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CHAPTER 2

OVERVIEW OF INDIAN AUTOMOBILE INDUSTRY

2.1 Preface

One of the major industrial sectors in India is the automobile sector. Subsequent to the liberalization, the automobile sector has been aptly described as the sunrise sector of the Indian economy. This sector has witnessed tremendous growth during the last two decades. On the canvas of the Indian economy, automobile industry occupies a prominent place. Due to its deep forward and backward linkages with several key segments of the economy, automobile industry has a strong multiplier effect and is capable of being the driver of economic growth. A sound transportation system plays a pivotal role in the country's rapid economic and industrial development. The well developed Indian automobile industry skillfully fulfils this catalytic role by producing a wide variety of vehicles- passenger cars, light, medium and heavy commercial vehicles, multi-utility vehicles such as jeeps, scooters, motorcycles, mopeds, three wheelers, tractors etc.

It has been able to restructure itself, absorb newer technology, align itself to the global developments and realize its potential. This has significantly increased automobile industry's contribution to overall industrial growth in the country. Automobile Industry was delicensed in July 1991 with the announcement of the New Industrial Policy. The passenger car industry was, however, delicensed in 1993. With the gradual liberalization of the automobile sector since 1991, the numbers of manufacturing facilities in India has grown progressively. The economic contribution of the sector is significant. The industry contributes ~22% of India's manufacturing GDP and ~7% of India's overall GDP. The sector has also contributed to social development and benefited local communities. It is one of the leading employment providers in the country and has helped create nearly 19 million jobs through direct and indirect employment.

2.2 Introduction

Automobile industry is the key driver of any growing economy and plays a pivotal role in country's rapid economic and industrial development. It caters to the requirement of equipment for basic industries like steel, non-ferrous metals,
fertilizers, refineries, petrochemicals, shipping, textiles, plastics, glass, rubber, capital
equipments, logistics, paper, cement, sugar, etc. It facilitates the improvement in
various infrastructure facilities like power, rail and road transport. Due to its deep
forward and backward linkages with several key segments of the economy, the
automobile industry is having a strong multiplier effect on the growth of a country
and hence is capable of being the driver of economic growth. It plays a major catalytic
role in developing transport sector in one hand and help industrial sector on the other
to grow faster and thereby generate a significant employment opportunities. In India,
automobile is one of the largest industries showing impressive growth over the years
and has been significantly making increasing contribution to overall industrial
development in the country. Automobile industry includes two wheelers, three
wheelers, commercial vehicles and passenger vehicles.

The Indian Automobile industry has made rapid strides since delicensing
and opening up of the sector in 1991. It has witnessed the entry of several new
manufacturers with the state-of-art technology, thus replacing the monopoly of few
manufacturers. There are 19 manufacturers of passenger cars & multi utility vehicles,
16 manufacturers of commercial vehicles, 10 manufacturers of two wheelers and 7
manufacturers of three wheelers in India. The norms for foreign investment and
import of technology have also been liberalized over the years for manufacture of
vehicles. At present, 100% foreign direct investment (FDI) is permissible under the
automatic route in this sector, including passenger car segment.

Presently, India is the world's second largest manufacturer of two wheelers,
fifth largest manufacturer of commercial vehicles and fourth largest manufacturer of
tractors. It is the seventh largest passenger car market in Asia as well as a home to the
largest motor cycle manufacturer. The installed capacity of four wheelers is 3.88
million units; two and three wheelers are 14.31 million units. The Indian automobile
industry has attained a turnover of USD 56,259.57 million and provides direct
employment to 1 million people and indirect employment to 18 million people in the
country. The sector has shown great advances in terms of development, spread,
absorption of newer technologies and flexibility in the wake of changing business
scenario.
Auto industry is said to be the engine of growth in most developed countries, including in China and India today. Indian automobile industry which was at its nascent stage at the beginning of the 21st century has now become a huge industry that contributes majorly to growth and development of Indian Economy. As per the current statistics, the auto industry’s turnover is estimated to be equivalent to:

7.1% of overall GDP

About 26% of Industry GDP

About 49% of manufacturing GDP

The industry employs 29 million people, directly and indirectly, and contributes to 13% of excise revenue for the Government.

2.3 Etymology

The word automobile comes, via the French automobile from the Ancient Greek word ἀὐτός (autós, "self") and the Latin mobilis ("movable"); meaning a vehicle that moves itself. The loanword was first adopted in English by The New York Times in 1899. The alternative name car is believed to originate from the Latin word carrus or carrum ("wheeled vehicle"), or the Middle English word carre ("cart") (from Old North French), in turn these are said to have originated from the Gaulish word karros (a Gallic Chariot).

2.4 History of the World’s Automobile Industry

The automobile as we know, it was not invented in a single day by a single inventor. The history of the automobile reflects an evolution that took place worldwide. It is estimated that over 100,000 patents created the modern automobile. However, we can point to the many firsts that occurred along the way. Several Italians recorded designs for wind driven vehicles. The first was Guido da Vigevano in 1335. Vaturio designed a similar vehicle, which was also never built. The first vehicle to move under its own power for which there is a record was designed by Nicholas Joseph Cugnot and constructed by M. Brezin in 1769. The early steam powered vehicles were so heavy that they were only practical on a perfectly flat surface as strong as iron. A road thus made out of iron rails became the norm for the next
hundred and twenty-five years. Many attempts were being made in England by the 1830's to develop a practical vehicle that didn't need rails. A Frenchman named Etienne Lenoir patented the first practical gas engine in Paris in 1860 and drove a car based on the design from Paris to Joinville in 1862. Siegfried Marcus, of Mecklenburg, built a car in 1868 and showed one at the Vienna Exhibition of 1873. His later car was called the Strassenwagen had about 3/4-horse power at 500 rpm. It ran on crude wooden wheels with iron rims and stopped by pressing wooden blocks against the iron rims, but it had a clutch, a differential and a magneto ignition. In 1885, Gottlibb Daimler's in Bad Cannstatt built the wooden motorcycle. Daimler's son Paul rode this motorcycle from Cannstatt to Unterturkheim and back on November 10, 1885. On 29th January 1886, Karl Benz was granted a patent on it and on 3rd July 1886, he introduced the first automobile in the world to an astonished public. Also in August 1888, William Steinway, owner of Steinway & Sons piano factory, talked to Daimler about US manufacturing right and by September had a deal. By 1891 the Daimler Motor Company, owned by Steinway, was producing petrol engines for tramway cars, carriages, quadricycles, fire engines and boats in a plant in Hartford, CT. By 1890 Ransom E. Olds had built his second steam-powered car. One was sold to a buyer in India, but the ship it was on was lost at sea. Running by February, 1893 and ready for road trials by September, 1893 the car built by Charles and Frank Duryea, brothers, was the first gasoline powered car in America. The first run on public roads was made on September 21, 1893 in Springfield, MA. Henry Ford had an engine running by 1893 but it was 1896 before he built his first car. With the financial backing of the Mayor of Detroit, William C. Maybury and other wealthy Detroiters, Ford formed the Detroit Automobile Company in 1899.

Eli Olds built first petrol-powered car. This car was running by 1896 but production of the Olds Motor Vehicle Company of Detroit did not begin until 1899. After an early failure with luxury vehicles they established the first really successful production with the classic Curved Dash Oldsmobile. E. Olds was the first mass producer of gasoline-powered automobiles in the United States, even though Duryea was the first auto manufacturer with their 13 cars. The Rolls Royce Silver Ghost of 1906 was a six cylinder car that stayed in production until 1925. It represented the best engineering and technology available at the time and these cars still run smoothly and silently today. This period marked the end of the beginning of the automobile.
2.5 History of the Indian Automobile Industry

About hundred years ago the first motorcar was imported and Import duty on vehicles was introduced. Indian Great Royal Road (Predecessor of the Grand Trunk Road) was conceived. First car brought in India by a princely ruler in 1898. Simpson & Co established in 1840. They were the first to build a steam car and a steam bus, to attempt motorcar manufacture, to build and operate petrol driven passenger service and to import American Chassis in India.

Railways first came to India in 1850's. In 1865 Col. Rookes Crompton introduced public transport wagons strapped to and pulled by imported steam road rollers called streamers. In 1919 at the end of the war, a large number of military vehicles came on the roads. 1942 Hindustan Motors Ltd incorporated and their first vehicle was made in 1950. In 1944 Premier Automobiles Ltd incorporated and in 1947 their first vehicle was produced. In 1947 the Government of Bombay accepted a scheme of Bajaj Auto to replace the cycle rickshaw by the auto and assembly started in a couple of years under a license from Piaggio. Automobile Products of India (API) and Enfield India had already commenced the manufacture of scooters, motorcycles, mopeds and autos from 1955. In 1956, Bajaj Tempo Ltd entered the Indian market with a program of manufacturing Commercial Vehicles and Simpson for making engines. AIA&AIA (association of the component manufacturers) came into being in 1959 and Government approved Bajaj Auto Ltd's plans for domestic manufacture of Vespa scooters and granted permission to produce 6000 units annually. In sixties two and three wheeler segment established a foothold in the industry. Escorts and Ideal Jawa entered the field in the beginning of sixties. Association of Indian Automobile Manufacturers formally established in 1960. Between 1955 and 1960 only API was producing Mopeds. During the first half of the sixties three companies namely Mopeds India Ltd (1965), SZUL Gwalior (1964) and Pearl Scooters Ltd (1962) entered the arena. During the decade of 1970’s there was not much change in the four-wheeler industry except the entry of Sipani Automobiles in the small car market. In the Two Wheeler Industry there were many entries during this decade. Scooter India established in 1972. In 1972 Kinetic Engineering entered the Industry with a licensed capacity of 100,000 units per annum. Three other companies, namely, Kirloskar Ghatge Patil Auto Ltd, Indian Automotive Ltd and Sen and Pandit Engg.
Products Ltd entered the market during 1971-75. They ultimately withdrew in early eighties. Unlike Motorcycle and Scooter segments the Mopeds segment grew rapidly. In the late seventies there were many entries in the Moped Industry.

Since the 1980s, the Indian car Industry has seen a major resurgence with the opening up of Indian shores to foreign manufacturers and collaborators. First phase of liberalization announced and unfair practices of monopoly, oligopoly, etc slowly disappeared. It was beginning of Liberalization of the protectionism policies of the Government. Lots of new Foreign Collaborations came up in the eighties. Many companies went in for Japanese collaborations. Hindustan Motors Ltd. in collaboration with Isuzu of Japan introduced the Isuzu truck in early eighties. The Two Wheeler market increased since 1982, the Government had permitted foreign collaborations for the manufacturing of Two Wheelers up to 100 cc engine capacity. Foreign Equity up to 40% was also allowed.

In1983 Maruti Udyog Ltd was started in collaboration with Suzuki, a Japanese firm. Other three Car manufacturers namely, Hindustan Motors Ltd., Premier Automobiles Ltd., Standard Motor Production of India Ltd. also introduced new models in the market. At the time there were five Passenger Car manufacturers in India - Maruti Udyog Ltd., Hindustan Motors Ltd., Premier Automobiles Ltd., Standard Motor Production of India Ltd., Sipani Automobiles. Ashok Leyland Ltd. and Telco were strong players in the Commercial Vehicles sector. In 1983-84 Bajaj Tempo Ltd. entered into collaboration with Daimler-Benz of Germany for manufacture of LCVs.

Important policy changes like relaxation in MRTP and FERA, delicensing of some ancillary products, broad banding of the products, modifications in licensing policy, concessions to private sector (both Indian and Foreign) and foreign collaboration policy etc. resulted in higher growth / better performance of the industry than in the earlier decades. Beginning with mid-1991 the government of India has made some radical changes in polices bearing on trade, foreign investment, exchange rate, industry, fiscal affairs and so on. Mass Emission Norms were introduced for in 1991 for Petrol Vehicles and in 1992 for Diesel Vehicles. In 1991 new Industrial Policy was announced. It was the death of the License Raj and the Automobile Industry was allowed to expand. Further tightening of Emission norms was done in
1996. In 1997 National Highway Policy has been announced which will have a positive impact on the Automobile Industry. The Indian Automobile market in general and Passenger Cars in particular have witnessed liberalization. Many multinationals like Daewoo, Peugeot, General Motors, Mercedes-Benz, Honda, Hyundai, Toyota, Mitsubishi, Suzuki, Volvo, Ford and Fiat entered the market. Various companies are coming up with state of art models of vehicles. TELCO has diversified in Passenger Car segment with Indica. Despite the adverse trend in the growth of the industry, it is resolutely trying to meet the challenges.

Various issues of critical importance to the industry are being dealt with forcefully. In 1999 The Hon’ble Supreme Court passed an order directing all car manufacturers to comply with Euro I emission norms (India 2000 norms) by the 1st of May 1999 in National Capital Region (NCR) of Delhi. The deadline was later extended to 1st June 1999. The 90s have become the melting point for the car industry in India. The consumer is king. He is being constantly wooed by both the Indian and foreign manufacturers. Though sales had taken a dip in the first few months of 1999, it is back to boom time. New models like Maruti’s Classic, Alto, Station Wagon, Ford’s Ikon and the new look Mitsubishi Lancer have all been launched with an eye on the emerging market.

2.6 Evolution of the Indian Automobile Industry

The presence of the automobile industry in India can be traced in the 1940s but the actual growth and expansion of the automobile industry started in 1970. There were only six automobile manufacturers in India. They were Telco, Mahindra and Mahindra, Ashok Leyland, Hindustan motors, Bajaj Auto and Premier Automobiles. There were only two companies involved in manufacturing passenger cars. They were Hindustan Motors and Fiat India Limited. Between 1970 and 1984 cars were mostly purchased by rich people and considered as a prestigious product.

In the year 1985 Maruti Udyog started manufacturing passenger cars. Japanese manufacturers also started manufacturing two wheelers and light commercial vehicles in India. Economic liberalization started in 1992 after the introduction of the new industrial policy. Before the introduction of the new industrial policy manufacturing of cars were licensed but due to economic liberalization the
manufacturing of passenger cars were delicensed in the year 1993. It has accelerated the growth and development of the automobile sector. Many international automobile manufacturing companies entered into the Indian market between 1995 and 2002.

There were many factors responsible for the speedy growth of the Indian automobile sector such as – Introduction of New Industrial Policy.

– Introduction of the Latest technology to meet competitive pressure.

– Introduction of 100% Foreign Direct Investment.

– Availability of World Class facilities for testing.

– Introduction of environmental and safety measures. – Landmark policy changes like quantitative restriction

– Vehicles manufactured by the Indian auto manufacturers were introduced in the Indian market and started exporting vehicles to other countries.

– Alignment of Government policies with the requirements of the Indian industries for their development and growth and to strengthen the Indian Economy.

In 2003, Core group on Automotive Research and Development was set up to identify priority areas for automotive research and development in India.
Fig. 2.1 Automobile Industry – A Global Hub
2.7 An Overview of Automobile Sector in India

The automobile industry plays a key role in the rapid economic and industrial development of the Indian economy. It is the one of the fastest growing and sunrise sector in India. In fact the last decade, the production, sales in domestic market and exports have increased tremendously.
According to the Automotive Mission Plan 2006-2016, Report of Ministry of Heavy Industry and Public enterprises, Government of India, India’s passenger car and commercial vehicle manufacturing industry is the sixth largest in the world which has produced more than 3.9 million units in 2011.

The contribution of the Automobile industry is explained as follows –

- India has now become Asia’s third largest exporter of passenger cars.
- The automobile industry in India provides direct and indirect employment to 15 million people.
- The contribution of the automobile Manufacturing GDP and the excise duty was 22% and 21% respectively.
- Today India is the largest manufacturer of tractors, the second largest manufacturer of two wheelers and the fifth largest manufacturer of commercial vehicles and is emerging as a global automotive hub.
- More than 3.7 million automotive vehicles were produced in India in 2010 making the country the second (after China) fastest growing Automobile market in that year. According to the Society of Indian Automobile Manufacturers, the annual vehicle sales are projected to increase to 4 million in 2015.

2.8 India: A Vibrant Economy

1. Largest Democracy – 1.2 billion people, Growing Middle Class.

2. 4th largest GDP (PPP) and 10th largest GDP (Nominal, USD 1.8 trillion).

3. One of the fastest growing economies
   - India’s average GDP growth rate: 8.4% over past 5 years
   - Expected to outpace China in the next decade

4. 3rd Largest Investor base in the World

5. Robust Legal and Banking Infrastructure
6. Demographics Advantage – Youth driven economy

7. Suburbanization & Rural to Urban Migration – 140 million by 2020; 700 million by 2050.

8. 2nd largest pool of Certified Professionals and highest number of Qualified Engineers in the world.

9. Investment in Infrastructure.

2.9 Car Classification

Governments and private organizations have developed car classification schemes that are used for innumerable purposes including regulation, description and categorization, among others. Vehicles can be categorized in numerous ways. For example, a government may establish a vehicle classification system for determining a tax amount. In the United Kingdom, a vehicle is taxed according to the vehicle's construction, engine, weight, type of fuel and emissions, as well as the purpose for which it is used. Other jurisdictions may determine vehicle tax based upon environmental principles, such as the user pays principle. In another example, certain cities in the United States in the 1920s chose to exempt electric-powered vehicles because officials believed those vehicles did not cause "substantial wear upon the pavements. Private enterprise, many car rental companies use the ACRISS Car Classification Code to describe the size, type and equipment of vehicles to ensure that rental agents can match customer needs to available vehicles, regardless of distance between the agent and the rental company or the languages spoken by either party.

2.9.1 Micro-car

Straddling the boundary between car and motorbike, these vehicles have engines under 1.0 liter, typically seat only two passengers, and are sometimes unorthodox in construction. Some micro-cars are three-wheelers, while the majority has four wheels. Micro-cars were popular in post-war Europe, where their appearance led them to be called "Bubble cars". More recent micro cars are often electric powered.

Examples of micro-cars: Tata Nano
2.9.2 City car

A city car is a small automobile intended for use in urban areas. Unlike microcars, a city car's greater speed, capacity and (in perception at least) occupant protection are safer in mixed traffic environments and weather conditions. While city cars can reach highway speeds, that is not their intended use. In Japan, city cars are called kei cars. Kei cars have to meet strict size and engine requirements: engines have a maximum displacement of 660 cc and the car's length must be less than 3400 mm.
Examples of kei cars: Suzuki Cervo

2.9.3 Ultra-compact car

In 2012, Japan's Transport and Tourism Ministry will allow local government to use ultra compact cars as transport for residents and tourists in their limiting areas. The size of ultra-compact cars will be less than mini-cars, but have engine greater than 50cc displacement and able to transport 1 or 2 persons. Ultra-compact cars cannot use mini-cars standard, because of strict safety standards for mini-cars. The regulation about running capacity and safety performance of ultra-compact cars will be published in early autumn. Today, there are cars smaller than ultra-compact cars,
called category-1 motorized vehicles which it has 50cc displacement or less and only one seat for the driver.

Figure 2.4 Ultra-compact Car

2.9.4 Super-mini/sub-compact car

This class is known as super-mini in Europe, subcompact in North America. Super-minis have three, four or five doors and are designed to seat four passengers comfortably. Current super-mini hatchbacks are approximately 3900 mm long, while saloons and estate cars are around 4200 mm long. Currently (2013) sedan variants are generally not available in Europe and are marketed at a lower price than hatchback models in North America. In Europe, the first super-minis were the Fiat 500 of 1957 and the Austin Mini of 1959. Today, super-minis are some of the best selling vehicles in Europe. In Australia, the motoring press tends to distinguish between a light car such as the Daihatsu Charade or early models of the Holden Barinas, and slightly larger models such as the Ford Fiesta which is considered to be a small car. As the general size of vehicles in this class has gradually increased, the category of light car has almost disappeared.
2.9.5 Full size luxury / Grand saloon

Also known as full-size luxury cars, grand saloons, or premium large cars, while "Oberklasse" is used in Germany. Typically a four-door saloon (sedan). These are the most powerful saloons, with six, eight and twelve-cylinder engines and have more equipment than smaller models.

Examples of grand saloons: Mercedes-Benz S-Class

Fig 2.6 Full size luxury / Grand saloon
2.9.6 Sports cars

The term "sports car" does not appear to have a clear definition. It is commonly used to describe vehicles which prioritize acceleration and handling; however, some people claim it is also defined as a vehicle with two seats. A sports car (sports car or sport car) is a small, usually two-seat, two-door automobile designed for spirited performance and nimble handling. Sports cars may be Spartan or luxurious but high maneuverability and minimum weight are requisite.

Examples of sports cars: Porsche 911

Figure 2.7 Sports Car

2.9.7 Supercar

Supercar is a term generally used for ultra-high-end exotic cars, whose performance is superior to that of its contemporaries. The proper application of the term is subjective and disputed, especially among enthusiasts.

Examples of supercars: Lamborghini Reventón
2.9.8 Crossover SUV

Crossover SUVs are derived from an automobile platform using a monocoque construction with light off-road capability and lower ground clearance than SUVs. They may be styled similar to conventional "off-roaders", or may be look similar to an estate car or station wagon.

Examples of crossover SUVs: BMW X5

Fig 2.9 Crossover SUV
2.10 Current Status of Automobile Industry in India

2.10.1 Indian Automobiles Industry Production Trends

The cumulative production data for April-March 2012 shows production growth of 13.83 percent over same period last year. In March 2012 as compared to March 2011, production grew at a single digit rate of 6.83 percent. In 2011-12, the industry produced 20,366,432 vehicles of which share of two wheelers, passenger vehicles, three wheelers and commercial vehicles were 76 percent, 15 percent, 4 percent and 4 percent respectively. The industry produced a total of 23,366,246 vehicles including passenger vehicles, commercial vehicles, three wheelers and two wheelers in April-March 2015 as against 21,500,165 in April-March 2014, registering a growth of 8.68 percent over the same period last year.

Table 2.1 Automobile Production Trend

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<td>1,78,92,409</td>
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*Source: Society of Indian Automobile Manufacturer (SIAM) 2015 Statistical Profile*

2.10.2 Indian Automobiles Industry Domestic Sales Trends

The sales of Passenger Vehicles grew by 3.90 percent in April-March 2015 over the same period last year. Within the Passenger Vehicles segment, Passenger Cars and Utility Vehicles grew by 4.99 percent and 5.30 percent respectively, while Vans declined by (-) 10.19 percent in April-March 2015 over the same period last year. The overall Commercial Vehicles segment registered a de-growth of (-) 2.83 percent in April-March 2015 as compared to same period last year. Medium & Heavy Commercial Vehicles (M&HCVs) grew by 16.02 percent and Light Commercial Vehicles declined by (-) 11.57 percent. Three Wheelers sales grew by 10.80 percent in April-March 2015 over the same period last year. Passenger Carriers and Goods
Carriers grew by 12.16 percent and 5.27 percent respectively in April-March 2015 over April-March 2014. Two Wheelers sales registered growth of 8.09 percent in April-March 2015 over April-March 2014. Within the Two Wheelers segment, Scooters, Motorcycles and Mopeds grew by 25.06 percent, 2.50 percent and 4.51 percent respectively in April-March 2015 over April-March 2014.

Table 2.2 Automobile Sales Trend

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Source: Society of Indian Automobile Manufacturer (SIAM) 2015 Statistical Profile

2.10.3 Indian Automobile Industry Exports Trends

During April-March 2012, the industry exported 2,910,055 automobiles registering a growth of 25.44 percent. Passenger Vehicles registered growth at 14.18 percent in this period. Commercial Vehicles, Three Wheelers and Two Wheelers segments recorded growth of 25.15 percent, 34.41 percent and 27.13 percent respectively during April-March 2012. For the first time in history car exports crossed half a million in a financial year. In March 2012 compared to March 2011, overall automobile exports registered a growth of 17.81 percent.

Overall Indian Automobile Industry has shown 2.61 growths in 2012-13 compared to 2011-12. Production and Domestic sales has registered growth of 1.20% and 2.61%, however export is negative growth due to negative global environment and fluctuation.
In April-March 2015, overall automobile exports grew by 14.89 percent over the same period last year. Passenger Vehicles, Commercial Vehicles, Three Wheelers and Two Wheelers grew by 4.42 percent, 11.33 percent, 15.44 percent and 17.93 percent respectively during April-March 2015 over the same period last year.

**Table 2.3 Automobile Exports Trend**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Passenger</td>
<td>446145</td>
<td>444326</td>
<td>508783</td>
<td>559414</td>
<td>596142</td>
<td>622470</td>
</tr>
<tr>
<td>Commercial</td>
<td>45009</td>
<td>74043</td>
<td>92258</td>
<td>80027</td>
<td>77050</td>
<td>85782</td>
</tr>
<tr>
<td>Three Wheelers</td>
<td>173214</td>
<td>269968</td>
<td>361753</td>
<td>303088</td>
<td>353392</td>
<td>407957</td>
</tr>
<tr>
<td>Two Wheelers</td>
<td>1140058</td>
<td>1531619</td>
<td>1975111</td>
<td>1956378</td>
<td>2084000</td>
<td>2457597</td>
</tr>
</tbody>
</table>

*Source: Society of Indian Automobile Manufacturer (SIAM) 2015 Statistical Profile*

**2.11 Growth and Development of Automobile Industry in India**

It is a known markets fact that health of country’s automobile industry is one of the key indicators of the manufacturing competitiveness of the country. India has emerged as one of the key global (both as consumption and as production base) in automobile industry and particularly in last few years it has witnessed tremendous growth and has also been base for global manufacturers. Volkswagen, Nissan, Renault, General Motors, Ford, Honda, Suzuki, Hyundai, Daimler, BMW, Skoda, Audi, all top brands are present in India and also manufacturing/assembling locally. India is 2nd largest two wheeler manufacturer, 5th largest Commercial vehicles manufacturer, largest three wheeler manufacturer and 10th largest passenger vehicles manufacturers. Automobile industry’s turnover in financial year 2011-12 was USD 56,259.57 million (estimated) and it contributes 5-7% of India’s GDP. Automobile industry witnessed a CAGR (Compound Annual Growth Rate) of 12.7% between 2006-07 and 2010-11, to reach total production units of 17.91 million units. Two wheelers represent largest segment with 75% share followed by 17% of passenger vehicles and 4% each by commercial vehicles and three wheelers. But most interesting aspect is that passenger vehicle segment exhibits highest growth of 17.9% followed by 12% of two wheelers. Growth of both commercial vehicles and three wheeler segments were between 9-10%. However, in Revenue terms, passenger
vehicles is the largest segment with approx. 63% share followed by commercial vehicles with 22%, and two wheelers and three wheelers with remaining 15%.

2.12 Gross Turnover

According to the figures issued by Society of Indian Automobile Manufacturer (SIAM) 2013 Statistical Profile which is represented in the table shows that the gross turnover for automobile manufacturers in India is increasing every year. The turnover in 2011-12 was 66,264 USD million which increased to 67,607 USD million in the year 2012-13. It shows that the contribution of Indian Automobile industry in Indian GDP is increasing every year.

Table 2.4 Gross Turnover of Automobile Manufacturers in India (In USD Million)

<table>
<thead>
<tr>
<th>Year</th>
<th>2007-08</th>
<th>2008-09</th>
<th>2009-10</th>
<th>2010-11</th>
<th>2011-12</th>
<th>2012-13</th>
</tr>
</thead>
<tbody>
<tr>
<td>In USD Million</td>
<td>36612</td>
<td>33250</td>
<td>43296</td>
<td>58583</td>
<td>66264</td>
<td>67607</td>
</tr>
<tr>
<td>USD Conversion Rate</td>
<td>40</td>
<td>46</td>
<td>47</td>
<td>46</td>
<td>47</td>
<td>50</td>
</tr>
</tbody>
</table>

Source: Society of Indian Automobile Manufacturer (SIAM) 2013 Statistical Profile

Figure 2.10 Gross Turnover of Automobile Manufacturers in India

Source: Society of Indian Automobile Manufacturer (SIAM) 2013 Statistical Profile
2.13 Market Size

The sales of Passenger Vehicles grew 3.9 per cent in FY 2014-15 over the same period last year. Within the Passenger Vehicles segment, Passenger Cars and Utility Vehicles registered a growth of 4.99 per cent and 5.30 per cent respectively.

The sales of Two Wheelers, Three Wheelers, Passenger Carriers, and Goods Carriers registered a growth of 8.09 per cent, 10.80 per cent, 12.16 per cent and 5.27 per cent respectively in FY 2014-15, over the same period last year.

As per data provided by Society of Indian Automobile manufacturers, the Indian Auto industry produced a total 7.8 million vehicles in April-July 2015 as against 7.7 million in April-July 2014, thereby indicating a growth of 1.8 percent year-on-year (yoy).

Domestic Sales of Passenger Vehicles increased 7.46 per cent in April-July 2015 yoy. Among Passenger Vehicles, cars grew 10.7 per cent while Utility Vehicles and Vans declined by 0.32 per cent and 1.43 per cent respectively. Overall Commercial Vehicles segment registered 5.63 per cent growth. Medium & Heavy Commercial Vehicles (M&HCVs) reported strong growth of 24.9 per cent while Light Commercial Vehicles declined by 5.24 percent. Three Wheelers sales fell by 8.41 percent, while sales of Passenger Carriers and Goods Carriers fell by 9.25 per cent and 4.5 per cent respectively during the 4-month period.

Two Wheelers sales increased marginally by 0.52 per cent, with, scooters and mopeds growing relatively strongly by 9.45 per cent and 2.53 per cent respectively, while motorcycles sales (largest segment in Two Wheelers) fell by 3.02 per cent.

In April-July 2015, overall automobile exports increased 8.6 per cent yoy. Passenger Vehicles, Commercial Vehicles, Three Wheelers and Two Wheelers reported increase of 2.94 per cent, 24.37 per cent, 28.96 per cent and 6.33 per cent respectively during the period.
2.14 Installed Capacity

Table 2.5 Domestic Market share 2014-15

<table>
<thead>
<tr>
<th>Category</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passenger Vehicles</td>
<td>13</td>
</tr>
<tr>
<td>Commercial Vehicles</td>
<td>3</td>
</tr>
<tr>
<td>Three Wheelers</td>
<td>3</td>
</tr>
<tr>
<td>Two Wheelers</td>
<td>81</td>
</tr>
<tr>
<td>Grand Total</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Society of Indian Automobile Manufacturer (SIAM)

2.15 Investments

In order to keep up with the growing demand, several auto makers have started investing heavily in various segments of the industry during the last few months. The industry has attracted foreign direct investment (FDI) worth US$ 13.48 billion during the period April 2000 to June 2015, according to data released by Department of Industrial Policy and Promotion (DIPP).

Some of the major investments and developments in the automobile sector in India are as follows:

• General Motors plan to invest US$1 billion in India by 2020, mainly to increase the capacity at the Talegaon plant in Maharashtra from 130,000 units a year to 220,000 by 2025.

• US-based car maker Chrysler has planned to invest Rs 3,500 crore (US$ 525.5 million) in Maharashtra, to manufacture Jeep Grand Cherokee model.

• Mercedes Benz has decided to manufacture the GLA entry SUV in India. The company has doubled its India assembly capacity to 20,000 units per annum.

• Germany-based luxury car maker Bayerische Motoren Werke AG’s (BMW) local unit has announced to procure components from seven India-based auto parts makers.
• Mahindra Two Wheelers Limited (MTWL) acquired 51 per cent shares in France-based Peugeot Motorcycles (PMTC).

2.16 Government Initiatives

The Government of India encourages foreign investment in the automobile sector and allows 100 per cent FDI under the automatic route.

Some of the major initiatives taken by the Government of India are:

• In the Union budget of 2015-16, the Government has announced to provide credit of Rs 850,000 crore (US$ 127.6 billion) to farmers, to boost the tractors segment.

• The Government plans to promote eco-friendly cars in the country i.e. CNG based vehicle, hybrid vehicle, and electric vehicle and also made mandatory of 5 per cent ethanol blending in petrol.

• The government has formulated a Scheme for Faster Adoption and Manufacturing of Electric and Hybrid Vehicles in India, under the National Electric Mobility Mission 2020 to encourage the progressive induction of reliable, affordable and efficient electric and hybrid vehicles in the country.

• The Automobile Mission Plan (AMP) for the period 2006–2016, designed by the government is aimed at accelerating and sustaining growth in this sector. Also, the well-established Regulatory Framework under the Ministry of Shipping, Road Transport and Highways, plays a part in providing a boost to this sector.

India’s automotive industry is one of the most competitive in the world. It does not cover 100 per cent of technology or components required to make a car but it is giving a good 97 per cent, as highlighted by Mr Vicent Cobee, Corporate Vice-President, and Nissan Motor’s Datsun.

The vision of AMP 2006-2016 aims for ‘India to emerge as the destination of choice in the world for design and manufacture of automobiles and auto components
with output reaching a level of US$ 145 billion; accounting for more than 10 per cent of the GDP and providing additional employment to 25 million people by 2016.’

Leading auto maker Maruti Suzuki expects Indian passenger car market to reach four million units by 2020, up from 1.97 million units in 2014-15.

Exchange Rate Used: INR 1 = US$ 0.0150 as on September 8, 2015

**Fig 2.11 Market Share**

![Market Share by volume (FY15)](image)

The automobile industry in India is expected to be the world's third largest by 2016, with the country currently being the world's second largest two-wheeler manufacturer. Two-wheeler production is projected to rise from 18.5 million in FY15 to 34 million by FY20. Furthermore, passenger vehicle production is expected to increase to 10 million in FY20 from 3.2 million in FY15.

Automobile exports grew at a CAGR of 14.65 per cent during 2010-15. Passenger Vehicles, Commercial Vehicles, Three Wheelers and Two Wheelers grew by 6.89 per cent, 13.77 per cent, 18.69 per cent and 16.60 per cent CAGR during 2010-15. Two wheelers accounted for the largest share of exports at 69.4 per cent in FY15. Passenger vehicles comprised a sizeable 16.7 per cent of overall exports. Exports of three wheeler vehicles registered around 11.1 per cent share in exports in FY15.
The government aims to develop India as a global manufacturing as well as a research and development (R&D) hub. It has set up National Automotive Testing and R&D Infrastructure Project (NATRiP) centers as well as a National Automotive Board to act as facilitator between the government and the industry.

Alternative fuel has the potential to provide for the country's energy demand in the auto sector as the CNG distribution network in India is expected to rise to 250 cities in 2018 from 125 cities in 2014. Also, the luxury car market could register high growth and is expected to reach 150,000 units by 2020.

2.17 Modernization of Vehicle Fleet

With a view to combating deteriorating air quality, stringent environmental regulations are being mooted. The automobile industry in India has been meeting these challenges. In recent years, the industry has made significant investment to produce safer and increasingly environment friendly vehicles.

The Bharat stage-1 norms for vehicles were introduced in India in April 2000. These norms were then progressively tightened to BS-2, BS-3, and today four wheelers manufactured since the year 2010 in major cities meet Bharat Stage-4 emission norms, which are more than 50 to 80 percent cleaner than the vehicles that were produced before April 2000.

In order to improve the environmental performance of new vehicles further government has plans to introduce BS-5 emission norms in 2020 and BS-6 in 2024 onwards. This policy lays the foundation of control of emissions from vehicles sold in the country.

However, whilst the new vehicles are cleaner and meeting stringent emission requirements and a continuous plan is being evolved by the government of India to further improve the emission performance of these newly manufactured vehicle, the benefits are not getting reflected in the ambient air quality due to the presence of a large number of old and ill maintained polluting vehicles, which continue to ply on the roads, in the absence of an efficient scrap page/fleet modernization policy in the country.
2.17.1 Need for Fleet Modernization in India

The Automotive industry in India over the years has become instrumental in the growth of R&D in the country through localization and indigenization of technology over the past few decades. Several players have undertaken acquisitions and forged alliances with multinational firms to gain technical know-how and fast-track their progress on the technology roadmap.

However, at present, India does not have a robust national policy on retirement of vehicles or end-of-life of vehicles. Hence, it is important to capitalize on the developments that the industry has catalyzed in the country, over the last two decades. Vehicle users in India tend to continue to use their vehicles, well beyond the expected life of the product.

2.17.2 Approach for Scrapping of vehicles

World over vehicle scrap page and fleet modernization is regulated through an end of life policy, which is implemented through a robust Inspection and Certification system. Notwithstanding a robust I & C system in countries like Europe, etc. even these countries had to resort to schemes like Cash for Clunkers for weeding out old and polluting vehicles and replacing them with new environment friendly ones.

In India I & C system is now in the process of being set-up. Having started late, the Indian I and C programme can be expected to become operational only after 4 to 5 years. Secondly, I & C for private vehicles is yet to be conceptualized in India, as the present programme is limited to Commercial Vehicles. All these reasons point to an urgent need for an alternative initiative to cleanse the Indian roads of old and polluting unsafe vehicles, till the time the I & C mechanism takes root in the country.

This concept was also recommended in India’s Auto Fuel Policy released in October 2003 (page 6 point 24), which is a Union Cabinet approved policy document and still guides India’s automotive emission control and fuel policy, but this particular recommendation has still not been implemented.

The policy states: “... Schemes combined with incentives would be developed for the replacement of old polluting vehicles.” It would help in removing older,
potentially polluting and unsafe vehicles from the road. The replacement of these older vehicles would also have an additional favorable impact on the economy. This programme would generate additional demand for new vehicles and make the scheme potentially revenue positive from the government’s point of view.

Also, the country would benefit by way of reduction in expenditure on account of fuel saving by retiring old vehicles and replacing them with more new ones, which are more fuel efficient. Most importantly, the reduction in pollution would lead to substantial health benefits and the resultant reduction in cost of medical treatment, reduction in premature deaths, reduction in man days lost on account of illness and so on.

Therefore in India, this scheme will have benefits of reducing pollution, reducing fuel consumption and improving safety (reducing fatalities from 130,000 people presently killed annually in road traffic crashes).

2.17.3 Preliminary estimation of benefits

- Revenue Benefits

Assuming that all vehicles sold under the programme are replacements and as such additional sales, over and above the normal sale, there will be a revenue positive impact. It is estimated that the above scheme would initiate a replacement of about 24.2 million Private vehicles and 3.2 million Commercial Vehicles, in the above eight States. Similarly, it can be extended across the country. Hence, from the above table, having data for the eight states, we can easily estimate that the revenue generation for the government, across the country, would be significantly higher than the amount generated in eight states.
Table 2.6 Estimated Revenue generated by replacement of Vehicles

<table>
<thead>
<tr>
<th>State</th>
<th>Old Vehicle Population (number of vehicles registered)</th>
<th>Income Generated from Project Modern Fleet (Rs in crores)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maharashtra</td>
<td>902,657</td>
<td>4,679,694</td>
<td>9,630</td>
</tr>
<tr>
<td>Rajasthan</td>
<td>249,626</td>
<td>2,072,436</td>
<td>2,876</td>
</tr>
<tr>
<td>Tamil Nadu</td>
<td>403,234</td>
<td>4,124,480</td>
<td>5,081</td>
</tr>
<tr>
<td>Karnataka</td>
<td>362,757</td>
<td>2,782,568</td>
<td>4,245</td>
</tr>
<tr>
<td>Telangana &amp; Andhra Pradesh</td>
<td>335,541</td>
<td>3,215,178</td>
<td>3,774</td>
</tr>
<tr>
<td>Delhi</td>
<td>355,185</td>
<td>3,054,780</td>
<td>5,984</td>
</tr>
<tr>
<td>Gujarat</td>
<td>633,157</td>
<td>4,142,676</td>
<td>6,550</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>3,242,057</td>
<td>24,271,812</td>
<td>38,142</td>
</tr>
</tbody>
</table>

- Emission Benefits

Analysis shows that 60-80% of pollutants generated by on-road vehicles are from older vehicles (>10 years of age), which constitute just 20-30% of the total vehicle population. Emission benefits by replacement of Commercial vehicles older than 15 years and private vehicles more than 10 years old in India would result in about 80-90% reduction engine out emissions from the new fleet. The reduction from each pollutant for the given fleet replaced is indicated below. Therefore, by retiring older vehicles, the impact on air quality would be significant.

Fig. 2.11 Impact of Emission by Replacement of Vehicles
• **Fuel Savings**

Further, older vehicles consume more fuel as compared to newer vehicles with modern technology. It is estimated that that the amount of petrol consumed nationally could reduce by about 5%, if older (>10-15 years of age) vehicles are replaced by newer vehicles. It is estimated that if more than 15 year old Two-Wheelers are replaced with new Two Wheelers, Passenger Cars and Commercial Vehicles in these Seven States, which would obviously have better Fuel efficiency, then the total fuel saving would be in the tune of 7,862 million liters of saving per annum. This translates to about Rs 490,000 Crores of saving for the country.

### Table 2.7 Estimated Reductions in Pollution

<table>
<thead>
<tr>
<th>Reduction in Pollutants (Tons / Annum) (For the replaced fleet)</th>
<th>CO</th>
<th>HC</th>
<th>Nox</th>
<th>PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>2W</td>
<td>599,497</td>
<td>579,514</td>
<td>(107,910)</td>
<td>9,992</td>
</tr>
<tr>
<td>Cars</td>
<td>157,391</td>
<td>37,991</td>
<td>55,358</td>
<td>1,628</td>
</tr>
<tr>
<td>CVs</td>
<td>67,573</td>
<td>18,197</td>
<td>126,324</td>
<td>12,031</td>
</tr>
<tr>
<td>Total</td>
<td>824,628</td>
<td>635,702</td>
<td>73,772</td>
<td>23,651</td>
</tr>
</tbody>
</table>

### Table 2.8 Estimated Fuel Savings

<table>
<thead>
<tr>
<th></th>
<th>Annual Fuel Saving (Million Litres)</th>
<th>Annual Saving (Rs Thousand Crores)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two Wheelers</td>
<td>1,768</td>
<td>133</td>
</tr>
<tr>
<td>Cars</td>
<td>1,608</td>
<td>111</td>
</tr>
<tr>
<td>Commercial Vehicles</td>
<td>4,487</td>
<td>247</td>
</tr>
<tr>
<td>Total</td>
<td>7,862</td>
<td>490</td>
</tr>
</tbody>
</table>


Planning Commission constituted a Working Group on Automotive Sector for the 12th Five Year Plan (2012-2017) under the chairmanship of Secretary, Department of Heavy Industry. An overview of the Indian Automotive sector - a
strategic sector of Indian economy can be described. With a CAGR of over 15% during the last 5-7 years, the automotive sector is aptly described as the next sunrise sector of the Indian economy. The contribution of this sector to the National GDP, with liberalization, has risen from 2.77% in 1992-93 to about 6% now. It provides direct and indirect employment to over 13.1 million people. In the present stage of economic development of the country, the manufacturing sector is expected to absorb a much larger workforce, relieving agriculture of the excessive burden and also contribute more to the national GDP. The National Manufacturing Plan which seeks to change the growth pattern of India’s manufacturing sector, calls for focusing on a number of areas and has identified auto sector as having the competitive advantage and potential to fuel rapid growth of manufacturing.

2.19 National Automotive Testing and R&D Infrastructure Project (NATRIP)

The National Automotive Testing R & D Infrastructure Project was approved by the Cabinet on 25th July 2005. NATRIP envisages setting up of world-class automotive testing and homologation facilities in India at a total investment of `1718 cr. The main facilities will come up in the three automotive hubs of the country, in the south, the north and the west. The project principally aims at (I) creating critically needed automotive testing infrastructure to enable the Government in ushering in global vehicular safety, emission and performance standards, (ii) deepening manufacturing in India, promoting larger value addition leading to significant enhancement of employment potential and facilitating convergence of India’s strengths in IT and electronics with automotive engineering, (iii) enhancing India’s abysmally low global outreach in this sector by de-bottlenecking exports and (iv) removing the crippling absence of basic product testing, validation and development infrastructure for automotive industry.

Recently in April, 2011, the Cabinet Committee on Economic Affairs has approved the revised cost estimate of `2288.06 cr. for the NATRIP in place of the original approved cost estimate of `1718 cr. due to the budget escalation of `570.96 cr. on account of the Foreign Exchange variation, Statutory Levies, rise in input costs,
Other Factors like change in Scope of Supply etc. The total escalation of ₹ 570.06 cr. has been approved in the following manner:

**A. Plan Support by the Government**

- By way of grant : ₹ 427.29 cr.
- By way of loan : ₹ 142.77 cr.*

**B. Contribution from automotive Cess**

(Collected from the auto industry) : Nil

Sub-total (A+B) : ₹ 570.06 cr.

**C. Additional loan component on account of short recovery of user charges** : ₹ 95.51 cr

**Total Project Cost (A+B+C)** : ₹ 665.57 cr.

The project envisages setting up of the following facilities:

- A full-fledged testing and homologation center within the northern hub of automotive industry at Manesar in Haryana.

- A full-fledged testing and homologation center within the southern hub of automotive industry at a location near Chennai in Tamil Nadu.

- Up-gradation of existing testing and homologation facilities at Automotive Research Association of India (ARAI), Pune and at Vehicle Research and Development Establishment (VRDE), Ahmednagar in Maharashtra.

- World-class proving grounds or testing tracks on around 4,000 acres of land, including summer and winter pads, the locations of which would be decided with technical assistance from a reputed global consultant to be appointed on the basis of global tendering process.

- National Center for Testing of Tractors and Off-Road Vehicles together with national facility for accident data analysis and specialized driving training in northern part of the country, at Rae Bareilly, in Uttar Pradesh.
• National Specialized Hill Area Driving Training Center as also Regional In-Use vehicle management Center at Dholchora (Silchar) in Assam.

Presently, most policies for promoting R&D in the country are focused on encouraging “in-house R&D” conducted in the CSIR approved in-house R&D units of companies. Last year, the Income Tax deductions available on R&D expenditure have been extended to R&D outsourced to institutions approved by the Government. While this has certainly paid some dividend, it still does not create a competitive environment for promoting full-scale development of vehicle platforms as compared to other competing economies.

Encouragements to R&D, New Product and Technology Development have to be taken up on a priority basis. Technology in the Auto industry is rapidly changing with ever evolving regulations on emission and safety, increasing industry responsibility towards society and the need for moving towards alternate energy sources.
Figure 2.12 India as a Testing Hub: NATRIP
2.20 Government Plans & Policies

The Automotive Mission Plan 2006-16, a joint document of the Government and industry has projected that the industry’s turnover would increase from US$ 34 billion to US$ 145 billion, an investment of US$ 35-40 billion (Rs.160,000 -180,000 Crores) and 25 million additional job would be created over a period of 10 years. The auto industry’s contribution to GDP would rise from nearly 5% to 10%, thus making it a greater driving force of the economy.

As envisaged, the industry has made major investments to achieve the targets set. The industry has made investments to the tune of Rs 50,000 Crores in the last three financial years. However at the current level of growth, the industry is expected to be just over US$110 billion, a shortfall of about 25%.

The industry was growing at the right pace until financial year 2012 to achieve the targets set in AMP 2016. However, the industry witnessed two difficult years, FY13 and FY14, in which the segments across the industry witnessed de-growth, carrying nearly 60% surplus production capacity.

2.21 Economics Affairs

Table 2.9 Excise Duty

<table>
<thead>
<tr>
<th>Vehicle Category</th>
<th>Excise Duty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>12.5%</td>
</tr>
<tr>
<td>Length &gt;4m but engine capacity less than 1500cc</td>
<td>24%</td>
</tr>
<tr>
<td>Length &gt;4m but Length &gt;4m and engine capacity more than 1500cc</td>
<td>27%</td>
</tr>
<tr>
<td>SUVs/MUVs (length &gt;4m, engine capacity &gt;1500cc and Ground clearance &gt; 170mm)</td>
<td>30%</td>
</tr>
<tr>
<td>Hybrid Cars</td>
<td>12.5%</td>
</tr>
<tr>
<td>Specified Components of Hybrid Vehicles</td>
<td>6%</td>
</tr>
<tr>
<td>Electric cars, 2W &amp; 3W</td>
<td>6%</td>
</tr>
<tr>
<td>Specified components of Electric Vehicles</td>
<td>6%</td>
</tr>
<tr>
<td>Buses</td>
<td>12.5%</td>
</tr>
</tbody>
</table>
### Table 2.10 Customs Duty

<table>
<thead>
<tr>
<th>Criteria/Applicability</th>
<th>Import Duty in %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Used car import</td>
<td>125</td>
</tr>
<tr>
<td>Cars CBU whose CIF value is more than $ 40,000 or Petrol Engine &gt; 3000 CC or Diesel engine &gt; 2500 CC</td>
<td>100</td>
</tr>
<tr>
<td>Cars CBU whose CIF value is less than $ 40,000 and Petrol Engine &lt; 3000 CC and Diesel engine &lt; 2500 CC</td>
<td>60</td>
</tr>
<tr>
<td>Two-wheeler CBU with engine capacity &lt;800 cc</td>
<td>60</td>
</tr>
<tr>
<td>Two-wheeler CBU with engine capacity &gt;=800 cc</td>
<td>75</td>
</tr>
<tr>
<td>Commercial Vehicles CBU (Trucks &amp; Buses)</td>
<td>20</td>
</tr>
<tr>
<td>CKD containing engine or gearbox or transmission mechanism in pre-assembled form but not mounted on a chassis or a body assembly</td>
<td>30</td>
</tr>
<tr>
<td>CKD containing engine, gearbox and transmission mechanism not in a pre-assembled condition</td>
<td>10</td>
</tr>
</tbody>
</table>

Source: Society of Indian Automobile Manufacturer

### 2.22 MAKE IN INDIA ON AUTOMOBILES

At Present India Is:

- Seventh-largest producer in the world with an average annual production of 17.5 Million vehicles.
- 4th largest automotive market by volume, by 2015.
- 4 large auto manufacturing hubs across the country.
- 7% of the country’s GDP by volume.
- 6 Million-plus vehicles to be sold annually, by 2020.
Reason to Invest:

- By 2015, India is expected to be the fourth largest automotive market by volume in the world.
- Over the next 20 years, India will be a part of the big global automotive triumvirate.
- Tractor sales in the country are expected to grow at CAGR of 8-9% in the next five years, upping India’s market potential for international brand.
- Two-wheeler production has grown from 8.5 Million units annually to 15.9 Million units in the last seven years. Significant opportunities exist in rural markets.
- India’s car market has the potential to grow to 6+ Millions units annually by 2020.
- The emergence of large automotive clusters in the country: Delhi-Gurgaon-Faridabad in the north, Mumbai-Pune-Nasik- Aurangabad in the west, Chennai-Bengaluru-Hosur in the south and Jamshedpur-Kolkata in the east.
- Global car majors have been ramping up investments in India to cater to growing domestic demand. These manufacturers plan to leverage India’s competitive advantage to set up export-oriented production hubs.
- An R&D hub: strong support from the government in the setting up of NATRiP centers. Private players such as Hyundai, Suzuki, and GM are keen to set up an R&D base in India.
- Tata Nano is a sterling example of Indian frugal engineering and is being positioned as a mobilizer of the young generation.
- Electric cars are likely to be a sizeable market segment in the coming decade.

2.22.1 Statistics:

The industry currently accounts for almost 7% of the country’s GDP and employs about 19 Million people both directly and indirectly. India is currently the seventh-largest producer in the world with an average annual production of 17.5 Million vehicles, of which 2.3 Million are exported. The Indian automobile market is estimated to become the 3rd largest in the world by 2016 and will account for more than 5% of global vehicle sales. India is the second-largest two-wheeler manufacturer, the largest motorcycle manufacturer and the fifth largest commercial
vehicle manufacturer in the world. The total turnover in 2010-11 was USD 58.5 Billion; turnover by 2016 is slated to be USD 145 Billion.

2.22.2 Growth Drivers:

- Passenger vehicles are to increase at a CAGR of 16% between 2013-20. Two-wheelers and three-wheelers are projected to expand at a CAGR of 9% between 2013-20. A growing working population and an expanding middle class are expected to remain key demand drivers. GDP per capita has grown from USD 1,432.25 in 2010 to USD 1,500.76 in 2012, and is expected to reach USD 1,869.34 by 2018. India has the world’s 12th largest number of high net worth individuals, with a growth of 20.8%, the highest among the top 12 countries.

- Increasing disposable incomes in the rural agri-sector.

- The presence of a large pool of skilled and semi-skilled workers and a strong educational system.

- A large number of products are available to consumers across various segments. With the entry of a number of foreign players and reduced overall product lifecycle, quicker product launches have become the order of the day.

- The availability of a variety of vehicle models meets diverse needs and preferences. Easy finance schemes, owing to which the auto finance industry has grown at the rate of 13% between 2008-13. Car finance penetration has increased from 68% to 70% between 2008-10 and between 70% to 72% in 2011-13.

- Favorable government policies like lower excise duties, automotive mission plans, the constitution of NATRIP etc.

2.22.3 Auto Policy

Automatic approval for foreign equity investment up to 100% with no minimum investment criteria. Manufacturing and imports in this sector are exempt from licensing and approvals. The encouragement of R&D by offering rebates on R&D expenditure.
2.23 Automotive Mission Plan, 2006-16:

To emerge as the world’s destination of choice for design and manufacture of automobiles and auto components with output reaching a level of USD 145 Billion, accounting for more than 10% of the GDP and providing additional employment to 25 Million people by 2016. The setting up of a technology modernization fund focusing on small and medium enterprises. The establishment of automotive training institutes and auto design centers, special auto parks and auto component virtual SEZs.

2.24 Automotive Mission Plan 2016-26:

The Automotive Mission Plan II for the period 2016-26 is under preparation and will be finalized by mid-2015. National Automotive Testing and R&D Infrastructure Project (NATRIP):

The project has been set up at a total cost of USD 388.5 Million to enable the industry to adopt and implement global performance standards. Focus on providing low-cost manufacturing and product development solutions. The Department of Heavy Industries & Public Enterprises working towards the reduction of excise duty on small cars and increased budgetary allocation for research and development. A weighted increase in R&D expenditure to 200% from 150% (in-house) and 175% from 125% (outsourced).

2.25 The National Mission for Electric Mobility 2020:

The objective of this body is to encourage reliable, affordable and efficient xEVs (hybrid and electric vehicles) that meet consumer performance and price expectations through government-industry collaboration, for the promotion and development of indigenous manufacturing capabilities, required infrastructure, consumer awareness and technology – thereby helping India emerge as a leader in the two-wheeler and four-wheeler xEVs market in the world by 2020, with total xEVs sales of 6-7 Million units thus enabling the Indian automotive industry to achieve global xEVs manufacturing leadership and contributing towards national fuel security.

2.26 Pilot electric vehicle projects:
The Department of Heavy Industry is launching pilot projects on electric vehicles in Delhi and subsequently, other metros and cities all across the country under the NEMPP 2020 with a dual purpose – demonstrating and disseminating the benefits of adopting cleaner, greener modes of transportation as also to explore the viable operational modalities.

The DHI will provide viability gap funding through subvention to support the extra cost of acquisition and operation of these vehicles by state governments or designated bodies. In the first phase, a pilot project to provide last mile connectivity to the Delhi Metro through electric passenger vehicles has been approved. All the other states have been brought on board and different states have already appointed nodal officers to co-ordinate with DHI and vehicle manufacturers for the implementation of those pilot projects. The uptake of electric vehicles will depend in large part on the adequate deployment of Electric Vehicle Supply Equipment (EVSE) needed to recharge electric vehicles.

2.27 Indian Automobile Industry in brief:

2.27.1 Emerging Trends in Indian Automobile Sector

Globalization is pushing auto majors to consolidate, to upgrade technology, enlarge product range, access new markets and cut costs. They have resorted to common platforms, modular assemblies and systems integration of component suppliers and ecommerce. The component industry is undergoing vertical integration resulting into emergence of systems and assembly suppliers rather than individual component suppliers. Thus, while most component suppliers are integrating into tier 2 and tier 3 suppliers, larger manufacturers and multinational corporations (MNCs) are being transformed into tier 1 companies. Environmental and safety concerns are leading to higher safety and emission norms in the country. India has already charted out a road-map for reaching EURO-II norms across the country by the year 2005. Seven metropolitan cities of India would simultaneously move to EURO-III norms in 2005. Most vehicle manufacturers are already producing EURO-II compliant vehicles in the country to meet special requirements of capital city of New Delhi where the Supreme Court verdict has already necessitated this. 114 To meet the concomitant testing and certification activities relating to higher safety and emission norms, testing
infrastructure in the country is being overhauled. A substantive state funding is being planned in upgrading the testing infrastructure with participation of industry. Environmental pollution and the need to conserve existing supply of fossil fuels have led to search for alternative fuels. In addition to supporting Greenfield research in this area, an ambitious phased program to upgrade carbon fuel quality commensurate with higher emission norms is also being undertaken. Foreign direct investment norms have already been considerably relaxed. Unhindered import of automobiles, including new and second hand vehicles, has also been permitted. Most non-tariff barriers have also been relaxed or removed. The Government has moderated and lowered taxes and duties on automobiles, including customs duty. Value Added Tax (VAT) is also proposed to be introduced across the country from 1 April 2001. The Government has also allowed private sector participation in the insurance sector. Norms guiding external commercial borrowings (ECBs) have been liberalized and lending rates within the country have also been reduced further strengthening the environment of investment. An ambitious program to upgrade the quadrilateral of highways in the country, the Government is laying an eight lane expressway linking all metropolitan and several important capital towns across the country paving the way for movement of heavier haulage vehicles.

2.27.2 Automobile Current Trends and Performance

Overall Indian Automobile Industry has shown marginal growth in FY 2012-13 compare to last FY 2011-12. According to Autobus Consulting Group (ACG) Production and Domestic sales ACG), has registered growth of 1.20% and 2.61%, however export is negative growth due to negative global environment and fluctuation. One of the hot spot in world automotive industry is Indian car market. Indian car industry is going thru turbulent times in now. Car sales are down by more than 6% in FY 2012-13 compare to last year of FY 2011-12. The main reasons are high interest rates, fuel price, high inflation, low movement in other sectors etc. Utility vehicle segment is having maximum growth in this segment. Following graphs shows figures of passenger vehicles domestic sales over the period of march – December 2012. M&M has shown a growth of almost 27% during FY 2012 -13 where as Tata Motors has shown a negative growth of 15% during the same period. Passenger car sales in India fell 7 percent in FY2013, the first such decline in over a
decade, based on the data provided by Society of Indian Automobile Manufacturers (SIAM). The industry body is, however, hopeful of a pickup in FY14. Overall, last financial year, CV sales were down 2 percent and motorcycle sales saw only marginal growth. FY14. Sales across passenger cars, medium & heavy commercial vehicles and two-wheelers have been hit amid expensive loans, rising fuel prices and the overall economic slowdown too has dampened. The overall economic activity remains weak, hurting & HCV sales, SIAM pointed out. Weak rural demand had also hit passenger vehicles sales sentiments. The slowdown has hit truck and bus makers like Tata Motors, Ashok Leyland and car makers including Maruti Suzuki and other domestic and multi-national rivals hard.

2.27.3 Key drivers for the growth of Indian Auto industry

- Finance Availability
- Exchange of Cars
- Favorable duty structure
- Improved Infrastructure
- Changing Lifestyle
- Finance Availability
- Rising Family Income

2.27.4 Challenges that Indian auto industry has to address

- Scale up Capacities & Absorbing newer technologies
- Cost competitiveness
- Improve productivity of both labour and capital
- Availability of auto grade technically advanced material
- Infrastructure development
- Availability of cost effective capital
- Favorable and predictable environment
- Availability of raw material commensurate with growth

2.27.5 STRENGTHS

- Investments by foreign car manufacturers
- Increase in the export levels
• Low cost and cheap labour
• Rise in the working and middle class income
• Increasing demand for European quality
• Expert skills in producing small cars good
• for environment
• Large pool of engineers

2.27.6 WEAKNESS
• Low quality compared to other automotive Countries
• Low labour productivity
• High interest rate and overhead level
• Production costs are generally higher than other Asian states, such as China
• Low investment in R&D area
• Local demand is still towards low cost vehicles, due to low income levels

2.27.7 OPPORTUNITIES
• Growing population in the country
• Focus from the government in improving the
• Road infrastructure
• Rising living standards
• Increase in income level
• Better car technology is demanded
• Rising rural demand
• The car is a status symbol
• Women drivers have increased

2.27.8 THREATS
• Less skilled labour
• Lack of technologies for Indian companies
• Increase in the import tariff and technology Cost.
• Imports of two wheelers from the Chinese
• market in India
• Smaller players that do not fulfill international standards
• Increased congestion in the urban.

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