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A STUDY ON EVOLUTION AND STRUCTURE OF INDIAN AUTOMOBILE INDUSTRY

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ABSTRACT

The Indian automobile sector has undergone significant transformations, particularly during the post-liberalization phase that commenced in 1991. This phase marked the opening of the Indian economy to global markets, ushering in technological advancements, foreign direct investment (FDI), and increased competition. This study critically examines the impact of liberalization on the competitiveness of the Indian automobile sector. By analyzing key factors such as market entry of global automobile giants, adoption of modern manufacturing practices, and the role of government policies, the study reveals that liberalization enhanced both domestic and international competitiveness. However, it also exposed the sector to global market volatility and operational challenges. The study further discusses the industry's transition, highlighting shifts in production standards, consumer preferences, and supply chain efficiencies, all of which contributed to the sector's resilience and growth.

Keywords: Evolution, Structure, Automobile industry, India

1. INTRODUCTION

The Indian automobile industry, one of the largest in the world, has experienced remarkable growth, especially after the economic reforms initiated in 1991. The post-liberalization phase marked a pivotal moment, characterized by the removal of trade barriers and the promotion of market-driven competition. This allowed for greater collaboration with international manufacturers, infusion of foreign capital, and access to cutting-edge technologies. Prior to liberalization, the industry was dominated by a few players with limited innovation and a restricted consumer base. With the entry of global automakers and the relaxation of regulations, the sector witnessed an unprecedented shift in productivity, quality, and scale. This paper seeks to explore how the post-liberalization policies transformed the competitiveness of the Indian automobile sector, examining key drivers such as foreign direct investment (FDI), strategic partnerships, and the evolution of domestic firms.

2. EVOLUTION OF GLOBAL AUTOMOBILE INDUSTRY

In the early 1890s, Western Europe saw the start of mass-produced vehicles. By 1896, the United States had begun manufacturing petrol and electric vehicles. The price of vehicles dropped from $850 in 1908 to $360 in 1916 after Ford entered the market in 1903. Sales dropped during the Great Depression and both World Wars, but the '50s and '60s were the golden age of the vehicle (thanks to Ford, General Motors, and Chrysler).As a result, sales hit 11 million copies that year. The history of international trade in automobiles begins with the post-WWII transfer of technology from the United States to Western Europe and Japan, based on the mass-production model of Ford Motor Company. As a result, two major tendencies emerged: first, the expansion and output of the German and Japanese automotive markets were boosted by industrialization breakthroughs; second, the export of fuel-efficient automobiles from Japan to the United States began during the 1973–1974 oil embargo. The US used to be able to compete with Europe and Japan, who had already produced fuel-efficient automobiles, since gasoline was cheap. However, following the oil price shocks, the US had to start developing "muscle cars" again. It was in the car industry that design, marketing, pricing, consumer happiness, etc., first gained traction. The worldwide overcapacity in the automotive industry occurred in 1982, when Japan had already solidified its position as the world leader in the US market, thanks to growth prospects. To address this overcapacity issue via market corrections, the 1990s saw a rise in mergers and acquisitions (M&A) as well as the establishment of strategic alliances.

Global rivalry among automakers heated up as a result of expanding commercial distribution networks made possible by burgeoning international commerce. Japanese car manufacturers gradually adopted new production techniques by adapting the American model. In order to boost production and product competitiveness, they were able to adapt and use technology effectively.

In general, the global automobile sector is seeing three main themes in its evolution:

- **GLOBAL MARKET DYNAMICS:** The top car companies in the world are pouring money into factories in developing countries so they can cut costs and increase profits. South and Southeast Asian markets, as well as those in Latin America, China, and Malaysia, are examples of these emerging markets.
- **ESTABLISHMENT OF GLOBAL ALLIANCES:** Joint ventures are becoming more common in the global automobile sector, which is a feature of modern dynamics. General Motors, Ford, and Chrysler, the three largest car companies in the United States, have partnered with or merged with other companies in Europe and Japan. The European carmaker sought to bolster its position in the American market by initiating the Chrysler-Daimler-Benz merger. As a whole, global automakers have been more busy expanding into new international markets via mergers and acquisitions with other massive automobile corporations.
- **INDUSTRY CONSOLIDATION:** The world's automakers have been split into three groups due to the increasing global competition and positioning within foreign markets. One group consists of giants like GM, Ford, Toyota, Honda, and Volkswagen. The other two groups are trying to consolidate or merge with other lower-group automakers to compete with the first group.

3. ECONOMICS OF AUTOMOBILE INDUSTRY

At present, the automotive industry has an excess of capacity, an abundance of competitors, and an abundance of redundancy and overlap, leading to a worldwide price war. Both emerging and mature markets present opportunities and risks to the industry as a whole. However, profitable growth is becoming more difficult to achieve as a result of challenges prevailing in the supply chain and the retail environment.

4. PRODUCTION

Large automobile manufacturers of 21 century have manufacturing facilities in multiple markets and from each platform, a vehicle is made for that market as well as for exports toother markets. The leading names in the car business don't have a single global headquarters from which they ship their wares to every country. Furthermore, in each target market, the items do not differ. Even though it's built on the same basic base, the design, functionality, and choices might vary greatly from country to country. The wants of consumers fluctuate greatly among nations, which is why they are distinct. For instance, consumers in South America need more reasonably priced automobiles due to lesser salaries compared to Western Europe. One key to a car's success in the United States is meeting customer demand for additional inside space. Small automobiles, on the other hand, have enjoyed sustained popularity in India.

Also, being in the high-volume industry and shipping the identical automobile to every market in the world is just not feasible. Since losing market share is a real possibility, automakers are putting more resources into consumer demand research and tailoring their products to specific markets. A growing number of nations are receiving lower quantities of CKD (fully knocked down) automobiles. This is often the situation when exporting automobiles to certain nations becomes more difficult due to certain obstacles, resulting in lower sales volumes. Companies often need their own factory with specialised component suppliers in bigger markets with significant sales of certain models.

5. SUPPLY CHAIN

Businesses in the automotive industry have begun to operate with a more global viewpoint. All of the competitors were present in almost every part of the world due to the growth of transplants in the 1990s. Companies may customise cars to a multiplicity of tastes and preferences of customers throughout the world by concentrating on common platforms and replaceable modules. This allows for quicker and lower cost deployment of innovative solutions across the complete product range. Major automakers are currently functioning on a worldwide scale because they can ensure adequate product differentiation to deal with proliferation, maintain scale efficiency, and properly manage brand equity (Lung et al., 1999). Along with their new investments, companies are attempting to recreate their supply chains by requiring suppliers to set up shop in the areas where their operations are situated, which is often closer to these new locations. The automotive industry's supply chain has seen radical changes in recent decades. The world's largest original equipment manufacturers (OEMs) are consolidating their supplier relationships in favour of a smaller group of vendors who can help them with basic design, assembly, and after-sales support. Because of this, the supply chain is changing into a network of commodities producers, sub-system integrators, and component manufacturers. When it comes to segregation, "risk sharing" is replacing "cost pressure" as the defining factor. As a result of rising risk-taking on the part of large players, Tier 2 suppliers who focus only on producing subcomponents are feeling the cost pressure from Tier 1 suppliers, who handle system supply, module assembly, and sub supplier management. In Asia-Pacific area, the rise of component makers has followed adifferent road. Independent or quasi-independent suppliers were closely tracked by the majority of Japanese manufacturers. This arrangement was made more easier by the fact that Japan has the keiretsu system, which stands for business association. However, when sourcing from a network of reliable vendors, some manufacturers particularly those from Korea, China, and India placed a premium on both price and quality. Consequently, many Asian nations' indigenous auto-component businesses are doing quite well, even if there are a few multinational corporations (MNCs) involved.

6. PRICING

Vehicle prices are complicated since they rely on a number of factors, including technology, economies of scale, fixed costs, and more. The function of competition and customer demand in fixing prices is equally important. The majority of car manufacturers now see lowering prices as a crucial survival tactic. From controlling manufacturing and supply chain variables to negotiating with dealers, corporations must make a series of choices at every level of selling and production in order to reduce prices. One of the many elements that greatly affects the unpredictability of product and service sales is price. To intelligently manage a chain of decisions like lowering prices, which does not necessarily result in profits businesses need suitable pricing policies. This choice should be made in conjunction with others that have to do with the product's marketing and quality maintenance.

Consideration of price reduction as the primary method of acquiring consumers has the unintended effect of drawing in unloyal clients who are enticed by the offer but fail to see any additional value in the firm. Ultimately, they have a limited lifespan, and the return they provide to the organisation is far more than the expense of acquiring them.

Various pricing strategies for various product classes are a common business strategy, with many firms taking into account the projected value to consumers while offering items. In order to increase profits while minimising harm to consumers, companies come up with creative techniques. Qualities, purchase volume, profitability, loyalty, and development potential are the elements that are used to alter pricing. Companies search for several models on the same platforms and decide on the overall production of each model due to the high fixed cost. The variable outputs and the extent to which economies of scale are used cause a decrease in the average production cost. If manufacturers are using average costs as their pricing metric, then short-term variations in production (across model years) could have a big impact on prices even if factor costs don't vary. The sensitivity of the short-run marginal cost to changes in the pricing of the variable components of production (for as a rapid increase in the prices of steel or rubber) increases as the percentage of fixed costs to total costs rises. Therefore, short-run marginal costs are particularly vulnerable to

fluctuations in variable factor prices in the automotive sector due to the low fraction of variable costs. According to Hoffer et al. (1976), if businesses are maximising profits in the short term, then increases in variable component costs should lead to an upward trend in prices.

7. INTERNATIONAL TRADE

Economists and policymakers have been focusing on the dynamics of international trade in the car industry in order to develop trade strategies. The global commerce of vehicles has been shaped by the twin forces of protectionism and liberalization. When Japanese car companies began to flood the American market in the 1970s and 1980s, it was the first time the American auto industry had serious competition from outside. Japan has instituted voluntary export restraints (VER) in anticipation of additional restrictions, in response to protectionism in the United States brought about by increased imports and a dwindling domestic vehicle industry. Japan persisted with VER even after the US government loosened quantity limitations in 1985. After the oil crisis, the United States saw a surge in demand for fuel-efficient Japanese automobiles (Rappoport, 1982). Import demand from Japan increased as a result of the Big Three's unwillingness to create smaller vehicles in the US. This was partly because the US players had limited capacity to produce tiny cars in the near term. Apart from this, the yearly import restriction had the unintended consequence of pushing Japanese auto firms to adjust the product mix of vehicles they delivered to the USA, shipping more upmarket models, where the profits were highest, and less smaller, cheaper cars. Estimates show that Japanese manufacturers were receiving an extra USD 5 billion per year in the early 1980s, thanks to the quota, since they were able to sell their quota-limited automobiles at a premium. Japanese automakers including Toyota, Nissan, Honda, and others have invested in the United States to meet demand both at home and abroad.

8. INDIAN AUTOMOBILE INDUSTRY: POLICY REGIME AND STRUCTURAL CHANGE

In India, the success of the automotive industry has been impacted by the substantial changes in government policies concerning the sector since independence. Instead of focusing on import substitution, these programs aimed to indigenize the population, liberalize certain areas, and eventually unleash competitive market forces. This caused tremendous changes in many facets of the Indian automotive industry, including technology, installed capacity, ownership, market and geographical structure, firm count, installed capacity, installed capacity, competition, etc. The Indian government established all of these policies over the I-VI Five Year Plans, which ran from 1951 to 1990. Foreign direct investment (FDI) forced the car industry to open its borders to new norms of price and product competition after fifty years of policy industrialization, as the globe trended towards greater liberalization and openness.

When faced with change, the Indian auto sector wasted little time getting up to speed. At now, it ranks seventh internationally with a turnover of USD 73 billion, and by 2020, it is expected to become one of the top three markets worldwide. Directly and indirectly, it supports more than 5 lakh jobs, adds 6 percent to GDP, and gets 21 percent of all tax revenue. For instance, for every commercial vehicle manufactured, 13.31 jobs are generated, and for every passenger car, 5.31 jobs are created; hence, its influence on the economy is undeniable. Additionally, the production multiplier for the industry is 2.24, which means that for every additional rupee of output in the automotive sector, the entire output of the Indian economy expands by 2.24 rupees.

To better comprehend the interplay of policy, structure, and growth of the Indian automobile industry, it is prudent to divide the study period into regulated and liberalized periods. There are three distinct periods within the three-part timeline: (a) the state-owned, licencing-based, and protected Pre-Maruti era (1950–80); (b) the somewhat liberalized Maruti era (1981–1993); and (c) the fully liberalized, competitive, and foreign-invested-in era (1993 and after).

Changes in the country's automobile industry's growth rate and breadth were brought about by deregulation, de-licensing, and decontrol. Due to the government's consistent backing, the manufacturing of automobiles increased by 13% in the 1990s. Other local firms also joined Joint Ventures with international automakers as MUL controlled the domestic passenger vehicle market with an 83% share by 1996–1997. MUL began manufacturing middle-sized passenger cars in the 1990s. In order to broaden its customer base and increase profits, TELCO, which had previously controlled more than 70% of the commercial vehicle industry (Kathuria, 1996), began manufacturing compact passenger vehicles in 1997 and Multi-Utility Vehicles (MUVs) in the early 1990s. Many multinational corporations (MNCs) were able to break into the passenger car and multi-utility vehicle (MUV) markets as a result of de-licencing the sector. Modifications to the entrance rules sparked innovation amongst established businesses in several industries and even spawned new ventures altogether. It was either "New Players" or "End entry of other vehicles producers" that entered the Indian auto industry. When the sector was originally deregulated, three new MNEs—General Motors, Ford, and

Daewoo—entered the market within a year. One domestic producer, Tata Engine and Locomotive Co Ltd. (Telco), gained a foothold in the passenger car market by introducing Multi-Utility Vehicles in the early 1990s and continuing to do so until 1995–1996. Telco had previously dominated the heavy and light commercial vehicle (LCV) market (62% in 1994–1995). It then jumped into the production of small passenger cars, the Indica.

In 1995, two established participants in the industry formed new joint ventures to manufacture middle-sized passenger vehicles, which were considered luxury in the Indian context. PAL partnered with Peugeot and Fiat, while HM partnered with General Motors and Mitsubishi. A large number of businesses have joined the automotive industry in an effort to capture the middle and upper echelons of the market. At the premium end of the budget vehicle segment, new competitors emerged from Daewoo (Matiz), Telco (Indica), and Hyundai (Santro). While Mercedes-Benz dominates the luxury market, General Motors, Ford, Peugeot, Mitsubishi, Honda, and Fiat have all made inroads into the mid-sized vehicle class.

In 2004, sales of vehicles surpassed one million units, increasing at a phenomenal rate of around 25%. Almost every major global automaker set up shop in India because of the country's favourable demographics, stable macroeconomic climate, and pro-reform government policies. The manufacturers are under extreme pressure to introduce their newest worldwide product in India as soon as feasible due to the intense rivalry in the market. As an added bonus, it has helped keep car costs in control. As a result, buyers have reaped the rewards in the form of a plethora of models to choose from, higher-tech vehicles, more accessible financing options, and enhanced support from the automakers.

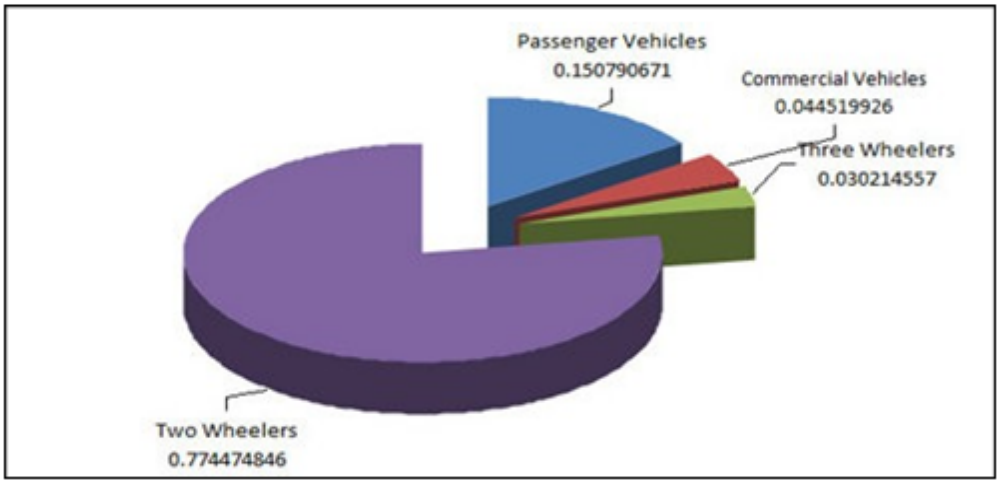

Figure 1: Domestic Market Share for 2012-13

Source: *SIAM*

9. RECENT POLICY INITIATIVES

The Union Budget 2013–14 had a few add-ons for the industry. The analysis by Deloitte on the Union Budget highlighted the following:

- The deadline for applying for the electric and hybrid vehicle concession, which was originally set to conclude in April 2013, has been extended until March 31, 2015.
- Luxury items, including high-end automobiles, motorcycles, yachts, and similar boats, are subject to a higher basic customs charge (BCD). Motorcycles with engine capacities of 800 cc or more are now subject to a duty of 75 percent, while yachts and similar boats are now subject to a charge of 25 percent. The tax on automobiles and motor vehicles, regardless of engine capacity, with a CIF value above US$40,000 was increased from 75 percent to 100 percent.
- Excise duty on SUVs with engines larger than 1,500 cc has been increased from 27 to 30 percent, while it was reduced from 80 to 72 percent for SUVs registered for just taxi uses.
- Lithium ion automotive batteries used to make packs of batteries to sell to companies that make electric and hybrid cars will not be subject to BCD. The excise tax on diesel motor vehicles used for transporting products was lowered from 14% to 13%.

10. EXPORT OF AUTOMOBILE FROM INDIA

It seems that the recent upturn in Indian vehicle exports will persist. Both components and whole cars have significant demand in the European, Middle Eastern, African, and Asian markets. In this area, Hyundai, Maruti Suzuki, Mahindra &

Mahindra, and Tata Motors have been in the forefront. There are just seven vehicles for every thousand people in India, which is a very low penetration level. As a result, the auto components business is very competitive and is experiencing consolidation, creating enormous opportunities for car firms both in the local market, which is expected to develop at a rate of 10-15% per year owing to the rising economy, and in exports.

Table 1: Automobile Export from India

Category	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Passenger Vehicles	218,401	335,729	446,145	444,326	507,318	554,686
Commercial Vehicles	58,994	42,625	45,009	74,043	92,663	79,944
Three Wheelers	141,225	148,066	173,214	269,968	362,876	303,088
Two Wheelers	819,713	1,004,174	1,140,058	1,531,619	1,947,198	1,960,941
Grand Total	1,238,333	1,530,594	1,804,426	2,319,956	2,910,055	2,898,659

An indication of India's rising prominence in the auto industry is the country's emergence as a major export center for both small and large automobiles, including midsize sedans and utility vehicles (UVs). An rising number of worldwide companies are now selling sedans and UVs made in India in foreign countries, leading to an increase in the export of heavy vehicles.

Sedan exports increased by 29% to 77,987 units from 60,512 units in the same time last year, from April to November 2013. From 9% in March 2012 to 21% now, the proportion of large vehicles exported by the auto industry has grown substantially.During that time, there was a 28% increase in the export of compact sedans (such as the Hyundai Accent, Maruti Swift Dzire, and Toyota Etios) and a 31% increase in the export of mid-size sedans (such as the Nissan Sunny, Volkswagen Vento, and Ford Fiesta).Society of Indian Automobile Manufacturers data shows that exports of these cars more than quadrupled from 43,903 units in 2011–12 to 91,478 units in 2012–13.Sedan and UV exports from India have been on the rise, according to CRISIL. The rising demand for these cars at home has prompted manufacturers to increase production, and they have also begun to prioritize exports as a means of making the most of their available capacity.

We expect the rapid expansion of sedan and UV exports to continue, even if it is still too soon to declare that India has begun to establish itself as a manufacturing base for luxury automobiles. India is a formidable player in the export of luxury vehicles for the same reasons that have made it an appealing center for small car manufacturing—a massive domestic market that allows for economies of scale in production, robust growth potential, and an abundance of available labor and engineers. Nissan got things rolling in January 2012 when it began shipping luxury sedans Sunny, which were manufactured in India, to international markets. The Micra and Sunny hatchbacks, manufactured in Chennai, have been distributed worldwide by Nissan. Volkswagen, the biggest automaker in Europe, has been selling the "Made in India" Vento all over the world. Mexico, which will soon surpass all others as Volkswagen India's top export market, has just begun receiving shipments of the automobiles.In the same vein as sedans, utility vehicles are writing their own success narrative, with exports of 23,556 units in 2012 compared to 4,793 units in the previous year. At the moment, the top three Indian UV exporters are Renault, Ford, and Mahindra & Mahindra.

The premium small SUVs Duster from Renault and the EcoSport from Ford have both developed extensive export strategies. Ten markets are selling Ford EcoSports manufactured in Chennai. Global original equipment manufacturers have begun to realize that vehicles manufactured here can be sold anywhere in the world, competitively, so although India's small car export narrative remains intact, export of larger automobiles is also projected to expand substantially. Manufacturers can better weather domestic market downturns with an eye on exporting.

11. CONCLUSION

The post-liberalization phase significantly reshaped the Indian automobile sector, fostering competitiveness on both domestic and international fronts. The liberalization policies opened the doors to global players, which brought in modern technologies, advanced production methods, and high standards of efficiency. Indian manufacturers adapted to these changes, improving their competitive edge. However, the increased exposure to global market fluctuations also presented new risks. The study concludes that while liberalization has undeniably propelled the Indian automobile industry toward growth and global recognition, continuous innovation, supportive government policies, and robust infrastructure development are crucial for sustaining competitiveness in an evolving global landscape.

CONFLICT OF INTERESTS

None.

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