CHAPTER III

GENESIS AND EVOLUTION OF INDIAN AUTOMOBILE INDUSTRY SINCE 1947 TO 1979

This chapter has been designed to trace the genesis of automobile and its evolution in India under different phase’s period. The automobile industry in India has come a long way from its nascent state at the time of India’s independence in 1947 to its present day dynamic form. The evolution of India’s automobile industry is identified to have occurred in four phases. In the first (1947-1965) and second phase (1966-1979), the important policies identified were related to protection, indigenisation and regulation of the industry. In the third phase (1980-1990), the single most important policy identified was the one with regard to relaxation in the means of technology acquisition. The foreign competition inducted into the industry transformed its dynamics. Lastly, in the fourth phase (1991 onwards) the liberalisation with regard to foreign investment had a significant influence on the Indian automotive industry as we see it today. In this chapter the history of Indian automobile industry till 1979 has been studied.
GLOBAL INNOVATIONS AND INVENTIONS

The genesis of the automobile dated back to 13th and 15th century when Roger Bacon and Leonardo da Vinci suggested the possibilities for power-driven vehicles. In 1672, Ferdinand Verbiest (Flemish Jesuit missionary in China during the Qing dynasty) designed what some claim to be the first working steam powered vehicle and many claim this as the world’s first automobile, in spite of its small scale and unable to carry a driver or passenger and lack of evidence that it was actually built. However in 17th Century, the famous English physicist Sir Isaac Newton proposed the concept of a steam carriage which was brought to reality in the late 18th Century.

In 1769, the French engineer and mechanic Nicolas Joseph Cugnot designed and build a three-wheeled, steam-powered, 2.3-mph tractor – conveyance capable of carrying four persons. The vehicle was used by the French Army to haul artillery at a whopping speed of 2 1/2 mph. The vehicle had to stop every ten to fifteen minutes to build up steam power. After several satisfactory test drives, it was followed in 1771 by an improved
FIGURE 3.1
CUGNOT’S STEAM WAGON (1771)

heavy freighted wagon (fardier) of the same general layout (Figure 3.1). By 1784, William Murdoch built a working model of a steam carriage in Redruth, England and in 1801 Cornish engineer Richard Trevithick who pioneered the development of the high-pressure steam engine, built a full-sized steam powered car in Camborne, England, which in 1803 was employed with some success in London for the transport of passengers – the
first motorized taxi (Figure 3.2). However, satisfactory conditions for operation of steam omni-buses were not met until approximately 20 years later - again in England, whose technological and industrial superiority was unchallenged at that time. Sir Goldsworthy Gurney built several omni-buses, one of which covered 14 kilometers.

In 1828, Ányos Jedlik, a Hungarian invented the first tiny electric motor car. In 1835, Professor Sibbrandus Stratingh of Groningen, Netherland and his assistant Christopher Becker developed a small-scale electrical car, powered by non-rechargeable primary cells. In 1838, Scotsman Robert Davidson built an electric locomotive that attained a speed of 4 miles per hour. Between 1832 and 1839 (the exact year is uncertain); Robert Anderson of Scotland invented the first crude electric carriage, powered by non-rechargeable primary cells.
FIGURE 3.2

THE LONDON STEAM CARRIAGE, BY TREVITHICK AND VIVIAN (1803)

Note: Liquid hydro-carbons were mixed in the carburetor of the engine, which released the vapor. An electric spark was used to ignite this vapor which released the power to drive the vehicle.

During the mid 1800s, the attention had shifted to internal-combustion engines which were safer and easy to operate than the steam-driven engines and electric motor engines. The first successful version of the internal-
combustion engine was built by Jean-Joseph Etienne Lenoir in 1859. In 1870, Austrian engineer Siegfried Marcus built a one-cylinder internal-combustion engine and attached it to a simple handcart which made him the first man to propel a vehicle by means of gasoline. Today, this car is known as "the first Marcus car" (Figure 3.3).

**FIGURE 3.3**

**FIRST MARCUS CAR OF 1870**

Etienne Lenoir’s model was revised by a German shop clerk, Nikolaus August Otto. He invented the first four-stroke internal-combustion engine in 1876 and named it as "Otto Cycle Engine". In 1885, German
mechanical engineer, Karl Benz designed and built (based on Nikolaus Otto’s patent), the world’s first three-wheeler car to be powered by gasoline and named it as “Benz Patent Motorwagen” (Figure 3.4). The car was first driven in Mannheim, southwestern Germany. Benz received patent for his automobile on 29th January 1886, and began the first production of automobiles in 1888. On the same year (1885), Gottlieb Daimler and Wilhelm Maybach developed the first gasoline-driven motorcycle, but Enrico Bernardi an Italian engineer and a professor of the University of Padua, on 5th August 1882 he prototyped the “Motrica Pia”, the first petrol combustion engine. He fitted the engine into his son’s tricycle in 1884, making it at least a candidate for the first automobile, and first motorcycle. Bernardi enlarged the tricycle in 1892 to carry two adults.
FIGURE 3.4

BENZ PATENT MOTORWAGEN (1885)

Note: Sylvester Howard Roper invented a two-cylinder, steam-engine motorcycle (powered by coal) in 1867. This can be considered the first motorcycle, if you allow your description of a motorcycle to include a steam engine.

Soon after in 1889, Gottlieb Daimler and Wilhelm Maybach built their first four-wheeler “Stahlradwagen” (“Steel-Wheeled Car”), originally known as the - a quadricycle that did not involve adapting a horse-drawn
carriage with their engine. This vehicle was powered by a 1.5 hp, two-cylinder gasoline engine, it had a four-speed transmission and traveled at 10 mph. Public indifference aside, the steel-wheeled car caught the attention of French entrepreneurs. The owners of the firm Panhard & Levassor (P&L) obtained licenses from Daimler and they assigned the rights to build Daimler engines to Peugeot. Closely following the design of Daimler and Maybach’s Stahlradwagen, in 1890, Peugeot developed its own quadricycle, more importantly, French’s first practical internal combustion road vehicle. The steel-wheeled car marks the birth of the French auto industry, which triggered the first wave of motorization in Europe. In 1893, Benz, after reinvention of Ackermann steering (known since 1816), introduced the four-wheeled “Viktoria”. Over the same time that the Viktoria was introduced, Benz also developed a small car named “Velo”. In 1896, Henry Ford built his first gasoline-powered car and drives it through the streets of Detroit. By the turn of the century, Benz works had gone to the world’s largest auto manufacture, ahead of Daimler, Peugeot and Panhard & Levassor (Table 3.1). In 1901, Peugeot overtook Benz, followed by Diamler in 1903.
### TABLE 3.1

**TRENDS OF AUTOMOBILE PRODUCTION (1894-1903)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Benz</th>
<th>Daimler</th>
<th>Peugeot</th>
</tr>
</thead>
<tbody>
<tr>
<td>1894</td>
<td>67</td>
<td>1</td>
<td>40</td>
</tr>
<tr>
<td>1895</td>
<td>135</td>
<td>8</td>
<td>72</td>
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<tr>
<td>1896</td>
<td>181</td>
<td>24</td>
<td>92</td>
</tr>
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<td>1897</td>
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<td>323</td>
</tr>
<tr>
<td>1900</td>
<td>603</td>
<td>96</td>
<td>500</td>
</tr>
<tr>
<td>1901</td>
<td>385</td>
<td>144</td>
<td>456</td>
</tr>
<tr>
<td>1902</td>
<td>226</td>
<td>197</td>
<td>637</td>
</tr>
<tr>
<td>1903</td>
<td>173</td>
<td>232</td>
<td>773</td>
</tr>
</tbody>
</table>

**Source:** Eckermann, Erik (2001): World History of the Automobile, Society of Automobile Engineers (SAE) Press, Warren dale, USA, p. 33

By 1900, mass production of automobiles begun in France and the United States. In the United States, brothers Charles and Frank Duryea founded the first automobile manufacturing company named “Duryea Motor Wagon Company” in 1893. The first mass-produced car in the United States was the Curved Dash model “Oldsmobile”, powered by a single cylinder
engine, built by the Ransom Eli Olds in 1901. Olds was the first person to use the concept of the assembly line in the automobile industry. This new approach enabled him to more than quadruple his factory’s output, from 425 cars in 1901 to 2,500 in 1902. On 12th August 1908, Henry Ford produced Model T car at the Piquette Plant in Detroit, Michigan (Figure 3.5). This car was generally regarded as the first affordable automobile that opened travel to the common middle-class American. However, by 1927, when Model T was discontinued, over 18 million had rolled off the assembly line.

FIGURE 3.5

FORD MODEL T (1908)

Note: Lean Production is a system of work organization that strives to deliver high quality, low-cost products through the efficient use of resources and the elimination of waste.
The automobiles manufactured in the 1890s were called as ‘horseless carriages.’ This marked the beginning of craft production as all the manufacturing was done by craftsmen employed in metal and machine tool industries. Each car was tailor-made to suit the needs of wealthy customers. But this craft-based production structure demanded skilled workers and resulted in very low production volume. By early 20th Century, the craft-based system was replaced by mass-production techniques, popularized by Ransome Eli Olds and Henry Ford. In 1913, Henry Ford upgraded the existing push and move assembly line to a conveyor belt line, which enabled an enormous increase in production and also reduced assembly time considerably. This was considered to be the landmark achievement. His famous Model T was assembled in 93 minutes. The production of Model T stood at 208,667 in 1913 rose to 308,162 units in 1914. The main advantage of mass production technique over craft-production was the ability to manufacture several products simultaneously rather than one at a time. The other features like inter-changeability of standard parts, standardized product design, and centralized hierarchy of tasks helped to realize economies of scale. This increased labor productivity by leaps and bounds but also brought about a reduction of skilled labors. Each worker performed identical
tasks using identical tools which were always kept within hand-reach. The enormous success of mass production resulted in the global sector being dominated by the American car manufacturers. In 1955, North America accounted for 75 per cent of global motor vehicle production. The Big Three, Ford, GM and Chrysler accounted for 95 per cent of all American car sales.

In Europe, mass production was widely adopted in the 1950s through the initiatives of Volkswagen, Renault and Fiat. But rather than production efficiency, the emphasis was more on product differentiation and technical innovation. Their product offerings included compact cars (VW Beetle), sporty cars (MG) and luxury cars. Front-wheel drive, fuel injection, unitized bodies, and five-speed transmissions were some of their innovations in the technical front. Thus with focus on product strategy, the European automobile industry contributed more than the US to the global automobile production during 1960s and early 1970s.

Japanese auto-makers emerged as a force to reckon with in the global scenario with the oil crisis in 1973, and subsequent price increases in 1979. The crisis had resulted in a shift in consumer demand for energy efficient
cars, a segment hitherto dominated by the Japanese automakers. By 1980s, the Japanese auto-makers were benefited from the voluntary export restraints in the US and set up assembly plants known as transplants within North America. Towards the latter half of 1990s Japanese cars accounted for 40 per cent of the total North American sales. In addition to cost savings by way of cheap labor, they also initiated better manufacturing techniques such as the Toyota Production System, developed by Taiichi Ohno in the 1960s and 1970s based on lean production techniques in the 1980s.

Toyota Production System was built on two main principles namely, ‘Just-In-Times’ production and ‘Jidoka.’ The underlying concept of the system was ‘Good Thinking Mean Good Product’. The approach helped to manage equipment, materials, and labor in the most efficient manner while ensuring a healthy and safe work environment. Just-In-Time referred to the manufacturing and conveyance of only what is needed, when it is needed, and in the manner needed. Jidoka referred to the ability to stop production lines, by man or machine, in the event of problems such as equipment malfunction, quality issues, or late work, thereby preventing the passing of
defects, helping to identify and correct problem areas using localization and isolation, building quality to the production process.

Thus the global automobile industry had covered a remarkable journey spanning through centuries covering craft production, mass production and currently excelling in lean production techniques, setting standards for manufacturing sector.

HISTORICAL BACKGROUND OF INDIAN AUTOMOBILE INDUSTRY

The history of the automobile actually began 5,000 years ago when the first wheel was used for transportation, probably on Mesopotamian chariots in 3200 BC. The dawn of automobile in India actually goes back to 4000 BC when the first wheel was used for transportation in India in form of chariots. Since then it has traveled a long way, from chariots to bullock cart, to the jet-age.

Up to almost the end of World War I completely-built motor vehicles were being imported into the country by British officials and other prominent Indians, either directly or through dealers/agents. The number of imported was not more than 4000 vehicles’ per year, both passenger cars and
commercial vehicles\textsuperscript{1}. It was only after 1920, local assembly of vehicles, from components and parts imported in completely knocked down (CKD) condition started.

India had her first imported car in 1897. It was brought by a resident of Calcutta. In the next year, four more cars (Curved Dash Oldsmobile model) were there in India, owned by Mr. Jamshedji Tata, the leading industrialist, Mr. Rustom Cama, a solicitor, Mr. Cawasji Wadia, a merchant, and Mr. Pack, a Bombay jeweler\textsuperscript{2}. That same year, the first pneumatic tyres arrived in Bombay, with Dunlop opening an office in the city.

Madras, it would appear, lagged behind, though it is related that a car was seen on Mount Road on a brief outing in 1894. If that unconfirmed appearance is ignored, the recorded date of car being in regular use in Madras is 1901. The car was owned by A.J. Yorke, a director of Parry & Co. He drove it daily from Ben’s Gardens, Adyar, to Parry’s in ‘Black Town’. The South’s first registered car, MC-1, belonged to Francis Spring, at that


time Secretary of the Madras Railway Board and, in 1904, to become the Chairman of the Madras Port Trust and ‘father’ of the Madras Harbour. The first Indian-owned car in Madras, MC-3, was a building contractor T. Namberumal Chetty’s.

Before long, several Madras firms became agents for British, Continental and American motor car manufactures. The pioneer was Simpson and Addison. These firms import and distribute motor vehicles and spare parts and also have their service stations for maintenance of cars, buses and trucks. Spare parts dealers formed a strong network in India. They were well versed, and any spare part for any model was readily available. There were many famous names such as Conwest, Chandulal Mehta, George Oakes, Howrah Motors, Jullundhur Mortors, Jain Motor Company, Madras Auto Service and others.

In 1903, Samuel John Green of Simpson and Company Limited (established in 1840) brought out India’s first steam car build in the

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company’s workshop at Madras. The Madras Mail hailed its appearance as the beginning of “a new industry for Madras”. By the end of 1903, Simpson began to import cars, the first being a 10 hp Turner Miesse steam car. In 1905, Simpson built the first steam bus. The bus ran between Bezwada (Vijayawada) and Musulipatnam. This was possibly India’s first bus service, though short-lived\(^5\).

A future in building steam-powered vehicles was, however, not envisaged by Simpson’s who felt that its core business, carriage building, and, ergo, body-building should be exploited. In 1904, when it was experimenting with steam cars, it built a body on a Turner-Miesse chassis and supplied it to Gwalior, where it becomes the first motorized vehicle used in India for postal and passenger service. In 1907, it built the first Public Service Vehicle for a customer from Salem District, a 16-passenger body fitted to a long wheel based 20/32 hp Darracq chassis. It was not till four years later, however, that a real beginning on Public Service Vehicles was made. A 22-seater body on a 2-ton Halley chassis was supplied in 1911,

again to the Salem district. And this was followed the same year by a passenger-cum-goods body for the Travancore Commercial Company. In 1912, it built a motor ambulance for a local institution.

Simultaneously, Simpson’s body-building activity for private owners of vehicles centred on building ornate, carriage-style bodies on car chassis. As English-made car bodies were expensive, only chassis were usually imported and locally-made bodies of varied designs were fitted on them. In 1907, several landaulette bodies were built by Simpson’s on Darracq chassis. In 1909, the first coach-type, full-sized landau body with a separate “coachman’s seat” was built on a 27 hp Delauney Belleville chassis.

In 1912, T.V. Sundram Iyengar & Sons Private Limited (now Sundaram Motors) entered into road transport business as a bus operator at Madurai. T.V. Sundram Iyengar took the road transport operations in a modest way in South India. T.V. Sundram Iyengar and Sons Limited became a vehicle dealer in 1922 after the lifting of Government restrictions on

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7 Ibid.,
imported vehicles of all types had been put in place during the Great War (1914-18).

By 1920, the number of imported vehicles of all types had grown to nearly 13,500 and two international automobile manufacturers, Ford and General Motors, sensing the potential, set up local companies that year to sell and service their motor cars and trucks. In 1928, General Motors India Limited commenced assembling of completely knocked down (CKD) condition trucks and cars in Bombay. It was followed by the Ford Motor Company of India in 1930 in Madras and in 1931 in Bombay and Calcutta. And in 1936, Addison and Company Limited began with CKD assembly of cars and trucks at Madras. Assembly or import of vehicles increased substantially since the twenties and crossed 30,000 units by 1930 (constituting about 17000 passenger cars and 15,000 commercial vehicles). After a decline in the depression years, the number of vehicles assembled or imported, increased up to the Second World War period. During the War the average fell to about 20,000 vehicles per year in the first few years;

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8 Ibid.,
subsequently the number dwindled even further to 7,000. The decline was sharpest in respect of passenger cars.

In 1936, Sir M. Visvesvaraya, an eminent Indian engineer and statesman, presented a detailed report to the then central government regarding formation of an indigenous automotive industry in India. The proposal, which included establishment of a factory with a production capacity of 11,000 vehicles per year and a capital outlay of Indian Rupee (INR) 22.5 million, was however rejected by the Central Government. Nevertheless, as a by-product of Sir Visvesvaraya’s efforts, the beginning of automotive industry in India was marked in early 1940s with the establishment of automobile companies by two Indian industrial houses – Hindustan Motors Ltd. (HML) founded by the Birlas and Premier Automobiles Ltd. (PAL) by the Walchand Hirachand Group in 1942 and 1944 respectively. Both the companies were established with foreign technical collaboration and a programme for progressive manufacture of

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complete vehicles. However, the progress of the two companies was “slow in the initial stages, due to the intense competition from both old and new producers who were merely assemblers”. Hindustan Motors Limited was also delayed because of imminent partition, as a result of which it could not decide its location. It began its operations by assembling of vehicles in 1948, while Premier Automobiles Limited did so in 1947.

The drive for India’s independence had already intensified in the country since 1930s. Various deliberations that shaped India’s post-independence development strategy were being carried out during this period. National Planning Committee, set up in 1938 by the then dominant political party Indian National Congress, considered nearly all the aspects of economic planning for an independent India and generated a series of studies, ultimately proposing a set of socio-economic policies and programmes for India after independence. The committee acknowledged the long-term importance of setting up an automotive industry in the country by recognising its place in the planned economy. In a separate effort, seven leading Indian industrialists prepared a set of proposals in 1944-45 for the development of post-independence economy of India. This set of proposals,
also known as the ‘Bombay Plan’, suggested state intervention in the development of the nation’s economy after independence. Eventually, recommendations of both the National Planning Committee and the Bombay Plan resulted in the original attempt of planned development after India’s independence. The development of the nascent Indian automotive industry thus took a different path of planned approach in the years following India’s independence in August 1947.

Today, the Indian automobile industry has come a long way on its path of development. From a mere production of 4,077 vehicles in 1950-51\textsuperscript{11}, the production of the industry reached 13,895,364 vehicles in 2009-10\textsuperscript{12}. The industry is now working in terms of the dynamics of an open market with a multitude of automobile and auto-component manufacturing firms. Various socioeconomic and political factors have shaped the development course of the industry along its way through inception to the


present-day dynamic form. The evolution of India’s automotive industry under the influence of these factors could be identified to have occurred in different phases.

**INDIAN AUTOMOBILE INDUSTRY IN DIFFERENT PHASE PERIODS**

The first phase (1947-1965) is characterised by protection from foreign competition, push for indigenisation and emergence of licensing regulations. The second phase (1966-1979) witnessed increased regulations and disparate growth among different segments of the industry. The third phase (1980-1990) saw relaxation in regulations and entry of several Japanese collaborators. Finally, the fourth phase (1991 onwards) began with the historic economic reforms in India and the ensuing liberalisation of the automotive industry. Subsequent influx of foreign players and the resulting access to global markets have begun the global integration of the industry. The historical account of these four phases along with the State interventions that shaped them is presented in the following sub-sections.

The realisation of the dream of an independent India had brought along with itself the challenge of nation building for its leaders. The dismal
performance of country’s agricultural and industrial sector under the shackles of colonial rule had led to abject levels of poverty within the population. Among other things, the leaders of the nation had to decide upon the type of economic system that would set the pace of India’s economic development promoting welfare of all its citizens. In light of the socioeconomic conditions then existing within the country, the newly formed government under the prime ministerial leadership of Jawaharlal Nehru preferred a mixed economy for the nation. This implied that the decision making of ‘what to produce’, ‘how to produce’ and ‘how to distribute’ was to be shouldered by both the State and the market. In consideration of the vast social and economic inequalities then prevailing within the Indian society, the State decided to assume a bigger role for itself in the nation’s economic development.

Protection, Indigenisation and Regulation: 1947 to 1965

In line with the intentions of the State to intervene in economic development, Industrial Policy Resolution (IPR) was passed in the Indian Parliament in 1948. IPR of 1948 outlined the approach that the government proposed to pursue in the industrial growth and development. The resolution
divided the nation’s industries into different categories depending upon their strategic importance and specified the role of State in the development of each category of industries. Accordingly, the automotive industry was classified under the category of ‘basic industries of importance’. As mentioned in IPR of 1948, these industries of basic importance, whose “location must be governed by economic factors of all-India importance, or which require a considerable investment of a high degree of technical skill”\(^{13}\), were subject to regulation and control by the central government. Further, the initiatives within the automotive industry were left to the private enterprises, with State playing only the role of a controller. However, the State reserved its right to intervene and progressively participate in the industry when deemed necessary.

In addition to outlining the role of State in promoting industrial development, IPR of 1948 hinted at the State’s disposition of raising tariff barriers for preventing unfair foreign competition and for ensuring judicious use of nation’s precious foreign reserves. The resolution also proposed

central regulation on new foreign investments and stipulated that effective control in future foreign equity collaborations ought to rest in Indian hands. In accordance with the objectives laid by IPR of 1948, the Ministry of Industry prepared its first policy for the automotive industry in 1949. As determined in the policy, the tariff on import of fully-built vehicles was heightened the same year, virtually banning their import into the country. The foreign assemblers assembling CKD vehicles were allowed to continue to operate nevertheless. Meanwhile, PAL and HML had already commenced their operations in 1947 and 1948 respectively. PAL started assembling Dodge-Fargo trucks, whereas HML assembled Studebaker trucks. The number of vehicles assembled/produced in the country reached a figure of 21,577 in 1951. The large number of on-road vehicles in the country by this time had led to the development of a sizeable repair and replacement sector.

In pursuance of IPR of 1948, the Industries (Development and Regulation) Act (IDRA) was promulgated in 1951. The Act provided the

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government with means to implement its industrial policy. While IPR of 1948 articulated the intentions of the government, IDRA orchestrated the complex implementation of rules and regulations for the planned development. According to the Act, “an industrial license was required for a unit with 50 or more workers (100 or more without power) in order to establish a new unit, expand output by more than 5 per cent annually, change location, manufacture a new product, and to conduct business if a change was introduced in policies”\textsuperscript{15}. The bureaucratic process for obtaining the licenses was also stated in the Act. Thus, IPR of 1948 along with IDRA 1951 created an elaborate licensing system surrounding the Indian industries, including the automotive industry. IDRA 1951 with subsequent amendments owing to policy changes continued to apply to the Indian industry till early 1990s.

In the mean time, the Constitution of India came into force in January 1950. Subsequently, the Planning Commission was set up in March 1950 to oversee the formulation and implementation of India’s Five-Year Plans

(FYP). The commission had the responsibility of assessing all the resources of the country, augmenting deficient resources and making plans for the deployment of the resources in the most effective and balanced manner in consideration to the nation’s priorities. With respect to the automotive industry, the commission planned the total number of vehicles (per vehicle type) that were to be produced in the given plan period depending upon country’s needs and the resources at disposal. For instance, the First FYP covering the period 1951-1956 and introduced in April 1951, targeted to raise the production of vehicles in the country from 4,077 in 1951 to 30,000 in 1956\textsuperscript{16}. Accordingly, the Ministry of Industry administered the capacity licenses to the automobile firms.

In March 1952, the government decided to replace its hitherto ‘gut-reaction’ policy for the automotive industry with a more studied and comprehensive approach to the industry\textsuperscript{17}. It referred to Tariff Commission


the question of providing protection/assistance for the encouragement of automotive industry. The Tariff Commission submitted its report in 1953 recommending that only units with a plan for progressive manufacture of components and complete vehicles may be allowed to operate. It also recommended against any price controls and advised the government to maintain a watch on the prices. Subsequently, the recommendations of the commission were adopted by the government. Foreign assemblers like General Motors and Ford who considered the domestic demand too low to warrant a local manufacturing programme were obliged to close down their operations within three years. Thus, the exit of foreign assemblers by 1956 and the ban on import of fully-built vehicles since 1949 effectively protected the Indian automotive industry from foreign competition.

The push for indigenisation by imposing a progressive manufacturing programme on the automobile firms was in alignment with the overarching goal of ‘self-reliance’ emphasised by the leaders of the nation. As per Tariff Commission’s recommendation, a minimum 50 per cent indigenous content requirement was introduced. The commission endorsed the already existing manufacturing plan of HML and PAL who had established units for
manufacturing some of the components. With the exit of foreign competition, both HML and PAL who had so far restricted themselves to CVs entered into the production of cars. HML had technical collaboration with Morris (UK) for cars, whereas PAL with Fiat (Italy) for the same. In addition to these two firms, the manufacturing programme of Automobile Products of India, Ashok Motors and Standard Motor Products for cars and CVs was also approved by the commission. Ashok Motors established in 1948 in Madras, renamed itself as Ashok Leyland based on its equity collaboration with British Leyland (UK) in 1955. Also established in Madras in 1948 was the Standard Motor Products of India Limited. It was in collaboration with Standard Motors (UK) for the production of cars and CVs. Production began in 1950 and the first Vanguard rolled out of the Standard Motors factory in Vandalur, a suburb of Madras, in 1951\(^\text{18}\).

Subsequently, manufacturing programme of one more firm Mahindra & Mahindra (M&M) was approved for the manufacturing of UVs Willys Jeeps.

After adoption of the Constitution and the integrated socio-economic goals, the industrial policy was revised and adopted in May 1956. Known as the Industrial Policy Resolution of 1956, the revised industrial policy described ‘socialist pattern of society’ as the objective of Parliament’s social and economic policy\(^{19}\). Accordingly, the IPR of 1956 signaled higher level of State participation for accelerating industrial development. The resolution grouped the industries into Schedule-A, Schedule-B and the remaining. Schedule-A industries were either exclusive monopolies of the central government or were industries in which any new undertaking was solely reserved for the State. Schedule-B included industries in which the State would establish new undertakings for accelerating the future development, and in which the private enterprises had equal opportunity for the same. The remaining industry list, which included the automotive industry, was left to the initiatives and enterprise of the private sector. However, the State reserved its right to participate in the future. Thus, the automotive industry

under IPR of 1956 had been provided with necessary autonomy for functioning.

The IPR of 1956 was followed by the introduction of Second FYP (1956-1961). In contrast to its predecessor, which focused on the development of agrarian sector, the Second FYP had ambitious programmes for rapid development of the industrial sector. Massive investments were planned for the public sector and the amount of deficit financing was around INR 1,600 million per year\(^{20}\). The plan targeted a production capacity of 40,000 trucks, 12,000 cars and 5,000 jeeps for the automotive industry by end of the year 1960-61\(^{21}\). As evident, more emphasis was laid on the production of trucks with regard to the nation’s priorities. Also, the plan aimed at stepping up the indigenous content of the automobiles to 80 per cent by end of the year 1960-61. Meanwhile by 1956, Tata Engineering & Locomotive Company (TELCO) and Bajaj Tempo with programmes of CVs


entered the industry. TELCO was in collaboration with Daimler-Benz of Germany and Bajaj Tempo initially produced 3-wheelers under the license of Vidal & Sohn Tempo Werke of Germany. Additionally, Enfield India with a programme of manufacturing motorcycles also entered the industry.

In order to encourage the domestic production and to keep the automobile prices low, the government in early 1950s had maintained lower import duties on the components still being imported. However, a steep rise in the prices made the government to approach the Tariff Commission for the second time in August 1955. The commission was asked to enquire into and recommend a price policy for the automobiles. In its report submitted in October 1956, the commission maintained its initial recommendation against the price controls, as they might undermine the development of the industry. It also suggested reviewing the whole question of protection granted to the automotive industry after a period of ten years.

The situation however changed very soon with the balance-of-payments crisis that sprang up in 1956-57. The ambitious Second FYP with massive outlays on industrial development had strained the nation’s foreign reserves. Immediate measures required to counter the economic crisis
included cuts on foreign exchange allocated to the automobile manufacturers. Moreover, these firms were permitted to produce only one model each. The ensuing reduction in import of vital components compelled the firms to reduce the production. As a result, severe backlogs were generated for the production orders. The decrease in supply of automobiles resulted in steep price increases owing to supply-demand economics. At this juncture, the government decided to impose ‘informal price control’ on automobiles, which was accepted by the manufacturers. The informal price control mechanism required the customer to place the order with the dealer and submit a partial payment to the Indian Postal Service. The manufacturer then had to deliver the automobiles in the sequence of the orders registered with the Indian Postal Service. The government also fixed the dealer commission to a maximum of 10 per cent and asked the manufacturers to intimate any decision of raising ex-works prices in advance.

The government by its mechanism of informal price control countered the negative effects of providing protection to the automotive industry to some extent. However, the performance of the automotive industry (especially passenger cars) throughout the 1950s had been unsatisfactory.
The growing criticism about the quality and price of the automobiles made the government to appoint L. K. Jha Committee to look into these issues. The committee was asked to review the progress of the industry and recommend measures in the matters of reduction of costs, etc. In its report submitted in January 1960, the L. K. Jha Committee observed that the high costs of automobiles were attributable to the neglect and inefficiencies in production owing to the lack of domestic competition. It was also noted that the in-house manufacture of components had resulted in an industrial structure devoid of supplier bargaining power, which further reduced the competition. As a result, in order to reduce costs and improve quality, the committee recommended the encouragement of an indigenous ancillaries sector. The subsequent adoption of these recommendations by the government marked the evolution of a separate auto-component industry in India.

The auto-components so far had mainly been produced by the in-house manufacturing units of the automobile manufacturers. The requirement of a progressive manufacturing programme coupled with the foreign exchange allocation incentives of in-house manufacture resulted in a
primarily vertically-integrated industry structure. Some large/medium-size auto-component manufacturers like L. G. Balakrishnan & Bros. Ltd. and Motor Industries Company Ltd. appeared during this period with appropriate foreign collaborations. The participation of small-scale sector, however, was limited to the replacement market and to the small-scale jobs from automobile and bigger auto-component manufacturers. This was in part attributable to the lack of required skills in the small-scale sector and in part to the provisions in foreign collaboration agreements. The latter prevented the larger firms from locally procuring the components, either by explicit clauses or by giving too small concessions on content not procured from the foreign collaborators.

The government with its socialistic ideals gave importance to the development of small-scale sector from the very beginning. Apart from special credit and fiscal concessions, the government provided protection rates of tariff on a number of ancillary items used in the replacement market since 1956. Further, both small-scale units (fixed assets up to INR 2 million) and ancillary units (fixed assets up to INR 2.5 million) were exempt from
licensing requirements under IDRA 1951\textsuperscript{22}. Additional encouragement for the small-scale sector came in 1965, with some 60 to 80 components being exclusively reserved for manufacture by the small-scale units following the recommendations of the L. K. Jha committee. In general, the auto-component industry saw good development during this phase due to the emphasis laid on indigenisation within each of the three FYPs.

In order to achieve the increased automobile production targets of the plan period without putting strain on country’s foreign exchange reserves, the Third FYP (1961-1966) had stressed on the efforts of indigenisation. The plan noted that “investment designed to increase the indigenous content has to take precedence over investment for establishing new units or expanding existing”\textsuperscript{23}. The indigenisation content to be achieved by 1965-66 was set at 85 per cent as compared to 50 per cent and 60 per cent in First and Second FYP respectively. The target production for automobiles by end of 1965-66


was 60,000 CVs, 60,000 2-/3-wheelers, 30,000 passenger cars and 10,000 UVs. As evident, priority was given to the production of CVs and 2-wheelers.

In summary, the Indian automotive industry in the years 1947 to 1965 was the one wherein the foreign competition was highly restricted by means of protective rates of tariff and foreign investment licensing requirements. Foreign collaborations were permitted only after diligent considerations and were subject to effective control by Indian entities. The domestic competition was also regulated by means of industrial licensing, foreign exchange allocations and other governmental decrees. The nation’s overarching goal of self-reliance was reflected in the indigenisation requirements imposed on the domestic automotive firms. Intentions of protecting and nurturing the nascent automotive industry were accompanied by side-effects of high prices and low quality levels. Even though the consumer interests were safeguarded to some extent by informal price controls, the overall performance of the industry in terms of quality, consumer choices and the ready availability of vehicles was unsatisfactory. Further, this phase witnessed increasing bias of the developmental efforts
towards CV and 2-wheeler segment as opposed to that of passenger cars. With regard to the auto-component segment, the industry structure was largely characterised by in-house manufacturing units and large/medium-size firms. Efforts to encourage small-scale sector were being attempted by the government during this phase. Auto-related institutions like Development Council for Automobiles, ACMA, SIAM and Vehicles Research & Development Establishment also got established during this period.

**Increased Regulation and Disparate Segmental Growth: 1966 to 1979**

India’s war with China in 1962 and with Pakistan in 1965, along with poor agricultural production due to successive severe droughts had led to financial crisis in the country by mid-1960s. The financial situation improved to some extent with the help of a loan from International Monetary Fund (IMF) in 1966. However, the formulation and implementation of Fourth FYP was put down and instead three annual plans were drawn up for the period 1967 to 1969. On the political front, the void created by sudden death of India’s fourth Prime Minister in 1966 was filled by Mrs. Indira
Gandhi. In the general elections of 1967, Mrs. Gandhi was re-elected as India’s fifth Prime Minister and this to an extent deflected the development path of India’s automotive industry.

During her rule till 1977, the populist stance taken by the government perceptibly altered the automotive policy. The first change was initiated in May 1966 with government directing the Tariff Commission to look into the whole question of continuance of grant of protection to the automotive industry. The government also asked the Tariff Commission to enquire into the cost structure and fair selling price of different type of automobiles. Although the review was already due as mentioned in Tariff Commission’s earlier report in 1956, however suggests that “the increasingly dominant populist ideology with its anti-big industry emphasis within the political leadership” had actually led to the third-enquiry. Based on its report submitted in the same year, the Tariff Commission recommended the government: a) to help industry attain minimum efficient scale by limiting the number of models to an absolute minimum b) to impose price controls

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on passenger cars. Subsequently, the government imposed statutory price controls on passenger cars in September 1969.

Meanwhile, India’s first competition law known as the ‘Monopolies & Restrictive Trade Practices Act’ (MRTP) was passed in 1969. The law was prepared to keep a check on the concentration of economic power in private hands by preventing monopolistic and restrictive trade practices in important economic activities. The MRTP Act classified companies with more than INR 200 million in fixed assets and/or having a dominant market share of one-fourth or more as ‘MRTP companies’. Such companies were required to obtain additional clearances (apart from those specified by the IDRA) in order to enter, expand, relocate, merge or acquire. The cumbersome process of obtaining MRTP clearances, which involved public notification of investment plans and semi-public hearings, acted as a deterrent for the companies. Subsequently, MRTP Commission was set up in 1970 for monitoring monopolistic practices in the industrial sector. Thus, many automotive firms owing to their high levels of investment came under the purview of MRTP Commission. TELCO was one of the first companies to
come under the scrutiny of the commission when it applied for increasing its licensed capacity from 24,000 to 36,000 units in December 1970.\(^{25}\)

Government policies related to foreign collaboration and foreign investment also underwent changes during Mrs. Gandhi’s regime. In the wake of growing criticisms regarding influx of foreign equity collaborations and the dependence on foreign technology, the government appointed Mudaliar Committee in 1968 to look into the whole question of foreign collaborations. The stricter approach to foreign equity collaboration recommended by the committee was adopted by the government. Subsequently, Foreign Investment Board was established in 1968 to critically review the acquisition of foreign technology by allowing foreign equity participation. In line with its stricter approach, the government enacted Foreign Exchange Regulation Act (FERA) in September 1973 consolidating and amending the then existing laws on foreign exchange transactions.

With its objective of conserving country’s foreign exchange reserves and ensuring judicious use of the same as per nation’s priorities, the FERA regulated the import of foreign supplies and the functioning of foreign collaborations. The provisions of the Act created additional constraints on the import of technology, raw materials and components for the industrial sector in general and the automotive industry in particular. The maximum foreign equity participation was brought down to 40 per cent under FERA, with exceptions permitted only at State’s discretion. Also, FERA classified the companies with more than 40 per cent foreign equity as ‘FERA companies’. These companies were subject to greater scrutiny in their operations. Thus, the enactment of MRTP and FERA in the early-half of this phase strengthened the regulations surrounding the Indian automotive industry.

The fourth FYP (1969-1974) was introduced in 1969. The financial crunch combined with populist ideology of the ruling party manifested itself into reduced plan outlays for the industrial sector. With regard to its policy for automobiles, the government was very clear in its preference for means of affordable personal and public transport as against to luxurious passenger
cars. From an actual production of 35,300 CVs and 84,600 2-/3-wheelers in 1968-69, the fourth FYP targeted to reach an annual production of 85,000 CVs and 210,000 2-/3-wheelers by the end of 1973-74\textsuperscript{26}. On the other hand, no additional capacity was planned for the passenger cars. Between 1970 and 1975, Kinetic Engineering and state-owned Scooters India made their entry into the 2-wheeler segment. Kinetic Engineering began producing mopeds, whereas Scooters India commenced production of scooters.

A further setback to the automotive industry came during this phase with the beginning of the Oil Crisis in October 1973. The substantial rise in the import bill of crude oil led to the balance-of-payments crisis. As a result, India approached IMF for a monetary loan to dampen the oil shock effects. The financial woes of the country made the bureaucrats of the Ministry of Finance and the Ministry of Industry to take a closer look at the development of the automobile industry, especially the low fuel-efficiency of the Indian automobiles. This study led to the division of automobile industry into luxury (passenger cars) and non-luxury (rest of the industry) segments. The

ministries decided to provide encouragement for the growth and technological development of non-luxury segment, leaving out the luxury segment. Accordingly, CVs were added to the ‘Appendix-I’ list in 1973, which meant that the applications for capacity licenses, foreign collaborations, etc. from the CV manufacturers (including MRTP/FERA companies) were to be treated more favourably\(^{27}\). Furthermore, significant capacities were being licensed for the 2-wheeler segment.

The aftermath of Oil Crisis led to a steep rise in prices of the common goods, thereby affecting economic well-being of the country. As a result, the growth of most of the automobile segments slowed down over the next few years. The accompanying rise in fuel prices resulted in a noticeable decline in the demand for already troubled passenger car segment. Some relief came for the segment in 1975 with the court’s judgement against the statutory price controls on passenger cars. Subsequently, the informal price controls on 2-/3-wheelers were also removed. Meanwhile, the Fifth FYP (1974-1979) was introduced in 1974. The plan outlays were kept at modest levels and no

\(^{27}\)In 1970, the govt. came out with a list of 9 core industries including tractors that were designated as national priorities. This list revised in 1973 with the addition of CVs was colloquially referred to as ‘Appendix-I’.
new projects in the industrial sector were planned. With regard to the automotive industry, the plan targeted an annual production of 60,000 CVs, 320,000 2-wheelers and 32,000 passenger cars by end of 1978-79 as against the actual production of 42,900 CVs, 150,700 2-wheelers and 44,200 passenger cars in the year 1973-74\textsuperscript{28}.

As is evident from the Fifth FYP, the government concentrated on the policy of encouraging the growth of 2-wheeler segment from mid-1970s. This was done to provide mobility to the country’s growing middle-class without incurring higher petroleum consumption on cars. As a result, the period between 1976 and 1980 saw new entries as well as diversification by the existing firms in the 2-wheeler segment. Maharashtra Scooters entered into the production of scooters. Sundaram Clayton and Majestic Auto commenced the production of mopeds. Bajaj Auto diversified into the production of motorcycles with its indigenously developed models. Scooters India also diversified into the production of 3-wheelers. As an exception,

\textsuperscript{28} GOI (1974): “5th Five Year Plan (Annexure 1: Chapter II, Para 2.9)”, Planning Commission, Government of India, New Delhi. (http://www.planningcommission.nic.in/plans/planre/fiveyr/5th/5planch7.html)
Sipani Automobiles entered into the passenger car segment with a small car model.

From 1975 onwards, minor relaxations were being made to the licensing regulations. For instance, since 1975 ‘automatic growth rule’ was applicable to CVs, ancillaries and tractors. According to this rule, an automatic capacity expansion of 5 per cent per year (25 per cent in total for 5 years) was permitted over and above the 5 per cent automatic growth permitted under IDRA 1951. Another relaxation that was made for non-MRTP and non-FERA automotive firms producing CVs, tractors, ancillaries and scooters was the one that allowed expansion without limit. However, these relaxations were subject to certain conditions. The product in consideration could not be the one reserved for the small-scale sector. Moreover, the requirements of imported machinery and raw-materials/components arising out of the undertaken expansion required additional clearances. Further, in 1978 the government also dismantled some of its stricter controls on foreign equity collaborations.

Thus, this phase of the development of Indian automotive industry witnessed tightening of regulations with the introduction of MRTP and
FERA. The macroeconomic setbacks along with populist policies undermined the development of passenger car segment. The average annual growth rate of this segment over the period 1966 to 1979 was quite low at 2.8 per cent. On the other hand, government policies to encourage the development of non-luxury segment helped it to sustain growth through otherwise difficult times. The CVs and the UVs segment saw moderate average annual growth rates of 3.3 per cent and 3.8 per cent respectively over this phase. The average annual growth rates over the same period for 2-wheeler and 3-wheeler segment were relatively high at 13.5 per cent and 26.2 per cent respectively. Nevertheless, all the segments within the industry experienced noticeable year-to-year fluctuations in demand within this phase. The Indian automotive industry produced 271,335 2-wheelers, 60,106 CVs, 28,950 cars, 16,743 3-wheelers and 111,642 UVs in the year 1979\(^{29}\).

The government policy towards the auto-component industry remained more or less the same. With minor amendments to the list, the auto-components reserved for the exclusive manufacture by small-scale

\(^{29}\)(SIAM, 2006): “The Indian Automobile Industry, Statistical Profile 2005-06”, Society of Indian Automobile Manufactures (SIAM), New Delhi, p. 6
sector continued to persist. The protective rates of tariff on components were preserved. By early 1970s substantial progress had been made in the indigenisation of components and the domestic content of almost all automobiles was above 90 per cent\textsuperscript{30}. Lastly, the automotive industry in cooperation with the Ministry of Industry established the Automotive Research Association India in 1966 for supporting R&D efforts within the industry.