



## RESEARCH ARTICLE

# Exploring the expansion trajectory of the Indian automobile sector

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## Abstract

The Indian automobile sector stands as a key element of the nation's economy, having accomplished remarkable growth and variation over time. This sector has displayed incredible disparity as it includes two and three-wheelers, commercial vehicles, and passenger vehicles. Furthermore, India is categorized as a massive manufacturer of passenger cars, commercial vehicles, three-wheelers and two-wheelers. The Indian economy was confined before the liberalization period, expressed by high import tariffs meant to shield the country's auto sector. This constraint hampered the sector's enlargement. Moreover, the domination of a few firms. But with the 1991 liberalization policy, the industry reflected a sharp boost in growth, which unfolded new way and quickened its development. The prime data source for this research was the Annual Survey of Industries. The growth rates of various automotive sector variables were analyzed in this article.

**Keywords:** Automobile industry, Growth, Liberalization, Policy regimes, India.

## Introduction

The Indian automobile industry has accomplished notable expansion and evolution all over the years, positioning it as a crucial and prominent sector in the nation's economy. The expansion of the Indian economy and the advancement of other industries, like steel, tires, auto ancillary, glass, software, electronics and infrastructure, are extremely shaped by the automobile sector.

The Indian automobile industry diversified into various segments, including commercial vehicles, passenger automobiles, two and three-wheelers. Further, India's competence in the automobile industry is revealed by its ranking as the fourth-largest car manufacturer globally in 2019; it was the leading constructor of three-wheelers and the seventh-largest creator of commercial vehicles in 2018–19 (ACE Equity, 2019). Contribution to the national GDP of the automobile sector has increased outstandingly, from

2.77% in 1992–1993 to 7.1% currently. More than 19 million individuals precisely and indirectly pursue work in this industry (Ministry of Heavy Industries, 2023; SIAM Annual report, 2022-23).

The automobile industry attracts foreign investment a lot. To take part in it, they collaborate with nearby businesses. Prominent brands like Maruti Suzuki, Hyundai Motor and Ford are major examples of this trend. This sector placed sixth rank out of the top ten sectors making the largest FDI inflows, accounting for a surprising 5% of aggregate FDI inflow (ACE Equity, 2019).

## *The Historical Evolution of the Expansion of India's Automotive Sector*

Different government policies have helped the Indian automotive industry flourish. India's economy underwent these transitions gradually. The two main categories of these substantial reforms are the pre-liberalization period and the post-liberalization period.

### *Pre-liberalisation period*

Before the liberalisation period, the economy of India was bounded by high import tariffs meant to conserve the automobile sector, which created a few companies' dominance and confined growth. Hindustan Motor and Premier Automobile Limited began the passenger automobile sector in the 1940s. Few companies held most of the market share by the 1970s, including Bajaj Auto, Ashok Leyland, Telco, Mahindra & Mahindra. Economic

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**Table 1:** Different industrial policies

<i>Pre-liberalisation period</i>	<i>Post-liberalisation period</i>
1940-1980 The economy was not open to outside trade. A system of licenses was in operation.	1991 onwards Relief on the importation of capital goods and, technologies and licenses was removed on imports.
1980-1990 A number of foreign companies joined with joint ventures to support the extension of the Indian manufacturing sector. For the expansion of domestic trade, various limitations of the license system were removed. Relaxation in import regulations.	In 2002, the auto policy was affirmed and FDI limit was increased by 100%. Further, the Automobile Mission Plan 2006-2016 was implemented to make Indian companies more ambitious. The Second Automobile Mission Plan 2016–2026 has been initiated to support the evolution of Indian businesses. The intent of the National Electronic Mobility Mission Plan (NEMMP) 2020 is to boost the use of electric vehicles.

Source: Compiled by the author

growth was confined by laws such as MRTP and FERA, which required operating permits. Foreign partnerships were rare till the 1980s. In 1984, Maruti Udyog started a joint venture with Suzuki in 1984 and introduced the Maruti 800. From 1985–1986 to 1990–1991 there was a constrained import of technology (Krishnaveni and Vidya, 2015; Sarwade, 2015).

#### *Post-liberalisation period*

The Indian government announced a new industrial policy in 1991 in response to weak growth rates and budget deficits. In 1993, additional reforms were executed with the goal of stretching out the economy, which covered the automobile sector. These reforms made it feasible for tax breaks and more foreign investment to uplift the Indian automobile sector (Mukherjee and Sastry (1996)). These regulatory reforms boosted the courage of companies to increase their R&D expenditure and modify their execution strategies, which in turn captivated multinational corporations to enter the market with the joint ventures of domestic businesses (Narayanan, 2001). The second phase of liberalization took up in 2002 with the execution of the auto policy, which approved 100% foreign direct investment by the government in the automobile sector. This caused to an increase in FDI inflows and foreign collaborations into this industry (ACE EQUITY, 2019).

The 2016 vehicle mission plan concentrated on boosting the sector's GDP contribution by 10% and developing a turnover of US\$ 145 billion as part of a 10 year drive to expand the Indian vehicle industry into a global hub and encourage competition between the domestic players (Bhaskar and Sharma, 2013, Patra and Rao, 2016).

Table 1 is based upon the literature of different authors (Mukherje and Sastry, 1996; Patra and Rao, 2016; Sarwade, 2015) and data on government policies were summarized with the help of several databases like ACE EQUITY and MOSPI (Ministry of Statistics and Programme Implementation). With every major shift in policies made by the government of India, the Indian automobile industry has come out strongly.

## **Review of Literature**

Lots of experts have studied how government rules and support have made the Indian automobile industry bigger and better over time (Table 2).

### **Objective**

The key intent in this study is to analyze the growth rates of selected variables of the Indian automobile industry.

## **Data Sources and Methodology**

The analysis in this study was based on secondary data. The Annual Survey of Industries (Central Statistical Organization, Government of India), which extent for the years 1987–1988 to 2017–2018, is the chief source used for productivity estimates. Only three-digit data was considered, with some modifications. National Industrial Classification (NIC) coding was used to select the categories of automobile data. For the analysis purpose compounding techniques were used and presented by visual representations.

### **Analysis with Explanation**

The table displays the growth rates of a few chosen variables related to the Indian automobile industry. The growth rates of these selected variables show several aspects of the success of the automobile industry from 1987 to 2018. Table 3 analyzes the growth rates of selected variables.

### **Explanation of Variables**

#### *Gross value added*

The additional value created during the production process is represented by gross value added (GVA). According to the Annual Survey of Industries, the computation involves deducting the gross output value from the total input value.

This shows the value that the automotive industry produces after subtracting the cost of raw materials and inputs. With a growth rate of 7.56%, it appears that the sector's economic contribution grew between 1987 and 2018. Things like increases in production process efficiency, a rise in the demand for cars, or technology breakthroughs could bring this on (Figure 1).

Table 2: Review of Literature

<i>Author/ Year</i>	<i>Major findings</i>
Bowonder and Richardson (2000)	This study examined the liberalization period in India. Industries increased their R&D expenditures and improved technological skills. Several Powerhouses like Maruti Udyog and Mahindra & Mahindra build new innovative models. Telco became the biggest research and development group in India after strengthening its design and production. After liberalization, Technology enhancement positively impacted the growth of the Indian automobile sector.
Narayan (2004)	This study investigated the factors that boosted the extension of the Indian automobile industry during three important periods: the licensing period, deregulation period, and liberalization period. This study took data from 11 manufacturing industries and analyzed the crucial elements like the technology used, company size, profits and firm age, which impacted positively on the growth of manufacturing industries.
Panagariya (2004)	This study explored India's economic transformation throughout the 1980s and 1990s in excellent detail. It was disclosed that while the rapid extension of the 1980s was unmovable, there was a more orderly and reliable period in the 1990s.
Shinde and Dubey (2011)	This study analyzed the expansion of the automobile industry from 2005 to 2010. Different segments of the automobile industry, like commercial vehicles, and passenger automobiles and two-wheelers, were discussed. It emphasized leading companies like Tata Motors, Bajaj Auto, Ashok Leyland, and Hero Honda Motors. The industry noticed sales go up, and to measure the growth CAGR and SWOT analysis were used. The study also recommended more investment in research and development for further growth.
Bhasker and Sharma (2013)	This study spotted the years 2001–2011. Since 1991, India's automobile sector has extended remarkably because of Foreign Direct Investment (FDI). There were noteworthy increases in output, exports and domestic sales during this liberalization period. Up to 2020, the industry desires to draw in more investors in order to maintain and expand its current growth trajectory.
Singh (2014)	This study investigated India's automobile exports and economy from 1960 to 2010. Bikes, trucks, and cars all increased gradually. The economic impact of passenger cars and motorbikes roughly doubled, and more Indian automobiles—particularly trucks and three-wheelers—were observed on global roadways. Overall, the auto sector increased production at a rate that had never been seen before.
Sarwade (2015)	This study examined the development of the auto industry, emphasizing governmental initiatives like globalization, liberalization, and protectionism. Ever since liberalization, the industry has consistently grown annually. The purpose of our article was to understand the current state of the automotive industry, trace its historical growth, and suggest ways to overcome challenges. After examining eight automobile businesses, we discovered that India's exports had increased, indicating strong industry growth. India's car sector has a lot of potential and might rank among the top five globally.
Patra and Rao (2016)	This study examined the impact of government regulations on the Indian automobile sector between 1991–1992 and 2009–2010. Ten automakers' worth of data were extracted from the Prowess database and subjected to fixed effect model analysis. The study's main topics were auto policy and liberalization policy. The findings indicated that various businesses attracted more foreign capital by growing at varying rates. Research and development improved, while giant corporations reaped the majority of the benefits.
Melwani and Sitlani (2017)	This paper studied the association between export performance and the growth of India's car sector between 2005–06 and 2015–16. The industry grew positively year after year, with advances being seen in several categories. Predictions indicate that this growing trend will continue in the future.
Singh (2017)	This study examined how globalization and liberalization have affected the growth of the auto industry. Growth was mostly driven by important elements like GDP, exports, domestic sales, employment, production, and foreign direct investment (FDI). Specifically, the two-wheeler market saw increased export volume, and the passenger car market saw significant export expansion. All things considered, the study demonstrated how globalization and liberalization have helped to advance the car sector.
Miglani (2019)	This study analyzed how governmental regulations affect how quickly the car business develops. Showcasing the objectives set in the Automobile Mission Plan 2026 and portraying India as one of the top three global manufacturing hubs. The study recommended using cutting-edge technology and boosting funding to encourage the development of regional innovations, strengthening the global supply chain in the process.
Chowdhury and Chatterjee (2020)	This study examined the variables affecting the Indian automobile industry's expansion between 1998 and 2016. Panel data analysis was used to examine data from 12 firms over 19 years. The fixed effect model was found to be valid by the Hausman Specification test, and we employed both random and fixed effect models. A balanced panel data set with few outliers was displayed in the results. The productivity of labor and capital, import intensity, net profit margin, fixed assets, and company age were important growth-influencing elements. The study came to the conclusion that the industry's expansion was significantly fueled by advantageous industrial policy.

*Total persons engaged*

This category includes all individuals employed by the factory, whether receiving wages or not, involved directly or indirectly in the manufacturing process. It encompasses various roles such as administrative, technical, and

clerical staff, as well as laborer producing capital assets for the factory's own use. This also covers supervisors, managers, and employees engaged in administrative tasks, storekeeping, welfare, security, sales, procurement of raw materials, and production of assets for the factory.

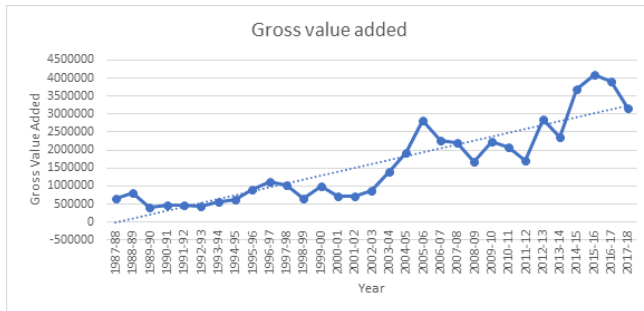


Figure 1: Gross value added

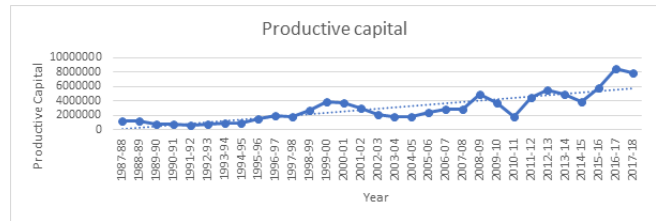


Figure 4: Productive capital

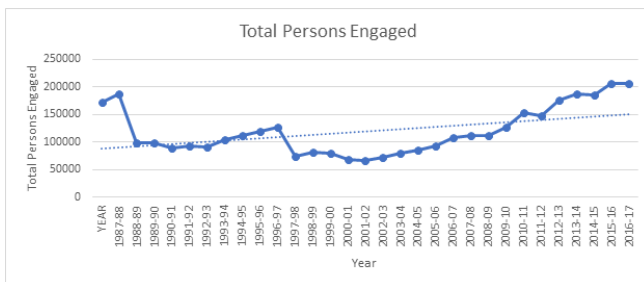


Figure 2: Total persons engaged

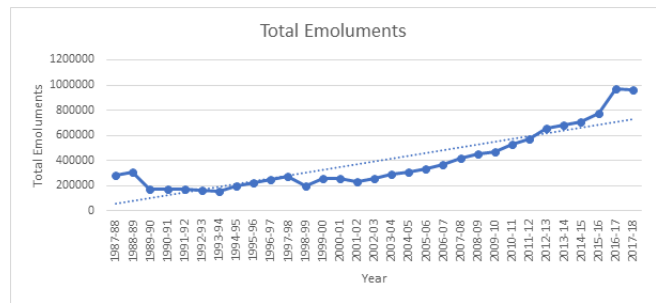


Figure 5: Total Emoluments

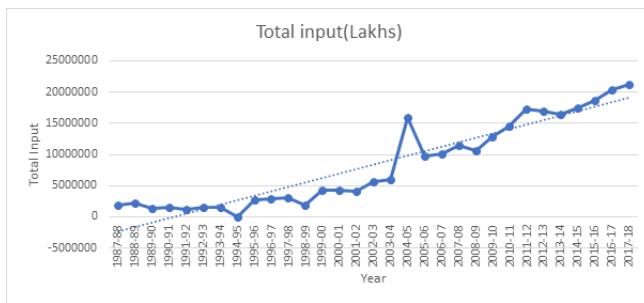


Figure 3: Total input (Lakhs)

Table 3: The growth rates of selected variables

Variables	1987 – 2018 (Growth Rates)
Gross value added (Rs Lakh)	7.56
Total persons engaged	1.56
Total input (Rs Lakh)	18.41
Productive capital (Rs Lakh)	7.18
Emoluments (Rs Lakh)	5.54

Source: Calculated from various issues of ASI

Additionally, it comprises working proprietors, their family members working in the factory without pay, and unpaid members of cooperative societies involved directly in the factory’s productive activities (Annual Survey of Industries).

This is the total number of people who work in the automotive industry. A growth rate of 1.56% suggests that throughout the given time frame, employment growth in

the industry was comparatively moderate. Variations in labor market dynamics, automation tendencies, or adjustments in production quantities could all be factors driving this development (Figure 2).

*Total input (in Lakhs)*

This covers the entire cost of all fuels, materials, and other inputs used in manufacturing, including non-industrial services, materials for factory asset repair and maintenance, contract labor, office supplies, rent for buildings and equipment, and R&D costs (Annual Survey of Industries).

This probably sums up all of the resources used in the industry, including capital investments, energy, and raw materials. An increase in resources allocated to the automotive sector over the analyzed period appears to have occurred, as indicated by the growth rate of 18.41%. This could be due to things like higher infrastructure spending, higher production capacity, or modifications to government regulations that impact the industry (Figure 3).

*Productive capital*

According to the Annual Survey of Industries, this is the total value of fixed capital and working capital.

Capital invested in assets that directly support the production of goods or services is referred to here. With a growth rate of 7.18%, the industry’s productive capital increased steadily during the given time frame. Investments in technology, machinery, and equipment intended to increase productivity and efficiency in the processes involved in the manufacture of automobiles may be the driving force behind this (Figure 4).

### Emoluments

These are payments given to workers that consist of their projected salaries as well as non-cash benefits. Employers offer their workers these benefits, which are products or services that are either given away for free or at a substantial discount, with the main advantage being to the workers as consumers. This group includes all types of remuneration, such as profit-sharing, sporadic bonuses, and additional sum that aren't included in normal salary. Housing, health care, education, leisure activities, personal insurance, income tax exemption, allowance for house rent, and transportation expenses are examples of non-cash benefits that are provided by the employer (Annual Survey of Industries).

This represents the total compensation paid to employees in the automobile sector, including wages, salaries, and benefits. A growth rate of 5.54% suggests an increase in employee compensation over the studied period, which could be influenced by factors such as inflation, changes in labor market conditions, or efforts to attract and retain skilled workers in the industry (Figure 5).

### Conclusion and Summary

The performance of the automobile industry is depicted in detail by these growth rates, which include the sector's economic contribution (gross value added), employment dynamics (total persons engaged), resource utilization (total input), capital investment (productive capital), and labor compensation trends (emoluments). Examining these characteristics provides valuable information on how the industry has changed over time and the underlying forces that have shaped its trajectory. Examining the growth rates of these factors provides a comprehensive understanding of the performance and evolution of the automotive industry throughout time.

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