

An Analysis Of The Growth Trends Of Automobile Sector In India

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Abstract

Automobiles make movement of people, and transportation of goods convenient and hence making it a fundamental necessity for businesses, individuals and the government. The automobile industry of India reflects the growth of Indian economy in terms of its performance and technological advancement. The changing demography with a larger percentage of the youth in the working age and the growing middle class led to the exploring of rural markets and the increasing logistics and passenger transport generate higher demand for commercial vehicles in future. It impacts and propels innovation, infrastructure development, economic growth, job creation and technological advancement. All these aspects make the automobile sector an essential component of the economy apart from being one of the biggest. The automobile sector is significant for the Indian economy because it is the key driver of economic growth. This present study covers 15 years period from 2009-10 to 2023-24. The study is aimed at analysing the growth trends and performance of the automobile sector in India. It analyses the production trends, domestic sales and exports of vehicles produced in India. The 2W segment clearly dominates in the production, domestic sales and export among different types of vehicles produced by the Indian automobile sector of India. The share of various classifications of automobiles in production, domestic sales and exports for the period of study substantially increased. With the economic outlook optimistic, the automobile sector is expected to witness a continuous growth in its growth trajectory.

Keywords: Automobiles, motor vehicle, cars, two-wheelers, commercial vehicles, competitiveness, automobile production, automobile sales, India,



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1. Introduction

Automobiles are one of the essentials of transportation that drives the economic growth of nations thus making automobile industry an essential component of industrial sector. Automobiles make movement of people, and transportation of goods and weapons convenient (Chitra, M. (2013) and hence making it a fundamental necessity for businesses, individuals and the government for higher productivity. Technological advancements, innovations and reasonable pricing in automobile sector have made it one of the fast-expanding sectors that enhances accessibility, safety, efficiency, convenience and effectiveness. These aspects are driven by the highest levels of technical regulations and policy prescriptions universally. In India, the Central Motor Vehicle Regulation (CMVR), adapts European norms to suit the Indian driving and road conditions, which is basically responsible for enforcing regulations in the road transport sector.

The automobile industry of India mirrors the growth of Indian economy in terms of its performance and technological advancement, managerial knowhow and skill upgradation, enhanced employment opportunities, improved infrastructure, competitiveness and expanded prospects for value addition by domestic businesses. Due to the expanding middle class and changing

demography witnessed a greater proportion of youth joining the workforce. This has led to exploring rural markets, while the increased cargo and passenger transportation needs increased the demand for commercial and passenger vehicles. Convenience, affordability, safety, and speed have made automobiles an indispensable part of everyday life of an Indian. The automobile sector contributes to 7.1% of India's GDP, up from 2.77% in 1992-93 (PIB, 2023). Further, it contributes 26% of the industrial GDP and value addition accounting for 49% of the manufacturing GVA (SIAM), apart from offering over 37 million direct and indirect employment opportunities (PIB, 2023). Hence, growth and development of the automobile sector in India reflects the performance of its manufacturing sector. Due to the extensive use of automobiles, the industry has a significant spillover effect on adjacencies and other industries in terms of capital accumulation, scale and scope economies and technological progress (Szirmai, 2013; Marconi, et al. 2016), encouraging transformation, upgradation and greater degree of participation in higher-value added production providing the innovation perspective (Humphrey, & Schmitz, 2002; Yang, et al., 2021) and contributing to exports. It propels innovation, drives infrastructure development, boosts economic growth, creates job and

urges technological advancement. All these aspects make the automobile sector an essential component of the Indian economy apart from being one of the largest contributors of GDP among the manufacturing industries. The automobile sector of India is notable for its ability to satisfy the demand of low-and middle-income group (Miglani, 2019) in addition to manufacturing premium category models.

The automobile sector is basically segmented according to vehicle type and fuel usage. The different types of vehicles are two-wheelers (2W), three-wheelers (3W), passenger vehicles (PV), commercial vehicles (CV) and others, while fuel usage is based on the features of fuel efficiency, stringent tailpipe emission and pollution control norms. These are on par with European standards and are a significant selling point to engage in Make in India for the industry for both domestic and global markets. In addition to these, the automobile market is also being disrupted by cutting edge technologies like electric vehicles (EV), connected technology, autonomous driving, telematics, safety, sustainability and shared mobility (PwC, 2023). The transformation and adaptation for these emerging trends and market demands can be met by leveraging the highly skilled talent pool and harnessing the advanced technological capabilities that can be sourced locally for faster development cycle and continuous engineering support, leading to the development of Global Capability Centres (GCC) in India. According to PwC, the number of automotive GCC's in India has increased dramatically over the last 20 years, from seven in early 2000s to over 60 centres, which generated over USD 3 billion in FY23. To take advantage of the growth momentum and to actively contribute to innovation that aligns with the emerging trends, the automobile industry requires a broad spectrum of know-how and skills in manufacturing and production, specialised engineering knowledge for R&D, design and development, technical skills for vehicle operations, maintenance and repair. These factors individually and collectively have the potential to enhance technical innovation and competitiveness, that would consequently enable the industry to overcome the technological barriers faced by the automotive sector (Latan, et al., 2020).

India's automobile industry developed in stages. From the initial protectionist policy to promote domestic interest that recommended local content requirement and imposed strict import restrictions through tariffs for trade protection. This was followed by the intermediary stage of license agreements for production and ownership restrictions leading to joint ventures, which further progressed towards the current stage of complete abolition of ownership restrictions resulting in 100% subsidiaries for both automakers and auto-component manufacturers (Athukorala, & Veeramani, 2019) bringing in confidence, vibrancy, capacity and capability to the sector in its transition (Kumar, et al., 2007). To put it briefly, the sector switched from a policy-protected, restricted approach to a progressive market confirming liberal one that opened up opportunities for investments, technology and knowledge transfer, making it competitive. The automobile sector of India has grown

from a modest production and sales figures of cars and commercial vehicles from 13,156 and 16,993 respectively in 1950 (Tariff Commission Report, 1953) to over 28.43 and 23.58 million in 2024 (SIAM, 2024). India has currently achieved the distinction of being the world's largest producer of 2Ws, 3Ws, and tractors. Moreover, it is also the second largest producer of commercial busses and the third largest producer of heavy commercial vehicles apart from being the third largest manufacturer of passenger vehicles with an overall annual sale in the domestic market of over 4 million units with the potential to emerge as the largest in the world. India is currently a net exporter of automobiles.

Even though India's position has grown stronger in the automobile sector, it lags when compared to many other countries in terms of cars per thousand people. It is estimated that around 326 million vehicles are currently operating on the Indian roads. Furthermore, owing to the low vehicle ownership index this number is far from saturation. The number of registered vehicles per 1000 person in 2020 was only 246 (Statista, 2024). In 2023-24, the automobile industry produced more than 28.43 million vehicles, this includes two-wheelers (2Ws), three-wheelers (3Ws), passenger cars and commercial vehicles. Talking about share of vehicles produced in absolute numbers, 2Ws are the most produced followed by passenger cars and in terms of market share 77% and 18% respectively. In comparison to India's population there are only 34 PVs and 185 2W for every 1000 persons (Waghmare, A. 2024, September 27). However, a growing middle-income class fuelled by increasing disposable income and rapid urbanisation present a significant potential of India for increased motor vehicle ownership and total vehicle stock (Dargay, & Gately, 1999; Dargay, et al., 2007).

2. Automotive Sector

The automobile sector is significant for the Indian economy (Kumar, & Choudhary, 2019) because it is the key driver of economic growth (Rathore, & Jaiswal, 2023). Liberalisation and permitting 100% foreign direct investment (FDI) through automatic route in the post liberalisation period of the Indian economy, the automobile sector has made India one of the favourite FDI destinations (Singh, 2019; Athukorala, & Veeramani, 2019). In addition, low labour cost, ready availability of highly skilled workforce, subsidies and tax exemptions and other factors consequently transforming India into a major global auto manufacturer. The automotive sector of India is one of the most promising manufacturing sectors due to rising demand for mobility, its enormous growth potential, and favourable economic trends. The entry of international automakers in India was followed by relocation / entry of several auto-component manufacturers especially first-tier supplier (FTSs) for early engagement in R&D (Frigant, 2009) and growing role in inter-firm coordination to reduce costs and risks (Biahmou, et al., 2019). This is also influenced by the network effect, product compatibility, and excessive reliance of auto-component manufacturers on particular automakers

(Farrell, & Klempner, 2007) leading to global buyer-supplier relationship (Haugh, et al., 2010). In addition to the aspersions on the effectiveness of the logistic system, and high shipping costs, their performance may also be impacted by amendments to the purchase strategy, product development and production plans, and buyer-supplier relationship (Lampón, & Lago-Peñas, 2013). Additionally, because factor endowment is transferrable, being in close proximity to automaker also helps to mitigate a significant business concern regarding the impacts of losing comparative advantage.

The Indian automobile industry is fiercely competitive, with several domestic and international brands engaged in it (Popli, & Rao, 2009). It is one of the industries that requires a wide range of expertise and specialized engineering skills and dedicated testing centres for product development, certification, and state-of-the-art manufacturing facilities. In addition to it, since India produces diverse categories of vehicles that complement each other, it requires sustainable supply chain management (Khatri, & Srivastava, 2016) and technical skills necessary for vehicle operations, maintenance, and customer support.

i) The different types of vehicles produced in India (Ministry of Heavy Industries and Public Enterprises, GoI, 2024) can be categorised into:

- a) Passenger Vehicles (PV)
- b) Commercial Vehicles (CV)
- c) Two-Wheelers (2W)
- d) Three-Wheelers (3W)
- e) Construction Vehicles
- f) Mining Vehicles
- g) Tractors and Farming

ii) Majority of the automobile brands in India have consistently expanded their product portfolio. In addition to this, they periodically have relaunched their existing product line after mid-life refresh. This is to maintain and increase product appeal and improve returns to scale as it takes a considerable time to design and millions of dollars in investment to produce a vehicle. Majority of the automakers in India produce both mass-market entry-level to premium category vehicles. In addition, they expand their offering from ICE, hybrids, alternate fuels and EVs. The products are well-differentiated across a number of categories, and it can be further categorized on the basis of: By Body Shape: hatchback, SUV, MUV, Sedan, Crossover
iii) By Powertrain: ICE – gasoline (petrol/diesel), Hybrid, Plugin hybrid, EV, Alternate fuel (CNG/LNG/LPG).

- iv) By Transmission: Manual, automatic,
- v) By Length in mm: A: <3600, B1: 3600-4000, B2: 4000-4200, C1: 4200-4400, C2: 4400-4600, D1: 4600-4800, D2: >4800
- vi) By Seating Capacity: less than or equal to 5, and more than 5

The list and choice options indicate that the Indian automobile sector has grown increasingly product focused and each product category positions differentiated products indicating the stage of maturity. This has enabled the automobile sector to meet the diverse requirements of industrial sectors as well as the

preferences of personal commuting. Nevertheless, the Indian automobile sector caters to the needs of both domestic and international markets. Owing to the large domestic market, the Indian automobile industry has drawn investments from both domestic and Multinational Corporations, (MNCs) progressively expanded capacity that resulted in economies of scale and hence gaining cost efficiencies. This benefit generated a favourable competitive environment for Indian automobile industry. The cycle of rapid technological advancement supported by innovation improves product quality bringing Indian automobile industry on par with global standards, satisfying customer expectations. Matching product specifications and features, performance, and quality with current standards equivalent to developed economies also serves as a catalyst for identifying the appropriate technology to enable enforcement of compliance and competitiveness (Calabrese, et al. 2022) apart from development of the value and supply chain ecosystem.

2.1 Demand Driving Growth of Automobile Sector

There are six factors identified as the driving forces of the growth of the automobile sector in India. The growing working age population is a healthy indicator among them. The driving forces of the growth of automobile sector in India are:

- i) A big domestic market due to a large population demands transportation of more people, and goods. The need for the mobility of more people and goods to pursue economic activities amplifies the prospect of development, growth and profitability of the automobile sector by meeting the increased demand for vehicles.
- ii) Rapid urbanisation has significant impact on automobile industry as a result of increased migration, personal mobility and economic activities which have a substantial impact on vehicles being produced and sold.
- iii) The demand for effective transportation is further heightened by an expanding industrial base, a rapidly increasing eCommerce and transportation of parcel items centred on last mile connectivity.
- iv) Businesses rely on speedy transit of goods and personnel and is essential differentiator for comparative and competitive advantage.
- v) Government's capital expenditure efforts that are increasingly focused on enhancing connectivity infrastructure networks through focused initiatives like National Logistic Policy (NLP), PM Gati Shakti etc., implemented through a Comprehensive Logistics Action Plan (CLAP).
- vi) The vehicle scrappage policy of 2021 mandates scrappage of government vehicles that are over 15 years old apart from commercial and private vehicles failing the fitness test. This policy is expected to trigger the need for replacement further adding to the organic demand emanating from the growing populations demand for transportation, and expansion of road network. It is currently in phased implementation.

The important factors driving the growth of automobile industry can be abridged as: i) a fast growing major economy, ii) sheer market size, iii) low vehicle ownership index (VOI), iv) rapidly growing middle-

income class, v) improving road connectivity and vi) policy thrust. These aspects make India an attractive market in the emerging economies for the multinational automakers to concentrate and consolidate their assembly plants that produces products that confirms to global market standards.

2.2 Regulatory Frameworks Fostering Automotive Sector Development

The automotive sector has garnered adequate attention of the policymakers, resulting in clear direction, well-defined objectives and alluring incentives that encourages both domestic and foreign players to view India as a favourable investment destination. Several government initiatives, subsidies to firms and regulatory policy interventions have shaped the evolution of the Indian automotive sector (Ranawat, & Tiwari, 2009; Haugh, et al., 2010). While regulations impose significant expenses on the automobile sector, regulatory frameworks also address issues of quality, safety, efficiency, and the environment while encouraging standardisation and technological advancement (Partnerships for Growth in Africa, Strategic Business, 2006). These strategies have attracted capital, upgraded technology, improved quality and safety, human-capital development, and fostered innovation enhancing the competitiveness and productivity of the sector transforming the sector into an important global manufacturing hub.

2.2.1 Automotive Mission Plan (AMP) 2006 - 2016 and 2016 - 2026: AMP is an ambitious ten-year roadmap targeting the automotive industry to develop India into a world-class manufacturing hub of automobiles and auto-components. It envisages growth promotion, technological maturity, forward and backward linkages, and competency for sustainable development of the automotive sector. AMP-1 (AMP 2006 – 2016) was a success in terms of both revenue and employment generation. Encouraged by AMP-1, AMP-2 was launched in 2016, with the goal to put Indian automotive industry on par with that of the developed economies in terms of product specifications and features, performance, and quality so as to create a level playing field for Indian industries. In this regard, BS-VI emission norms have been implemented. AMP-2 also has targets for increasing domestic production, domestic sales and exports.

2.2.2 National Electric Mobility Mission Plan (NEMMP): Launched in 2013, this aims to reduce dependence on fossil fuel by promoting electric and hybrid vehicles achieving a target of 6-7 million annually from 2020 onwards. The plan envisaged, indigenous technology development, domestic production, and incentivizing demand to achieve economies of scale while realizing self-reliance and sufficiency scale.

2.2.3 Faster Adoption and Manufacturing of (Hybrid and Electric Vehicles (FAME I & II): FAME-I was introduced in 2015 as a means of incentivizing the

development and use of Electric Vehicles (EV) and hybrid vehicles with focus on automobiles used in public transport to make India's transportation system greener and sustainable. It was launched in phases. FAME-I was effective between FY 2015-19, the main objectives of the schemes were to support experimental projects for the development of electric and hybrid vehicles, develop cutting-edge technology and build charging infrastructure. FAME-II was launched in Apr 2019 to accelerate the proliferation of EV and heavy vehicles (HV). In addition to privately owned 2W, this scheme includes 3W and four-wheelers registered as commercial vehicles in an effort to encourage the general public to embrace electric mobility solutions. 56 manufacturers have registered as a result of this programme, and 175 models have been registered and validated (PIB, Government of India).

2.2.4 PLI-Auto Scheme: Approved in September 2021 with an allocation of INR 25, 938 crores with an aim to increase production of Advanced Automotive Technology (AAT). The plan is in effect for five years, from FY 2022-23 to FY 2026-27. This programme seeks to create both domestic and global supply chain, by promoting and supporting deep localization of AAT products. Zero Emission Vehicles (ZEV) such as Battery Electric Vehicle (BEV) and Hydrogen Fuel Cell Vehicles (HFCV) are its focus.

2.2.5 Testing and Certification Facilities: Various testing, validation and certification facilities have been setup by National Automotive Board to ensure compliance to quality standards that cover, build quality, safety, emission norms, performance of components, powertrain, electrical and electronics, tyre, wheel and braking, stability and handling etc. Both labs and proving testing tracks have been established for testing vehicle to ascertain its roadworthiness. In addition to validation and certification, these facilities also support R&D and innovation efforts.

3. Objective of the Study

The main aim of the study is to analyse the growth trends and performance of the automobile sector in India. The study examines and analyses the production trends, domestic sales and exports of vehicles produced in India. The supplementary objectives are:

- i) Analyse the production trends of automobiles in India
- ii) Analyse the domestic sales trends of automobiles in India.
- iii) Analyse the export trends of automobiles in India.

4. Research Methodology

This study is based on the secondary data taken for the period from 2009-10 to 2023-24 covering a period of 15 years. The time span of 15 years aligns with the current policy on vehicle scrappage. The source of the secondary data is compiled from the Annual Reports published by the Society of Indian Automobile Manufacturers (SIAM). The study considers data across multiple

classification of vehicles and applies statistical methods to analyse growth trends.

5. Data Analysis and Interpretation

5.1 Production Trends

The automobile manufacturing in India increased at a rapid rate in the last decade as a result of rising disposable income of the middle-income class and the country’s low production costs. During 2009-10 to 2023-24, the Indian automobile sector has more than doubled its production capacity growing at a CAGR of 5%. The quadricycle segment is in its infancy, as it is just eight

years since its introduction and has grown by 216% despite recording only a modest level of 4-digit production figures. The total annual production of vehicles more than doubled during this period increasing from 14.05 million to 28.43 million registering an increase of 102% at an average annual growth rate of 6%. This period witnessed a total cumulative production of over 353 million vehicles, increasing availability of vehicles for both domestic and international markets. Table 1 presents the production trends in terms of number of vehicles produced in India in select automobile classifications.

Table 1: Production Trends of Automobiles in India

Year	PV	Growth Rate in %	CV	Growth Rate in %	2W	Growth Rate in %	3W	Growth Rate in %	Quadricycle	Growth Rate in %	Total
2009-10	23,57,411		5,67,556		1,05,12,903		6,19,194				1,40,57,064
2010-11	29,82,772	26.53%	7,60,735	34.04%	1,33,49,349	26.98%	7,99,553	22.56%			1,78,92,409
2011-12	31,46,069	5.47%	9,29,136	22.14%	1,54,27,532	15.57%	8,79,289	9.07%			2,03,82,026
2012-13	32,31,058	2.70%	8,32,649	-10.38%	1,57,44,156	2.05%	8,39,748	-4.71%			2,06,47,611
2013-14	30,87,973	-4.43%	6,99,035	-16.05%	1,68,83,049	7.23%	8,30,108	-1.16%			2,15,00,165
2014-15	32,21,419	4.32%	6,98,298	-0.11%	1,84,89,311	9.51%	9,49,019	12.53%			2,33,58,047
2015-16	34,65,045	7.56%	7,86,692	12.66%	1,88,30,227	1.84%	9,34,104	-1.60%			2,40,16,068
2016-17	38,01,670	9.71%	8,10,253	2.99%	1,99,33,739	5.86%	7,83,721	-19.19%	1,584		2,53,29,383
2017-18	40,20,267	5.75%	8,95,448	10.51%	2,31,54,838	16.16%	10,22,181	23.33%	1,713	8.14%	2,90,94,447
2018-19	40,28,471	0.20%	11,12,405	24.23%	2,44,99,777	5.81%	12,68,833	19.44%	5,388	214.54%	3,09,14,874
2019-20	34,24,564	-14.99%	7,56,725	-31.97%	2,10,32,927	-14.15%	11,32,982	-11.99%	6,095	13.12%	2,63,53,293
2020-21	30,62,280	-10.58%	6,24,939	-17.42%	1,83,49,941	-12.76%	6,14,613	-84.34%	3,836	-37.06%	2,26,55,609
2021-22	36,50,698	19.22%	8,05,527	28.90%	1,78,21,111	-2.88%	7,58,669	18.99%	4,061	5.87%	2,30,40,066
2022-23	45,87,116	25.65%	10,35,626	28.57%	1,94,59,009	9.19%	8,55,696	11.34%	2,897	-28.66%	2,59,40,344
2023-24	49,01,844	6.86%	10,66,429	2.97%	2,14,68,527	10.33%	9,92,936	13.82%	5,006	72.80%	2,84,34,742
Total & Average Growth Rate	5,29,68,657	6%	1,23,81,453	6.51%	27,49,56,396	5.8%	1,32,80,646	0.6%	30,580		35,36,16,148

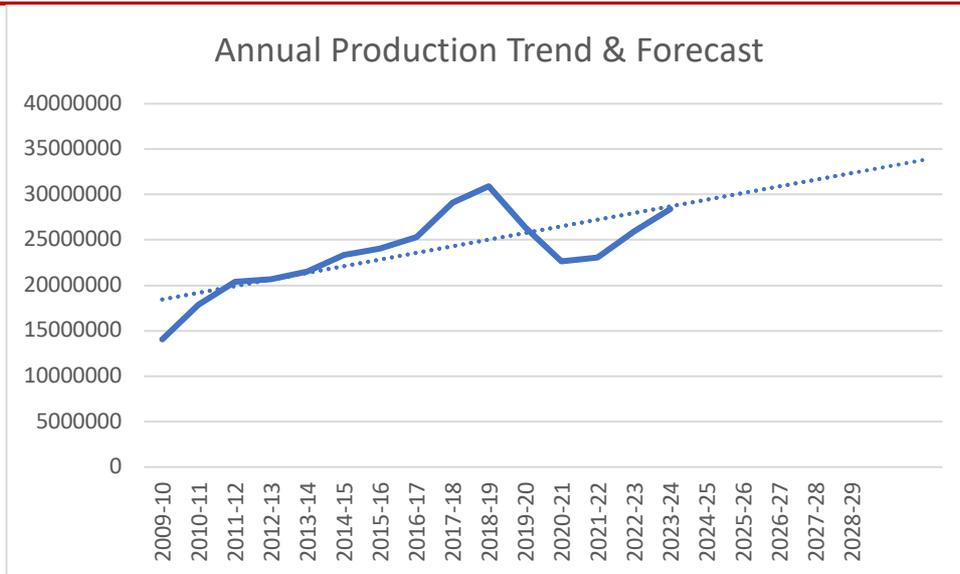
Source: SIAM

For the period of study, the total automobile production in India has shown an increasing trend. It has grown at a CAGR of 5%, resulting in more than doubling the overall production capacity of PV, CV, 2W and 3W segments. The production capacity grew for PV and 2W by 108% and 104% respectively followed by CV at 88%. However, the average annual growth rate of the CV was

the highest at 6.51% followed by that of PV at 6%. It can be seen that the Covid-19 period affected the production of different types of vehicles marginally however, all other years witnessed a consistent increase in the production of vehicles during the period.

Chart 1 indicates the total annual production trends, and the forecast indicates a positive trend.

Chart 1: Production Trend and Forecast



The production trends indicate the peak production was achieved in the FY 2018-19 recording 30.91 million vehicles. This was followed by two years of negative growth in FY 2019-20 and FY 2020-21. This was followed by recovery from 2021-22 onwards. However, except for the PV segment which has exceeded the 2018-19 production figures by a convincing 21.7%, all the remaining segments i.e. CV, 2Ws and 3Ws despite showing signs of recovery are yet to meet the production figures of FY 2018-19 by -4%, -12% and -22% respectively. At the CAGR demonstrated by the sector for production, it is forecasted by FY 2025-26 the automobile production would exceed the previous record of 30.9 million.

5.2 Domestic Sales

During the study period from 2009-10 to 2023-24, the domestic sales of Indian automobile sector grew by 94% at a CAGR of 2.9%. The total annual sales of vehicles increased from 12.29 million in 2009-10 to 23.85 million in 2023-24 increasing at an average annual growth rate of 5.5% This period witnessed total automobile addition to the tune of 297.5 million vehicles. This addition catered to market expansion due to both population and infrastructure apart from replacement of older vehicles thereby adding to the vehicle density and traffic congestion on the roads. Table 2 depicts the domestic sales trend of automobiles in India.

Table 2: Domestic Sales of Automobiles

Year	PV	Growth Rate in %	CV	Growth Rate in %	2W	Growth Rate in %	3W	Growth Rate in %	Quadricycle	Growth Rate in %	Total Annual Sales
2009-10	19,51,333		5,32,721		93,70,951		4,40,392				1,22,95,397
2010-11	25,01,542	28.20%	6,84,905	28.57%	1,17,68,910	25.59%	5,26,024	19.44%			1,54,81,381
2011-12	26,29,839	5.13%	8,09,499	18.19%	1,34,09,150	13.94%	5,13,281	-2.42%			1,73,61,769
2012-13	26,65,015	1.34%	7,93,211	-2.01%	1,37,97,185	2.89%	5,38,290	4.87%			1,77,93,701
2013-14	25,03,509	-6.06%	6,32,851	-20.22%	1,48,06,778	7.32%	4,80,085	-10.81%			1,84,23,223
2014-15	26,01,236	3.90%	6,14,948	-2.83%	1,59,75,561	7.89%	5,32,626	10.94%			19,72,4371
2015-16	27,89,208	7.23%	6,85,704	11.51%	1,64,55,851	3.01%	5,38,208	1.05%			2,04,68,971
2016-17	30,47,582	9.26%	7,14,082	4.14%	1,75,89,738	6.89%	5,11,879	-4.89%			2,18,63,281
2017-18	32,88,581	7.91%	8,56,916	20.00%	2,02,00,117	14.84%	6,35,698	24.19%			2,49,81,312
2018-19	33,77,389	2.70%	10,07,311	17.55%	2,11,79,847	4.85%	7,01,005	10.27%	627		2,62,66,179
2019-20	27,73,519	-17.88%	7,17,593	-28.76%	1,74,16,432	-17.77%	6,37,065	-9.12%	942	50.24%	2,15,45,551
2020-21	27,11,457	-2.24%	5,68,559	-20.77%	1,51,20,783	-13.18%	2,19,446	-65.55%	12	-98.73%	1,86,20,257
2021-22	30,69,523	13.21%	7,16,566	26.03%	1,35,70,008	-10.26%	2,61,385	19.11%	124	933.33%	1,76,17,606
2022-23	38,90,114	26.73%	9,62,468	34.32%	1,58,62,771	16.90%	4,88,768	86.99%	725	484.68%	2,12,04,846
2023-24	42,18,746	8.45%	9,67,878	0.56%	1,79,74,365	13.31%	6,91,749	41.53%	725	0.00%	2,38,53,463
Total & Average Growth Rate	4,40,18,593	6.28%	1,12,65,212	6.16%	23,44,98,447	5.44%	77,15,901	8.97%	3155		29,75,01,308

Source: SIAM

During this period the PV added 44 million, CV: 11.2 million, 2W: 234 million, and 3W: 7.7 million vehicles, registering an average growth rate of 6.28%, 6.16%, 5.44%, and 8.97%. This period witnessed an average growth rate of PV at 6.28% and the cumulative addition of PV grew by 116.20% followed by 2W at 5.44%, increasing vehicle presence by 91.81%. The PV segment added a total of 4.4 million and the 2W segment added

234.5 million vehicles. With 79% of domestic sales, the 2W holds the largest share, followed by PV coming in second with 14.8%, CVs at 3.8% and 3W at 2.6%. Quadricycle due to their infancy are at a fraction. Chart 2 indicates the current composition of market share of different class of vehicles. And Chart 3 indicates the domestic sales and forecast trend.

Chart 2: Composition of Market Share

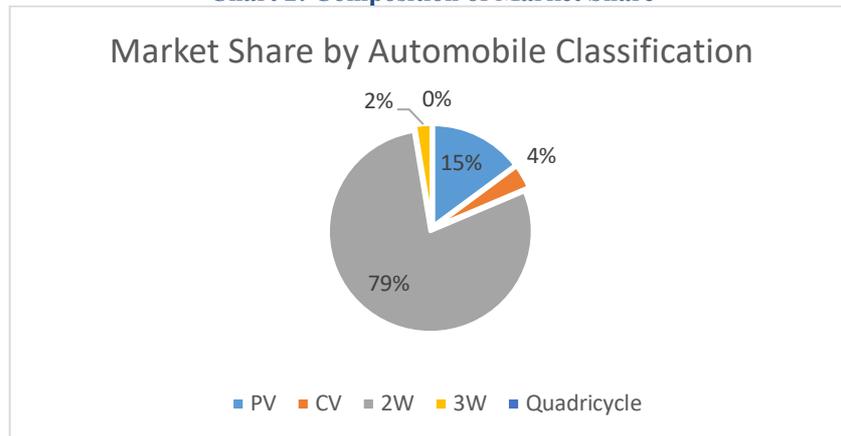
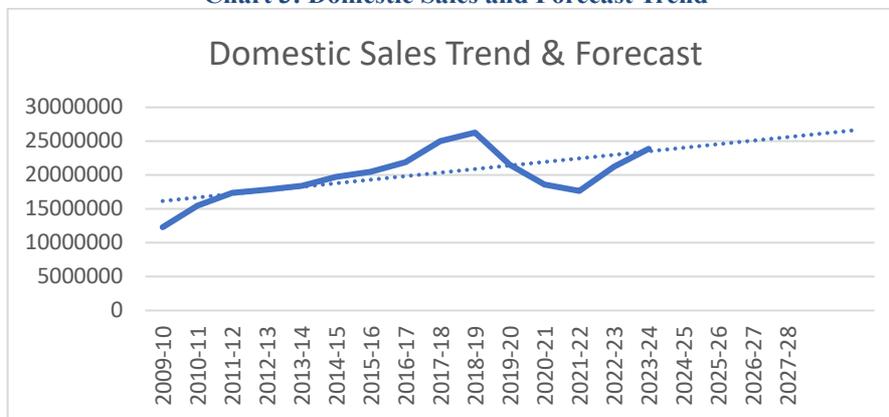


Chart 3 shows the overall annual sales trend and the forecast.

Chart 3: Domestic Sales and Forecast Trend



The sales trend indicates the peak domestic sales was achieved in FY 2018-19 of 26.26 million vehicles. Domestic sales peaked in FY 2018-19 achieving 26.26 million automobiles, subsequently sales plummeted in FY 2019-20 by 18% and further declined due to the contraction in the manufacturing sector apart from the decline in investment in construction and infrastructure in FY 2019-20 which was followed by *stringent* COVID-19 lockdowns in FY 2020-21 and FY 2021-22 thereby registering further contraction by 13.5% and 5.5%. Automobile domestic sales have since improved. The domestic PV market had achieved sales of 3.37 million vehicles in FY 2018-19 and subsequently declined registering negative growth in FY 2019-20 and FY 2020-21. Nonetheless, it has bounced back and

grown to reach 4.21 million units in FY 2023-24 registering a 25% increase over FY 2018-19 levels. However, the remaining segments CV, 2W and 3W are yet to meet the sales high registered in FY 2018-19. While the CV and 3W need to catch up by 4 and 1.3 per cent respectively, the 2W is trailing by 15%. The forecast shows a favourable trend, and estimates indicate are on track to exceed the previous record high in 2026-27.

5.3. Exports

During 2009-10 to 2023-24, India had exported over 5.6 million vehicles. Exports have grown at an average rate of 7.8%, registering 1.8 million vehicles in 2009-10 to over 4.5 million vehicles in 2023-24, in absolute terms an increase by 149%. In total annual exports, the share

of 2W in India's exports stood at 72% followed by PV at 16%. 2W also registered the highest average growth rate of 9.41% followed by 3W recording 7.9%. During the period of study, in absolute numbers, the rate of two

wheelers grew by 203%, followed by 3W: 73%, PV: 51% and CV: 46%. Table 3 presents the export trends of automobiles from India.

Table 3: Exports of Automobiles

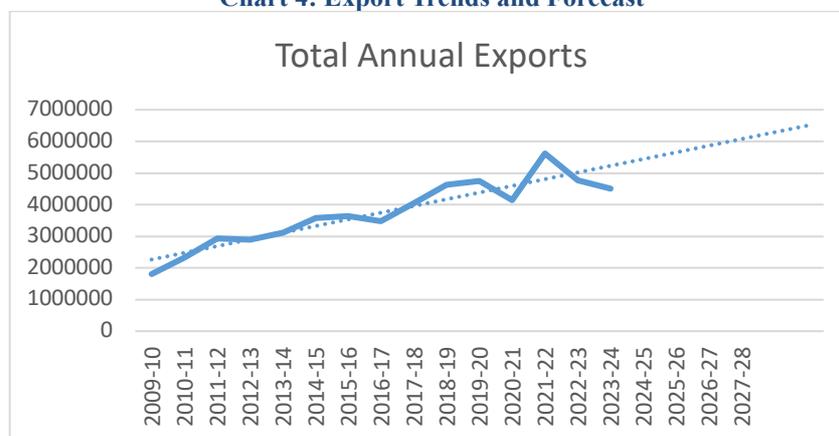
Year	PV	Growth Rate in %	CV	Growth Rate in %	2W	Growth Rate in %	3W	Growth Rate in %	Quadricycle	Growth Rate in %	Total Annual Production
2009-10	4,46,145		45,009		11,40,058		1,73,214				18,04,426
2010-11	4,44,326	-0.41%	74,043	64.51%	15,31,619	34.35%	2,69,968	55.86%			23,19,956
2011-12	5,08,783	14.51%	92,258	24.60%	19,75,111	28.96%	3,61,753	34.00%			29,37,905
2012-13	5,59,414	9.95%	80,027	-13.26%	19,56,378	-0.95%	3,03,088	-16.22%			28,98,907
2013-14	5,96,142	6.57%	77,050	-3.72%	20,84,000	6.52%	3,53,392	16.60%			31,10,584
2014-15	6,21,341	4.23%	86,939	12.83%	24,57,466	17.92%	4,07,600	15.34%			35,73,346
2015-16	6,53,053	5.10%	1,03,124	18.62%	24,82,876	1.03%	4,04,441	-0.78%			36,43,494
2016-17	7,58,727	16.18%	1,08,271	4.99%	23,40,277	-5.74%	2,71,894	-32.77%			34,79,169
2017-18	7,48,366	-1.37%	96,865	-10.53%	28,15,003	20.29%	3,81,002	40.13%			40,41,236
2018-19	6,76,192	-9.64%	99,933	3.17%	32,80,841	16.55%	5,67,683	49.00%			46,24,649
2019-20	6,62,118	-2.08%	60,379	-39.58%	35,19,405	7.27%	5,01,651	-11.63%	5,185		47,48,738
2020-21	4,04,397	-38.92%	50,334	-16.64%	32,82,786	-6.72%	3,93,001	-21.66%	3,529	-31.94%	41,34,047
2021-22	5,77,875	42.90%	92,997	84.76%	44,43,131	35.35%	4,99,730	27.16%	4,326	22.58%	56,18,059
2022-23	6,62,703	14.68%	78,645	-15.43%	36,52,122	-17.80%	3,65,549	-26.85%	2,280	-47.30%	47,61,299
2023-24	6,72,105	1.42%	65,816	-16.31%	34,58,416	-5.30%	2,99,977	-17.94%	4,178	83.25%	45,00,492
Total & Average growth	89,91,687	4.51%	12,11,690	7.00%	4,04,19,489	9.41%	55,53,943	7.87%	19,498	6.65%	5,61,96,307
Share in Export	16.00		2.16		71.93		9.88		0.03		100.00
Growth	51%		46%		203%		73%				149%

Source: SIAM

This period witnessed PV exports of 8.9 million, CV: 1.2 million, 2W: 404 million, 3W: 5.5 million, registering average growth rates of 4.51%, 7%, 9.4%, 7.9% respectively. In absolute terms, the exports of PV grew by 51%, CV: 46%, 2W: 203%, and 3W: 73%. The

exports were dominated by the 2W category and accounted for 73%, with the PV coming in second registering 16%. The overall annual exports of vehicles are shown in Chart 4 and the forecast for exports.

Chart 4: Export Trends and Forecast



Source: SIAM

Original Researcher Article

The export of automobiles from India is showing an increasing trend. The trend indicates that peak exports was achieved in FY 2021-22, registering a cumulative record of 5.61 million vehicles exported from India. Aggregate exports have subsequently declined. The export peak for each category of vehicle was in different FY. For instance, PV and CV achieved export peak volume in FY 2016-17, 3W in 2018-19 and 2W in 2021-22. However, the forecast for exports show a positive trend indicating exports would meet and surpass the previous records in each category of vehicle produced in India. It is forecasted that the cumulative exports would exceed the previous record in 2027-28.

2W segment clearly dominates in the production, domestic sales and export among different types of vehicles produced in the Indian automobile sector of India. The share of various classifications of automobiles in production, domestic sales and exports for the period of study has grown at an average annual growth rate of 6%, domestic sales at 5.5% and exports at 7.8% respectively resulting in doubling of production and export growth by 1.5 times. In the same period domestic demand grew by 94% with PV segment registering a growth of 116%. Since FY 2021-22, the CV and 3W segment have shown rapid average annual growth rates registering 20.3% and 49.21%, respectively. Exports of 2W in the period of study grew at an average annual growth rate of 9.41% registering a phenomenal growth of 203%.

5.4. Summary of Data Analysis

Table 4: Share of Automobiles in Production, Domestic Sales and Exports (in percent)

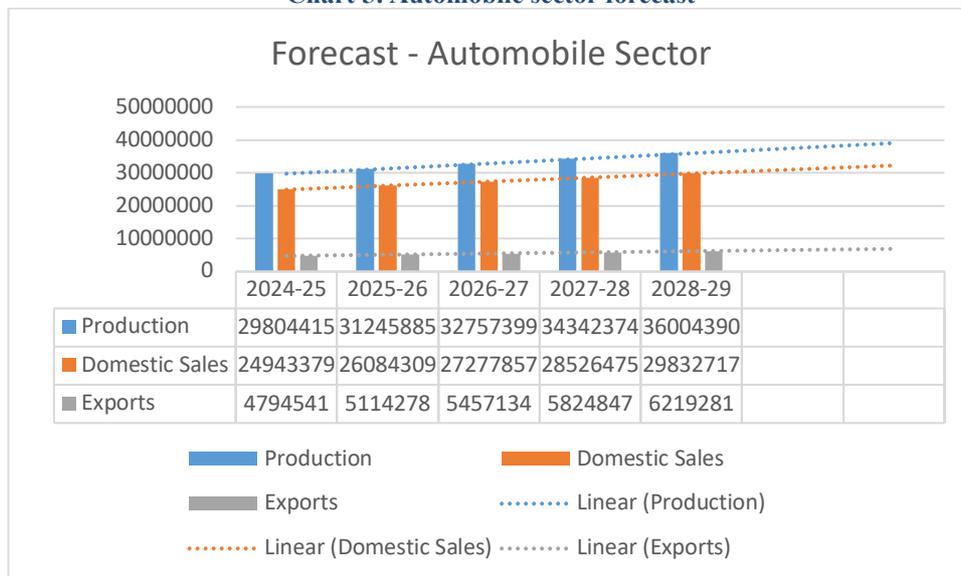
	PV	CV	2W	3W	Quadricycle
Production	17.24	3.75	75.50	3.49	0.02
Domestic Sales	14.80	3.79	78.82	2.59	0.00
Exports	14.95	1.46	76.92	6.67	0.43

5.5. Forecast

It is estimated that the cumulative production of automobiles in India would touch 360 Mn., domestic sales close to 300 Mn. and exports to exceed 6.2 Mn. by

FY. 2028-29 from the current levels of 284 Mn. 238 Mn. 4.5 Mn. Chart 5 presents the forecast for the automobile sector.

Chart 5: Automobile sector forecast



6. Conclusion

The findings of the study indicate India has progressively emerged as one of the leading automobiles assembling hub of the world gaining capabilities and competitiveness. The 2W segment leads in production, domestic sales and exports in absolute terms and also in its rate of growth among the different categories of the automobile sector. The automobile industry has expanded at an impressive rate, even with fluctuating

annual growth rates and economic downturns. With the economic outlook appearing optimistic, the automobile sector is expected to witness a continuous advance in its growth trajectory. Public policies and programmes steadfast focusing in improving connectivity infrastructure, and initiatives like CLAP, AMP, NEMMP, PLI and vehicle scrappage apart from the rising demand for personal, commercial and recreational mobility of the growing population are expected to

further augment the growth of the sector. The sector presents enormous opportunities for itself and evolve to attain technology leadership to make India an automotive hub.

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