹55,099 crores.

The following table sets forth our total liquid assets, namely cash and cash equivalents, short-term deposits and investments in mutual funds and money market funds (under other Investment—Current):

(₹ in crores)

	As of March 31,	
	2023	2022
Total cash and cash equivalent	31,558	38,159
Total short-term deposits	4,817	2,038
Total mutual fund investments	18,704	21,972
Total liquid assets	55,078	62,169

These resources enable us to address business needs in the event of changes in credit market conditions. Of the above liquid assets, Jaguar Land Rover held ₹38,547 crores and ₹43,859 crores as of March 31, 2023, and 2022, respectively. Most of Jaguar Land Rover's liquid assets are maintained in GBP, USD, EUR and RMB with smaller balances maintained in other currencies to meet operational requirements in those geographic regions.

We expect total product and other investment spending to be around ₹38,000 crores in property, plants and equipment and product development during FY 2023-24.

We will step-up our investments for domestic business to cater to increasing demand, launch new products and technologies and explore new business avenues. Jaguar Land Rover has Investment plans of £15 billion over five years in its industrial footprint, vehicle programmes, autonomous, AI and digital technologies and people skills, as a part of its reimagine strategy. Tata Motors Limited (TML) and Tata Motors Passenger Vehicles Limited (TMPVL) expects to meet the investments primarily out of their own operating cash flows. Capital investments in Tata Passenger Electric Mobility Limited (TPEML) will be largely funded from the funds received from TPG Rise Climate in line with the strategy roadmap set. Any additional funding requirements if needed, can be met through loans and other debt from time to time. Despite step-up in the investments, we are expecting our business to be self-sustaining, and we aim to get to turn net cash positive by Fiscal 2025.

Auto Free Cash Flow (cash flow from operating activities less payment for property, plant and equipment and intangible assets add proceeds from sale of property, plant and equipment, less interest paid add interest received, add dividend from equity accounted investees core auto and less investment in equity accounted investees of core auto entities and less cash flow of TMF Group i.e., financing business) on consolidated basis was positive at ₹7,840 crores compared to negative ₹9,472 crores in FY 2021-22. This is mainly on account of improvements in cash profit and working capital.

The following table provides information for the credit rating of Tata Motors Limited for short-term borrowing and long-term borrowing from the following rating agencies as of March 31, 2023: Credit Analysis & Research Limited ("CARE"), Information and Credit Rating Agency of India Ltd. ("ICRA Limited" or "ICRA"), Credit Rating Information Services of India Ltd. ("CRISIL Ltd" or "CRISIL"), Standard & Poor's Ratings Group ("S&P") and Moody's Investors Service ("Moody's"). A credit rating is not a recommendation to buy, sell or hold securities. A credit rating may be subject to withdrawal or revision at any time. Each rating should be evaluated separately of any other rating. The credit rating of Tata Motors as at March 31, 2023, was as follows.

Rating agency	Long-term borrowings	Short-term borrowings
CARE	AA- / Stable	A1+
ICRA	AA- / Positive	A1+
CRISIL	AA- / Stable	A1+
S&P	BB- / Stable	-
Moody's	BI / Stable	-

Subsequently, S&P upgraded the long-term issuer and issue credit rating on Tata Motors Limited to BB/Stable from BB-/Stable in April 2023.

As at March 31, 2023, JLR's rating was "BI" / Stable by Moody's, "B+" / Stable by Standard & Poor's. Subsequently, in April 2023, S&P upgraded the credit rating to BB-/Stable.

As at March 31, 2023, for TMFHL and its subsidiaries, CRISIL, ICRA and CARE rating on long- term debt instruments and long-term bank facilities stood at "AA -/ Stable",

We believe that we have sufficient liquidity available to meet our planned capital requirements. However, our sources of funding could be materially and adversely affected by an economic slowdown, as was witnessed in FY 2008-09, arising due to the COVID-19 pandemic, supply chain disruptions or other macroeconomic factors in India, the United Kingdom, the United States, Europe or China, which are beyond our control. A decrease in the demand for our vehicles could affect our ability to obtain funds from external sources on acceptable terms or in a timely manner.

We assessed the cash flow projections and available liquidity for a period of eighteen months from the date of these financial statements. Based on this evaluation, our management believes that the Company will be able to continue as a 'going concern' in the foreseeable future. For further details kindly refer note 2 (e) in Significant accounting policies forming part of consolidated financial statement.

Our cash is located in various subsidiaries. The cash in some of these jurisdictions, notably South Africa and Brazil, is subject to certain restrictions on cash pooling, intercompany loan arrangements or interim dividends. However, annual dividends are generally permitted, and we do not believe that these restrictions have, or are expected to have, any impact on our ability to meet our cash obligations.

Long-term funding

To refinance our existing borrowings and support our long-term funding needs, we continued to raise funds during FY 2021-22 and FY 2022-23. Details of major funding during FY 2021-22 and FY 2022-23 are provided below.

During FY 2021-22, Tata Motors raised unsecured term loans amounting to ₹1,000 crores from Banks for general corporate purpose and funding capital requirements. Tata Motors Limited also raised ₹1,000 crores through unsecured, rated, listed NCD's. During FY 2021-22, Tata Motors Limited prepaid ₹600 crores of secured term loan.

MANAGEMENT DISCUSSION AND ANALYSIS

During FY 2021-22, TMFHL and its subsidiaries (TMF Group), raised ₹5,005 crores by issuing debentures (including Hybrid and non-hybrid Perpetual NCDs). Total issuance through Hybrid Perpetual NCDs was ₹935 crores. Bank borrowings continued to be a major source for long-term borrowing and raised ₹7,975 crores during FY 2021-22.

In July 2021, Jaguar Land Rover Automotive Plc issued \$500 million senior notes due in 2029 at a coupon of 5.50% per annum and EUR 500 million senior notes due 2028 at a coupon rate of 4.5%. The proceeds were for general corporate purposes.

In February 2022, the GBP 400 million senior notes with a coupon of 5% issued by Jaguar Land Rover Automotive Plc in January 2014 matured and were fully repaid.

In June 2021, TML Holding Pte Limited has issued USD 425 million (₹3,107 crores) senior notes with a coupon rate of 4.35% due in 2026. The proceeds have been used towards refinancing and meeting general corporate purposes.

In June 2021, Tata Motors Limited issued E 30-A Series of 5,000 Rated, Listed, Unsecured, 6.60% Coupon, Redeemable, Non-Convertible Debentures of ₹500 crores, on private placement basis.

In July 2021, Tata Motors Limited issued E 30-B Series of 5,000 Rated, Listed, Unsecured, 6.95% Coupon, Redeemable, Non-Convertible Debentures of ₹500 crores, on private placement basis.

In December 2021, Jaguar Land Rover took GBP 625 million five-year amortising loan (backed by a UKEF guarantee). As at March 31, 2023, total amount outstanding in respect of the five-year amortising loan facilities of GBP 625 million taken in October 2019 and above-referenced facility of GBP 625 million taken in December 2021, stood at GBP 662 million with GBP 250 million repayment in FY 2022-23.

In FY 2022-23, Tata Motors Limited did not raise any new long-term borrowings.

In FY 2022-23, Tata Motors Limited prepaid the balance outstanding of secured term loan from Financial Institution (₹3,000 crores availed in June 2020) and Bank Term Loan (₹500 crores availed in April 2019).

In February 2023, the US\$500 million senior notes with a coupon of 5.625% issued by Jaguar Land Rover Automotive Plc in January 2013 matured and were fully repaid. In March 2023, the GBP 400 million senior notes with a coupon of 3.875% issued by Jaguar Land Rover Automotive Plc in February 2015 matured and were fully repaid.

During FY 2022-23, TMFHL and its subsidiaries (TMF Group), raised ₹1,660 crores by issuing debentures (including Hybrid Perpetual NCDs). Total issuance through Hybrid Perpetual NCDs was ₹360 crores. Bank borrowings continued to be a major source for long-term borrowing and raised ₹872 crores during FY 2022-23.

In October 2022, TML Holdings Pte Ltd raised GBP 375 million syndicated loan facility for 5-year bullet maturity at the interest rate of SONIA + spread of 180 bps. The proceeds were used to prepay existing loan of GBP 225 million which were due in July 2023.

The Company at its Board meeting held on October 12, 2021, approved the incorporation of a wholly owned subsidiary ("TML EV Co") to undertake its passenger electric mobility business and executed a Securities Subscription Agreement with India Markets Rio Pte Ltd, an entity affiliated with TPG Rise Climate (the climate investing strategy of TPG's global impact investing platform TPG Rise) for an aggregate investment of ₹7,500 crores in TML EV Co over the period of 18 months from the date of completion of the first tranche. Accordingly, Tata Passenger Electric Mobility Limited (TPEML) is formed on December 21, 2021. The Proposed Transaction involves the primary investment of ₹7,500 crores by TPG Rise Climate in TPEML in tranches; and issuance and allotment of compulsorily convertible preference shares, having face value of ₹1,000 each, by TPEML to TPG Rise Climate in lieu of such investment. The investment is by issuance and allotment of compulsorily convertible preference shares, having face value of ₹1,000 each, by the Company to TPG Rise Climate. The total amount of investment of ₹7,500 crores is bifurcated into two instruments CCPS A1 and CCPS A2 of investment of ₹5,000 crores and investment of ₹2,500 crores, respectively. The remittance of the first tranche of ₹3,750 crores (50% of each instrument) has been received on March 29, 2022, and the second tranche on January 31, 2023.

We plan to refinance and raise long-term funding through borrowings or equity issuances, based on review of business plans, operating results and covenant requirements of our existing borrowings.

For various repayments made during FY 2022-23, refer "summary of long-term debt outstanding as of March 31, 2023" in Principal Sources of Funding Liquidity.

Short-term funding

We fund our short-term working capital requirements with cash generated from operations, overdraft facilities with banks, short- and medium-term borrowings from lending institutions, banks and commercial paper. The maturities

of these short-term and medium-term borrowings and debentures are generally matched to particular cash flow requirements. We had borrowings of ₹13,230 crores and ₹17,378 crores as of March 31, 2023, and 2022, respectively.

On January 1, 2022, we transferred our Passenger Vehicles business to TMPVL, a wholly owned subsidiary. Accordingly, the working capital limits for Tata Motors Limited were reduced to ₹7,000 crores and we entered into facility with a consortium bank for ₹3,000 crores working capital limits for TMPVL. The unutilized working capital Limits for TMPVL were ₹ 2,779 crores as at March 31, 2023. As at March 31, 2023, the unutilized working capital limits for Tata Motors Limited were at ₹4,724 crores. The working capital limit are secured by hypothecation of existing current assets, including stock of raw material, stock in process, semi-finished goods, stores and spares not relating to plants and machinery (consumable stores and spares), bills receivables and book debts, including vehicle financing receivables and all other moveable current assets, except cash and bank balances, loans and advances of Tata Motors Limited, both present and future. The working capital limit are renewed annually.

For Jaguar Land Rover, the unutilized revolving credit facility was GBP 1.52 billion as at March 31, 2023. In our opinion, our working capital facilities and short-term borrowings are sufficient for the Company's present requirements.

As at March 31, 2023, Jaguar Land Rover Limited had sold receivables of GBP 373 million equivalent under the approximately US\$500 million committed invoice discounting facility, which was renewed for another two years in March 2023. Under the terms of this facility receivables are accounted as sold (through trade receivables in working capital) and therefore not accounted as debt under IFRS.

Loan Covenants

Some of our financing agreements and debt arrangements set limits on and/or require prior lender consent for, among other things, undertaking new projects, issuing new securities, changes in management, mergers, sales of undertakings and investments in subsidiaries. In addition, certain negative covenants may limit our ability to borrow additional funds or to incur additional liens, and/or provide for increased costs in case of breach. Certain financing arrangements also include financial covenants to maintain certain debt-to-equity ratios, debt-to-earnings ratios, liquidity ratios, capital expenditure ratios and debt coverage ratios.

We monitor compliance with our financial covenants on an ongoing basis. We also review our refinancing strategy

and continue to plan for deployment of long-term funds to address any potential non-compliance.

We monitor compliance with our financial covenants on an ongoing basis. We also review our refinancing strategy and continue to plan for deployment of long-term funds to address any potential non-compliance. For FY 2022-23, the Company is in compliance with all the covenants. In one of our subsidiaries, we could not meet certain covenants and have obtained a waiver for FY 2022 -23. The outstanding term loan as at March 31, 2023, is ₹15 crores.

Certain debt issued by Jaguar Land Rover is subject to customary covenants and events of default, which include, among other things, minimum liquidity requirement in the case of the UKEF facilities (and the GBP 1.52 billion extended revolving credit facility, restrictions or limitations on the amount of cash that may be transferred outside of the Jaguar Land Rover Group in the form of dividends, loans or investments to TML and its subsidiaries. These are referred to as "restricted payments" in the relevant Jaguar Land Rover financing documentation. In general, the amount of cash which may be transferred as restricted payments from the Jaguar Land Rover Group to the Company and its subsidiaries is limited to 50% of its cumulative consolidated net income (as defined in the relevant financing documentation) from January 2011. As at March 31, 2023, the estimated amount that is available for dividend payments, other distributions and restricted payments was approximately GBP 4.4 billion.

(ii) Capital Expenditures

Capital expenditures totalled ₹18,543 crores and ₹14,907 crores during FY 2022-23 and FY 2021-22, respectively. Our automotive operations accounted for most of such capital expenditures. We currently plan to invest around ₹38,000 crores in FY 2023-24 in new products and technologies.

Our capital expenditures in India for Commercial Vehicles and Passenger Vehicles business during FY 2022-23 related mostly to (i) the introduction of new products, such as the Tata Punch, Tiago and Tigor CNG, Altroz DCA, Tata 407 CNG, ACE Petrol and wide range of commercial vehicles (ii) the development of planned future products and technologies, and (iii) quality and reliability improvements aimed at reducing operating costs.

Total product and other investment for Jaguar Land Rover in FY 2022-23 was GBP 2.4 billion, primarily reflecting the product launches and refreshes, as well as towards electrification platforms, architectures and investments in future BEV's as a part of Reimagine Strategy.

MANAGEMENT DISCUSSION AND ANALYSIS

We continue to focus on development of new products for our various markets. Through Jaguar Land Rover, we continue to make investments in new technologies through its research and development activities to develop products that meet the requirements of the premium market, including developing sustainable technologies to improve fuel economy and reduce carbon dioxide emissions, such as the expansion of electrification across 12 of Jaguar Land Rover's 13 nameplates, including eight plug-in hybrid and eleven mild hybrid models as well as the all-electric Jaguar I-PACE.

We intend to continue investing in our business units and research and development over the next several years, including capital expenditures for our ongoing projects, new projects, product development programs, mergers, acquisitions and strategic alliances in order to build and expand our presence in the Passenger Vehicle and Commercial Vehicle categories.

F. Critical Accounting Policies

The preparation of financial statements in conformity with Ind AS requires management to make judgments, estimates and assumptions that affect the application of accounting policies and the reported amounts of assets, liabilities, income, expenses and disclosures of contingent assets and liabilities as of the date of this annual report and the reported amounts of revenues and expenses for the years presented. The actual results may differ from these estimates.

Estimates and underlying assumptions are reviewed on an ongoing basis and on each balance sheet date. Revisions to accounting estimates are recognized in the period in which the estimate is revised, and future periods are affected.

In particular, information about significant areas of estimation uncertainty and critical judgments in applying accounting policies that have the most significant effect on the amounts recognized in the financial statements are included in the following notes:

Impairment of Goodwill

CGUs to which goodwill is allocated are tested for impairment annually on each balance sheet date, or more frequently when there is an indication that the unit may be impaired. If the recoverable amount of the CGU is less than the carrying amount of the unit, the impairment loss is allocated first to reduce the carrying amount of any goodwill allocated to that unit and then to the other assets of the unit pro rata on the basis of carrying amount of each asset in the unit. Goodwill impairment loss recognized is not reversed in subsequent period.

Impairment

Property, plants and equipment and intangible assets

On each balance sheet date, we assess whether there is any indication that any property, plants and equipment and intangible assets with finite lives may be impaired. If any such impairment exists, the recoverable amount of an asset is estimated to determine the extent of impairment, if any. Where it is not possible to estimate the recoverable amount of an individual asset, we estimate the recoverable amount of the CGU to which the asset belongs.

Intangible assets with indefinite useful lives and intangible assets not yet available for use are tested for impairment annually on each balance sheet date, or earlier if there is an indication that the asset may be impaired.

The recoverable amount is the higher of fair value less costs to sell and value in use. In assessing VIU, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset for which the estimates of future cash flows have not been adjusted.

If the recoverable amount of an asset (or CGU) is estimated to be less than its carrying amount, the carrying amount of the asset (or CGU) is reduced to its recoverable amount. If this occurs, an impairment loss is recognized immediately in the statement of profit and loss.

Finance receivables

We provide allowances for losses on portfolio of finance receivables on the basis of expected future collection from receivables. The future collection is estimated on the basis of past collection trend which are adjusted for changes in current circumstances as well as expected changes in collection based on expectations with respect to certain macro-economic factors, such as GDP growth, fuel price and inflation as well as management judgement regarding qualitative factors, including economic uncertainty, observable changes in portfolio performance, and other relevant factors.

Capitalization of internally generated intangible assets

We undertake significant levels of research and development activity and for each vehicle program periodic review is undertaken. We apply judgement in determining at what point in a vehicle programs lifecycle that recognition criteria under accounting standards is satisfied.

Product Warranty

Vehicle warranties are provided for a specified period of time. Our vehicle warranty obligations vary depending upon the type of the product, geographical location of its sale and other factors.

The estimated liability for vehicle warranties is recorded when the products are sold or when new warranty programs are initiated. These estimates are established using historical information on the nature, frequency and average cost of warranty claims and management estimates regarding possible future warranty claims, customer goodwill and recall complains. The timing of outflows will vary depending on when warranty claim will arise, being typically up to six years and for batteries in Electric Vehicles warranty period is typically up to eight years.

We also have back-to-back contractual arrangements with our suppliers in the event that a vehicle fault is proven to be a supplier's fault. Estimates are made of the expected reimbursement claims based upon historical levels of recoveries from supplier, adjusted for inflation and applied to the population of vehicles under warranty as on balance sheet date. Estimated supplier reimbursements are recognized as separate asset. Actual claims incurred in the future may differ from our original estimates, which may materially affect warranty expenses.

Employee Benefits

Employee benefit costs and obligations are dependent on assumptions used in calculating such amounts. These assumptions include salary increases, discount rates, health care cost trend rates, benefits earned, interest costs, expected return on plan assets, mortality rates and other factors.

While we believe that the assumptions used are appropriate, differences in actual experience or changes in assumptions may affect our employee benefit costs and obligations.

Recoverability/recognition of deferred tax assets

Deferred tax assets and liabilities are recognized for the future tax consequences of temporary differences between the carrying values of assets and liabilities and their respective tax bases, and unutilized business loss and depreciation carryforwards and tax credits. Such deferred tax assets and liabilities are computed separately for each taxable entity and for each taxable jurisdiction. Deferred tax assets are recognized to the extent that it is probable that future taxable income will be available against which the deductible temporary differences, unused tax losses,

depreciation carryforwards and unused tax credits could be utilized.

INTERNAL CONTROL SYSTEMS AND THEIR ADEQUACY

We have an adequate system of internal controls in place. We have documented policies and procedures covering all financial and operating functions. These controls have been designed to provide a reasonable assurance regarding maintaining of proper accounting controls for ensuring reliability of financial reporting, monitoring of operations, and protecting assets from unauthorized use or losses, compliances with regulations. We have continued our efforts to align all our processes and controls with global best practices.

Some significant features of the internal control of systems are:

- The Audit Committee of the Board of Directors, comprising entirely of independent directors and functional since August 1988, regularly reviews the audit plans, significant audit findings, adequacy of internal controls, compliance with accounting standards as well as reasons for changes in accounting policies and practices, if any;
- Documentation of major business processes and testing thereof including financial closing, computer controls and entity level controls, as part of compliance program towards Sarbanes-Oxley Act, as required by the listing requirements at New York Stock Exchange and also as required under the Companies Act, 2013;
- Robust Enterprise Resource Planning, supplier relations management and customer relations management connect our different locations, dealers and vendors for efficient and seamless information exchange. We also maintain a comprehensive information security policy and undertakes continuous upgrades to our IT systems;
- Detailed business plans for each segment, investment strategies, year-on-year reviews, annual financial and operating plans and monthly monitoring are part of the established practices for all operating and service functions;
- A well-established, independent, multi-disciplinary Internal Audit team operates in line with governance best practices. It reviews and reports to management and the Audit Committee about compliance with internal controls and the efficiency and effectiveness of operations as well as the key process risks. The scope and authority of the Internal Audit division is derived from the Internal Audit Charter, duly

MANAGEMENT DISCUSSION AND ANALYSIS

approved by the Audit Committee; and Anti-fraud programs including whistle blower mechanisms are operative across the Company;

- Adopted three Line Of Defence model. The 1st line of defence, ensures implementation of desired Internal Controls and Risk Management practices. The 2nd line of defence assist in determination of Risk Capacity, Appetite, Process and Procedures and facilitate oversight, monitoring and reporting on Risk and Controls. The 3rd line of defence is the internal audit, which provides Independent and Objective assurance to the Audit Committee on overall effectiveness of Risk Management, Internal Control and Compliance activities and recommendations on improvements required;
- An ongoing program, for the reinforcement of the Tata Code of Conduct is prevalent across the organization. The Code covers integrity of financial reporting, ethical conduct, regulatory compliance, conflicts of interest’s review and reporting of concerns.

The Board takes responsibility for the overall process of risk management throughout the organization. Through an Enterprise Risk Management program, our business units and corporate functions address risks through an institutionalized approach aligned to our objectives. This is facilitated by internal audit. The Business risk is managed through cross-functional involvement and communication across businesses. The results of the risk assessment are presented to the senior management. The Risk Management Committee reviews business risk areas covering operational, financial, strategic and regulatory risks.

There have been no changes in our internal control over financial reporting that occurred during the period covered by this annual report that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting. Although we have implemented various initiatives for continuous business operation in response to the COVID-19 pandemic, including enabling most of our employees to telework, apart from those who need to work at their office for smooth operations, we believe these initiatives have not had a significant impact on our internal control over financial reporting.

During FY 2022-23, we assessed the effectiveness of the Internal Control over Financial Reporting and has determined that our Internal Control over Financial Reporting as at March 31, 2023, is effective.

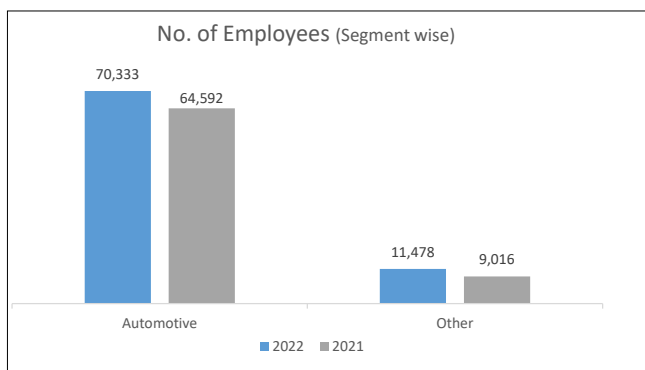
HUMAN RESOURCES / INDUSTRIAL RELATIONS

Our people are our best assets. Their caliber and commitment are our inherent strength. With the singular objective of always being the employer of choice in the Indian auto industry, we are encouraging our employees to discover and realize their true potential. Acquiring diverse experiences, accomplishing challenging tasks and continually learning and upskilling is enabling them to deliver their best. By identifying, developing and nurturing quality talent at every stage of the employee lifecycle, we are empowering them to become future ready and build rewarding careers. Keeping employee wellbeing foremost, we have embraced the post-pandemic way of life and work. By institutionalizing hybrid mode of working, digitizing processes, refreshing our culture, we are collectively fostering new ways of working. Future ready trails of agility, digital mindset and customer centricity are being consciously imbibed, both in thought and action, at every level across the organization. Richer collaborations and stronger teamwork have accelerated our pursuit of excellence.

Building a Strong Workforce

We employed approximately 81,811 and 73,608 permanent employees as of March 31, 2023 and 2022, respectively. The average number of flexible (temporary, trainee and contractual) employees for FY 2022-23 was approximately 36,082 compared to 40,717 (including joint operations) in FY 2021-22. We have a healthier gender diversity with 8.79% of our workforce comprising of women employees.

The following graph presents the breakdown of persons employed by the Company’s business segments as of the following dates.



Culture

Culture is a key enabler to optimize potential, retain and also attract top talent to fuel performance within the organization. The collective desire to become more agile and future ready necessitated a refresh of the organizational culture. Following an intense process of co-creation wherein thoughts, opinions, perspectives and aspirations of every employee were heard, a new Culture Credo, summarized as – More When One with its four culture pillars – Be Bold, Solve Together, Own it & Be Empathetic, was launched. These culture pillars were further defined through eight distinct leadership behaviors – Agility, Risk taking, Owner's Mindset, Empowerment, Collaboration, Accountability, Embrace Diversity and Passion for Customers. A high impact launch, followed by consistent and conscious efforts to accelerate the Culture Transformation journey with active employee participation has resulted in improvement in overall employee engagement scores.

Capability Development

Committed to empowering our employees, we are fostering their development by strengthening their functional, managerial and leadership capabilities to make them future-fit. With volatility rising in the external environment, a holistic approach has been adopted to proactively identify and address all potential capability gaps. Tata Motors Academy designs and creates appropriate functional training modules to address the development needs of the various segments of our workforce. The academy focuses on three functional pillars – Customer Excellence, Product Leadership, Operational Excellence and Management Education. The emphasis of the functional academies is to reinforce knowledge, skills and expertise with a structured and in-depth approach, within the respective function:

- The Product Leadership Academy, Operational Excellence Academy and Customer Excellence Academy are designing and deploying the courses and learning programs for our employees in Engineering, Operations, and Customer facing functions, focused on the organization's technical roadmap on Connected, Electric, Shared & Safe vehicles (CESS), as well as domain capabilities in respective functional areas.
- The Customer Excellence Academy ensures capability building not only for Tata Motors' front-end functions, but also for our channel partners. These training interventions are planned for Dealer Sales Agents to provide best-in-class experience to our customers. We also launched the 'Re-imagining PV front-end' dealership program, a targeted intervention to train and mobilize the workforce responsible for delivering the last mile customer experience.

→ The Management Excellence Academy provides executive management education opportunities in the areas of B.Tech, M.Tech, and Executive MBA to develop general management education. The Academy also focusses on developing Professional and Growth leadership skill for staff. Programs for First Time Managers, People Managers, for Hiring Managers, Promotees are some of the interventions driven by this Academy.

→ By embracing digital, the academy has also embarked upon a decisive journey of curated functional e-learning journeys for all its employees. This includes e-learning and virtual classrooms, which augments the offering of functional as well as management education pillars.

TALENT MANAGEMENT

Healthy succession pipeline and leadership capabilities is the focus such that we create a Talent Factory across employee levels of the Organization. Our annual Organizational & Talent Review process and a robust Succession planning exercise ensures that we maintain a healthy succession pipeline of critical and leadership roles. This enables us to identify, groom and develop potential candidates across the organization. Comprehensive leadership development approach is established based on talent assessments and identification process. Basis the developmental needs identified, developmental programs are tailored to the requirements in partnership with a top ranked global business schools and esteemed knowledge partners like Tata Management Training Center (TMTC) as well as external partners. To cite examples, Leadership Trails curated for Senior Leadership of Tata Motors in collaboration with TMTC and global institutions of repute. Another example is that of Inner Circle, a developmental program for our best mid-level and junior management talent has also been introduced in collaboration with a marquee academic institution. To provide employees with growth opportunities across functions, locations and business units, we encourage internal mobility of our talent through job rotations and 'Career Explore' – our internal job posting portal.

Skill Development

The endeavor to deliver high quality products by enhancing our craftsmanship and improving manufacturing and assembly processes continues with a greater thrust. To address the rapid technology disruptions and changing market dynamics, we have developed the 'Future of Workplace' strategy. It provides our workforce with new skills such as High Voltage (Electric Vehicles), Mechatronics (Industry 4.0), Auto Electronics and Vehicle Communication.

MANAGEMENT DISCUSSION AND ANALYSIS

We are actively reskilling our permanent workforce in these newer technology areas. In parallel, we are also developing a young, skilled, agile and digital enabled workforce through our company's flagship full-time apprenticeship program (new craftsman trades) and the Earn and Learn NEEM program. We recruit talent from the finest training institutes. Beyond core trade-based skills, we focus and train our technicians in very specific skills to achieve world-class quality, best-in-class know-how and high productivity levels.

Talent attraction at JLR

Software is essential for us to deliver next-generation automated driving systems, digital services, and experiences for clients. ADAS (Advanced Driver Assistance Systems) and autonomous driving skills have been identified as critical to this ambition, but are a sought-after skill set in the market. To attract these skills, and compete with other industries, we have expanded our global operational footprint in Germany, Italy and Spain, in addition to existing hubs in Manchester, Ireland, Hungary, Portland, India and China, to access a wider skills pool and harness the best talent for our business.

Upskilling for the future at JLR

We are also focused on evolving the skills of our workforce through upskilling programs that build critical capabilities internally. To enable the transition from internal combustion engines to battery electric vehicles, we have upskilled our engineers on electrification through the co-creation of bespoke courses, in partnership with a local university. Focus has also been placed on upskilling employees in 'product owner' and 'scrum master' roles, to enable agile ways of working in program delivery.

Early Careers at JLR

To expand our talent pool and establish a pipeline of skills to transition to an electrified future, there is continued investment in early careers programs which is made up of apprenticeships, undergraduate positions and graduate positions. Through hiring drives, we expect to see over 1,000 people join JLR in 2023 globally, a 55% increase on the previous year and a new record intake for the company. We were third in Target jobs' most popular graduate recruiter in Engineering, Design and Manufacturing award 2023 and named a Top 100 Apprenticeships Employer in 2022.

Training and development

We have developed three e-learning modules for our UK business with future plans to create the same for all regions, to ensure that all our colleagues have a good understanding

of diversity and inclusion, and how inclusivity can affect those around us. These modules have reached a minimum completion rate of 92%.

We have also established a face-to-face diversity and inclusion training program, for colleagues across our UK manufacturing sites.

In July 2022, we announced the appointment of two diversity and inclusion co-sponsors, François Dossa, and Barbara Bergmeier, ensuring diversity and inclusion is represented at the highest levels of our business. They are supported by 14 global employee resource groups, ensuring that employees have spaces where they are able to share their lived experiences, and also to learn from one another's experiences. These have been instrumental in showcasing the power of allyship within our organization.

Diversity & Inclusion

Tata Motors fosters workplaces that promote diversity and equal opportunities. It is our endeavor to establish an environment where diversity is natural and business as usual.

We have the following strategic focus areas for diversity and inclusion:

- Strategic workforce planning: We have designed a process for workforce planning that focuses on increasing gender diversity across levels and various segments of the organization. With this process, we are able to proactively anticipate current and future hiring needs and align them to driving more gender balanced hiring.
- Culture transformation: We are working towards creating an inclusive workplace culture through our policies and processes. The Company organizes sensitization and awareness campaigns to help create an open mind and culture to leverage diversity at the workplace.
- Business integration: We recognize that a diverse workforce enables us to better understand and serve our customers and intend to embed D&I into our business operations covering all aspects – business strategy, people or operations. We conceptualize product designs that are inclusive and cater to a diversified customer base. We encourage our suppliers to adopt gender diversity at their end too.
- Partnership & external impact: We aim to create opportunities in all dimensions of diversity by partnering with specialists and NGOs to support local communities. We are committed to working with our external partners, such as suppliers and customers, to promote diversity and inclusion across the industry.

In a significant step forward toward increasing gender diversity on the shop floor, traditionally a male bastion, our TCF assembly at the Pune Plant is now entirely operated and managed by over 1,500 women employees. This is a benchmark practice in automobile industry. Also, women employees completely manage one line at Maval foundry. We have a development program called Gear-Up. Eligible women employees are provided training or mentorship basis each women employee's strengths and improvement areas. Some of these initiatives include providing opportunities with various teams like quality circles, GEMS projects, and innovation projects through the Imagineering platform. The Second Career Initiative Program (SCIP) is a platform that encourages women, who put their career on pause to restart it with interesting opportunities. We also introduced Paternity Leave and Adoption Leave for our male colleagues to support parenthood. Inclusive Internship policy is formulated to drive employability initiative and employment opportunities for LGBTQ+ and PwD.

Tata Motors measures the success of its diversity and inclusion initiatives via different parameters. These parameters measure success of diversity initiatives across H2R (Hire to Retire) journey of employees. Gender diversity for new hires is tracked. Attrition of women employees and the reasons for the same is closely monitored as well. We also compare performance appraisal normalization of ratings for women employees' function/BU wise vis-a-vis men employees to ensure that there are no biases at play at any stage. We track career development of women employees through a robust review mechanism of "Individual Development Plan (IDP)" and measure the success of it by tracking number of women managers identified and developed as successor to senior leadership roles.

External partnerships

Since 2018, we have held an official partnership with Stonewall. This relationship and the insight provided informs our policies and specific guidance and support, such as our 'transitioning at work' guidance for employees and managers. We have been steadily increasing our position in the Stonewall Index.

We have been a member of Business in the Community since 2019, providing support as a race partner. We were the first automotive company to sign the Race at Work Charter in 2019, outlining a list of commitments to improve equity in race. We signed the updated Charter in 2022, to re-state our commitment to driving action in this area.

Most recently, in 2022, we joined in partnership with the Business Disability Forum, and in FY 2023-24, we will have a

specific focus on disability and neurodiversity, to help ensure that we are providing employees with everything they need to work at their best and feel confident and comfortable in doing so.

Industrial Relations

We have labor unions for our technicians at all our plants across India except the Dharwad plant. The Company maintains cordial relations with its employees at its factories and offices and has been supported by the unions in the implementation of several reforms to improve safety, quality, cost erosion and enhance productivity across all locations. Technicians and unions have supported business continuity to achieve productivity levels during challenging times caused by COVID-19 and the semi-conductor supply chain crisis.

Employee wages are paid in accordance with the wage settlements signed that have varying terms (typically three to five years) at different locations. The expiration dates of the wage agreements for various locations/subsidiaries are as below:

Location/subsidiaries	Wage Agreement valid until
Jaguar Land Rover – UK Plants	31-Oct -23
Mumbai	31-Dec-25
Pune – Passenger Vehicles	31-Aug-25
Pantnagar – Commercial Vehicles	31-Mar-26
Lucknow – Commercial Vehicles	31-Mar-24
Sanand – Passenger Vehicles	30-Sep-24
Pune – Commercial Vehicles	31-Aug-25
Jamshedpur – Commercial Vehicles	31-Mar-26
Sanand – TPEM	31-Mar-24

LONG-TERM WAGE SETTLEMENTS (LTS)

We have successfully and amicably signed the long-term wage settlement (LTS) for our Pune PV and Pantnagar CV Units with complete support and cooperation from the Union Representatives. These settlements mark a significant milestone in our organization's journey towards growth and business excellence. The discussions with our Union colleagues were conducted in a constructive and collaborative manner, and we are grateful for their efforts and continued support in reaching a mutually beneficial agreement. In a first, we have transitioned from MOP to HPeV as a measure of productivity, setting international standards of productivity and also achieved historic five minutes increase in available production time which will result in increased output and higher market share.

MANAGEMENT DISCUSSION AND ANALYSIS

EMPLOYEE ONBOARDING AT SANAND-2

We have successfully completed the on-boarding of over 600 employees from the recently acquired Ford Plant in Sanand, Gujarat. A comprehensive Orientation plan put in place in partnership with reputed educational institution for skill development of the onboarded employees.

SURRENDERING OF PROVIDENT FUND TO EMPLOYEE PROVIDENT FUND ORGANISATION (EPFO)

The transfer of provident fund balance for a majority of the ~65000 employees across all locations to their account EPFO account was completed. Members can now view the same by logging into the EPFO portal.

OPPORTUNITIES

A recent industry report by Nikkei Asia finds India to be the third largest auto-producing nation after China and the USA. India's automotive sector is worth more than \$222 billion and contributes 8% of the country's total export, and accounts for 7.1% of India's GDP. It also provides direct and indirect employment to over 19 million people.

Phase 2 of Bharat Stage 6 emission norms came into effect on April 1, 2023, which requires the vehicles to meet real time driving emission standards. The vehicles will be equipped with an OBD (On Board Diagnostic) system that monitors the emissions in real world.

Phase-II of Faster Adoption and Manufacturing of Hybrid and Electric Vehicles in India (FAME India), with a total budgetary support of ₹10,000 crore is extended till March 31, 2024. The incentives are provided to buyers of electric vehicles in the form of an upfront reduction in the purchase price of electric vehicles based on battery capacity.

The Government of India approved the Production Linked Incentive (PLI) Scheme for Automobile and Auto Component Industry in India for enhancing India's Manufacturing Capabilities for Advanced Automotive Products (AAT) with a budgetary outlay of ₹25,938 crore. The PLI Scheme for Automobile and Auto component industry proposes financial incentives to boost domestic manufacturing and attract investments in the automotive manufacturing value chain. Its prime objectives include overcoming cost disabilities, creating economies of scale and building a robust supply chain. Tata Motors has got approval in PLI scheme.

The finance bill of FY 2023-24 has given reduction in customs duty (5 to 20%) on machinery and capital goods, used to produce lithium-ion batteries for EVs. This should help in reducing the price of EVs in the country from mid- to long-term and ensure the Advance Cell Chemistry PLI scheme is well supported. A national budget of ₹19,700 crore has been allocated to National Green Hydrogen Mission, which is an initiative by the government, focused on promoting the usage of Hydrogen as a renewable and clean energy source. We see significant opportunities to leverage the mega trends shaping the Indian automotive industry by means of increasing digital offerings, strengthening the play in CV passenger segment under own maintain and operate model, accelerating CNG and EV penetration in CV's, stepping up new product launches in EV's and expanding EV ecosystem in India.

Jaguar Land Rover is accelerating its Reimagine transformation into a business that will deliver double-digit EBIT margins by Fiscal 2026 and achieve net zero carbon through our entire value chain, including our products, supply chain and operations, by 2039. This strategy aims to launch Jaguar as a pure electric brand from 2025 by introducing the first Land Rover all electric model by 2024 with an additional five all electric Land Rover models launched by 2026, launch the modular longitudinal architecture and electrified modular architecture (native BEV architecture) for Land Rover products and a BEV only architecture dedicated to Jaguar. The new BEV will be available for orders by end of 2024 and will be starting deliveries from 2025.

OUTLOOK:

Long-Term

India's annual production of automobiles in FY 2021-22 was 22.93 million vehicles. India is also a prominent auto exporter and has strong export growth expectations for the near future. In addition, several initiatives by the Government of India such as the Automotive Mission Plan 2026, scrappage policy, and production-linked incentive scheme are expected to make India one of the global leaders in the two-wheeler and four-wheeler market.

The Indian passenger car market was valued at US\$ 32.70 billion in 2021, and it is expected to reach a value of US\$ 54.84 billion by 2027 while registering a CAGR of over 9% from 2022 to 2027. According to NITI Aayog and the Rocky Mountain Institute (RMI), India's EV finance industry is likely to reach ₹ 3.7 lakh crore (US\$ 50 billion) by 2030. A report by the India Energy Storage Alliance estimated that the EV market in India is likely to increase at a CAGR of 36% until 2026.

Due to the recent developments in this sector, we can still say that the Automobile Industry has the potential to contribute about 12% of the total GDP of the nation and create 65 million employment opportunities, as per the original Automotive Mission Plan 2016-26.

The Government aims to develop India as a global manufacturing and research and development (R&D) hub. It has set up National Automotive Testing and R&D Infrastructure Project (NATRIP) centres as well as the National Automotive Board to act as facilitator between the Government and the industry.

The Range Rover introduced plug-in hybrid electric propulsion with a segment-leading official electric-only range of over 100km. From 2024, a pure electric Range Rover will join the family. By 2026, Land Rover will welcome six all-electric variants, across two architectures—our flexible Modular Longitudinal Architecture (MLA) and Electric Modular Architecture ("EMA"). This will help Jaguar Land Rover to meet unprecedented policy shifts and an exponential rise in customer demand toward electric vehicles across its key markets. As adoption increases, Jaguar Land Rover expects over 60% of global Land Rover sales to be pure electric by 2030.

As part of the Refocus transformation program, Jaguar Land Rover also explores opportunities to source materials in a more cost-effective manner, as well as sharing components across platforms in order to gain economies of scale and reduce engineering costs per vehicle.

JLR aims to become net zero carbon by 2039 throughout its entire Value chain and had defined and committed to CO₂e reduction targets by 2030, which have been validated by the Science Based Targets initiative ("SBTi"), aligning the business to a 1.5-degree emissions reduction set out by the Paris Agreement.

Short-Term

Trends suggest that the automotive industry is hurtling towards another challenging year. Globally, the gasoline crisis amid the Russia-Ukraine conflict, the global supply chain disruptions and stalled sales run rampant in the current scenario. However, Electric vehicle segment shows significant promise.

Energy costs in Europe have risen since the build-up to the start of the conflict in Ukraine and during FY 2022-23. These prices may not fall back to prior levels in the future, and this could have impact on the global competitiveness of Europe as a manufacturing location compared to countries such as the USA who do not rely on imports of gas. Some parts of the automotive supply chain are sourced from Russia and Ukraine, including Neon gas used in semiconductor production (Ukraine) and palladium (Russia). Should the conflict lead to shortages of these or any other commodities, we may face

challenges within our supply chain in sourcing parts or face significant price increases in the future.

Domestically, factors such as fuel price hikes affect freight rates and transporter profitability in case of commercial vehicles. Reduced consumer spending due to inflation, higher costs due to the new emission norms and the subsequent anticipated reduction in sales are all issues plaguing the industry. There has been a marked shift in consumer interest towards connected vehicle features that provide updates regarding traffic congestion, road safety, and vehicle health status.

The Passenger Vehicle business landscape is seeing rapid transformation in the form of tightening emissions norms, the push toward electrification, enhanced disruptions from autonomous and connected technologies and, as the aspiration levels of the Indian consumer continue to rise, requiring stepped-up investments in contemporary products in a competitive market.

Meanwhile, Commercial Vehicle segment is introducing electric variants while pushing for connected vehicles. CV demand is expected to grow based on the government's continuing thrust on infrastructure development, as well as improvement in finance for fleet buyers who make up for the bulk of truck sales, and replacement demand for buses kicking in. In addition, EV adoption is also expected to see growth in the country once all vehicle segments demonstrate considerable ownership savings over those powered by internal combustion engines (ICE).

Customer requirements are increasingly pointing towards electrification and Jaguar Land Rover is driving forward connectivity in and with its vehicles. Through remote diagnostics and software-over-the-air updates, JLR can already predict, diagnose and update all major vehicle systems. To date, Jaguar Land Rover has completed more than three million updates on customer vehicles, and through its Electric Vehicle Architecture, it can monitor data points to continually enhance its customer experiences.

Furthermore, Jaguar Land Rover formed a multi-year strategic partnership with NVIDIA, the leader in artificial intelligence and computing, to jointly develop and deliver next-generation automated driving systems, plus AI-enabled services and experiences for its customers. From 2025, new Jaguar and Land Rover vehicles will be built on the NVIDIA DRIVE™ software-defined platform—delivering a wide spectrum of active safety, automated driving and parking systems, as well as AI features inside the vehicle.

Jaguar Land Rover has also partnered exclusively with BNP Paribas, to broaden competitive automotive financing with new, innovative services across nine European markets. The ambition is to provide retail partner network and customers with an expanded range of financing solutions and insurance products by early 2023.