



## **The Development of India's Small Car Path<sup>1</sup>**

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### **Abstract**

This paper explores the emergence, consolidation and challenges to India's small car path in the passenger car industry. The paper shows that this path can only be properly understood if we consider the interplay of a wider range of context conditions, including political, social, economic and infrastructural conditions. The paper shows that while the state has played a pivotal role in creating the path, it was the socio-economic conditions that channelled the political choices. The paper also shows that although the government's role in developing and sustaining the path has changed from an entrepreneurial to a framework setting role, the prevailing socio-economic conditions keep channelling the political action towards a small car path.

**Keywords:** Small car path, Indian automobile industry, India, Maruti-Suzuki, TATA, Nano

### **1 Introduction**

Unlike other emerging markets, such as China, the Indian passenger car market and industry has followed a pronounced small car path. The latest expression of this development is the introduction of the low cost car Nano by TATA. While India's small car path initially only involved the production and sale of foreign designed small cars in the domestic market, India is developing towards a global production and R&D hub for small cars. It is this development this paper seeks to understand. Specifically, the paper explores the emergence, consolidation and challenges to India's small car path in the passenger car industry. The paper shows that this path can only be properly understood if we consider the interplay of a wider range of context conditions, including political, social, economic as well as infrastructural conditions. The paper also shows that while the State has played a pivotal role in creating the path, it was the socio-economic conditions that channelled the political choices. The paper suggests that although the government's role in developing and sustaining the path has changed from an entrepreneurial to a framework setting role, the prevailing socio-economic conditions in India keep channelling the policy making towards a small car path.

The paper is structured as follows: In the next section (section 2) we describe the emergence of the small car path in India and the conditions that have facilitated it. In section 3, we discuss the maturing and strengthening of the small car path and the contextual conditions constituting it. In the final section (section 4) we discuss opportunities and threats for the sustainability of India's small car path in future. This also involves asking, to what extent the path is economically and ecologically sustainable.

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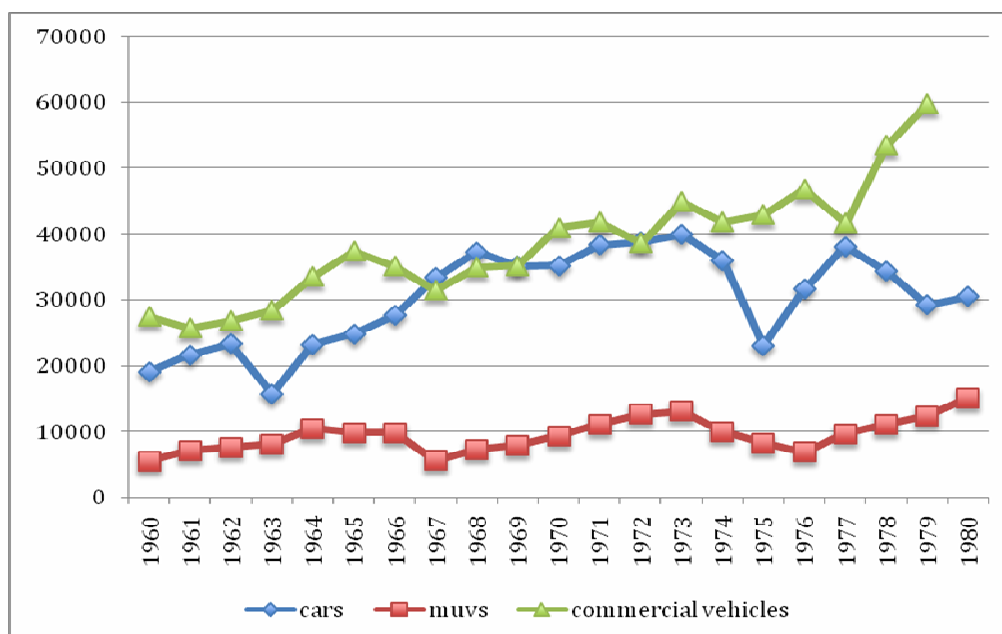
## 2 The Emergence of India's Small Car Path

### 2.1 From First Thoughts to the Beginning

The idea to build small cars for the Indian market is almost as old as India's independence. Already by the late 1950s, the Indian Government established a Commission with the task to look at costs and prices of motor vehicles produced in the country and invited proposals for the production of an 'economy car'. In response, different manufactures submitted proposals. Tata, for example, submitted a proposal for the license production of a DKW light car. In 1959, it was Premier Automotive Limited (PAL) that was allowed to enter into collaboration with the Fiat Motor Company for the production of the Fiat 500 which was later replaced by the Fiat 1100 (Mohanty *et al.* 1994). While there were ever new Commissions looking into the question of mass-producing small cars, there was no real effort to realize the endeavour before the 1980s. Venkataramani (1990) argues in this context:

From time to time committees appointed by the Government purported to study the issue of initiating the manufacture of a small, economical, "people's car." But the persistence of the notion in high Government circles and in the Planning Commission that the passenger car was a luxury item that catered to the needs of a small section of the population inevitably promoted inaction. (Venkataramani, 1990: p. 12)

India's entire production of passenger cars and MUVs rose in the 1960s to 1980s only slowly to around 40.000 vehicles annually (see figure 1). Low production volumes and high prices put passenger car ownership quite deliberately out of reach of average middle class consumers. The stagnation was above all related to India's post independence State-led investment regime that favoured capital goods production (favouring commercial vehicle production and busses), restricting market competition through a licensing system and shielding of the national economy by a protectionist trade and FDI regime. Thus, while the demand for passenger cars – even for a small car like the Fiat 500/Padmini – is restricted by stringent price controls and high taxes, the supply side is equally restricted by a licensing system and protectionism that curb production, domestic competition and locking out international players (Becker-Ritterspach & Becker-Ritterspach, 2008).



**Figure 1. Production of Cars, Jeeps and Commercial Vehicles in India, 1960 to 1981 (Compiled by SIAM 2006) (Production in Numbers).**

In the early 1970s the idea of mass producing a small car was taken up again. It was Sanjay Gandhi, Prime Minister Indira Gandhi's son, who revived the idea of producing a car for the people. On the 16th of November 1970, Sanjay Gandhi founded a private limited company named 'Maruti technical services private limited'. The stated mission of the enterprise was the development of a 'people's car' – an affordable, cost-effective, low maintenance and fuel efficient car – for India's middle class that was indigenously designed and produced. Following Sanjay Gandhi's initiative, Prime Minister Indira Gandhi's cabinet proposed the production of a 'people's car' and passed a unanimous resolution for its development and production. Although Sanjay Gandhi neither had any prior experience in automobile production nor a clear design proposal or tie-ups with another corporation, he was awarded the contract and the exclusive production license (Venkataramani, 1990). To produce the car a second company called 'Maruti limited' was incorporated in 1971 under the Indian Companies Act. Under patronage of Indira Gandhi's Government the company received land, tax breaks and funds (Shirali, 1984; Shenoy, 2003). However, despite all government backing and support, Maruti – named after the Hindu God of the winds – didn't take off. The young company proved incapable of producing a single marketable car. A part of the problem lay in the inexperience in automobile production of the Nehru-Gandhi family members who comprised the company's top management. Maruti limited's problems culminated in the company's liquidation in 1977 (Becker-Ritterspach, 2007).

Trying to rehabilitate her family name, Indira Gandhi tackled the unresolved Maruti problem. Eventually the 'Maruti Scandal' came to a close when in October 1980 the Government of India took over Maruti limited and incorporated it in February 1981 by an Act of parliament (Maruti Limited Acquisition and Transfer of Undertaking Act) as a Public Limited Company. Rechristened Maruti Udyog Ltd., the company was incorporated under the provisions of the Indian Companies Act, 1956. Realizing that the company – as well as the industry as a whole – could only succeed with foreign cooperation, bids for foreign collaboration were invited. What is more, the Indian Government not only sought to turn Maruti into a success story, but pursued a wider political agenda with the project that drove the search and selection for a foreign Joint Venture partner. According to Venkataramani, the "Project report for Manufacture of passenger cars and light utility vehicles", dated 27. May 1982 revealed that among the major goals associated with Maruti were:

1. Modernisation for the Indian automobile industry;
  2. Production of fuel efficient vehicles;
  3. A large output of motor vehicles;
  4. Import of foreign technology, and equity participation by the collaborator
  5. Production of a "peoples car" suited to Indian driving and climatic conditions
  6. Creating potential for earning foreign exchange by export of Maruti products; and
  7. Generating employment through establishment of ancillary industries
- (Venkataramani, 1990: p. 65)

Although there was an earlier intention to produce light commercial vehicles and medium sized-cars, the idea of producing a fuel efficient small car prevailed. In 1981, Maruti's board of directors decided that the vehicle to be manufactured would be a small car and that the engine size should be kept below one litre (Venkataramani, 1990). The decision was driven by the rationale that the Maruti project could only succeed if mass production was realized. This, in turn, was tightly linked to the car's affordability and cost of operation. The decision was further supported by market research that found at the time:

The survey of potential purchasers drawn from nine cities which then accounted for 60% -70% of the country's car owning population revealed that 90% of car use was within a city, the individual car owner travels 800 km a month on an average and that the average number of passengers in a car was four because cars were largely used for office-going purposes. Also, only 20%-30% of the respondents indicated a desire to purchase a car in the next two years at the

then existing prices but for a new price range of between Rs.40.0(H) and Rs.55,000 the proportion of likely buyers went up to 43%-45%. Finally, the survey revealed that the two most important factors considered while purchasing a car were fuel efficiency and initial capital cost. Of the total sample, 37% preferred a small car and only 18% preferred a medium-sized car. "This strengthened our belief that the earlier decision to go in for a medium-sized family car was wrong. So we decided to manufacture a small car," says Bhargava. (Shirali, 1984: p.4)

In the light of these requirements, Japanese manufacturers turned out to be the more attractive partners:

Once the Japanese entered the race, the Europeans were almost automatically eliminated. The Peugeot and Volkswagen offers were reportedly over 50% more expensive than the Japanese offers. Apart from the obvious Japanese superiority in small-car technology, a related reason for the Maruti Udyog team concentrating on Japanese offers was that they had derivatives such as vans, a pick-up truck and a four-wheel drive jeep — all using the same engine and transmission as the car. This offered Maruti Udyog the prospect of catering to a larger market and made possible mass production and economies of scale since the cars and derivatives could be made with the same engine. But the factor which decisively swung the balance in favour of the Japanese was the promise that an Indo-Japanese collaboration offered a chance to introduce the work culture and management [...]. (Shirali, 1984: p.5)

Ultimately, the Indian Government selected Suzuki as a partner because the company convinced with its small car experience and product portfolio – particularly Suzuki's 796cc, SS80F model (see table 1) – the projected manufacturing cost and product price, and its flexible approach in the negotiations.

**Table 1. Maruti Vital Statistics (Shirali, 1984: p.2)**

	<i>Passenger Car (Maruti 800)</i>	<i>Pick-up truck</i>	<i>Van</i>
Seating capacity	4	2	5-8
Body size (length x width x height)	3.295 x 1.405 x 1.335	3.195 x 1,395 x 1.660	3.195 x 1.395 x 1.660
Maximum loading capacity	-	600 kg	550 kg with 2 persons
Kerb weight	630 kg	645 kg	705 kg
Engine type	4-stroke cycle, water cooled, 3 cylinder (OHC)	Same as for car	Same as for car
Displacement	796 cc	796 cc	796 cc
Maximum horsepower	29.42 KW (39.5 HP) at 5500 RPM	27.50 KW (37 HP) at 5500 RPM	27.50 KW (37 HP) at 5500 RPM
Compression ratio	8.7:1	8.7:1	8.7:1
Transmission	4-forward. All synchomesh, 1-reverse	Same as for car	Same as for car
Brake system	Front disc. Rear drum	All drum	All drum
Turning radius	4.4 metres	4.4 metres	4.4 metres
Ground clearance	17.75 cm (7.09 in)	17 cm (6.7 in)	17 cm (6.7 in)
Fuel consumption – Japanese test result under simulated city driving conditions	19.9 km per litre	16.8 km per litre	16.8 km per litre
Fuel	Petrol (regular)	Petrol (regular)	Petrol (regular)

In addition, Suzuki promised to provide the much sought after Japanese manufacturing practices and culture through comprehensive knowledge transfer. Most importantly, Suzuki's equity participation offer was higher than that of all the other contenders (Venkataramani, 1990). Thus, while the idea and the market demand for a small fuel efficient affordable car for India's emerging middle class was present since the early 1960s, it wasn't until the 1980s, with the entry of Suzuki, that the Indian passenger car market saw the arrival and mass production of a small car, the Maruti 800.

## 2.2 *The Emergence of the Small Car Path and its Political and Socio-economic Context*

The successful establishment of a small car path around that time was facilitated by a complex of social, economic and political factors. The *first* and probably most vital condition for the emergence of the small car path lay in a growing demand scenario for a small and fuel efficient car. Specifically, there was an accumulated demand which is not only constituted by potential first time buyers at the entry level – e.g. scooter or motorbike owners who seek car ownership – but also by extant vehicle owners who had a huge replacement demand given an average vehicle life of 25 years at the time (Venkataramani, 1990). The small car demand was constituted by India's growing middle class. It is among other factors, the expanding public sector that contributed to the emergence of a sizable middle class that posed increasing consumer demands (D'Costa, 2005), albeit from low income-level by international comparison. At the same time, the economic policy, most notably the Five Year Plans, with their focus on heavy industries, capital goods and later agriculture, proved increasingly unable to satisfy this growing demand (D'Costa, 2005).

The *second* reason for the emergence of the small car path was rooted in the situation and beginning of de-regulation of the Indian economy in the 1980s. By the late 70s the Indian State-led economy showed signs of exhaustion, finding expression in repeated balance of payment difficulties and a slow-growing economy (D'Costa, 2005). In response to the economic difficulties Rajiv Gandhi's Congress-led government introduced in the 1980s a number of deregulation measures that stimulated both the demand side and supply side. On the demand side, passenger car ownership was no longer perceived as luxury, expressed in a lowering of customs and excise duties for small cars in 1983. On the supply side, first modest economic reforms aimed at carefully stimulating domestic competition and carefully opening up the economy to foreign investors (D'Costa, 2005). The measures included the 'delicensing', the 'broadbanding' and the lowering of import tariffs. In 1983 broadbanding was introduced to the commercial vehicle sector and extended to passenger cars in 1985. While there were new possibilities for collaborations there was still no free access to the Indian market for international automobile companies. For Maruti-Suzuki, this situation created a particularly protective and conducive environment. On the one hand, the company could, with the help of international cooperation, adopt state-of-the-art small car technology and out-compete its domestic rivals. On the other hand, the company was shielded from international competition through the licensing system and protectionism that remained in place (Becker-Ritterspach, 2007).

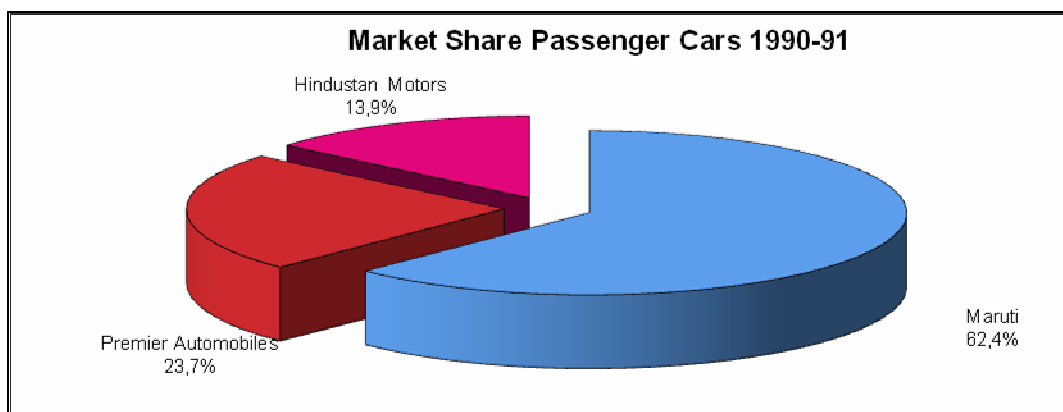
Although the deregulation of the Indian economy marked the beginning of a new policy *vis-à-vis* passenger car production and foreign involvement, core themes remained unchanged and also benefited the emergence of a small car path. One important aspect was the continued balance of payment problem of the Indian economy. As the Indian economy was fully dependent on oil imports, the fuel efficiency of cars directly impacted India's balance of payments. It was, therefore, an ongoing national goal to keep fuel consumption low by promoting small car production.

The *third* factor explaining the successful establishment of the small car path was probably related to the political will to render Sanjay Gandhi's brain child of a people's car a success. Not only did the company benefit from the limited market reforms, but it also profited from preferential treatment by the Indian Government who held a majority stake in the company. A range of policy measures were specifically drafted to support the company. For example, in



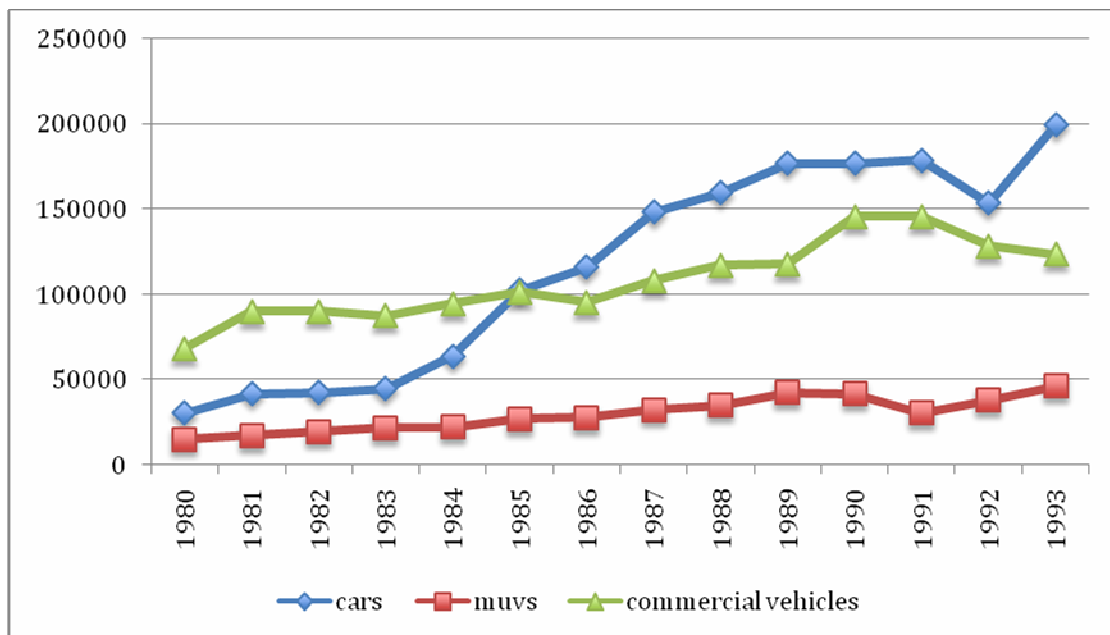
1983 the Indian Government “issued a special notification extending substantial reduction in customs and excise duties to automobiles that had a capacity of no more than 1000cc” (Venkataramani, 1990: p. 62). While this notification strongly benefited Maruti-Suzuki, which was about to produce an 800cc vehicle, the other two main competitors were put at a disadvantage by this measure. Maruti-Suzuki clearly became a ‘national champion’ whose development Indira Gandhi vowed in 1983 at the factory inauguration would be her personal interest. It is probably precisely the “politicised origin” that also allowed Maruti-Suzuki to develop without too much direct political interference in its operations. Although Maruti-Suzuki benefited from economic reforms and preferential treatment as a public sector company, its relation to the government diverged from earlier modes of Government-Public Sector Undertaking nexus in that the government largely abstained from influencing operative decisions in the company to render the project a success (cf. Shirali, 1984; D’Costa, 2005).

Thus, it was essentially this interplay of an emerging market demand for small, fuel efficient cars, economic deregulation and political support that shaped the emergence of India’s small car path. Its emergence was inextricably linked with the Government Company Maruti Udyog and Suzuki. Soon after Suzuki’s involvement the other players Hindustan Motors (HM) and Premier Automotive Limited (PAL) lost their market share and were outperformed by Maruti. From the 1980s onward, Indian passenger car sales were dominated by Maruti cars in the lower segments. At the time of its introduction, the Maruti 800 not only offered superior product technology, but also sold at a substantially lower price than the cars of the main competitors HM and PAL. Until the market liberalization in the 1990s the small car path was dominated by Maruti that absorbed in the early 1990s about 62 % of the market share (see figure 2).

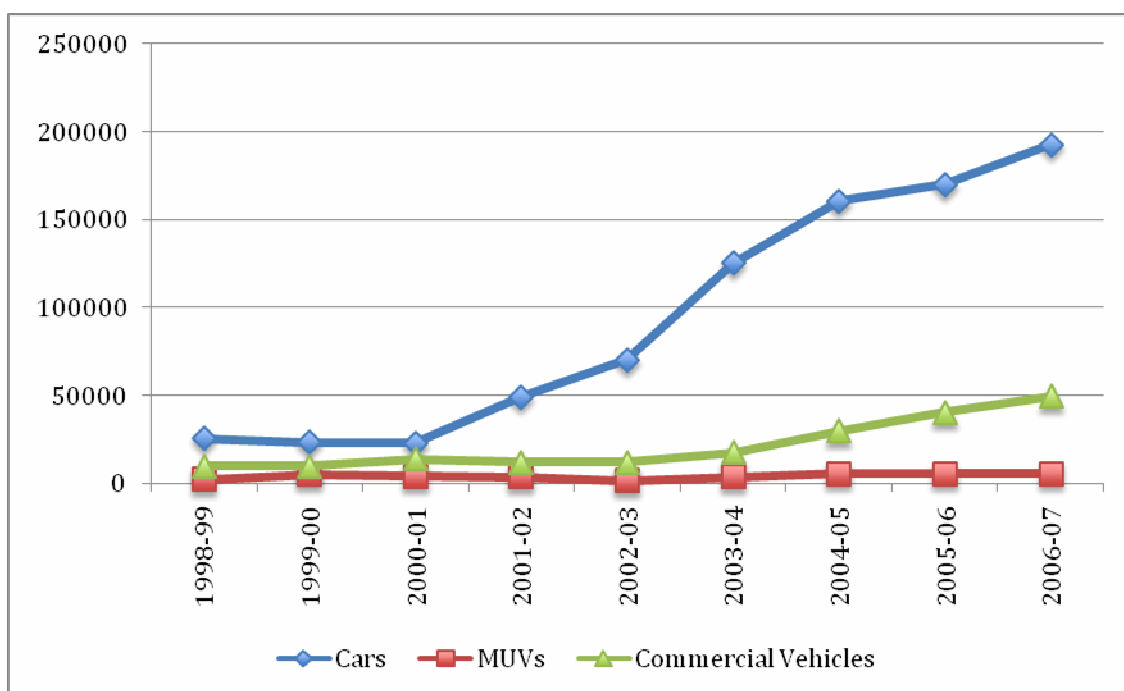


**Figure 2. Market Share of the Indian Passenger Car Market 1990-91 (Mohnot 2001:61)**

While the 1980s saw the emergence of India’s small car path in sales and production terms and for the first time higher production of passenger cars compared to commercial vehicles (see figure 3), research and development (R&D) for small cars played a marginal role. Basically all product and production competence lay in the hands of the foreign partner Suzuki. First efforts to set up R&D in Maruti, mainly aimed at minor product adaptation to local road and climate conditions (Mohanty *et al.*, 1994). By the same token, production was firmly focused on domestic demand. As the figure below shows overall exports remained negligible until the 2000s (see figure 4).



**Figure 3. Production of Cars, Jeeps and Commercial Vehicles in India, 1980 to 1993 (Compiled by SIAM 2006 ) (Production in Numbers)**



**Figure 4. Export Trend of Cars, MUVs and CVs, 1998-99 to 2006-07 (Compiled by SIAM 2006:12) (Production in Numbers)**

### 3 Change and Continuity of India's Small Car Path From the 1990s Onward

In the 1990s and especially in the 2000s, India's small car path continued to develop and grow stronger. While it was still the domestic demand structure that sustained the small car path in sales and production terms, the emergence of small car export and R&D additionally strengthened the path. As the small car path developed further, there were changes in the path's qualitative and quantitative terms. These changes were largely rooted in India's economic reforms that started in the 1990s and received a new boost in the 2000s.

### 3.1 A New Industrial Policy in the 1990s

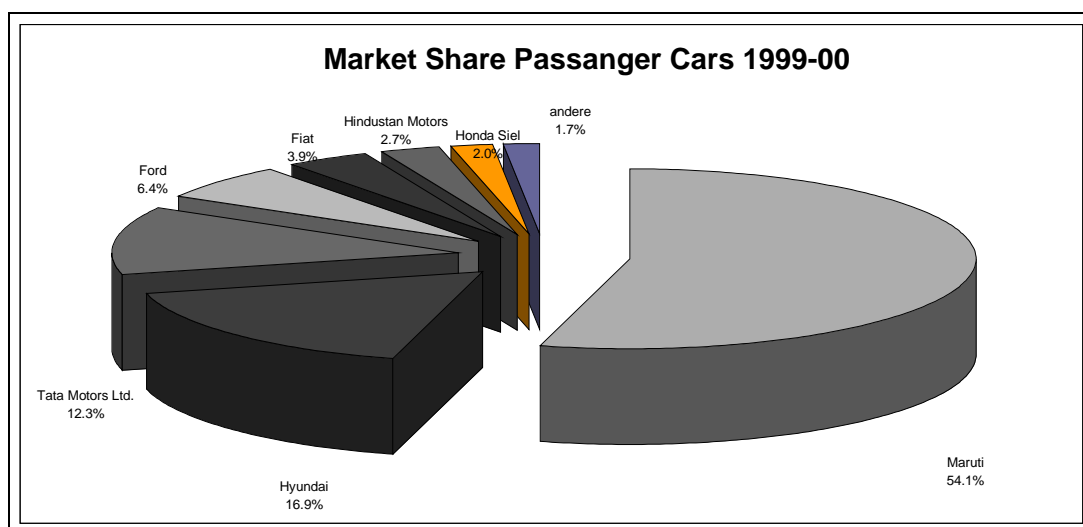
Following the balance of payment crisis in the early 1990s, the Indian Government launched stabilizing measures and embarked on a New Industrial Policy in 1991. First stabilizing measures included the reduction of the fiscal deficit and the devaluation of the Indian rupee. While the stabilization measures aimed at short-term alleviation of the economic crisis, the reform program addressed structural problems in the Indian economy with a more long-term approach. Internally, the reforms focussed on shifting the economy from a State-led coordination and State-led investment growth regime to a more market-led coordination and market-led investment growth regime. This implied a massive de-regulation of private sector controls and a step-wise privatization of public sectors and their enterprises. Externally, the reforms aimed at liberalizing the trade regime summarized by Krueger and Chinoy (2002) as follows:

In the first two years of the reforms, measures liberalizing the trade regime included: (a) the removal of import licensing requirements for most imports (although prohibitions on the import of consumer goods remained); (b) the beginning of a program of tariff reductions; (c) restrictions on inflows of foreign direct and portfolio investments were significantly eased; (d) a number of export restrictions were removed or relaxed (although some remained). (Krueger and Chinoy, 2002: p.23)

For Indian companies, the liberalization implied the emergence of international competition in what used to be an entirely protected market. Yet, the liberalization pace was incremental with periods of slow down. For example, import tariffs remained high and indigenization requirements for FDI stayed largely in place throughout the 1990s. In the mid-1990s, the reform-speed even lost momentum (Becker-Ritterspach, 2008a).

### 3.2 Economic Reform and New Players in the Small Car Segments

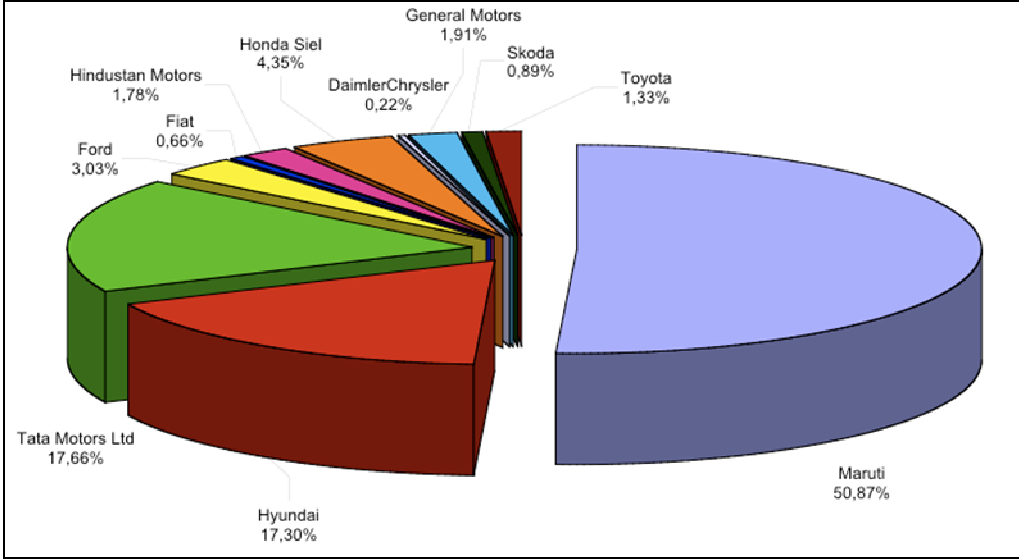
On the supply side the economic liberalization showed its first effects in 1993 with the abolishment of production licenses. Like in other sectors, import tariffs were reduced and the 'Phased Manufacturing Program' was reformulated. Moreover, the pre-entry security for investment decisions (such as expansion, diversification, merger and acquisition) for big companies – such as companies falling under the Monopolies and Restrictive Trade Practices Act (MRTP, implemented in 1969) – became obsolete (Mohnot, 2001). While a number of strict FDI controls stayed in place through the 1990s, the 2000s see a further



**Figure 5. Market Share of the Indian Passenger Car Market 1999-00 (Compiled by Centre for Industrial & Economic Research 2002:9)**

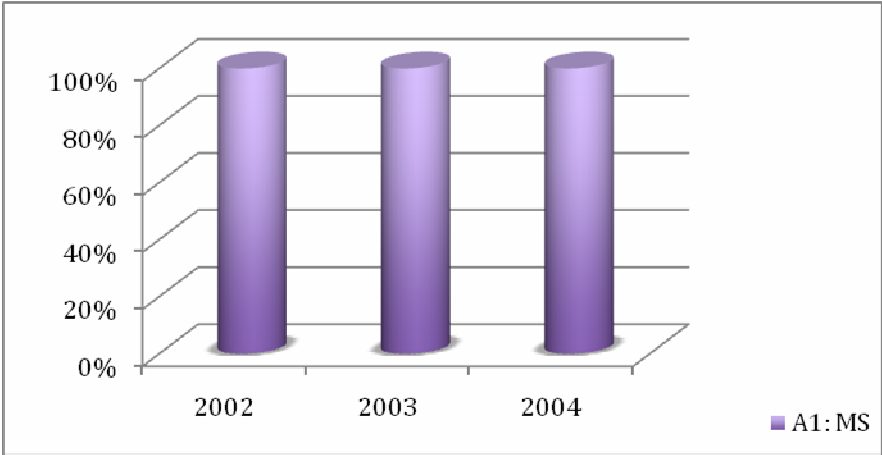


liberalization of the FDI regime (lower import tariffs, abolishment of local content requirements, 100% foreign ownership, dropping mandatory minimum levels for investment etc.) (Becker-Ritterspach 2008b).



**Figure 6. Market Share of the Indian Passenger Car Market 2004-05 (SIAM 2006:107)**

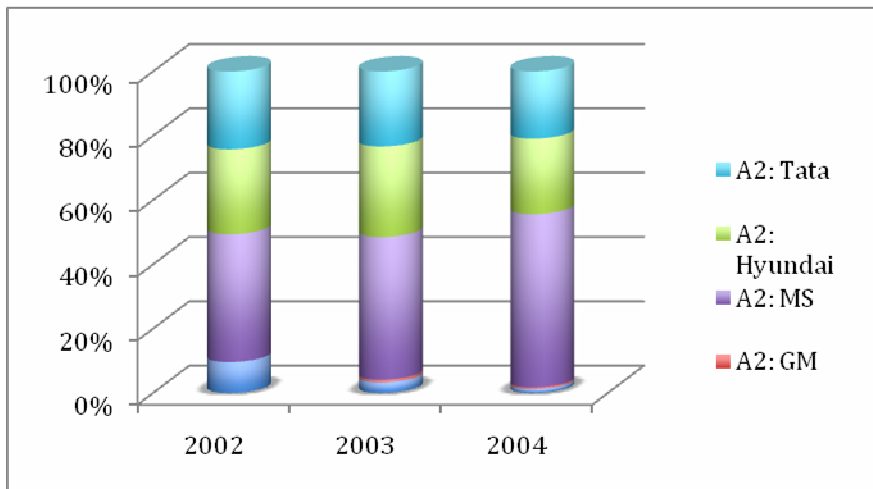
For the development of the small car strategy the de-licensing and opening up of the economy basically implied that new players, domestic and international, were allowed to enter the market for passenger car production. For Maruti-Suzuki, which dominated the small path, this implied an increasing number of competitors, who also tried to cater to small car or lower market segments<sup>2</sup>. This was particularly the case with regard to Hyundai and Tata but also Ford, GM and Fiat (see figure 5 and figure 6). Yet, despite inroads by competitors, Maruti-Suzuki (MS) could defend its market share in the lowest market segment, the Mini (A1) segment. On the one hand, this had to do with the condition that no other manufacturer offered a competing product (the absence of a competing product) in the Mini (A1) segment (see figure 7).



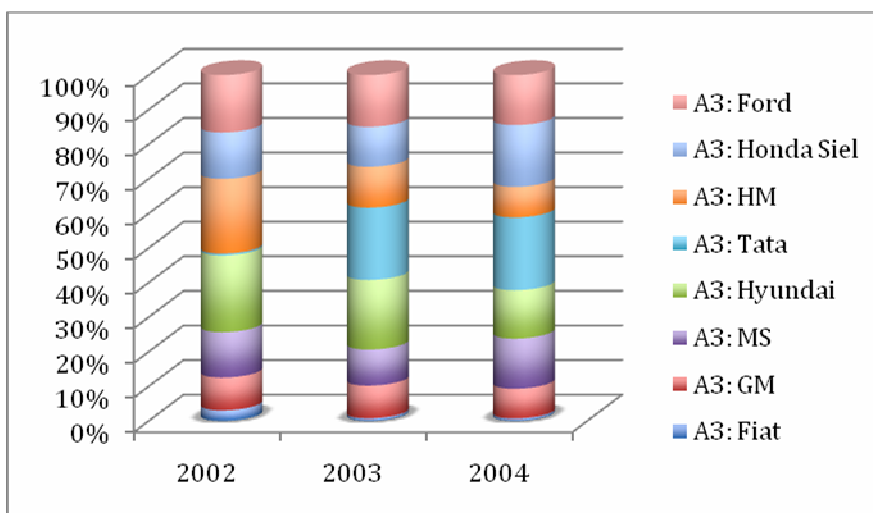
**Figure 7. Development of Passenger Car Mini (A1) Segment, 2002-2004 (SIAM 2006:100)**

<sup>2</sup> Based on vehicle length and price, India’s automobile market is commonly segmented as follows: A1/A mini segment (up to 3400 mm; < 5000€), A2/B compact segment (3401-4000mm; 5000-8000€), A3/C mid-size segment (4001-4500mm; 8000-13000 €), A4/D executive segment (4501-4700mm; 13,000-22,000 €), A5/E premium segment (4701-5000mm; 22,000 € +), and A6/E+ luxury segment (more than 5000mm) (ACMA, 2006)

On the other hand, Maruti-Suzuki was able to defend its market share in the Compact (A2) and Mid-Size (A3) segment due to its product offensives and with its country-wide service and sales network, owing to a first-mover advantage (see figure 8 and figure 9).



**Figure 8. Development of the Passenger Car Compact (A2) Segment, 2002-2004 (SIAM 2006:100)**



**Figure 9. Development of the Passenger Car Mid Size (A3) Segment, 2002-2004 (SIAM 2006:100)**

### 3.3 Economic Reform and Small Car Demand

The liberalization and India’s new industrial policy not only had a strong impact on the supply side for the production of small cars; equally important was the impact the liberalization had on the demand side for small cars in India.

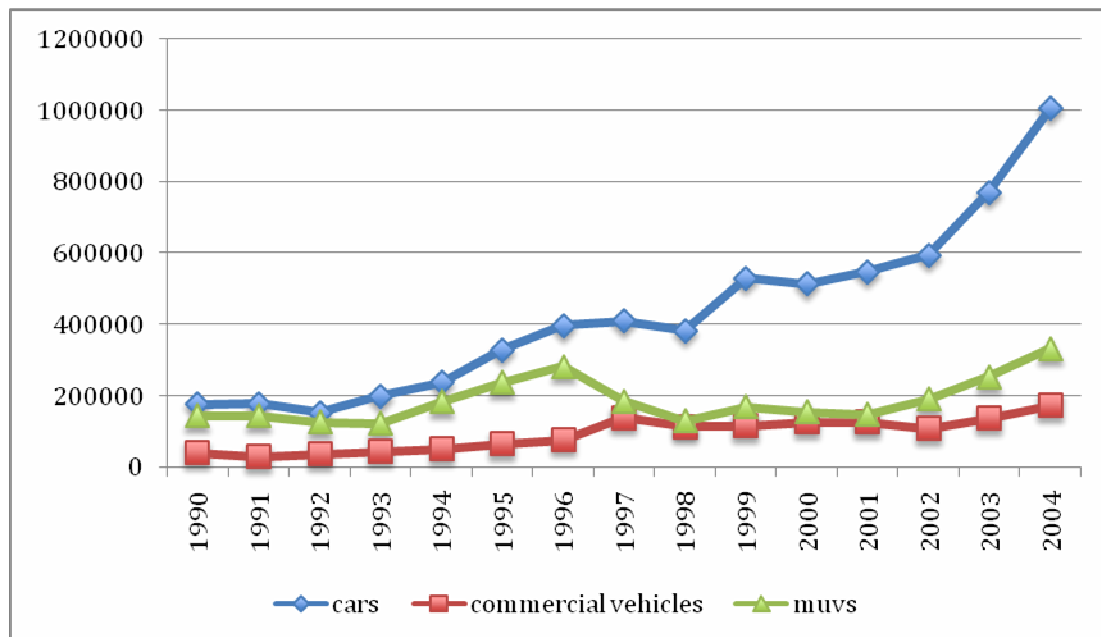
In 2004/2005 the sales of passenger cars and multi-utility vehicles crossed for the first time the 1 million mark (Maruti Udyog Ltd., 2004). In 2004, India was “the fastest-growing large market for passenger cars in the world” (The Economist Intelligence Unit, 2006: p.40). Yet, it remained to be a small car market. The Economist Intelligence Unit stated in this context:

India’s car market is, however, strikingly one-dimensional: the mini- and compact car segments combined accounted for 74.5% of new-car sales in April-December 2004, the first nine months of the fiscal year. One car in particular, Maruti’s ubiquitous 800 model, with an engine size of less than 1000cc, remains the

biggest seller, although its market share plummeted to 15% in 2004 from around 25% in previous years. Sales in the luxury-car segment – vehicles priced at US\$20,000 and above – doubled between 2002 and 2004, although they make up only 4.6% of the market. Few inexpensive cars are imported because of high duties, although import tariffs are coming down. (The Economist Intelligence Unit, 2006: p. 41)

It was the highly price sensitive, lower market segments (especially the Mini (A1) and Compact (A2) Segment (see figure 10 and figure 11)) that benefited strongly from the reform-driven economic growth and particularly fiscal and monetary reforms. Also, the reform of the banking system, low interest rates and the continued reduction of excise duty rendered vehicle financing easier and stimulated entry level demand (ACMA, 2006; Nair, 2006). Lastly, the automobile industry benefited as a whole from infrastructure projects, government efforts to reduce poverty and rural development. The Economist Intelligence Unit (2006) noted that investments in agricultural efficiency already contributed to increased demand in rural areas.

India remains an overwhelmingly agrarian society, so that any initiative to raise farm incomes should translate into rising car sales. Car producers are already opening more dealerships in semi-urban and rural regions to tap rising incomes and demand, and these areas now account for a growing share of overall sales. (The Economist Intelligence Unit, 2006: p. 39)

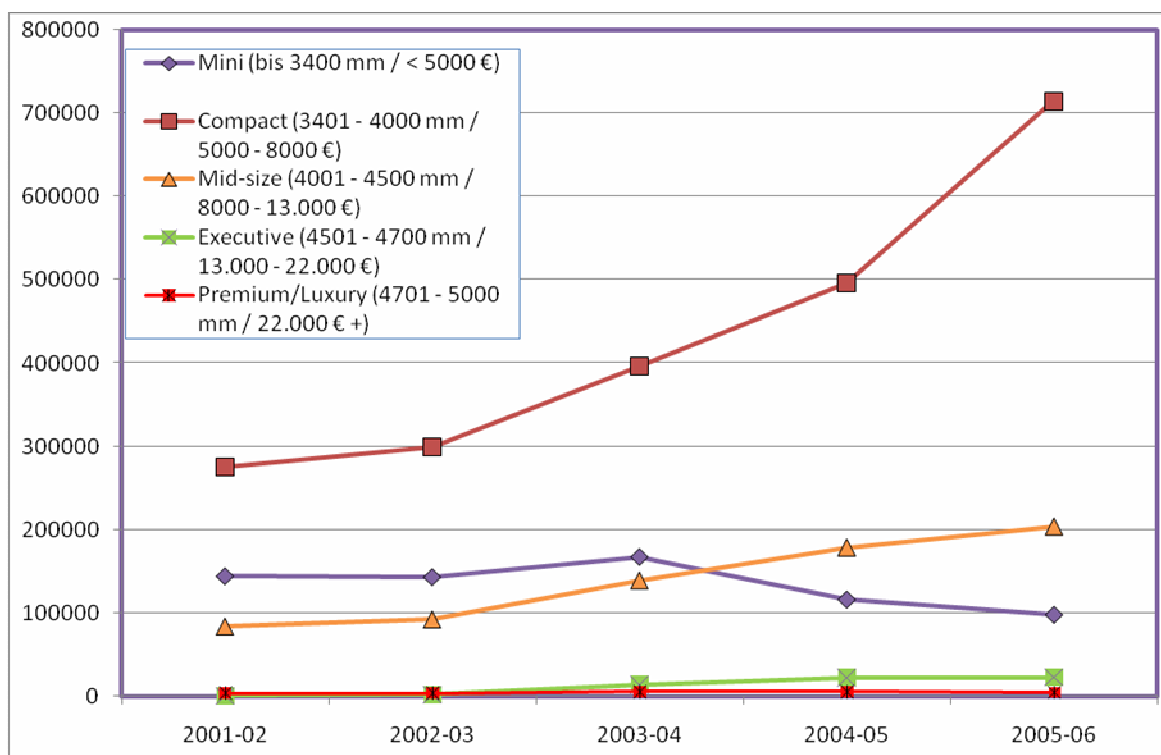


**Figure 10. Production of Cars, MUVs and Commercial Vehicles in India, 1990 to 2004 (compiled by SIAM 2006) (Production in Numbers)**

While the liberalization led to an overall opening up and segmentation of automobile demand in India, it was the lower segments that remained the strongest beneficiaries from the reforms and economic growth. Despite a strong growth of the luxury segments (starting from a very low level, however), India's social structure and disposable incomes suggest that the market remained to be dominated by lower and small car segments in the then foreseeable future (e.g. D'Costa 2005). This outlook was also shared by the Economist Intelligence Unit that reflected the Indian automobile demand scenario as follows:

According to India's National Council of Applied Economic Research, in 2002 only 6.1m households out of a total of 176m were classified as 'affluent or very rich', and therefore able to afford a personal car. However, another 56.8m households were considered to be 'well off' able to afford motorcycles and

scooters, but not cars. Some of those aspiring consumer households will have already moved into the 'affluent' group during the current economic boom. If only 10% of these 'well-off' households can move to the next level in the next five years, the number of car-owning households could rise by nearly 6m, nearly doubling current levels. Although this structural shift seems eminently achievable, economic shocks – such as a drought or a fiscal crisis that leads to much higher interest rates – could stem demand for a period of time. (The Economist Intelligence Unit Limited, 2006: p. 38)



**Figure 11. Development of the Passenger Car Market by Segment in India, 2001-02 to 2005-06 (Compiled by ACMA 2006)**

The economic sustainability of the small car path rests above all on the nature of domestic demand scenario in the years to come. This demand scenario is constituted by India's market reform and economic growth, the political will to further develop the small car path and above all the social structure and income situation that create demands at the lower end (see table 2):

**Table 2. Incomestruure and Buying Power (*BusinessWorld* 2003-04)**

<i>Incomestruure</i>	1994-95	1999-00	2005-06
<b>Rich</b> (above INR 215,000) Owns cars, PCs, luxury items	1 million households	3 million households	6 million households
<b>Consumers</b> (INR 45,000 – 215,000) Owns bulk of branded consumer goods, 70% percent of two-wheelers, refrigerators	29 million households	66 million households	75 million households
<b>Climbers</b> (INR 22,000 – 45,000) Have at least one many, durable (TV, mixer, sewing machine)	48 million households	66 million households	78 million households
<b>Aspirants</b> (INR 16,000 – 22,000) Have bicycles, radios, fans	48 million households	32 million households	33 million households
<b>Destitutes</b> (Less than INR 16,000)	32 million households	24 million households	17 million households

It is also this basic condition that entices new players to introduce small or/and lately mini cars into the Indian market. Cases in point are the Tata Nano (see table 3) and yet another mini car, Renault and Bajaj are planning to introduce in cooperation by 2011 (e.g. Lamparter, 2008). Especially the mini-car projects are likely to have a substantial impact on the Indian automobilisation, as Baig (2008) states:

Impact on the auto market: Priced at nearly half the price of the cheapest Indian car but three times the price of an average motorcycle, the Tata Nano will create a new market niche. It may just end up attracting some 5% of the 7 million annual buyers of two-wheelers and define a new entry level for cars. Indians bought 1.2 million cars last year and the Tata Nano will probably add some 3 - 400, 000 new buyers to this. Bigger cars however are likely to remain unaffected and motorcycles and scooters will continue to sell. (Baig 2008: p. 2)

**Table 3. Maruti 800 and Tata Nano Compared (Rediff News 2008, AutoCar India 2008, TopGear 2008, Baig 2008)**

	<i>Maruti 800 (Passenger Car)</i>	<i>Tata Nano (Passenger Car)</i>
Seating capacity	4	4-5
Body size (length x width x height)	3.335 m x 1.440 m x 1.405 m	3.1 m x 1,5 m x 1.6 m
Kerb weight	665 kg	
Engine type	4-stroke cycle, 3 cylinder	multi-point fuel injection petrol engine, 2 cylinder
Displacement	796 cc	623 cc
Maximum horsepower	39 HP	(33 HP)
Fuel consumption	18,3 km per litre	20 km per litre (estimation)
Fuel	Petrol	Petrol
Price in Rs.	190 000 – 230 000 (plus taxes)	100 000 (plus taxes)

### 3.4 A New Government Focus on the Development and Export of the Small Cars in the 2000s

Apart from the changing FDI regime that potentially invites new players to compete in the small car segment, the 2000s sees another important shift. As part of its privatization policy, the Indian Government pulled out of Maruti-Suzuki. With this shift, there was also a shift in the Indian government's small car policy. Until the end of the 1990s the promotion of the small car strategy was intimately connected with the Indian government's stake in Maruti. This promotion gradually shifts in the 2000s, by creating economic incentives for all manufacturers catering to the development, production and export of small cars. Thus, while the political will and agenda to see the small car sector thrive remains an important ingredient in the economic sustainability of the small path, there is a change with regard to the level of influence. This level moves from the company to the sector level.

But let us take a closer look at continuity and change in the auto policy. Promoting sector conditions that facilitate small car R&D, production and export become important building blocks in the new auto policy in the 2000s. The Indian government's Auto Policy of 2002 and the Automotive Mission Plan (AMP) 2006-2016 (see also table 4 and table 5) state respectively that:

Domestic demand mainly devolves around small cars not exceeding 3.80 meters in length. Small cars occupy less road space and save on fuel. These capture more than 85% of the market. India can build export capability and become an

Asian hub for the export of small cars. The growth of this segment needs to be spurred. (Ministry of Heavy Industries & Public Enterprises, 2002)

In order to raise the contribution of the automotive industry to GDP from 5.2% to 10%, there has to be a focus on both the domestic market as well as exports. Domestically the focus should be on developing and selling appropriate products for the large population of the country. These products could include cost effective small carriers, strong, rugged, low cost vehicles for the rural market, USD 300-350 motorbikes and small, safe four wheelers for family transport. (Ministry of Heavy Industries & Public Enterprises, 2006: p. 13).

**Table 4. Objectives of the 2002 Auto Policy (Source: Ministry of Heavy Industries & Public Enterprises, 2002)**

This *policy aims* to promote integrated, phased, enduring and self-sustained growth of the Indian automotive industry. The objectives are to:

- (i) Advance the sector as a lever of industrial growth and employment and achieve a high degree of value addition in the country;
- (ii) Promote a globally competitive automotive industry and emerge as a global source for auto components;
- (iii) *Establish an international hub for manufacturing small, affordable passenger cars and a key center for manufacturing Tractors and Two-wheelers in the world;*
- (iv) Ensure a balanced transition to open trade at a minimal risk to the Indian economy and local industry;
- (v) *Conduce incessant modernization of the industry and facilitate indigenous design, research and development;*
- (vi) Steer India's software industry into automotive technology;
- (vii) Assist development of vehicles propelled by alternate energy sources;
- (viii) Development of domestic safety and environmental standards at par with international standards.

A core rationale of the new auto policy is that the development of the Indian automobile industry (in production and R&D terms) crucially depends on volumes. Volumes, in turn, can only be realized in India if the vehicles produced and developed are affordable for Indian consumers. Specific measures to develop the small car path include fiscal policies such as lower excise duties for small cars. In the 2000s, the Indian Government reduced excise duty for small cars to 8%, contrasting with the 16% for other passenger cars (Ministry of Heavy Industries & Public Enterprises, 2002).

Thus, despite new emphases in India's automobile policy, we see above all continuity in the goal and motivation for fostering a small car path. An old issue is that small cars were seen as a *sine qua non* to realize mass production in India. Mass-production, in turn, is seen as a prerequisite for the growth of the Indian automobile industry and its contribution to the Indian economy. The emphasis on fuel-efficient cars and export capability are also old policy issues and reflect India's continuing balance of payments challenge. At the same time, the concern for safety, environmental pollution and infrastructure bottlenecks are new policy issues that additionally drive the small car path (Ministry of Heavy Industries & Public Enterprises, 2002 and 2006).

### 3.5 The Emergence of India as a Worldwide Research and Production Hub for Small Cars

Economically, the small car path in India has reached a sustainable level. In the past this sustainability was largely driven by the nature of domestic demand. However, the Indian government envisions this path growing even stronger by turning India into a worldwide R&D and production hub. The Automobile Mission Plan states in this context:

Export opportunities for four wheelers would lie primarily in the small car segment as Indian companies have gained expertise in manufacturing vehicles in this



segment and enjoy an advantage over other low cost countries. India should capitalize on this expertise and target becoming a manufacturing hub for A/B class vehicles. This is already being leveraged by OEMs like Hyundai with Santro, Suzuki with Maruti 800/Alto and TATA Motors with Indica. (Ministry of Heavy Industries & Public Enterprises, 2006: p. 13-14)

**Table 5. Summary of Recommendations of the Automotive Mission Plan 2006-2016 (Source: Ministry of Heavy Industries & Public Enterprises, 2006, p. 47)**

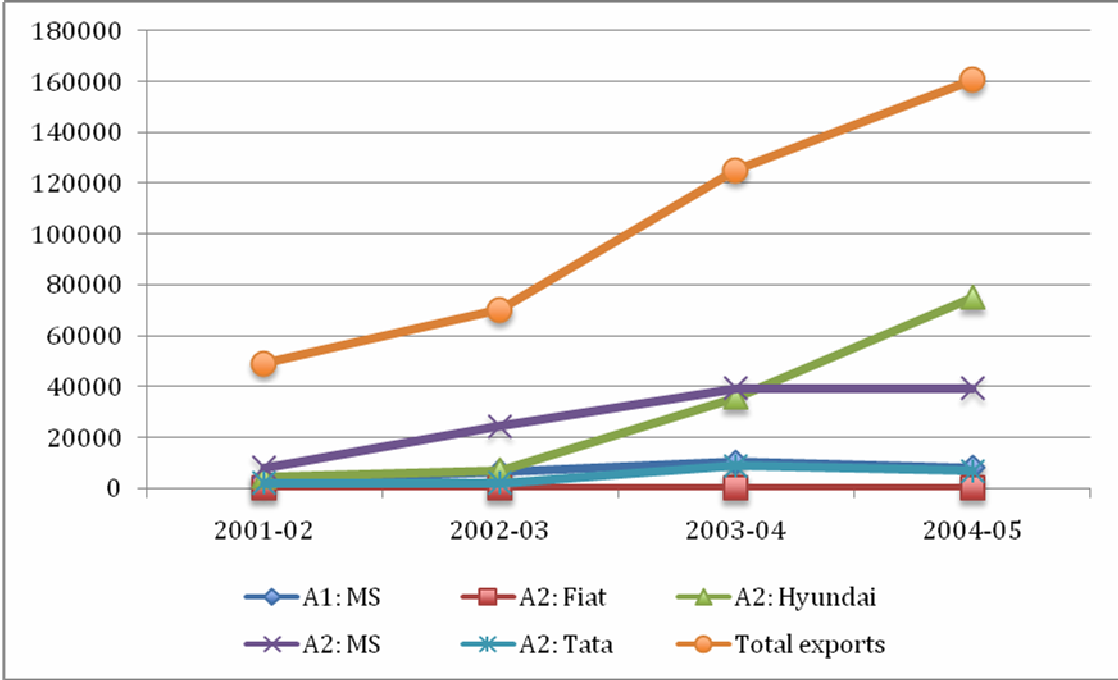
<ol style="list-style-type: none"> <li>1. Manufacture and export of small cars, MUVs, two &amp; three wheelers, tractors, components to be promoted</li> <li>2. Negative list of items and rules of origin for FTAs/RTAs to be followed</li> <li>3. Appropriate Tariff Policy will be followed to attract investment</li> <li>4. Specific measures will be taken for expansion of domestic market</li> <li>5. Incremental Investment of US\$ 35-40 Billion in the Automotive Industry during the next ten years to be encouraged Exports to be encouraged</li> <li>6. Exports to be encouraged</li> <li>7. Policy initiatives for competitiveness and development of technology would be taken</li> <li>8. National Road Safety Board to act as the coordinating body for promoting safety</li> <li>9. Inspection and Certification system to be strengthened by encouraging public-private partnership</li> <li>10. Fleet Modernisation to be encouraged</li> <li>11. Implementation of GST should be time bound</li> <li>12. National level Automotive Institute for training on automobiles at ITIs and ATIs to be set up</li> <li>13. Centers for automotive manufacturing excellence to be created</li> <li>14. Adoption of ITIs and ATIs by OEMs, Tier I component manufacturers to be encouraged</li> <li>15. An Auto Design Centre to be established at NID, Ahmedabad</li> <li>16. NATRIP to act as Centre of Excellence for Technical Design Data</li> <li>17. Integration of IT in manufacturing and in Automotive infotronics to be promoted</li> <li>18. Infrastructure development around identified automotive clusters to be undertaken</li> <li>19. Closer partnership between Industry, research institution and academia for innovation and IPR to be encouraged</li> <li>20. R &amp; D for product, processes and technology to be incentivised</li> <li>21. Continuous investment in road, port, railways and power to be encouraged</li> <li>22. Strive for Labour reforms</li> <li>23. Road Map for Auto Fuel Policy beyond 2010 would be drawn</li> <li>24. Rationalisation of motor vehicle regulations to be undertaken</li> <li>25. Setting up of virtual SEZ and Auto Parks for auto component industry would be considered</li> </ol>
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Concrete measures recommended or in the process of being implemented include:

- investment support (deduction on R&D expenditure,
- excise duty concessions, tax/levy exemption, research grants)
- introduction of stiffer emission standards; infrastructure investment (ports, roads, rail, energy/power)
- set up of testing-, certification and –homologation facilities
- development of centres of excellence in the area of: noise (at Mansear), vibration & harshness, auto components (at Mansear); engine and material testing (at Pune); automotive infotronics and crash testing (at Chennai); testing track and vehicle dynamics (at Indore) development of focused lab facilities at the Indian Institutes of Technology and Management (Ministry of Heavy Industries & Public Enterprises, 2006).

While the National Automotive Testing and R&D Implementation Project (NATRIP) is envisioned to play a coordinating role, different States have also taken individual initiatives with regard to providing R&D facilities. The government of Maharashtra, for example, has set up what it calls an 'Auto Cluster' providing testing facilities for OEM and their suppliers (Interview MCCI). While the political initiative is there, the question is to what extent the Indian automobile industry actually moves beyond being a mere technology adopter and producer for the domestic markets?

In terms of exports, the 2000s show a new trend pointing towards rising exports in the passenger car sector. What is more, most of the vehicle exports do focus on the lower market segments with Hyundai being the dominant exporter (see figure 12 and figure 13).



**Figure 12. Export Trends of the A1 (Up to 3400 mm) and A2 (2401 - 4000 mm) Segment Compared to the Total Export (A1 to A6 (5001mm & above)) (Compiled by SIAM 2006:61) (Production in Numbers)**

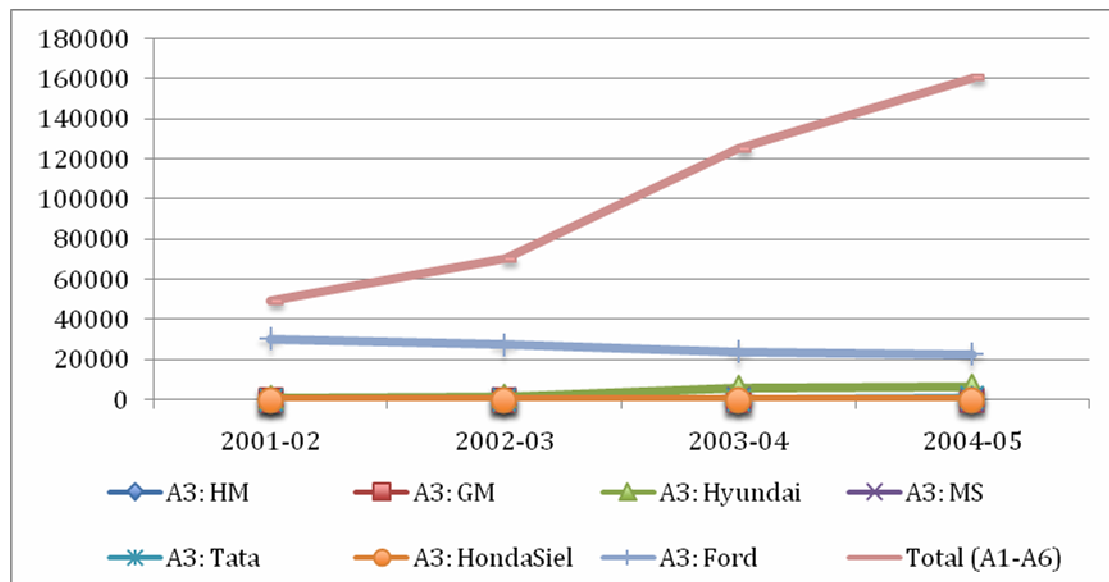
With regard to R&D we also see an emerging trend of using and developing local capability. On the one hand there is a general development of increasing R&D expenditure in the Indian automobile industry (see table 6), which has also been stimulated recently by more stringent emission regulations (Shastry, 2004).

**Table 6. 15 Four Wheelers Ranked in Terms of R&D Expenditure 2006-07**

Company	Total Gross Turnover Rs. In Million	Gross Profit Rs. In Million	R&D Expenditure Rs. In Million	R&D Expenditure % of Turnover
Ashok Leyland	83,047.17	6,045.06	1,564.02	1.88
Mahindra&Mahindra	144,395.19	15,435.43	1,493.00	1.03
GM India	22,815.40	-	840.00	3.68
Tata Motors	321,298.80	25,731.80	796.86	0.25
Maruti Suzuki (MS)	151,823.00	17,500.00	639.00	0.42
Force Motors	12,313.00	31.00	401.00	3.26
Eicher Motors	18,844.40	988.60	363.30	1.93
Ford India	27,223.00	-	148.00	0.54

Premier	891.66	550.67	90.00	10.09
Swaraj Mazda	6,902.00	354.00	53.00	0.77
Hyundai Motor	99,159.00	-	47.00	0.05
Hindustan Motors (HM)	8,064.00	128.00	20.00	0.25
Fiat India	5,200.00	-	17.10	0.32
International Cars & Motors	219.68	-101.86	16.83	7.66
Toyota Kirloskar	45,540.91	-	7.05	0.02

On the other hand, there is an increasing small car R&D focus among some manufacturers, who seek to develop India into their corporate hub for car R&D. A case in point is Maruti-Suzuki that is in the process of developing the Indian operation into a R&D hub for small cars. Similarly, Tata has invested substantially in small car R&D in recent years (Venugopal, 2005) and Hyundai and Fiat have also established regional R&D centres in India (The Economist Intelligence Unit Limited, 2006). The Tata Nano is probably the most recent and prominent example of India's rising local R&D capability in the small car segment. While Tata strongly relies on local partners/suppliers (most of which have international involvement like Bosch, Freudenberg, Continental, Johnson Controls, Denso, Delphi, Ficos, EDAG, Taco



**Figure 13. Export Trends of the A3 (4001–4500 mm) Segment Compared to the Total Export (A1 to A6 (5001mm & above)) (Compiled by SIAM 2006:61) (Production in Numbers)**

Visteon, INA, FAG, Mahle, Tenneco (Lamparter, 2008; Lang, 2008)) to develop the Nano and its components, it is to a large degree Indian engineers who do the actual development. Interviews held in May 2008 underline that it is not only the low cost of engineers that make India a highly attractive location for small car development. More important than this is the Indian engineers' intimate understanding as to what is essential and what is not with regard to building a vehicle that has to satisfy developing country requirements and conditions (Interview with Managing Director Mercedes-Benz India).

#### 4 Conclusion: Challenges to the Sustainability of the Small Car Path in Future

Looking at a host of factors including India's demographic development (a young and fast growing population), upwards social mobility (rising per capita income from a low level), low vehicle density (8 per 1000 in 2004 (Statistisches Bundesamt, 2006)), rising oil prices,

infrastructure bottlenecks and pollution problems, a small car path seems to be not only economically a sustainable path for India's future auto-mobilization. At least, it appears to be the most sustainable path within the traditional ambit of mass-motorization.

Yet, the same conditions that suggest a small car path also pose limitations. For example, rising oil prices and India's dependence on oil pose a threat, as small car demand may be more vulnerable in the face of financial crises than other segments. And this situation may not only apply to domestic demand but also to exports. Another threat to the socio-economic sustainability of the small car path is the poor road infrastructure in India (Haldea, 2008). Clearly, small cars need less road space than large cars. However, as an interviewee pointed out, if two wheeler owners migrate at a sudden and substantial rate to small car segments, traffic will come to a virtual standstill given an infrastructure development that is already now unable to keep pace with vehicle growth on India's roads. This is also why the new mini car producers (e.g. Tata Nano target markets) strongly eye rural areas, where road traffic is still moderate.

While rising oil prices and infrastructural problems pose a threat to India's small car path in socio-economic terms, there are other problems of sustainability. The high pollution in Indian cities poses already now a serious threat to air quality and human health. An extensive growth of small car demand (replacing two wheelers) is, therefore, in environmental terms not sustainable. It is the dependence on oil and the recognition of environmental problems that has also pushed the Indian government towards creating incentives for alternative fuels and engine technology (Ministry of Heavy Industries & Public Enterprises, 2002 and 2006).

There is finally the question of whether India can develop its automobile industry into a small car production and research hub for the world. There are certainly some indications that India may have a competitive edge in this segment, owing to its own national demand scenario, its past experience and policy measures supporting such an end. At the same time, there are factors that work against the economic sustainability of such a path. Small car production relies above all on low cost. India, however, has seen sharp rises in labour cost in the automobile industry and suffered from low productivity, rigid labour laws and high infrastructure cost, despite some improvements in this regard (Belzowski *et al.*, 2007). A cost comparison study comparing the Indian and Chinese industry found, for example, "the cost of manufacture of passenger vehicles in China is 23% lower than in India with the principle difference due to higher taxes and the cascading impact in India" (Ministry of Heavy Industries & Public Enterprises, 2006: p. 12). Clearly, China has also seen increases in labour cost in recent years. However, there may be other emerging economies that are more competitive than India and China in this regard. With regard to R&D the situation may be slightly different. After all, India offers one of the largest pools of well trained engineers in the world and the national and State governments are investing in R&D facilities as well as human resource development that is specifically geared towards the automobile industry (Ministry of Heavy Industries & Public Enterprises, 2006). Here, it remains to be seen if the Tata Nano is more than a one-off in setting the pace for global automobile development.

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