

**LONG TERM EFFECTS OF PROTECTION ON THE
PASSENGER CAR INDUSTRY, 1955 to 1990**

Dissertation submitted to the Jawaharlal Nehru University
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MASTER OF PHILOSOPHY

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DECLARATION

This is to certify that the dissertation titled, **Long Term Effects of Protection on the Passenger Car Industry, 1955 to 1990** submitted by **Malini Chakravarty**, in partial fulfilment of the requirements for the award of the degree of Master Philosophy (M . Phil) of this university, has not been previously submitted for any degree of this or any other university. This is her own work.

We recommend this dissertation to be placed before the examiners for evaluation.

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However, I alone am responsible for the errors that remain.

Malini Chakravarty

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Chapter One

Introduction

The passenger car industry in India has enjoyed protection right from its inception, and more systematically so after independence. On the other hand, it had to operate under varying sets of regulatory measures from time to time. One of the major constraints it had to face almost all through, was the rationing of foreign exchange. Its freedom to import was, therefore, greatly circumscribed. But, that is by and large, an unavoidable problem faced by industries in an import-substituting regime, which prefers building up a base for producing capital goods as the first step towards import-substitution.

The adverse effects of such a regime of control have been widely discussed in macro-economic literature. We have chosen the present subject of study mainly because this is one of the industries which have achieved very high rate of growth during what we have called the 'Maruti Phase', beginning 1985-86. Protection, however, has not been withdrawn from the industry. In fact, it appears that, protection enjoyed by the industry during this phase was wider than in the past. It is the combination of high growth with continuing and sometimes expanding protection which raises some significant questions. Some of these questions constitute the basis for our study. As regards the period chosen for study, it has been mainly based on two reasons: first, the available data for car production begin with 1955; and second, the year happened to have closely followed the Tariff Commission, 1953, which had examined the

need for protection to the car industry, and closely followed by the beginning of second five year plan period, which marked the beginning of the import-substituting strategy.

Paucity of information and difficulty in collection whatever should be available have posed serious problems, which we came to understand only during the process of study. Balance sheets of public limited companies, we had thought, would be accessible without much difficulty. Experience proved otherwise, and we could not get for close scrutiny more than a few. Collection of trade data and data regarding commodity-wise excise and customs revenue, it appeared would take a much longer time than we could have spent on it. Besides, in case of components and ancillaries disaggregated data pertaining exclusively to the car industry are not available in many cases. Similar was the experience with regard to some administered prices relevant to our study. Electricity rates payable by some industries, or prices of steel supplied by the public sector units to the car industry from time to time, are important variables for our study. We could not get those.

All that have created limitations, in the absence of which, some aspects or issues could have been more rigorously analysed, in the interest of a more comprehensive assessment. In some case, we have kept the relevant issues out of consideration in spite of our keenness to examine those. We have therefore, concentrated on a few decisive questions so that the essential part of our finding remains tenable in our understanding, in spite of relative inadequacy of rigour and coverage in some parts. The study is divided into ~~five~~ chapters excluding the present introductory one. In Chapter Two, we discuss the overall

framework of the problematic, the boundaries of the theme, and the relevance of this study. Development of the industry is discussed in Chapter Three, while the major policy matters and protective action have been taken up in Chapter Four. Assessment of the effects of protection and an outline of the experience in some other countries have been presented in Chapter Five. In the sixth and the last chapter, we have presented the outline of a conclusion.

Chapter Two

The Primary Argument

The Indian passenger car industry, an infant in terms of the volume of its product until at least 1986, has been enjoying a wide range of incentives from the state almost since its inception. Protection against competition with imports in the domestic market was in operation all through the period since independence. This was done mainly through ban on import of cars-- except with prior permission from the Government-- protective rates of customs and excise duties on cars, components and ancillaries and sometimes capital goods for these industries. The installed and utilised capacities were controlled by the Government, as a part of the planned resource allocation policy. The Government decided to give license only for a limited quantity of output, on condition that import dependence for components and ancillaries would be gradually transcended through indigenisation.

Rationing of foreign exchange too, was prevalent for long. One effect of these restrictions was a supply constraint, felt particularly in periods when excess demand was more clearly identifiable. Both licensed capacity and domestic demand were insufficient for the capacity required for the least-cost level of

output. There were however, a few years, during the seventies in particular, when the rate of capacity utilisation was much lower than the average of the preceding five or ten years. Car prices, fixed by the Government until 1975, were not always the best for satisfying the firms' expectations.

Yet, the aforesaid combination of circumstances led to an oligopolistic structure in the industry. Of the three manufacturers prior to 1984-85-- Hindustan Motors Ltd (HML) Premier Automobiles Ltd (PAL) and Standard Motor Product (SMP)---- output from the third was generally insignificant and it virtually closed shop after some years. So, since the beginning of MUL, the industry became a three-firm oligopoly dominated by MUL itself.

A substantial change in the entire situation was initiated in 1991-92 with the adoption of the new economic policy of liberalisation and closer integration of the economy with the international market and international capital. The Structural Adjustment Programme (SAP) adopted in the nineties encourages free play of the market mechanism for mobilisation and allocation of resources, and is directed towards a corresponding adjustment in the nature of the state's role. *Despite these preferences in the new policy, the car industry, the dominant firm in particular, continues to enjoy protection.* Since, however, the preferred state policy is directed towards a competitive market system, one can assume that this will extend to the car industry also. It will then have to grow under competition, it will have to acquire the competitive strength for both the domestic and the international market. Adequate growth in domestic demand will also be a necessity in that case.

The Theme of The Study

The present study is an attempt to assess the long-run effects of protection on the growth of the industry. It raises some important questions in this regard, and attempts to present a framework for answering some of those. How, for example, will the industry be affected if and when protection is completely withdrawn? Would it be able to sustain the production levels achieved in the recent years, or substantially raise those? Has it become sufficiently efficient for facing stiff competition? One part of the answer lies in the relationship between the protection enjoyed by the industry (and at times one particular firm within the industry) and its growth process. In other words, taking the first 30 years since 1955 as one long period, we investigate whether protection laid the foundation for growth during that period itself. The next task then, is to ask the same question about the long-run future. How will the industry, the existing firms in particular, fare after the free entry of well-known brand names has materialised into production?

The meaning of the term 'protection', relevant to this study, however, needs to be explained. By convention, protection in its narrow sense has come to mean provision of state support for ensuring an effective price advantage to domestic industry in its competition with foreign products in the domestic market. Such support through state intervention is necessary for nursing a new industry, since, international competition involves unequal competition with firms which have a long experience of producing and marketing of the product, generally with relative economies of scale, and efficiency of organisation. Historically, this infant-industry argument has been prior to

the idea and theory of a regulatory state as an instrument of demand management or that of the state with a more comprehensive role in supervising the development of a mixed economy, characterised as it is, by planning of public investment and regulation of private investment through different forms of control and incentives.

Apart from the growth angle, protection is seen as a means of regulating domestic consumption in favour of a planned allocation of resources across industries and sectors. The second objective is a part of an import-substituting growth policy, especially due to scarcity of foreign exchange. It is thus, directly related to the balance-of-payments problem. That is how Bela Balassa looks at it, when she says that, "Traditionally, it has been assumed that domestic producers and consumers respond to the price-raising effects of tariffs by expanding production and reducing the consumption of the commodity that has come to be protected".¹ But, protection can also have one single target of providing a price advantage-- alternately, offsetting price disadvantage-- to the domestic producer, independently of the BOP implications. At least there are some historical cases of that kind, and quite a few examples in the post-war history of developed countries. Even the infant-industry argument may not be universally relevant. The recent US-Japanese conflict on the alleged Japanese protection of its car and ancillaries industries, for example, did not mean that either side was protecting an infant industry.

¹ Bela Balassa, Structure of Protection in Developing Countries, 1971, p. 16.

Protection, in its broader sense, includes other forms of state support as well. Balassa divides the instruments of protection between 'price' and 'non-price' measures. The price measures are instruments of protection in its narrow sense, as described above. These include "ad valorem and specific tariffs, import surcharges, advance deposits for imports, and multiple exchange rates".² Developing countries adopt non-price measures like "quotas, licensing and exchange controls".³ Besides, in an indirect way, she argues, the extent of protection is also affected by other types of policy measures, such as profit taxes, credit policy, and social security arrangements. Together, these are all instruments of patronage provided by the state, determined largely by the state's preference regarding the extent of patronage, not all of which has been covered in the relevant literature. State policy, for example, may retard competition and create objective conditions for the formation of an oligopolistic market structure, and the industry may derive extra benefits from the structure, which, it is possible to logically argue, would not have been possible in the absence of such patronage. Formation of oligopoly of course, does not always depend on protection, though state patronage has sometimes helped the process.

Some types of patronage actually amount to direct subsidies. State investment in development infrastructure, for example, may become a source of subsidy for one or more industries, in a specific situation. There are many more routes through which non-market benefits can accrue to an industry,

² Bela Balassa, Structure of Protection in Developing Countries, 1971, p. 10

³ Bela Balassa, Structure of Protection in Developing Countries, 1971, p. 10

depending on the extent of regulation of an economy by the state, and the exact instruments of regulation.

In the Indian case, the scope for state intervention for both protection and restriction was wider. The Approach to The Second Five Year Plan elaborated it when it said that “The techniques to be employed may and have to vary in the light of requirements. In some cases, fiscal or price incentives may have to be relied on; in others, a licensing system may be essential; in still others, fixation of profit margins, allocations of scarce raw materials or other regulatory devices may be necessary. Sanctions of capital issues, for exchange allocations, differential tax incentives, financial assistance in suitable cases, and the general direction and control of commercial, financial, and industrial institutions are a recognised part of the apparatus of planning.”⁴ Therefore, while studying protection and its effect, one should differentiate between state intervention for protection and that for regulation amounting on occasions, to restrictions which might have neutralised some benefits of protection enjoyed by the industry.

As regards the meaning in which we use the term ‘protection’ it is the aggregate of all forms of support and incentives provided by the state to the industry, with the qualification that such support should be identifiable as explicit policy preferences, or implicitly delivering such benefits to the industry which could not have been derived without the policy or the exact mechanism of implementation of policy. Not all of that can, however, be tangibly identified, mainly due to two sets of reasons. First, protection (used,

⁴ Second Five Year Plan, Government of India, Planning Commission, p, 21.

hereinafter, in the broader sense elaborated above) cannot be fully captured at the level of a firm or an industry.

It can be more complex in the car industry than in many others. Several thousand components and ancillaries go into the making of a car. Consequently, the chain of backward linkages here is longer and the products at some points of the chain are common to several industries. Cold rolled steel, for example, is an input for a number of industries other than the car. Brake assembly, an important part of a motor car, is equally important for a truck or a bus. A single custom duty rate for it will be equally beneficial for most segments of the automobile industry as a whole. Similarly, in the example of subsidy through the road system cited above, it is shared by all types of vehicles, including non-motorised vehicles. Here too, is a case of indivisibility which renders measurements more difficult.

Measuring even the nominal protection at the industry level, therefore is vulnerable to inaccuracy. Effective protection or its rate cannot be measured within a single-industry framework anyway, even if one attempts to separate protection specific to a single industry from the protection that is common to several industries. Secondly, paucity of information and inadequacy of coverage within the available information are too serious impediments to be overcome by methods for discerning what is not visible. The particular problem that has somewhat affected the preferred comprehensiveness of this study, has already been mentioned in the Introduction.

Relevance of This Study

Protection is the opposite of free trade, and that is the strongest theoretical ground against it, especially since the sixties when trade came to be seen as the 'engine of growth'. Authors of several studies of protection have argued how it has retarded efficiency and created a built-in system that favours continuance of protection for an indefinite period. Jack Baranson has shown that the excess cost of domestic car production in Brazil rose from 6 to 71 per cent as "we move from assembly to the domestic production of 99 per cent of the value of the automobile".⁵ His finding implies that, the greater the extent of indigenisation, the higher the domestic 'excess' cost of the product. L. L. Johnson⁶ argues that, according to the decree of the Government, indigenisation in Chile was to rise from 27 per cent in 1964 to 32 per cent in 1965 and 45 per cent in 1966, and yet the excess domestic cost, as Johnson suggests, was not substantially reduced. Balassa cites the Norwegian case to argue that, it is by participating in the international division of "production process by manufacturing parts, components and accessories"⁷ that the country had five times as many cars as Chile.

The debate on protection, at the macro-economic level in particular, seems to have posed questions under assumptions based on the theorist's understanding of the history of growth of the advanced capitalist countries.

⁵ Jack Baranson, Automotive Industries in Developing Countries, p. 82.

⁶ L.L. Johnson, Problems of Import Substitution : The Chilean Automobile Industry, Economic Development and Cultural Change, January 1967, pp. 202-16.

⁷ Bela Balassa, Structure of Protection in Developing Countries, 1971, p. 79.

And, as Professor Sukhamoy Chakravarty says, *“the directional effect of trade on growth, not its effect on levels of living, cannot be adequately ascertained within the framework of conventional models”*. Therefore, “when the traditional analysis is used to recommend trade as a major engine of growth, one is overstepping the limits within which precise analysis is generally carried out.”⁸

Criticism against protection gained stronger ground after the initial theoretical conviction in favour of import-substituting growth was eroded due to the realisation that the mixed economy model had not delivered the expected goods. This more or less coincided or was followed by the period of liberalisation of most hitherto mixed economies. Liberalisation of the Indian economy, too, occurred in stages since the mid seventies, though it moved at an uneven pace and its application to different sectors or industries was spread over nearly a decade-and-a-half. The opinion favouring an outward-looking policy, with its implications for protection, was gathering strength in India during the eighties. The argument was that “an outward-looking policy framework is more conducive to technology transfer than an inward-looking one.”⁹

Our focus is on assessing the effect of protection on the industry’s long-run growth prospects, not on the effects of protection at the macro-economic level. We, investigate protection given to the car industry, some forms or instruments of protection, and try to trace how far it helped the industry in growing fast. The question of technology transfer comes in, but for a dual

⁸ Selected Economic Writings, 1992, p.82 Italics mine.

⁹ S. Chakravarty: Selected Economic Writings, 1992, p. 90.

purpose. First, for identifying, as stated above, how much strength has been acquired by the industry during the period under review. Secondly, whether the outward-looking policy which includes an open-arms approach to multinational corporations, has improved or is likely to improve the prospects of technology transfer.

At the same time, the questions raised above regarding the possible effect of protection on the growth of the passenger car industry have implications for approaching the question of efficacy of the new economic policy. It may acquire greater significance in the context of the debate about the liberalisation policy. The debate is not just about whether the new economic policy can ensure stable growth, or an optimum savings ratio necessary for such growth, but also on whether it would not impair the structural characteristics in terms of distribution of income, or lead to a recurrent debt crises and consequently to rising dependence on international capital. (The question of technology transfer is especially incorporated within the problematic of dependence.)

Some of the issues in focus within the debate have direct relevance for our theme, though there is little scope for any macro-level generalisation within or from our study. A concrete basis for answers to some important questions, however, may be identified here if we can adequately see the important connections. Greater dependence on exports, for example, are inherent in the liberalisation package. The recent boom in the passenger car industry, on the other hand, is based almost wholly on rising domestic demand. Maruti 800 played the role of catalytic agent in laying the

foundation for this demand growth in the eighties, and early nineties. (Maruti's market share has hovered around 60 per cent during the 8 years since 1984.) And, all the products of Maruti Udyog Ltd are highly import-consuming despite counter claims from the company's Management.

Therefore, the greater the share of the domestic market in the total sales of the cars, the higher will be the gap between the foreign exchange earnings of the unit and the foreign exchange expenditure. This gap can be filled by transferring foreign exchange surplus of other firms/industries, direct commercial borrowing by MUL, or its foreign equity issues. In the second and the third case, the firm itself will have to ensure financing of the gap, while in the first case, it has to be either routed through the foreign exchange market, or the central bank/state will have to intervene, under some system of foreign exchange allocation. That brings in more macro-economic questions which are outside the purview of this study.

If and so long as the domestic sales remain larger than exports, the foreign exchange gap will remain a problem. It can be solved if the gap is wholly funded by the foreign collaborator, independently of the extent of indigenisation of components and ancillaries. The experience of MUL however, has shown that indigenisation of manufacture of components does not solve the problem so long as the products used for the manufacture of components also are not indigenised. In other words, indigenisation as an import-substituting path is different from indigenisation of a finished or an intermediate product dependent on substantial imports of the inputs or raw

materials for their production.¹⁰ As regards the prospects of FDI in general, it can be considered only at the macro level.

For studying the growth prospects of a net-import-consuming industry, therefore, one has to make some assumptions about the possible macro-economic developments under different combinations of circumstances. One important question in our framework, is whether with the support from the state it received, the industry acquired a strong foundation for stable growth in the long run, without such support. The specific meaning of 'foundation' has been taken up in Chapter V. Here it can be said in broad terms that, it has four major pillars:

1. technological achievement necessary for cost efficiency including fuel efficiency of cars;
2. the degree of finesse which is preferred today by the consumer;
3. the extent of indigenisation of components which enables the industry to transcend the foreign exchange constraint; and,
4. competitiveness in the international market.

In the absence of any of these achievements, there are two possibilities of the future of this industry. Either it will continue to require a good deal of state support in various forms, including tariff protection, or, it will continue to be

¹⁰ This has now become a bone of contention between MUL and Suzuki Motors (SMC), and the Indian representative of SMC said in the second week of July 1995, that, a significant proportion of the value of gross output of MUL products will have to be imported.

a net consumer of imports, with all the attendant implications, some of which have been mentioned above in a general way. The first possibility will mean that protection has only partly achieved its purpose. The second prospect will provide a concrete empirical evidence in support of the general theoretical contention that, it is difficult for a consumer durable industry, in a developing economy, selling its product to a small proportion of the population, to enjoy accelerated growth in the long run.

Survey of Literature

There is a sizeable body of literature on protection in general, including the book edited by Bela Balassa, cited above. As regards protection to passenger car industry, we have not come across any literature specifically about it. Most studies are about the automobile industry as a whole, where protection comes in for reference, not as the subject of study. A few studies focus on one or more units in the passenger car industry, though again, not on the issue of protection itself. Literature on the automobile industry covers issues ranging from transfer of technology, research and development activities, progress of indigenisation, impact of government policies, relationship between the ancillary industry and the automobile industry, and so on.

In the literature on the passenger car industry itself, one study looks into the fair-selling prices of the two-car producing units, namely, Hindustan Motors Limited (HML) and Premier Automobiles Limited (PAL). More specifically, it attempts to examine whether car price increases after price decontrol in

1975 were justifiable. ¹¹ It shows that the increase in price was less than what was necessary for covering the rise in the average cost of production. It argues that, increase in average cost was due to a combination of higher input price and overhead cost--the latter due to lower capacity utilisation-- in both the factories in the second half of the seventies. The study concludes that the units were justified in charging higher price, but adds that the losses incurred by the two units in the latter half of the seventies were more than compensated by the reasonable and substantial returns on Ambassador and Premier Padmini (Standard) respectively. One study on Maruti Udyog Limited, deals with its joint venture with Suzuki Motors Company, specifically bringing out the Japanese work-culture, inculcated in Maruti enterprise. It also covers areas such as collaboration agreements, and the preferential treatment given to MUL by the government, in contrast to other units producing passenger cars.

Sanjay Kathuria(1990) ¹² deals with the impact of government policies on the development/growth of the industry. The message of the study is that Government's interventionist policies have been the main factors responsible for the inefficient, technologically obsolete, high-cost structure of the industry that worsened over the years. Thanks to the structural adjustment programme (SAP) adopted in the 80's, the industry is slowly becoming a more efficient, competitive, (both internally as well as internationally), dynamic industry. In short, the future of the industry, in the liberalisation era, of the '80's and the '90's, seems to be much more bright.

¹¹ The study of the Reasoableness of Increases in Prices of the Passenger Car after Decontrol, Bureau of Industrial Cost and Prices, Delhi, 1985.

¹² S. Kathuria The Indian Automotive Industry : Recent Changes and the Impact of Government Policy. 1990

He argues that, the major changes in Government policy towards the automotive industry, particularly in the 1980's, intensified competitive pressures, and the proliferation of car models after the entry of MUL, provided impetus for technological change. Liberalised policy about technology import helped the process.

Dividing the automobile industry into four segments, Kathuria describes their historical development including scales of production and demand, and makes a comparison with corresponding international units. Causes underlying the difference in the performance of different segments also come up for analysis. He thinks that the licensing system could not contain concentration in the earlier years of the industry, and that with the entry of Maruti, the degree of concentration decreased initially but increased later, as Maruti itself came to dominate the car market.

Kathuria claims that technological change in the car industry before the seventies had been very limited. This was due to insufficient degree of competition, low or negative profits of the car companies leading to negligible expenditure on research and development, and periodic foreign exchange crises. He measures the ratio of gross profits to gross capital stock of the companies in the 1980's, and shows that there was a general decline in profitability in case of HML and PAL. In case of MUL, it went up due to increase in interest earnings on deposits and decrease in capital output ratio.

Technological changes during the eighties have made Indian cars more competitive in the international market, as indicated by the increased export

of cars. Efficiency of the car producing units measured in terms of both vehicles/man and inventory level, too had gone up in the eighties.

Narayana's (1989)¹³ study, to which Kathuria's study seems to be an answer, is rooted in the opposite view. Other than the review of the development of the automobile industry, (which he terms as the `assemblers') Narayana has looked into the structure of the ancillary industry, its development over the years, the assembly-ancillary relationship, and the changes in it, over time. Government policies, regarding the automobile industry, and the transition, from the fifties to the late seventies and eighties has been clearly brought out. He deals with the question whether Government policies had been the cause for the general drawbacks of the industry, or there were other reasons for such development. The analysis has been done, on the basis of changes in the industry, when it was relatively less fettered by the shackles of state's interventionist policies (which incidentally has been generally seen as the cause for the unimpressive growth of the industry). On the basis of comparison, of different segments, in terms of entry, he shows that, neither the licensed capacity nor the absence of broad-banding facility, raised any barrier to growth. It was the low growth of demand which had played the crucial role. He further points out that the most important policy change, which determined the number of entries, in different segments was "the relaxation with regard to foreign collaboration."¹⁴ Hence, the segments that were characterised by low order of technological capability, saw the maximum

¹³ D. Narayana, The Motor Vehicle Industry in India : Growth Within a Regulatory Policy Environment, 1989

¹⁴ D. Narayana, The Motor Vehicle Industry in India : Growth Within a Regulatory Policy Environment, 1989, p. 93.

number of entries. In brief, thus, "the main factor governing entry into any segment of the industry, was the technological gap."¹⁵ Thus he shows that the cause of low rate of growth of the industry, lies not with the regulatory policies, but rather with conditions, internal to the industry and some other exogenous factors. As regards the implication of the liberalisation policies, he says, that the industry would grow up to be a major drain on foreign exchange reserves. Increased need for oil imports, dependence on foreign collaboration and high import-contents, low prospects of export growth, all would have serious repercussions on the country's balance of payments. And hence he concludes that, "on the whole, though the wide technological gap has been narrowed for the present, it may be unrealistic to expect the gap to be narrow in the years to come"¹⁶-- inherent in which lies the dismal prospects of the growth of the industry, in the future.

Issues relating to the automobile industry in other countries, both developing and developed, have been taken up in a significant number of studies. Important among developing countries covered are Argentina, Brazil, and Mexico, and Republic of Korea, China, and Japan. Some of these studies are relevant to us to the extent these reflect protection and its effects on growth. We have made selective use of some of these studies in the last chapter, and do not therefore, go into summarising the findings.

¹⁵ *ibid*, p. 93.


¹⁶ *ibid*, p. 94.

Chapter Three

Development of the Industry

In this chapter we first trace the development of the industry manifest as it was in production of cars. Changing market shares of firms were a part of the development profile. Development of the industries grouped as components and ancillaries, is an important condition for the development of the car industry. We trace an outline of those industries in the second section. While these two represent the supply side, the demand side too, needs to be studied. That is taken up in the third section.

Development of the Industry

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Beginning in the early forties of the twentieth century, the passenger car industry went through highly inconsistent production trends. The Hindustan Motors Limited (HML) controlled by the Birla group and Premier Automobiles Limited (PAL) of the Walchand group were set up in 1942 and 1944 respectively, both with foreign collaboration. The firms were supposed to take up a programme for phased manufacturing (PMP) over time, of complete vehicles. Their operations in the initial years was concentrated mainly on assembly of parts and components imported as completely knocked down (CKD) packages. Production of cars started in 1949 when a partially manufactured car came out of the Hindustan Motors (HM) factory. Protection to the industry started in 1949, when complete ban on the import of Fully Built Up (FBU) vehicle was imposed. The Government decreed, in 1953, on the basis of the Tariff Commission Report (1953) that firms without a PMP should cease to operate. The Commission endorsed the eligibility of

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Hindustan Motors (HM) and Premier Automobiles (PA) as they had already prepared a programme for progressive manufacture of vehicles and had established some production facilities. These two units took up production of commercial vehicles as well. Five models of passenger cars, light and big, were being produced by these two units. HM produced Baby Hindustan, Hindustan Landmaster and Studebaker cars, while PA produced Fiat 1100, and Dodge/ Desoto/Plymouth cars. However, the models for which substantial foreign exchange was required, were withdrawn in 1953, on the advice of the government, due to severe foreign exchange scarcity. Further, by the early sixties, the units chose to specialize, in certain type of vehicles. HML and PAL concentrated, mainly, on the production of passenger cars. Standard Motors Products was another unit producing passenger cars. Its production trends were, however, highly volatile and its market share was very low in much of the years of its existence. We have therefore, not taken it up in our profile of development of the industry. Thus, HML and PAL, the two main producers of passenger cars until the inception of Maruti Udyog Ltd, are the two firms referred to here. These were the effective manufacturers until the early second half of the eighties. The general environment of a seller's market till the mid-seventies, was understandably built-in¹ for many years.

The increasing opening up of the economy in the eighties, saw the first major new entrant into the industry and that too, in the public sector. A joint venture of Maruti Udyog Limited with Suzuki Motor Company of Japan, took up production of small cars with the engine capacity not exceeding 1000 cubic capacity (cc). For the first time since the 1950s a new make of car with

¹ It was only in 1975-76 that for the first time the waiting list for cars dried up and a buyer's market was built up.

advanced technology was introduced in India. The impact of this small car-- the 'people's car' as it was called by some Government spokespersons-- on the total output of passenger cars was phenomenal. By the mid eighties, the industry gradually came to be dominated by Maruti Udyog Limited

Within a few years after the entry of MUL, it became the dominant firm with a rising share in the total output. Its market share went up from 47.4 per cent in 1985 to 60.5 per cent in 1990. On the whole, the industry consisted of four firms including the Standard Motor Products (SMP), but the later was actually insignificant for most of its lifetime, which later led to its closure.

Production

Production showed a relatively fast rate of growth in the sixties and the eighties, the period in between being one of relative stagnation, as shown in (Table 3.1). Taking the annual average of the five year aggregates of the two periods 1951-55, and 1956-60, production of cars increased from 4611 per year to 12949 per year. The annual growth rate during the 23 years (1961-1984) was 4.6 per cent. But that does not capture the drastic fall in some years during the seventies. A more useful indication can be obtained by splitting the 23-year period into four: 1961-68, 1968-74, and 1974-80, and 1980-84. Growth trends varied widely during the four periods (Table 3.2). Reasons for such widely differential growth trends are not so clearly visible. Demand variations seem to be the major source, since, at least in some years production was much below the licensed or installed capacity. As regards the severe fall in output in some years during the seventies, it mainly seems to

be due to the increase in oil price after the two oil shocks of 1973 and 1979.² Production maintained a consistent uptrend, after 1980 but, the 'demand explosion' occurred during 1984-90, after Maruti-800 had been brought to the market.

The ongoing shift in the economic policy since the late 1970's from import-substituting to export-promoting growth strategy got further accelerated in the eighties. For the first time since the late-sixties, foreign collaboration was being encouraged, once again. Other than HML and PAL which were allowed to go in for foreign collaboration for producing new models, a new unit, MUL came up in 1983. The capacity licensed to MUL by the third year of its production, was much larger than that which had been approved for any other unit in any year.

The high and rising predominance of MUL is most strikingly evidenced in the trend in the relative market shares of these three units during the eighties. (Table 3.3) In the fifties and the sixties HML dominated the passenger car industry. It accounted for more than 50 per cent of the total production till 1983 (with the year 1975 being an exception). PAL kept facing fluctuating fortunes. Both HML and PAL lost their shares after Maruti-800 had been marketed. HML fell from 70 per cent in 1980 to 40 per cent within four years. Thereafter, it was MUL which kept increasing its share at the cost of the two other firms.

Both HML and PAL had entered into collaboration agreements with foreign automobile firms for import of technology. HML's first collaboration was with the Nuffield company of the UK for manufacturing passenger cars, namely

² Further, labour unrest in the factories of these two units (HML and PAL), during the period 1977-80, contributed to the decline in production.

Table 3.1: Production Trend of Passenger Car in India, 1951-1974

Year	Total Output	Year	Total Output
1951-55	4611*	1967	33395
1956-60	12949*	1968	37308
1961	21662	1969	35183
1962	23326	1970	35205
1963	15711	1971	38316
1964	23227	1972	38827
1965	24790	1973	39937
1966	27597	1974	36008

* Annual averages

Source: D.Narayana . The Motor Vehicle Industry in India and Automobile Engineers and Traders ; Annual Report 1993

Table 3.1(contd.): Production Trend of Passenger Car in India 1975-1980

Year	Total Output	Year	Total Output
1975	23075	1978	34366
1976	31610	1979	29235
1977	38019	1980	30538

Table 3.1(contd.): Production Trend of Passenger Car in India 1981-1990

Year	Total Output	Year	Total Output
1981	42106	1986	116004
1982	42674	1987	151875
1983	45090	1988	165798
1984	64013	1989	179278
1985	102456	1990	181821

Source: D.Narayana . The Motor Vehicle Industry in India and Automobile Engineers and Traders ; Annual Report 1993

Table 3.2 : Growth Trends of Passenger Car Production (in percentage)

Year	Annual Growth Rate
1961-68	8.0
1968-74	-0.59
1974-80	-2.7
1980-84	20.0

Source : Computed from source given in table 3.1

Table 3.3 : Market Share of Various Passenger Car Manufacturers (in percentage)

Year	HML	PAL	SMP	SAL	MUL
1948-1950	51	46	3	---	---
1951-1955	55	28	17	---	---
1956-1960	47	36	17	---	---
1961-1965	59	24	17	---	---
1966-1970	63	32	5	---	---
1974	56	39.1	4	---	---
1975	40.4	59	neg.	---	---
1976	52	47	neg.	neg	---
1977	53	46	neg.	neg	---
1978	61	38	neg.	neg	---
1979	60	39.5	neg.	neg	---
1980	71	28.5	neg.	neg	---
1981	55	44.8	neg.	neg	---
1982	51	49	neg.	neg	---
1983	53	46	neg	1	---
1984	38	41.6	neg.	2	18.8
1985	23.5	28.5	neg.	neg.	47.4
1986	19	25	1	neg.	54.7
1987	17.2	21	neg.	neg.	61
1988	17.2	23	neg.	neg.	59.6
1989	16.5	23.7	neg.	neg.	59.7
1990	14.8	24	neg.	neg.	60.5

Source : Computed from source cited in table 3.1

Note: neg. = negligible.

Hindustan 10. This model has undergone many changes since the fifties, ranging from Landmaster, Ambassador Mark IV, Ambassador Regent and Ambassador Nova. PAL had entered into an agreement with Chrysler Company of USA in 1947 for the assembly of passenger cars and trucks. In 1959, PAL entered into an agreement with the Italian company, Fiat, for producing a small car named Fiat 500, to be replaced later by Fiat 1100.

Components and Ancillaries

There are over 10,000 parts and components, which go into the making of a single passenger car. Thus, passenger car manufacturers are assemblers who assemble parts and components supplied by other firms. Hence a large proportion of the production costs are accounted for by bought-out materials purchased from these firms. Car units often contract out production of a large number of parts and components to the ancillary sector. The relationship between vehicle assemblers and ancillary industries forms a multi-structured layer. Fully bought-out parts and components are of two types: (i) functional; and (ii) non-functional. Items like valves for all types of internal combustion engines, fuel injection equipment, carburettors, dampers and valve tapets, ^{are included in functional type.} which require the use of sophisticated technology. The second type has relatively simpler items like wiring harness, radiator assembly, foot plates, suspension arrangements and fuel tanks. Some components themselves are assemblies (for example, shock absorbers and brake- assembly), and the firms producing them are similar to the vehicle assemblers in the sense that they assemble parts supplied by other manufacturers. Firms producing parts for the component assemblers, then form the third layer in the structure. Assembling and making of parts and

components involve a wide range of basic manufacturing processes, such as machining, welding, pressing, forging and casting of varying precision. Most often these operations are sub-contracted out, mainly to small units outside the organised industry, rather than being carried out by the assemblers (both vehicle and components) or part makers themselves. Besides, there are firms supplying dies and moulds to both the vehicle assemblers and makers of parts and components, and there are firms catering exclusively to the replacement market.

More than 50 per cent of the ex-works cost of the passenger car, is accounted for by bought-out materials. The picture however was very different in the initial stages of the development of the industry. Under the phased manufacturing programme (PMP) introduced in 1953, the government encouraged in-house production of parts and components by vehicle manufacturers. As a result, manufacturers took up production of as many components as they could, in order to hasten the process of indigenisation. Further, the terms and conditions of most foreign collaboration agreements were such so as to, either explicitly disallow the use of locally manufactured parts and components as original equipments, or discourage its use by giving a much smaller discount from the total cost of the vehicle when compared to the cost of manufacturing it locally. This encouraged the tendency of the vehicle industry to be vertically integrated. Among the passenger car manufacturers, both Hindustan Motors and Premier Automobiles were producing as many as 180 and 70 components respectively.³ At that time, the ancillary industry had not developed. Gradually, it came into existence as an industry separated from car

³ D.Narayana, The Motor Vehicle Industry in India : Growth Within a Regulatory Policy Environment (Centre for Development Studies, Occasional Papers, IBH Press, 1989), p. 13.

manufacturers, but mainly in response to the replacement market demand, particularly for fast moving parts.

A major proportion of these parts and components were also being manufactured by the vehicle assemblers themselves. Some duplicate capacity was thus built up in the vehicle factories and in the ancillary sector. The main impetus for stimulating domestic investment in the ancillary industry was the need to save foreign exchange. Emphasis was laid on indigenisation of the ancillary industry in stages. Even then the basic problem facing the ancillary industry persisted. Low volume of demand for cars, and the unwillingness of the assemblers to place orders with the domestic producers were the reasons behind the lack of orders from the main industry.

In 1965, the Government differentiated the items that were normally to be produced by the components sector and those that could be developed either by manufacturers of components or by vehicle manufacturers. As can be seen from Table 3.4, reduced imports of components was followed by purchase from ancillary manufacturer and through self manufacture. These proportions varied widely across firms. On the whole, however, components purchased from ancillary units as a percentage of total material cost went up from an average of about 15-20 per cent in 1961-62 to 30-40 per cent in 1965-66. Further, shift in Government policy favouring use of bought-out indigenous components, and restriction on imports of automotive parts being produced in the country, saw the ancillary industry grow fast. As compared to only about a dozen sophisticated components manufactured in the early fifties, the production capacity of the organised sector alone grew to the extent of

Table 3.4 : The Percentage by Value of components (a) directly imported, (b) bought from

ancillary manufacturers and (c) produced in their own factory by various car manufacturers (1961-62 to 1965-66)

	1961-62			1962-63			1963-64			1964-65			1965-66		
	I	B O	S M	I	B O	S M	I	B O	S M	I	B O	S M	I	B O	S M
Passenger Cars															
HML: Ambassador	29 .9	16 .7	53 .4	25 .4	21 .7	52 .9	15 .5	29 .7	54 .8	15 .5	30 .2	54 .3	9 .9	31 .5	58 .6
PAL: Fiat	51 .1	21 .1	27 .0	43 .1	26 .1	30 .8	35 .2	27 .9	36 .9	30 .4	32 .2	37 .4	19 .3	41 .7	39 .0
SMP: Herald	56 .6	17 .4	26 .0	54 .9	16 .5	28 .6	43 .0	20 .8	36 .2	40 .4	23 .0	36 .6	27 .8	29 .3	42 .9

Note ; I: Imported

B O: Bought out

S M : Self manufactured

Source: *Report on the Continuance of Protection to the Automobile Industry*

Tariff Commission, Government of India, 1968

manufacturing nearly 80 components. But, even then these constituted a very small proportion of the total number of components and ancillaries. Growth since the seventies was mainly by way of proliferation of firms rather than production of new items. In 1990, bought-out indigenous components accounted for more than 60 per cent of the total material cost of a passenger car.⁴

Progress of indigenisation is an important indicator of the extent of technological development achieved by patronage/protection. It appears to have progressed in phases, partly because foreign collaboration was encouraged again after a long time in the seventies, and collaboration showed a generally rising trend thereafter. This was directed towards developing domestic sources of supply of car components and corresponding economy in foreign exchange expenditure. With the shift in the policy towards foreign collaboration, the indigenisation policy had to undergo some change. It continued to be a preference, but not without the participation of foreign firms any longer. The policy regarding indigenisation could not have remained identical in a period of increasing foreign collaboration.

The Adhoc Committee (1960), under the chairmanship of Mr L K Jha, reviewed the achievement, in terms of progress of indigenous content. Its assessment of the scale and extent of indigenisation is evident in the following Table 3.5 The Planning Commission observed that since 1960, all firms had made investments in plants and machinery and had achieved further increase in indigenous content ranging from 10 per cent to 15 per cent , during the Second Five Year Plan.

⁴ Reported by employees of Maruti Udyog Limited (MUL).

Table 3.6 shows the progress of indigenisation content achieved during the Third Plan as assessed by the D.G.T.D. on the basis the Jha Committee formula. As can be seen from the table, the indigenous contents, turned out to be as high as 95 per cent for Ambassador cars and 97.5 per cent for Fiat cars by 1966-67. The formula, however, overlooked the import contents of the products of the ancillary industries. Analysis of the raw materials needed shows that, tool alloys and special steels and non-ferrous metals constituted the principal imported raw materials. As cited in the Report on the Fair-Selling Prices of Automobile Ancillaries (1968): " steel flat products are being permitted for import except for certain banned categories. The tool and alloy steels required by the ancillary industry are being imported. As regards aluminium, since the indigenous production is not adequate it is allowed to be imported. Other non-ferrous metals are also being imported since they are not available from indigenous sources".⁵ Further the D.G.T.D. and the President of A.I.A.A.I., said that adequate licenses had been provided for the import of these raw materials.

New collaboration agreements called for some restructuring of supply from indigenous sources. For Contessa, HML collaborated with one for the design and tooling and with another for the engine and power train assembly technology. Since PAL's 1981 agreement with Fiat of Italy included styling and improved engine technology, it called for some degree of restructuring of components and therefore, a relatively higher share of imports for some time. The same was true of the agreement with Nissan of Japan.

⁵ Report on the Fair Selling Prices of Automobile Ancillaries, Tariff Commission, Government of India, 1968, p. 68.

Table 3.5 : Indigenous Content Of HML and PAL achieved by 1960

Passenger Cars	Indigenous Content (in percentage)
Ambassador	75.0
Fiat	47.0

Source : Report on the Continuation of Protection to the Automobile Industry, Tariff Commission, Government of India, 1968.

Table 3.6 : Progress in Indigenisation achieved during the Third Plan Period (in percentage)

Year	Ambassador	Fiat
1961-62	74.5	49.0
1962-63	76.2	56.0
1963-64	77.5	64.0
1964-65	80.4	74.0
1965-66	90.0	88.0
1966-67	95.0	97.5

Source : Report on the Continuation of Protection to the Automobile Industry, Tariff Commission, Government of India, 1968.

Maruti Udyog Ltd (MUL) was a somewhat different case. Beginning as it did on the basis of assembly of CKD units from Suzuki, it was supposed to take longer for reaching a very high share of indigenous components. According to the initial plan, it was supposed to have achieved the following degree of indigenisation over a period: Table 3.7

The actual achievement by all the three firms during the eighties can be seen from the following Table 3.8

Indigenous production of these ultimately came to be dominated by firms with foreign collaboration. More than 150 units produced automotive components in the early 1990s. More important among their products were: pistons and pins; piston rings; gaskets; engine valves; carburettors; fuel pumps; fuel injection equipments; filters; crankshafts; automotive chains; radiators; thermostats; bimetal bearings; starter motors; flywheel magnetos; ignition coils; clutch assembly; tie rod ends; steering gear assembly; gears and gear boxes; and propeller shafts. (Table 3.9).

Demand Trend

A few years of exception apart, the demand for cars was greater than production. The Government had introduced a system of registration of purchase intentions, mostly from households. So, registration figures could be deemed as indicators of the quantity that could be sold at given or marginally higher price. By official count, the stock of cars, excluding taxis, was 1.48 lakhs in 1950-51, 1.67 lakhs in 1954-55, and 2.56 lakhs in 1960-61. Inclusive of taxis, the number of registered cars went up from 1.59 lakhs in 1950-51 to 2.79 lakhs in 1960-61. Cumulative car stock data, however, have apparent discrepancies. Change in car stock often does not

Table 3.7: Maruti's rate of Indigenisation, as Planned

Year	Cumulative indigenisation (%)
1984-85	31.5
1985-86	42.6
1986-87	57.3
1987-88	84.5
1988-89	95.3

Source: Japan Enters Indian Industry; Raja Venkataramani.,1990

Table 3.8: Consumption of Raw Material and Components by HML, PAL & MUL (in percentage)

Year	HML		PAL		MUL	
	Indigenous	Imported	Indigenous	Imported	Indigenous	Imported
1980-81	69.6	30.4	82	18	--	
1981-82	66.9	33.1	84	16	--	--
1982-83	66.4	33.6	81	19	--	--
1983-84	61.7	38.3	80	20	--	--
1984-85	65.4	34.6	81	19	14.7	85.3
1985-86	64.4	35.6	82	18	19.2	80.8
1986-87	58.1	41.9	77	23	27.2	72.3
1987-88	55.5	44.5	77	23	40.5	59.5
1988-89	54.4	45.6	77	23	51.5	48.5
1989-90	58.9	41.1	78	22	60.5	39.5

Source: Technology Transfer in Indian Automobile Industry, Mohanty *et al*, 1994

Table 3.9 : Production of Automotive Components and Parts in 1991

Engine Parts	U.J.cross
Cylinder Liners	Axle shafts
Valve Collect	Wheel Assembly
Fuel Pump(F.P)	Axle Housings
F.P. Delivery Valves	Complete Axles
Fuel Oil Lines	Oil Seals
Electrical Parts	wheels
Generators	Hub Wheels
Distributors	Parts & Spares
Spark Plugs	Suspension and Breaking Parts
Commutators	Leaf springs
Drive Transmission & Steering Parts	Shock Absorbers
Steering Linkages	Facings
Clutch Plates\Discs	Brake Hoses etc.

Source : Automotive Engineers and Traders, Annual number, 1993.

equal the sum of the relevant period's production and imports. Going by the data, the average annual increase in car stock, inclusive of taxis, was 11,163 during 1950-51 to 1960-61, 31,223 during 1960/61- 1970-71, 16,469 during 1970/71-1975-76, 63,760 during the next five-year period, and 1,16,700 during 1980/81-1985/86. (Table 3.10)

Registration figures for cars cited by the 1968 Tariff Commission indicate a rising backlog of unsatisfied demand. Effective registration went up from 28,732 at the beginning of 1963 to 122,698 during the first nine months of 1967, and the backlog went up from 28,734 in 1962 to 1,10,288 at the end of 1967. There was, however, a significant lack of consistency in the demand trend as reflected in the registration and the backlog data. New registration, for example, increased from 44,595 in 1963 to 68,554 in 1964. But, then it kept up a generally declining tendency despite some fluctuations. (Table 3.11)

Looking at the production figures, it is not possible to postulate any effective demand constraint facing the industry with the given licensed capacity. The severe fall in output during some years of the seventies, however, was mainly due to decline in demand. As mentioned above, the most important reason for this lay in the high rise in petrol prices due to two bouts of rise in international oil prices. Similar effects should have been expected from the effect of the 1966 devaluation of the rupee. Rise in petrol price had not actually affected the consumer after devaluation, because the Government had reduced excise duties on petro-products, for offsetting the impact of devaluation.

Till the early sixties, on the contrary, the gap between domestic demand and supply was evidently wider. The number of cars imported during 1957-1963

Table 3.10 : Change in Stock of Cars and Taxis, 1950/51 to 1989/90

Year	Change in car stock	Annual average	Change in taxi stock	Annual average
1950/51- 60/61	1,08,531	10,853	10,112	1,011
1970/71	2,73,232	27,232	39,000	3,900
1975/76	62,348	12,469	2,000	4,00
1980/81	2,98,398	59,679	20,400	4,080
1985/86	4,93,502	98,170	72,000	1,800
1986/87	3,28,302	1,61,651	28,800	2,880
1987/88	1,51,956	1,51,956	24,800	2,480
1988/89	1,87,715	1,87,715	18,200	1,820
189/90	1,24,873	1,24,873	16,500	1,650

Source :Research and Development Wing , Ministry of Transport

Table 3.11 : Registration for Purchases of Motor Cars

Year	Effective registration at the beginning of the year	Fresh registrations during the year	Total registration	Sales	Balance
1962	----	----	N.A	19,623	28,732
1963	28,732	44,595	73,327	11,563	61,764
1964	61,764	68,554	1,30,318	19,787	110,531
1965	1,10,531	26,999	1,37,530	24,973	112,557
1966	1,12,557	38,010	1,50,567	27,869	122,698
1967 (nine months)	1,22,689	12,499	1,35,197	24,909	110,288

Source : Report on the Continuation of Protection to the Automobile Industry, Tariff Commission, Government of India, 1968.

is given in Table 3.12. Even after that, the discrepancy between the change in stock of cars and the annual production continued. That, on the face of it, indicates continuance of imports after 1962-63. This is evident in Table 3.13. The gap seems to have narrowed down in and after 1967.

The lack of consistency in demand trend, made its effect on demand projection. Different estimates of future demand were wide off the mark, on occasions, (Table 3.14) if one assumes that the gap between projected effective demand and actual production, should maintain a consistent trend, especially if one is looking at figures for a period ranging between five and ten years. The supporting contention behind the assumption is that, while short-term developments may always upset planned production, such departures from the 'normal' level would not persist over a longer period of time. The 1953 Tariff Commission forecast the growth in demand for cars at an annual figure of 10,000. The 1956 Tariff Commission cited the estimate made jointly by the Planning Commission and the Development Wing of the Ministry of Commerce in 1960-61 and after, at an annual average of 20,000 cars. The Ministry of Transport estimated the figure at 12,000 in the same year. The Motor Manufacturers' and Importers' Association put it at 80,000, while Standard Motor Products was less optimistic with an estimate of 21,500 in 1959. The Tariff Commission itself adopted the Planning Commission estimate.

Actual production in 1959 (11,993) 1960, (19,097) and in 1961 (21,663) showed that there was little difference between the projected demand and output, except in case of the Standard Motor figure. For the subsequent period, however, the gap was quite wide in some cases. The 1968 Tariff Commission, for example, expected the level of demand to go up to 45,000 by

Table 3.12 : Import of Passenger Cars to India ; 1957 to 1963

Year	Passenger Cars	Complete Knocked-Down Cars	Second Hand or Used Motor Cars
1957	247		67
1958	370	9,737	29
1959	130	7,570	102
1960 (Jan-March)	11	6,331	73
1960-61	68	1,788	284
1961-62	286	3,744	396
1962-63	137	398	286

Table 3.13 : Import of Passenger Cars to India ; 1963 to 1967

1963-64	76	58	308
1964-65	117	---	248
1965-66	114	---	255
1966-67	54	---	87

Source : Report on the Continuation of Protection to the Automobile Industry, Tariff Commission Government of India.

Table 3.14 : Estimates of Demand for the Second Five Year Plan

Different bodies	Annual demand by 1960/61
Planning Commission and Development Wing of the Ministry of	20,000 cars
Ministry of Transport	12,000 cars
The Motor Manufacturers and Importers Association	80,000 cars
Standard Motors Product	12,500 in 1956 and 21,500 in 1959

Source : *Report on the Automobile Industry*, Tariff Commission, Government of India, 1956

1968, and the Planning Commission set the capacity target for 1970-71 at 50,000 cars. Actual production was just a little more than 37,000 in 1968 and 35,000 in 1970. Particularly noteworthy is the idea which had gained ground about excess demand. The Government was sometimes accused of creating supply shortage. A well-known opposition member of parliament accused the Government of sheltering 'monopolists' by its refusal to permit the establishment of any new car unit, despite the widening gap between demand and supply. ⁶

Car prices were fixed by the Government until April, 1975. The 1966 devaluation of the rupee was a major event in the history of price formation. So, taking the period 1958-1974 (we have figures since 1958) as that of administered price, we put the price figures below in three different periods: 1958-1966, 1966-1974, and 1974-1981 for Ambassador and Padmini Premier. For the subsequent period, it is Maruti 800 which became the decisive indicator of growth, and as said above, MUL enjoyed the lion's share of the market. Looking at price changes between the base year and the terminal year of each of these periods, (Tables 3.15 and 3.16) price of Ambassador was higher by 20 per cent at the end of the first period, 27 per cent at the end of the second period, and 304 per cent higher at the end of the third period. . The annual rate was 2 per cent in the first period, 3 per cent in the second period, and 22 per cent in the third period (ending 1981). In case of PAL, the annual rates were 2 per cent, 4.3 per cent and 21.7 per cent respectively. Price increase during 1981-1990 in Ambassador and Premier Padmini was around 11.19 per cent and 11.8 per cent respectively. Maruti's have been a different set of reasons for price change (discussed

⁶ Shri Bhupesh Gupta's speech in Rajya Sabha on August 27, 1962, cited in Report of the Commission of Inquiry on Maruti Affairs, India, May 31, 1979, Volume I.

Table 3.15 : Increases in Price of Passenger Car ; HML and PAL, 1958- 1966

Year	HML	PAL
Price fixed in 1957	9,999	9,755
1958	11,161 (100)	9,755 (100)
1959	11,161 (100)	9,755 (100)
1960	11,554 (103)	9,870 (101)
1961	11,554 (103)	9,828 (100.1)
1962	11,667 (104)	9,631 (98)
1963	12,131 (108)	9,696 (99)
1964	12,195 (109)	10,393 (106)
1965	12,555 (112)	10,449 (107)
1966	13,466 (120)	11,778 (120)

Source : Report on the Continuation of Protection to the Automobile Industry, Tariff Commission, Government of India, 1968

Note : Figures in brackets give the index of growth of the prices.

The year 1958 has been taken as the base.

Table 3.15 (contd.) : Increases in Price of Passenger Cars ; HML and PAL, 1966-74

Year	HML	PAL
1966	13,466 (100)	11,778 (100)
1967	14,901 (110)	13,555 (115.01)
1968	14,901 (110)	13,570 (115)
1969	----	----
1970	----	----
1971	----	----
1972	15,896 (118)	15,046 (127)
1973	16,120 (119)	15,556 (132)
1974	17,152 (127)	16,617 (141)

Note : 1. Figures in brackets indicate index of growth in prices with 1966 as the base.
 2. Prices are retail prices.

Source : Computed from data in BICP studies on the car industry and Report on the Continuance of Protection to the Automobile Industry, Tariff Commission, Government of India, 1968.

Table 3.15 (contd.) : Increases in Price of Passenger Cars; HMLand PAL, 1974-81

Year	HML	PAL
1974	17,152 (100)	16,617 (100)
1975	22,596 (132)	22,646 (136)
1976	21,275 (124)	22,075 (133)
1977	22,925 (134)	22,959 (138)
1978	31,798 (185)	36,785 (221)
1979	41,017 (239)	44,373 (267)
1980	51,603 (301)	51,155 (308)
1981	69,243 (404)	65,831 (396)

Note : Figures in brackets indicate index of growth in prices with 1974 level as the base
All prices are retail prices

Source : Computed from data in BICP studies on the car industry and Report on the Continuance of Protection to the Automobile Industry, Tariff Commission, Government of India, 1968.

Table 3.16 : Increase in prices of Maruti , 1984-1989

Year	Price of Maruti 800
1984	47,500 (100)
1985	49,950 (105)
1986/3	57,100 (120)
1986/6	63,900 (134)
1987/3	71,550 (150)
1987/10	72,550 (152)
1988/3	73,210 (154)
1988/5	77,260 (162)
1989/1	80,000 (168)
1989/3	86,510 (182)

Source : Japan enters Indian Industry: Maruti -Suzuki joint venture, R. Venkataramani, 1990

Note : Figures in parentheses denote index of growth of prices.

1984 has been taken as the base year.

below), but the price of Maruti 800, with all its cost efficiency, went up at an annual rate of 12.7 per cent.

The estimate of replacement demand, however, did not prove very effective. The 1956 Commission observed that old cars were not being replaced after 12 years, the assumed effective life-period of a car. Figures for most of the subsequent period indicate two contrary trends. First, different sections of users kept replacing their cars after widely different time lags. Secondly, partly because of the first, unusually high replacement volumes were concentrated in a few years, or a consecutive number of years.

The Maruti Phase

The eighties in a general way and the last five years of the decade in particular, saw a series of changes in the industry. The second part of eighties can be called the 'Maruti Phase' in the post-independence history of the passenger car industry. From the demand angle, a wider base had already been created for generating a rising effective demand for cars. Maruti-800 provided a concrete opportunity for that demand to be translated into large-scale registration with the company. Both the price of the car and the cost of car-running turned out to be favourable for further expansion of the demand base in terms of income groups. Relative fuel efficiency thus, proved to be a major demand-multiplying factor, and it is this which Maruti provided. The nineties began with MUL well established and planning new brands.

Chapter Four

Evolving Protection

In this chapter we discuss the state policy in operation from time to time, with the focus on issues pertaining to protection, sometimes inseparable from issues concerning regulation of the industry.

For identifying forms and instruments of protection, we should state at the outset that the two targets of protection-- balance-of-payments management under an import-substituting regime, and incentive for domestic investment and production-- may have both complementary and contrary implications. Rationing of foreign exchange, for example, may create supply side constraints so long as the industry depends on import for its intermediate and/or capital goods. Under a system of licensing, rationing will normally influence capacity creation. Capacity itself, on the other hand, can be one way of implicit protection, in particular circumstances. Similarly, indigenisation of components and ancillaries, have identical targets. But, it can lead to higher costs for the final product industry as long as domestic production is less cost efficient and therefore, has a higher cost than the foreign product.

Such contrary effects, especially in short and medium-term, sometimes create fiscal compulsions for the Government. Price rise due to higher domestic costs, higher international price of raw materials and components, or exchange rate fluctuation, may have to be offset by reduction in excise duties, even when the

existing duties are lower than comparable product classes. Besides, the revenue effect of indirect taxes have to be generally overlooked and protective rate of duties has to be the basis for taxation. This, as we shall see, did happen.

Protection can also continue under a system of increasing foreign participation. The foreign investor, for example, finds an assured market in the country, if protection is combined with lower labour costs, without any negative effect of variations in exchange rate. This is somewhat true about what we have called the Maruti Phase, and it continues to be so. Important manifestations are: relatively low excise duties on *motor* vehicles and *motor* parts specific to certain types of vehicles in producing which large-scale foreign participation takes place. It also operates in the domain of exchange rate. Some foreign investors are protected against adverse exchange rate variation through an agreement that repatriation of fees and dividends will be made at the exchange rate prevailing at the time of agreement. As regards implicit or indirect protection, there are indefinite number of forms in which it can be extended. State subsidies on roads, for example, are enjoyed by, among others,, the users of vehicles. The vehicle-user pays indirect taxes and use-specific charges like registration fee, license fee, tolls, and the like. But, all that together, in the Indian case, has generally been only a fraction of total expenditure on roads. Also, a World Bank-aided study of road costs and charges paid by different vehicle users in the later 1980s showed that, subsidy per vehicle was the highest in case of trucks, but that cars and two wheelers also were substantially subsidised. Besides, the number of cars being much larger than that of trucks, the

absolute value of subsidy received by car-owners was very large.¹ In this chapter, we have concentrated mainly on the direct fiscal protection, in terms of customs and excise duties. Components and ancillaries have not always been taken separately. Besides, we have not taken up a critical analysis of the concessions listed. That is to be taken up in the next chapter.

The passenger car industry enjoyed the benefits of state protection right from the time of its inception. While that was true of the entire automobile industry, cars got more of it at least in the initial period. Licensed capacity of passenger car, for example, was higher than that of commercial vehicles, until the beginning of the second plan, though one could argue that greater emphasis should have been put on commercial vehicles for planned development of surface transport infrastructure. The core of the argument was inherent in what was stated in the Second Plan document itself. "The volume of goods traffic is expected" it said "to increase from 120 million tonnes in 1955-56 to about 181 million tonnes in 1960-61, i.e. by 50 per cent. And it is felt that even the large outlay of Rs. 900 crores may not suffice to enable the railways to lift all the additional goods traffic that is offered. It is in view of this that the plan provides for an increase of only 3 per cent per annum in passenger traffic. This order of increase in passenger services will not help much in relieving present overcrowding."² Consequently, it said that, "In the development programme for the automobile industry, which aims at stepping up of the Indian content of the automobiles to 80 per cent,

¹ World Bank-Aided Study on Vehicle Fleet Modernisation and Road Use Charges, Govt of India, Delhi Vol 5 1985 .

² Second Five Year Plan, 1956, Government of India, Planning Commission, p. 36

the main emphasis is placed on the production of trucks.”³ The planned production of trucks was, thus, put at 40,000 compared to 12,000 cars and 5,000 jeeps and station wagons. Even with all that emphasis, production of passenger cars continued to remain higher than the average annual figure targeted. One member of the Tariff Commission, K.T Merchant, cited this in his note of dissent, as a departure from preferred policy. “Despite the priority given to the manufacture of commercial vehicles, the production of passenger cars has been relatively much more than that of commercial vehicles.” “(A good part of the total output of heavy vehicles, in the third five year plan, it may be noted in passing, was due to defence demand, and not for additional freight tonnage.) The data cited by Merchant in support of his argument are presented in Table 4.1.

Protection from Foreign Competition

Protecting the domestic (infant) industry from foreign competition was a major component of the state policy all through our period. Committees and commissions were appointed from time to time for recommending necessary action. Review of the industry on the question of protection had inevitably led to continuation of protection for an extended period of time. In 1953 the government recognised, on the suggestion from the Tariff Commission, that

³ Second Five Year Plan. *Cited above*. p.213

⁴ Report on Continuation of Protection to the Automobile Industry, Tariff Commission, Government of India, 1968, p.335.

Table 4.1: Production of Passenger Cars and Commercial Vehicles

Year	Passenger cars	Commercial
1957	12,203	17,109
1962	21,663	26,810
1966	27,597	35,208
1967	33,354	31,724

Source: *Report on the Continuance of Protection to the Automobile Industry*, 1968
Tariff Commission, Government of India.

in order to boost the demand for the automobile industry, it was necessary to bring down its prices. It was also felt that high rates of duty did not help the industry but on the other hand had affected the demand for vehicles adversely. Import duty rates were quite high-- 94.5 per cent on certain components shortly expected to be produced in the country, 63 per cent on some others and 31.5 per cent on the rest. The Commission recommended reduction of these to a flat rate of 40 per cent ad valorem. The Government brought these down to an average level of approximately 40 per cent on a complete CKD pack and at a somewhat higher level for components which were expected to be domestically manufactured. Thus in order to encourage the manufacture of components, the Government decided to levy a duty of 50 per cent ad valorem on ICT items 75(9) and 75(10) and 25 per cent ad valorem on items 75(11) and 75 (12). ⁵The average incidence of these duties turned out to be at 40 per cent ad valorem on a complete CKD pack.

The Tariff Commission 1956, was asked to once again review the question of protection to the automobile industry. The Commission recommended continuance of protection for another 10 years.⁶ It also recommended protection through encouraging production of components which were taken up for domestic manufacture. At the same time, it suggested that duties should be lowered on items not produced or included in the manufacturing programme. This was meant for reducing the costs of essential imports of the car industry. The Government however, felt that since the domestic industry

⁵ Some components listed under ICT items 75(9), 75(10), 75(11) and 75(12) are given in Appendix II

⁶ Report on the Automobile Industry, Tariff Commission, Government of India, 1956, p. iii

was already sheltered to a large extent by restrictions on imports, changes in tariff were not necessary. It proposed instead to change the existing revenue rates of duty into protective duties. Further incentive to domestic manufacturers were given through higher import entitlements to the car unit which had shown the 'maximum' progress in indigenisation.

The Tariff Commission went into the question once again in 1968 and recommended continuation of protection to the industry, for another ten years. It said: " There is no practical alternative but to let the industry continue under the present scheme of protection."⁷ The Commission noted that the Government had provided protection through restriction on imports, and development assistance i.e liberalisation of foreign exchange for easy availability of raw materials, intermediate products and plants & machinery. The rates of duty charged for importation of fully assembled car, according to the Customs Tariff Schedule, were not shown as being protective in nature. But the revenue rates of duty charged on imported motor cars, including taxi cabs, were as high as 75 per cent ad valorem in 1957 and had been further increased to 150 per cent ad valorem by the late sixties. Thus, protection to the domestic passenger car industry through tariff rates was made sure, by making prices of imported cars prohibitive. Besides, the passenger car manufacturers too, imported parts and components for the vehicles manufactured by them. As a result, the benefits of reduced rates of duty on some of the parts and components imported accrued to the passenger car manufacturers too. Table 4.2 shows the list of items imported for Ambassador cars and Fiat 1100 cars in 1966

⁷ Report on the Continuation of Protection to the automobile Industry, Tariff Commission, Government of India, 1968, p.ii

Table 4.2 : Data on Imports by HML and PAL in 1966

Assembly or sub-assembly	Items Imported
A. Ambassador	
1. Engine	Camshaft bearing liner; carburettor; chain tensioner; main shaft interceptor
2. Clutch	Clutch thrust bearing
3. Transmission	assembly gear shift lever
4. Cooling	Water pump bearing assembly
5. Fuel	Petrol pump
6. Steering	Steering rack assembly; steering column; tube assembly
7. Frame and chassis	Bearings; fasteners and miscellaneous items
8. Body and upholstery	Back light glass; wind screen glass; button push locking
B. Fiat	
1. Engine	Valve tapet; thermostat
2. Propeller shaft	Synchroniser flexible joint propeller shaft
3. Steering	Complete steering assembly
4. Frame and chassis	Pressure bonded bushes; seven types of bearings
5. Body and upholstery	Wind shield glass; fuel filter glass
6. Instruments	Rim instrument dial

Source : Report on the Continuation of Protection to the Automobile Industry, 1968 Tariff Commission, Government of India

Import duty on accessories ranged between 25 per cent and 60 per cent prior to the seventies, compared to 100 per cent on all consumer items. These were then raised to 100 per cent and thus brought at par with consumer goods.⁸ It was raised to 100 per cent in 1971-72. Other changes in import duties were the following :

Depreciation on imported cars allowed until 1975-76 for the purpose of direct tax calculation was withdrawn in that year, but full depreciation was continued on indigenous cars irrespective of their costs.

Duty on cold rolled sheets, alloy steel, tool steel , special steel, and high carbon steel --all required for components and ancillaries-- was brought down in 1977-78 from 75 per cent to 40 per cent. ⁹

Indirect protection through lower or no excise duty also was generally a part of the official policy. Some increases however, were also made on some occasions. Important changes through budget proposals were the following:

1. Rise by 10 per centage points on certain motor vehicles parts and accessories in 1971-72.

⁸ Speeches of Union Finance Ministers, 1947-48 to 1984-85, Presenting Central Government Budgets, Ministry of Finance, Government of India, October 1984, p. 343.

⁹ Speeches of Union Finance Ministers, *Cited Above* . P. 436.

2. Increase in duty on motor car to 20 per cent, and 40 per cent ad valorem for big-sized cars (compared to the prevailing rate of 13.33 per cent ad valorem), in 1974-75.
3. Selective reduction of duties on vehicular tyres and motor vehicle components by way of rationalisation in 1975-76.
4. Reduction of excise duty on passenger cars by 5 per cent ad valorem, in 1976-77.
5. Increase in duty on motor cars from 15 per cent to 17.5 per cent and exemption from excise duty to tyres tubes and batteries supplied with the car in 1977-78.
6. Increase in duty on cars from 17.5 per cent to 18.3 per cent in 1977-78.
7. Increase in duty on cars from 18.3 per cent to 25 per cent, in 1979-80.

The establishment of Maruti Udyog Ltd marked the beginning of a new phase in terms of different forms of state patronage. The Government issued a special notification extending substantial reductions in customs and excise duties on automobiles that had a capacity of no more than 1000 cc. Only MUL could have benefited from these since it alone satisfied the condition of the 1000 cc limit. Special concession in central excise and custom duties on components for small fuel-efficient car was also announced. The fuel-efficiency condition too, could be satisfied only by Maruti. MUL's excise duty was reduced from 25 per cent ad valorem to 15 per cent ad valorem and

special excise duty was reduced from 5 per cent of basic duty to 0.75 per cent. The other two car manufacturing firms were paying customs duties on components at 60 per cent to 150 per cent ad valorem . The basic customs duty was 25 per cent for fuel-efficient cars, plus an auxiliary duty of 15 per cent, thus making a total of 40 per cent.

Allocation of Foreign Exchange

Manufacturers were being granted blanket licenses for importing machinery, tools and raw materials. "In the initial stages each manufacturer was permitted a blanket license upto a value of Rs. 10 lakhs, for importing machinery which was later increased to Rs. 30 lakhs. They were also permitted a blanket license of Rs. 10,000 for imports of spares parts of machine tools, not on the banned list; Rs. 20,000 for tools not indigenously produced and RS. 5,000 for small cutting tools (including such as are normally banned for import). In addition, each manufacturer is permitted to import 2 sets of cutting tools with each machine tool he imports. Blanket licenses upto Rs. 20 lakhs are also available to each manufacturer for imports of alloy steel."¹⁰

As mentioned earlier, only those firms with a programme for phased manufacturing were allowed, in 1953, to remain in the field and units which

¹⁰ Report on the Fixation of Fair Selling Prices of Automobiles, Tariff Commission, Government of India, 1968, p. 7.

operated mainly as assemblers were asked to cease operation within 2-3 years.

Price Control

The lowering of the import duties in 1953, however, did not contribute much to prices as it did not show any significant decline. Reasons like increase in prices of raw materials and components, rise in costs due to increased use of domestically produced components, (whose costs of production were often higher than the cost of imported components) and high incidence of overheads on account of small turnover, were, forwarded as causes underlying the increase in the price of vehicles. The Government often allowed adhoc increases in the prices of vehicles, where they were satisfied that a prima facie case had been made out by the manufacturers. However an inquiry into the fair ex-works price of the various vehicles was thought to be of importance.

As mentioned above the government allowed adhoc increases in the prices of vehicles. The 1956 enquiry committee felt that, the prevailing rigid system of price control should be replaced by a more flexible system, under which no maximum prices would be fixed. Manufacturers were allowed to set their prices subject to a general obligation not to charge excessive prices. The government accepted this recommendation, on the condition that, manufacturers would have to give a notice of one month, prior to any proposed increase in prices, and further, net dealer prices would not exceed the ex-works cost by more than 10 per cent.

The Jha Committee (1960) listed five components of the price of a vehicle. These were:

1. Cost of production in the automobile factory.
2. Cost of production in ancillary industry.
3. Cost of imported items.
4. The profit element.
5. The incidence of taxation.

In a situation of excess demand, however, the 'profit element' could rise faster than the four others. An excess demand in the market for passenger cars, in and after 1958, was specifically underlined. It was also noted that excess demand was aggravated by the foreign exchange crisis in 1958 which resulted in fall in production of passenger cars. The committee pointed out that, there was room for reduction in the cost of production. It did recognise that factors like small capacity of production, inadequacy of plants and machinery which were installed initially only for assembly operations, lack of trained workers and technical supervision, partly avoidable wasteful expenditure, and inadequate capital funds, had contributed to the high cost structure. But, even with these constraints, the committee thought, there was scope for reducing costs. It suggested that the cost-plus system as a basis for price fixation, adopted under the "Informal Price control" of automobiles in 1956, was an additional factor responsible for the high cost

structure. In a situation of a sellers market, then prevailing, it was easier for the manufacturers to pass on to the consumer any increase in price, due to rise in the cost of production. "The cost-plus system as a basis of price fixation", it said, "means that, the higher the cost of production, the greater the profits which the industry can earn."¹¹ It therefore, felt that, "unless pressure was exercised towards reduction in prices, there would be no improvement in the situation at all. It therefore, recommended the following reduction in prices: Produce of Hindustan Motors and Premier Automobiles - Ambassador cars and Fiat cars respectively - Rs. 500 each and a cut in retail price by Rs. 400 for Standard Ten car produced by Standard Motors Product"¹² The government was not in favour of proposing any cuts in the prices of these cars at that stage. However, two of the manufacturers themselves, had reduced their prices by Rs. 200 each after informal discussions. The Jha Committee felt that effective control over prices, could be achieved by bringing about greater internal competition, by augmenting the availability of vehicles from different factories in India. It recommended an alternative system of price fixation. In view of the prevailing shortage of vehicles, the Committee recommended fixation of prices on an 'ad hoc' basis influenced in particular under two considerations:" (a) an efficient producer who had succeeded in keeping cost down should be able to make better profits than a producer who has not been able to do so; (b) a firm using more indigenous components should get better returns than a firm using imported

¹¹ Report of Adhoc Committee on Automobile Industry , Government of India, 1960, p. 75.

¹² same as above, p. 78.

components."¹³ On the issue of price control, the Committee recommended continuation of control over passenger cars and its abolition in case of commercial vehicles. The government, however, was not in favour of abolition of price control over any type of vehicle at that point of time. However, by 1967, commercial vehicles went out of the purview of price control.

Licensed and Utilised Capacity

In times of scarcity of foreign exchange and raw materials, licensing of capacity becomes an important instrument for rationing of such scarce resources with competing needs, according to development priorities. For a developing country like India setting up of an automobile industry means a substantial claim on the total foreign exchange reserves of the economy. Entering into foreign collaborations for setting up of assembly operations from imported CKD packs, importation of technology, plants and machinery in the initial stages, to the imports of parts components and raw materials in the various stages of phased indigenous production, are the major reasons for the large foreign exchange demands of the automobile industry. As a result licensing of capacity, for the automobile industry as a whole and segments within the industry, becomes an important instrument of control. Capacity licensed to various units for production of passenger cars, can thus be assumed to have been done according to such priorities.

However, there have been cases when, production, and hence actual capacity, have been much higher, than official estimates of licensed capacity.

¹³ *cited above*, p. 76.

The gap in the DGTD's estimates of capacity and the actual capacity furnished by the manufacturers themselves is an example (Table 4.3)

The 1953 inquiry commission assumed the assembling capacity of Hindustan Motors, both for cars and commercial vehicles, to be at 18,000 vehicles per annum, on a single shift basis, and the same capacity was adopted in the 1956 inquiry also. The AdHoc Committee of 1960 assessed the manufacturing capacity of this unit to be at 10,000 Ambassador cars. Going by the production figures till 1959, the assessed capacity seem to be based on facts as shown in Table 4.4 below .

However, since 1960, production of cars by this unit saw a high growth except in 1963 (Table 4.5) And it reached as high as 19,469 cars in the year 1966. The unit had been producing about 20,000 cars annually, though official estimates of the units capacity to be at 15,000 cars per annum. Each extra car, however, meant spending of a corresponding amount of foreign exchange, except in case of import of fixed capital. As the Tariff Commission (1968) observed, "Each vehicle has a certain amount of import content in the form of finished and semi-finished components, and the value of imported raw materials alone is more than 20% of the total cost of manufacture of an Ambassador car, excluding assembly charges." ¹⁴

Import licenses on raw materials were given on the basis of actual performance in the previous year, irrespective of the licensed or installed

¹⁴ Report on the Continuation of Protection to the Automobile Industry, Tariff Commission Report, 1968, p. 75

Table4.3: Capacity of Hindustan Motors Limited

Hindustan Motors Ltd.:	As furnished by producers (in numbers)	As furnished by D.G.T.D (in numbers)
Ambassador cars	38,400	15,000

Source : *Report on the Continuation of Protection to the Automobile Industry, 1968*
Tariff Commission, Government of India

Table 4 : Production of Cars by Hindustan Motors from 1951 to 1959

Year	Ambassador cars
1951	2,161
1952	1,185
1953	1,847
1954	2,628
1955	4,868
1956	5,781
1957	5,086
1958	4,799
1959	5,745

Source : *Report on the Continuation of Protection to the Automobile Industry, 1968*
Tariff Commission, Government of India

Table 4.5: Production of cars by Hindustan Motors from 1960 to 1967 (first nine months)

Year	Ambassador cars
1960	9,217
1961	11,056
1962	13,438
1963	8,621
1964	---
1965	15,558
1966	19,469
1967 (Nine months)	15,140

Source : *Report on the Continuation of Protection to the Automobile Industry, 1968*
Tariff Commission, Government of India

capacity. Thus, a unit which produced more passenger cars than its licensed capacity, was able to secure additional import licenses, and thus go on increasing its production. Hindustan Motors, for example, had been allowed to import, over and above the extra foreign exchange associated with the extra output, a "c.i.f. value of about Rs. 2 crores, a battery of new machines for cylinder block line for ambassador cars for the capacity of eight blocks per hour, which works out to be 38,400 blocks on double shift basis."¹⁵The actual production capacity thus got raised to 38,400 cars per year on double shift basis. This was also the claim made by the unit as its capacity right from the beginning.

Quota System

The distribution and sale of passenger cars was brought under statutory control in 1959. The Motor Cars (Distribution and Sale) Control Order was promulgated in 1959, closely following, the foreign exchange crisis of 1958. The Order was applicable to the cars manufactured in India, namely, Ambassador, Fiat 1100 and Standard Herald. A Controller appointed under this Order, made allocations for distribution of cars, and fixed quotas for Central and State Governments, LIC, Taxi trade and fixed a discretionary quota for manufacturers. Based on the information furnished by the Controller of passenger cars, the then existing quotas were :

Central Government quota per quarter:

¹⁵ Report on the Continuation of Protection to the Automobile Industry, Tariff Commission, 1968, p. 75.

Ambassador 500 Nos.

Fiat 300 Nos.

Standard Herald 150 Nos.

State Government quota : 5 % of the number of cars allocated to a State/
Centrally administered territory subject to the following minimum of cars per
quarter:

- (a) States 15 each of Ambassador and Fiat, and 10 Standard;
- (b) Delhi Administration 15 each of Standard and Fiat and 10 Ambassador;
- (c) Centrally Administered Territories, other than Delhi 7 each of
Ambassador and Fiat, and 5 Standard.

This kind of a rationing system, was necessary only during a period when the demand for cars far exceeded supply, when even with a system of prior approval for hiking prices, the manufacturer could enjoy a greater freedom to charge higher prices. The 1968 Tariff Commission on Automobile Industry noted that the scarcity that had made the quota system necessary was no longer continuing, and that the quota system should be abolished, so as to give them greater freedom as sellers.

Other Policy Issues

In the Industrial Policy Resolution, 1948, automobiles and tractors were classified as industries of importance which were to be controlled by the state. Later motor cars were classified under Schedule Industries which meant that producing units here were to be set up under private initiative but with adherence to various controls and regulations. Under the Industries (Development and Regulation) Act 1951, an industrial license was required for a unit with 50 or more workers in order to establish a new unit, expand output by more than 5 per cent annually, change location, manufacture a new product and to conduct business if a change is introduced in policies.

As regards the policy of foreign collaboration, it too, underwent changes. Two major phases may be identified till the late seventies: the first phase which ended in 1968 encouraged foreign collaborations with equity participation.¹¹ The flood of foreign collaborations up to 1968, in the economy in general, had led to growing criticism of the increasing dependence on foreign technology. This prompted the government to appoint the Mudaliar Committee to look into the whole question of foreign collaborations.¹² The committee favoured a stricter approach which was accepted by the Government.

The Foreign Investment Board was established in 1968, and the emphasis was on discouraging acquisition of technology through direct foreign investments. (DFI). As part of the strict policy towards DFI, Foreign Exchange Regulation Act (FERA) was passed in 1973. Under this act all concerns with more than 40 per cent foreign equity participation were classified as FERA companies and were subject to special state controls and regulations. The new policy shift since the

mid-seventies however, ultimately led to large-scale liberalisation of foreign investment.

In Transition

An export-promoting growth strategy started gaining ground since the mid-seventies in general and the early eighties in particular. Expanding privatisation, relaxation of controls for free play of the price mechanism, free trade and market-determined exchange rate of the national currency, were the pillars of the export-promoting growth strategy. Protection to domestic industry continued but collaboration with foreign capital was encouraged.

The passenger car industry, it was felt, should be allowed to import whatever technology it desired. On the demand side the policy shift favoured what is usually described as 'freedom of the consumer' for choice, with regard to all types of consumer goods including luxuries, like passenger cars, in respect of which all restraints on production were removed. Protection continued, though under a different configuration. Mention may be particularly made of credit for car purchase, and relatively low excise and import duties, especially for Maruti cars. The initial foreign equity participation in MUL was 26 per cent, and it was raised first to 40 per cent and then to 50 per cent or more in the early '90's, when MUL became a non-government company entity. Other passenger car manufacturing units, i.e., HML and PAL, were granted approval for foreign collaborations for new models, but only for cars, with engine capacity exceeding 1000 c.c.

The system of licensing earlier required that a unit required prior approval for expanding its output by more than 5 per cent annually, or for manufacturing a new product. The system was relaxed from time to time. For example, 'automatic growth' upto 25 per cent in five years (over and above the 25 per cent already permitted by the IDRA) which was earlier permitted to some vehicles in 1975, was extended to include passenger cars in 1982. In the same year, a liberal scheme for re-endorsement of capacity was announced, which envisaged that the capacity indicated in the industrial license could be re-endorsed upto 133 per cent of the highest level of production during the previous five years, provided capacity utilisation, was at least 94 per cent. In 1986, the level of capacity utilisation required for availing of this scheme was reduced to 80 per cent. However, before that, in 1984, automobiles were included amongst those industries which were subject to special regulation. As a result the re-endorsement facility of 1982 was again withdrawn.

The system of broad banding indirectly brought about some flexibility in utilisation of productive capacity. Earlier, a facility for diversification was available to passenger cars and two-wheelers, whereby extra capacity was normally allowed to be used for the production of other items within the scheduled industry. In 1985, motorised two/three/four wheelers were exempted from the provisions of section 21 and section 22 of the MRTP Act. The implication of this proposal was that, large industrial firms would no longer require approval under the MRTP Act, for undertaking substantial expansion or for setting up new units, except for seeking approval under the Industries (Development and Regulation) Act, 1951. Another scheme announced in 1986, was that of minimum economic scale wherein the government recognised that

firms across a wide spectrum of industries were of uneconomic size. These scales were 50,000 for cars (30,000 for cars above 2000 c.c.) and the government stated that it would actively encourage all units to achieve this scale of operation.

Chapter Five

Towards An Assessment

Our assessment of the impact of protection on the growth of the industry as the background for anticipating the future prospects is presented in this chapter. 'Growth' has a dual meaning for our purpose-- output growth as such, during the period under review; and combination of technological improvement on the production side, with a strong sustainable demand base. The first one is an essential condition for cost efficiency, and periodic improvement in the quality of the product, necessary for being internationally competitive. Technological upgradation could have been achieved either by technology transfer, or domestic research and development (R & D), or some combination of the two. In the passenger car industry, upgradation actually means technical efficiency of components and ancillaries which are domestically produced, or free access to import of these components.

Indigenisation as such, does not provide any conclusive evidence for or against it. Mainly because, what is domestically produced need not necessarily contribute to technical efficiency in terms of cost of production or cost of running or maintenance of the car. Without such efficiency indigenisation may be foreign-exchange-saving, but not a source of reduction in the cost of production. It can even retard efficiency, to the extent the latter is required for reducing costs. A domestically produced

component, for example, may be costlier than the imported one, especially when fiscal policy is oriented towards free trade.

For identifying a sustainable demand base, we have to first examine the domestic demand base. Export demand is its second component. One way of looking at historical output growth, is to examine whether protection made a positive contribution here. Another question which can be answered on the basis of historical output growth, is whether the level of domestic demand was or ultimately became large enough to absorb a minimum level of output required for economies of scale.

Income and price are the two main determinants of household demand for car. As regards price elasticity of demand, own-price elasticity is the important one for us. It is ordinarily quite low, particularly in the short run. There have been situations, for example, when the price of Maruti 800 has increased by 5 per cent to 10 per cent without any fall in demand. Nevertheless, we cannot conclude only on that basis, that the effect of a price rise as high as 20 per cent or more, would have been similar. We cannot rule out a significant fall in demand, even if the measure of elasticity is less than unity.

For examining price as a factor in historical output growth, our first question is whether price rise turned out to be demand-constraining. The source of price rise usually lies in mark-up pricing, and rise in cost. The latter, in turn, can be due to a number of reasons--higher fiscal imposts on the final product, raw materials or intermediate goods; rise in international prices; depreciation of the currency; higher 'fixed charges' due to lower capacity utilisation; and, the conscious decision of the Government to cut down consumption for a stricter foreign exchange rationing. The last one can be

achieved through higher customs and/or excise duties on any of the types of product mentioned above, and/or higher administered car price or fuel price.

The nature of the effect of protection would be usually different for different sets of reasons. If mark-up pricing by manufacturers appears to be the reason, and that is due to the oligopolistic structure of the industry, then, there will be ground for inquiring whether the structure itself was one of the effects of protection. Most other causes would indicate either that, state policy and action have conflicting effects on growth, or that, instability in cost is inherent in the structure of the industry. 'Structure' here includes the mix of indigenous and imported intermediate products; the 'excess' cost of indigenous products, if any; and the share of materials cost in total cost.

Our analysis in this chapter is mainly based on the information regarding customs and excise duties, price of cars, foreign exchange allocation, and licensed and actual capacity, presented in Chapters Three and Four. These form the basis for ascertaining how far protection favoured historical output growth. We also intend to see in a general way how far different policy preferences and actions from time to time were in conformity or conflict with the protection policy. Our investigation of the demand side is meant essentially for finding the basis which can enable us to anticipate the future. As regards technological improvement related to cost and quality, we take up only the case of MUL. Since, the demand 'explosion' has been almost wholly due to fuel efficiency and some of the perceived qualities of the Maruti cars.

Output and Protection

For our analysis in this section, we divide the 35 years of our study period into three sub-periods to begin with, 1955- 1961, 1961-84, and 1984-1990. Taking the 23 years of the second sub-period (1963-84) as one long-run, the average annual growth rate was 4.6 per cent, compared to GDP growth of 5.12 per cent during 1961-1970 and 12 per cent during 1970/71 to 1980/81. But, short-period fluctuations in car output were very high, ranging between -2 per cent and 5.55 per cent. (Chapter Three) Protection in different forms did continue during the entire period, though the trend in customs and/or excise duty rates was not uniform.

Looking at the trend in customs and excise duties during the entire period, it appears that the Government resorted to ad hoc actions in some cases on the basis of its own idea about the best combination of steps for protecting car industry along with encouraging increasing indigenisation. As regards direct protection to the car industry, import restriction, as noted by different Tariff Commissions, was the main instrument. When foreign exchange was given for importing cars, arguably on unusual grounds, prohibitive tariff for competing imports was combined with low tariff on products used by the industry, including ancillaries. Customs tariff on the finished product, thus, was generally of a protective nature. Machinery imports, for example, attracted a much lower duty until the late sixties than the motor car did.

As regards components and ancillaries, however, two opposing pulls seem to have worked in fixing duty rates in different years or longer periods. Import duty on these were almost consistently raised during mid-sixties to end-seventies. Here was a case of a consistent target facing conflicting results on occasions. Rise in customs duty from 25 per cent in 1963-64 to 100 per cent

in 1971-72 seems to have been directed towards encouragement of domestic industry. But, it also produced the counter effect of cost rise on the finished product, and thus produced what has been called 'excess cost'. It is possible to argue that, such conflicts are somewhat unavoidable when domestic production of intermediate products are preferred but production of capital goods for production of the intermediate products are accorded a low priority. But, that too, is generally unavoidable in an import-substituting regime, where industries requiring foreign exchange for developing self-reliance are far too many and the available foreign resources are extremely limited.

The situation since the late first half of the eighties was different, mainly because state policy during the Maruti phase was focussed on combining fuel efficiency with lower cost. Components and ancillaries necessary for Maruti were consistently protected by lower import and excise duties. The car too, got a similar treatment in terms of excise duty rates. (Chapter Four). More important, other existing car models were sometimes positively discouraged, in the same period. In 1988-89 for example, existing concessional import duty was extended to cars of not more than 1000 cc, and to some parts imported by auto ancillaries manufacturers supplying to Maruti. Even among fuel efficient cars, discriminating excise duty was imposed on vehicles produced by firms other than Maruti. In the same year, excise duty on fuel efficient cars exceeding 1000 cc was raised from 25 per cent ad valorem to 30 per cent ad valorem. Such consistency was not visible before the eighties. The two approaches to protection, before and during the eighties, were partly inherent in the policy thrusts at the macro-economic level in general and the car industry in particular. The Government had been examining the proposal for a 'low-price' fuel-efficient car since the

seventies, and it was in the second half of that decade that the change from the import-substituting policy was initiated.

We do not have enough information for investigating whether scarcity of foreign exchange was a source of supply constraint leading to lower rate of capacity utilisation in some years. It is possible to surmise that in those short periods when demand grew at a higher rate, during 1961-68 in particular, (with a growth rate of 8 per cent) additional capacity creation or utilisation could not have been ruled out, unless restricted supply was planned by the firms. But, since prices were fixed by the Government until 1975, one cannot assume much scope for mark-up pricing except to the extent it was accommodated within the fixed price. Our information, therefore, does not permit us to conclude that, controlled capacity utilisation was consistently used for price manipulation. At the same time, we know from the evidence from the manufacturers themselves that, it was a demand constraint arising out of higher petrol price that they could not utilise the capacity they had desired.

As regards the scope for large-scale capacity expansion independently of technological change, several official Committees and Commissions observed insufficient demand as the major constraint. Paucity of foreign resources was an additional reason almost all through. We can thus conclude the following about the effect of protection on historical growth until 1984-85: ***First, protection did provide incentive for investment and production of cars and intermediate products; and second, realisation of the full impact of that incentive was constrained by three factors: resources constraint in years of higher growth rate, especially during the sixties;***

higher cost of at least some indigenous intermediate products; and third, demand constraint.

As regards the Maruti phase, we have already seen that the Maruti project thrived mainly on a new demand situation that was emerging prior to its inception. The relatively low price of its most popular product was partly contributed to by protection, which it continues to largely enjoy. *In that sense, protection made a consistently positive effect on growth during the Maruti phase. The possible long-run effect, however, has to be examined on the basis of the experience in the short run.*

Prospects of Future Demand

For that, we have to closely scrutinise the demand side and the cost side. We take up the demand side first. For examining the trend in past demand as one basis for anticipating the future trend, we should divide the study period into two: first, until the end-seventies, and second, the eighties. For the first period, we start with the finding that, demand constraint was an important factor against faster output growth. The following appear to have been the major reasons:

(a) Government and business demand together occupied a much higher share in the total demand for cars, and volume did not grow faster; ¹

(b) Since the growth rate in the demand for cars was much lower than the non-agricultural GDP growth rate, increase in household demand for car occurred at a much slower pace than in the next period.

¹ Industry sources cite such declining proportion.

Demand growth in the second period was due to the combined effect of a higher growth in business demand including replacement demand, and a much faster growth rate on household demand. As regards household demand, fuel efficiency was a decisive reason, though the price of Maruti 800 in the initial years made a substantial contribution. It is the second period which we now take up for elaboration.

The Maruti project became viable because a sizeable section of households had already gone up the income ladder over a period of time, and the so-called pent-up demand had become identifiable sometime before Maruti was launched.² There is a body of literature identifying the process of the change in income distribution, in consequence of which there has been a proliferation of what has been popularly identified as the 'middle class'.³ Most households belonging to this income group are also potential savers, though their savings-income ratio may vary according to the level of real income.

The spurt in household demand for cars was based on the process through which had emerged a much larger size and proportion of households which became actual or potential savers over a period since the seventies. There are quite a few indicators of this process. Here we draw attention to two sets of interrelated trends. These two together provide a set of reasonable evidence for explaining the relationship between the proliferation of what we have called 'potential or actual savers' among households and the spurt in demand for two-wheelers and passenger cars:

² Official thinking about the need for and feasibility of a low-costly small car, since 1960, as recorded in the Report of the Committee of Inquiry on Maruti Affairs, 1979, clearly brings it out.

³ C.P. Chandrasekhar, Aspects of Growth and Structural Change in Indian Industry, Economic and Political Weekly, Special Number, November, 1988. S L Shetty, Industrial Growth and Structure as Seen Through Annual Survey of Industries, Economic and Political Weekly, October, 1982.

(a) It is household savings which accounted for the increase in the savings ratio during the seventies and the eighties. This is confirmed by the well-known fact that private capital formation in agriculture was noticeably stagnant during the eighties, implying that creation of physical assets in the non-household sector had a low weight in the trend in household savings. The share of financial savings in total household saving was generally on the rise, despite intervening fluctuations. Of the total financial savings again, financial investment in units of the Unit Trust of India and shares and debentures together kept acquiring a larger share during the period, the eighties in particular. These are evident from Tables 5.1 to 5.2.

(b) The share of personal transport equipment kept acquiring a rising share in aggregate private final consumption expenditure, during the seventies and the eighties. Table 5.3

For a large proportion of these households the variable cost of car running becomes important. That is where Maruti enjoyed a major advantage. Maruti's initial retail price for the consumer was Rs. 47,500, in 1984, while Ambassador and Fiat were both priced at above Rs.60,000. The fuel cost for Maruti-800 it was at least 10 per cent less than either of the two. Taking the average annual distance travelled by a car at 15,000--as mentioned in a World Bank-aided study on Road User Cost in India in the second half of the eighties-- the fuel expenditure, excluding that on engine oil, was not more than 65 per cent⁴ of the expenditure for Ambassador or Fiat. So long as this advantage is not offset by the difference in the price of cars, Maruti should decisively enjoy higher demand. Nevertheless, for a high demand

⁴ World Bank Aided Study on Vehicle Fleet Modernisation and Road Use Charges, Government of India, Vol 5, February, 1989.

Table 5.1: Financial Saving as Percentage of (i) Household Saving and (ii) Net Domestic Saving

	1970/71	1975/76	1980/81	1985/86	1987/88	1988/89	1989/90
Financial Saving as percentage of household savings	38.0	49.0	39.4	51.6	45.6	38.9	45.32
Financial Saving as percentage of net domestic savings	30.0	35.0	51.5	79.16	69.80	43.30	63.00

Source : NAS data 1979 and NAS data 1993.

Table 5.2 : Household Savings as Percentage of Net Domestic Saving(Gross Domestic Saving from 1980/81 onwards)

	1970/71	1975/76	1980/81	1985/86	1987/88	1988/89	1989/90
House hold Savings as percentage of NDS/GDS	77.5	66.7	37.2	40.86	37.35	31.2	37.5

Source : NAS data 1979 and NAS data 1993.

Note : NDS= Net Domestic Saving

GDS= Gross Domestic Saving

Table 5.3 : Private Final Consumption Expenditure by Object (percentage distribution)

	Furniture, furnishings, household equipments etc.	Personal transport equipment
1950/1951	1.2	0.2
1955/56	1.2	0.3
1960/61	1.4	0.5
1965/66	1.7	0.6
1970/71	2.3	1.0
1975/76	2.6	1.0
1980/81	0.6	1.4
1985/86	0.7	2.2
1986/87	0.7	2.8
1987/88	0.6	2.9
1988/89	0.6	3.1
1989/90	0.7	3.3

Note : (1) Figures from 1950/51 to 1975/76 are at 1970/71 prices
(2) Figures from 1980/81 to 1989/90 are at 1980/81 prices.

Source : NAS data 1979 and NAS data 1993.

growth, identical trends in the pattern of income distribution will be necessary. Its feasibility can be examined only at the macro level.

Here we underline that, the demand growth has been very closely dependent on, or associated with a high degree of concentration of car ownership. We have state-wise car stock data for two years beginning 1990-91, metropolitan city-wise stock data for one year, and state-wise sales data for 21 years. As regards the stock data, it is somewhat inadequate due to the small number of years of coverage. But, that is significantly offset if we consider that the stock figures are cumulative over time, and that therefore, these provide a reasonably dependable indication of a process of concentration over a period of time. Taking the stock of car or sale of car in a period per thousand population, there was an extraordinary concentration of car ownership in Delhi (Table 5.4 to 5.6). Besides, more than 33 per cent of aggregate car stock in 1990-91 was concentrated in Delhi and Maharashtra, nearly 47 per cent in Delhi, Maharashtra and West Bengal together, and the four states, with Gujarat added, had more than 50 per cent. Higher Government, business, and institutional stock together could be an additional reason for the numbers in these states. But when the state-wise figures of registered companies are taken into account, firm ownership does not make any significant difference to the relative numbers. Delhi, for example had less than one-third of what Maharashtra had as companies filing tax returns. Besides, the decisively high weightage of personal ownership comes out clearly if we relate the car stock to state-wise distribution of income-tax assessees. Our data here is for 1989-90, but the one-year gap does not significantly affect the direction and nature of trends we are underlining. (Table 5.7).

Table 5.4 : Stock of Cars and Two Wheelers in Select States/ Union Territories

States/ Union Territories	Cars			Two- Wheelers		
	1989/90	1990/91	1991/92	1989/90	1990/91	1991/92
Maharashtra	-	404.09	431.40	-	1735.87	1837.07
Delhi	-	408.64	426.66	-	1220.64	1260.00
West Bengal	-	325.33	312.70	-	351.15	419.45
Gujarat	-	166.20	168.25	-	1412.00	1448.00
Tamil Nadu	-	238.57	275.89	-	1069.65	1116.80
Andhra Pradesh	-	88.20	89.20	-	1114.87	1181.80
Karnataka	-	145.12	144.70	-	1030.75	1065.50
All India	-	2542.70	2633.57	-	14046.76	

Source ; Ministry of Surface Transport

Table 5.5 : State wise sale of Passenger Cars.

('000 no.s)

	1971/80	1981	1984	1985	1986	1987	1988	1990
Delhi	37.81 (3.78)	5.16	9.66	25.02	26.60	40.24	37.72	42.90
U.P	18.10 (1.81)	1.90	2.81	4.08	4.97	7.42	9.54	9.61
W.B	45.50 (4.55)	4.20	6.38	7.72	8.65	9.65	8.86	8.95
Gujarat	20.28 (2.03)	2.48	3.02	4.42	4.47	8.39	9.09	10.45
Maharashtra	68.38 (6.84)	10.13	14.63	22.50	20.35	24.46	25.53	26.13
A.P	12.07 (1.21)	1.44	2.48	3.88	3.92	5.75	5.33	7.32
Karnataka	16.82 (1.68)	1.89	1.96	3.85	4.90	7.34	7.11	7.45
T.N	33.52 (3.35)	3.74	6.48	8.76	8.21	12.53	11.87	12.17
Total	336.71 (33.67)	40.49	61.04	101.8	105.7	151.1	158.8	169.7

Note : Figures in brackets are annual averages.

Table 5.6 : Car Stock in Major Cities, March 1990.

Cities	Car Stock (in '000 no.s)
Ahmedabad	32.75
Bangalore	71.07
Bombay	244.00
Calcutta	176.09
Delhi	345.15
Jaipur	21.46
Kanpur	9.20
Lukhnow	14.63
Nagpur	8.59
Pune	19.90
Total	942.79

Source : Same as cited in table 5.4

Table 5.7: Income Tax (Number of Returns) of Some Select States/Union Territory;1989-90

State/Union Territory	Individual	Hindu Undivided Family	Registered Firms	Others
Maharashtra	671149	36066	131700	4151
Delhi	269432	14459	49401	346
West Bengal	319273	12960	27446	6309
Gujarat	242732	28469	74855	4494
Tamil Nadu	184525	17135	42061	815
Andra Pradesh	136266	14251	41334	515
Karnataka	164713	9627	24765	461

Source: Directorate of Income Tax, Ministry of Finance.

Concentration in the ownership of cars is mainly based on income concentration partly associated with the aforesaid pattern of income distribution. Concentration in car ownership that is relevant to our analysis, took place at three levels-- (a) urban relative to rural; (b) among states/union territories; and (c) among cities. In each of the levels, those which formed the base for accelerating demand in the mid-eighties, have been gradually turning into low-demand units during the nineties. Its implications are not very favourable for sustained growth in new demand. Here we are not going into the trends in and determinants of replacement demand, mainly a function of the age-structure of the car population.

The Cost Factor

Historically, manufacturers were known to have generally passed on any increase in costs to the consumer. The 1968 Tariff Commission observed that, "since 1957, all the manufacturers have revised upward the prices of their respective vehicles" ⁵ on grounds of enhanced customs/excise duty; increase in CKD pack prices and ocean freight, and in price of tyres and tubes; exchange rate variations, and tax levied by state governments. The exchange rate variation cited by the Commission was apparently with reference to the 1966 devaluation. The 2 per cent rate of price increase during the first period, can, therefore, be supposed to have incorporated the change in cost due to reasons cited by the Commission.

Cost of production of a car, is not amenable to easy estimating. The constituents of the cost of a car, with several thousand components and ancillaries needed for its production, are too heterogeneous and large in number to be unified into comparable or measurable categories. The Jha

⁵ Report on the Fixation of Fair Selling Prices of Automobiles, Tariff Commission, 1968, p 6.

Committee's (1960) enumeration of the five major segments where costs are separately formed, has been mentioned earlier. (Chapter Four). It also underlined the difficulty of estimating costs, under the specific pattern of linkages in which the industry was operating. It adopted rather simplified methods and conceptualization for cost determination. Showing that the difference between the value of bought-out components and the ex-factory cost of a car, was 34.5 per cent in case of Ambassador, and 23 per cent in case of Fiat--the rest of the cost was constituted by the value of bought-out components-- it argued that, fixation of the price for covering just the cost of the bought-out items, price of Ambassador could be lower, at best, by 'about 30 per cent'.⁶ That was only partly true, and less so as time passed. For, a rising proportion of components and ancillaries were being produced by the car manufacturers themselves, both for self-consumption and for sale to users for repair. The profit earned on those products were apparently not taken into account, nor were the fiscal concessions on those items, as we have cited in Chapter Four considered.

The point made by the L K Jha Committee about the structural peculiarities inherent in the high proportion of bought-out components and ancillaries in the total cost, was, however, not without basis. With this kind of a built-in structural characteristic, was added the 'historical cost' since, the initial capacity installed was based on the perception of a low demand level, thus excluding the economies of scale.

What is significant is that, cost-reducing measures were not systematically examined by any of the several Commissions and Committees, except for making suggestions regarding organisational efficiency, or economising on

⁶ The Ad Hoc Committee Report on the Automobile Industry, Tariff Commission, 1960, p 20

the cost of marketing. The Jha Committee, on the other hand, came to the conclusion that, (a) wholesale re-equipment of the existing machinery could not be sustained by the 'current or expected levels of demand'.⁷ and (b) the somewhat "chronic reasons for higher costs... cannot be remedied in the near future." At the same time, in its eagerness to expand competition, it recommended "expanding the productive capacity of the existing units rather than by adding to the number of units." There was no suggestion to encourage any change in the structural peculiarity of the industry.

Both HML and PAL, however, complained in the seventies that they had been incurring losses over a few consecutive years after the price control system was abolished in 1975. Ambassador price, on the other hand, went up at an average of 10.25 per cent during 1974-77, and Premier prices increased at 11.3 per cent. That was despite a significant reduction in 1976-77, in excise duties on both cars and components and ancillaries. The firms claimed that, they were affected by cost rise due to rise in 'input' prices combined with "higher incidence of fixed charges due to lower capacity utilisation".⁸ The Bureau of Industrial Costs and Prices largely upheld the contention and identified the reason for cost rise as "increase in the cost of raw materials and in other elements of cost."⁹

The share of higher fixed charges due to low capacity utilisation provides a few significant indicators. The rate of capacity utilisation was neither consistent, nor was it always based wholly on the principle of restricting supply in a seller's market. Such a market was there, anyway, and it is difficult to reconcile the large backlog in some periods with under utilisation

⁷ *ibid.*, p 21.

⁸ The Study of the Reasonableness of Increases in the Prices of Passenger Cars After Decontrol, March, 1985.

⁹ *ibid.*

of capacity, except in some years. The manufacturer's preference for utilisation rate was not consistent anyway.

One important supply-side constraint could have come from scarcity of foreign exchange. Allocation of foreign exchange was made on an ad hoc basis in some years, no doubt. But, it was generally[^] supposed to be guided by the licensed capacity. In any case, the actual utilisation of foreign exchange could be scrutinised by reference to the actual production. Under-utilisation of capacity could, therefore, not be wholly or significantly ascribed to insufficient allocation of foreign exchange except in years of an unusually low foreign exchange reserves. Car manufacturers complained of scarcity of foreign exchange on occasions, but manufacturers of components and ancillaries had different views about it.

The drastic fall in output in a few years during the seventies, therefore, remains somewhat paradoxical. It cannot be explained by price elasticity, though prices did rise. That makes it possible to get some measure of the own price elasticity of demand for passenger cars. But, the price that was more relevant here was the one influencing the household's cost of running and maintaining a car. Earlier increases in car price did not pull down the demand. The rise in the running cost due to rise in petrol price-- consequent to two oil shocks in quick succession-- seems to have played the decisive role in pulling down the demand. And, that is where fuel efficiency came to play a very important role.

Maruti provided that fuel efficiency. But, its performance on the cost side is not as efficient as it was supposed to be. Frequent rise in the price of Maruti-800 has already been cited. Reasons for such rise, as explained by the Maruti Management, have been broadly of three kinds-- exchange rate

fluctuation, rise in indirect tax rates, and increase in administered prices, steel prices in particular. All these causes then, lie outside the firm's control. Assuming that cost-efficiency has to be achieved within the firm, we need a reasonable criterion for assessing it, or the potential for it.

Labour productivity alone does not provide the criterion, especially in a case where relative capital intensity is preferred as an important attribute of the production function. Besides, when plant and machinery and associated fixed capital -- in Maruti's case it is the Data Processing equipment-- have to be wholly imported, a lower output-capital ratio may fail to produce cost-efficiency for two reasons. If technological upgradation has to mean nearest approximation to the state-of-art technology --which itself is changing fast-- then, some components of the existing fixed plant and machinery may have to be replaced earlier than what could be deemed as the normal life-period. That would raise the rate of depreciation, and a good part of the gain from higher labour productivity. Secondly, any depreciation of the currency may raise costs in case of higher import-dependence.

Besides, a higher rate of obsolescence becomes unavoidable if the industry has to be internationally competitive, and if international corporate giants are locked in a keen competition for lowering costs and introducing new technical features for customer attraction.

Coming back to more direct cost factors, the share of the materials cost in total cost, an important factor in automobile industry, has great significance for our purpose. The distinctive characteristic a vehicle is largely influenced by the wide variety and large number of its components and accessories.

Consequently, the essential condition for lowering costs is that the cost, and thereby the price, of those parts also keep coming down. But, that calls for cost efficiency all along the backward linkages, which we have to keep out of consideration here. Besides, the real effect of indigenisation enters through material cost. So, we take up the ratio of material cost to total cost as another important measure of cost efficiency.

The ratio of value added to value of production is the third necessary measure, especially because this can incorporate the cost implications of two other variables. Even the measure of the value of production is not wholly representative for our purpose. It is the sum of sales excluding excise duty, and the allocated value of the stock of finished goods and work in progress less value of the opening stock of finished goods and work in progress. Whether both the opening and the closing stocks are valued at identical prices is not known. We take it that, price changes are equally covered in both value added and value of production.

Some of the important implications of the ratio of value added to the value of production should be noted here. First, the higher this ratio, the greater is the weight of labour productivity on total cost, and greater the effect of rising labour productivity on cost. Secondly, this is another way of capturing the effect of the share of the materials cost to total cost, so long as mere financial and certain types of marketing costs are kept out of the latter.

Two other measures we have chosen are:

Ratio of Value Added to Gross Block; and,

Ratio of Value Added to the Value of Plant and Machinery.

These provide two different measures of output-capital ratio. Gross Block is the aggregate value of fixed assets, while the second one separates the actual directly productive asset from the aggregate Gross Block. In MUL's case Gross Block is the sum of the values of free- hold land; roads, culvert and test track ; tubewells; buildings; electric installation; drainage, sewerage and water supply; plant and machinery; furniture, fixture and other appliances; and vehicles for self-use. We take plant and machinery and data processing equipments together as directly productive fixed capital.

We present a somewhat simplified basis for testing the usefulness of these ratios as measure(s) of cost efficiency. To begin with, we note the following:

(A) The materials costs are due to purchase of raw materials, components and ancillaries, both from abroad and within the country, whatever the shares of the two at any point of time.

(B) Value added figures are not net value figures, and therefore, do not exclude depreciation.

(C) Gross Block and Fixed Plant and Machinery are valued as the sum of the initial assets at corresponding prices and subsequent additions in different periods at different prices. So, homogeneity remains a problem.

(D) Wages and salaries include expenditure on items which are financially relevant but have no implications for the technical efficiency of production, and therefore, for the attendant cost efficiency.

With these features and limitations in view, we ask the following questions: What can be the extent of contribution made by rising labour productivity to average or total cost? If, for example, output of cars in quantity grows by

8.9 per cent over a three-year period, but value added for the same period goes up by 46.6 per cent, then, the source of this difference lies in higher prices after the initial year. In other words, better price realisation may lead to a higher growth rate in value added than that in the physical volume of output. That still does not indicate any conclusive evidence about the relevant profitability ratio. For, when prices and costs both go up, one has to identify the relative growth rates of both. If the rise in materials cost during the same period turns out to be 69.4 per cent, and that in the value of production by 68.1 per cent, then it is clear the higher output price due to rise in material cost has not been wholly neutralised by higher price realisation.

That is exactly what happened in the case of MUL. The three years we have taken here begin with 1986/87 and not with 1985/86, because MUL imported a much higher proportion of the contents of its car in 1985/86. Figures in Tables 5.8 are absolute figures relevant to the ratios we have mentioned above, and those in Table 5.9 are some of the corresponding ratios. Growth rates of value added relative to those in value of production, are implicit in the trend in the ratio of value added to value of production. Similarly, the ratio of value added to Gross Block or Fixed Plant and Machinery indicate the relative growth rates of the three.

The last two are two different measures of output-fixed capital ratio, while the first one is a reasonably good basis for identifying the trend in the role of materials cost relative to that in the value added. It is here that we find, in a more direct manner, the answer to the question regarding the contribution made by labour productivity to cost efficiency. It is evident that, the share of value added in the value of production showed a consistent downtrend

Table 5.8 : Basis of Cost Structure-- Maruti (in Rs.. crores)

	1985/86	1986/87	1987/88	1988/89	1989/90
Gross block	127.87	218.88	231.38	246.07	259.69
Value added	58.48	125.15	107.68	114.52	136.28
Cost of production	304.51	550.77	620.48	725.34	896.71
Wages and salaries	6.69	10.61	13.15	15.72	23.75
Material cost	249.08	435.66	492.59	609.35	738.0
Plants, machinery and equipments	92.3	185	197	204	213.87
Value of production	275.65	522.52	600.98	727.76	878.33

Source : Maruti Udyog Limited, Annual Reports (various issues)

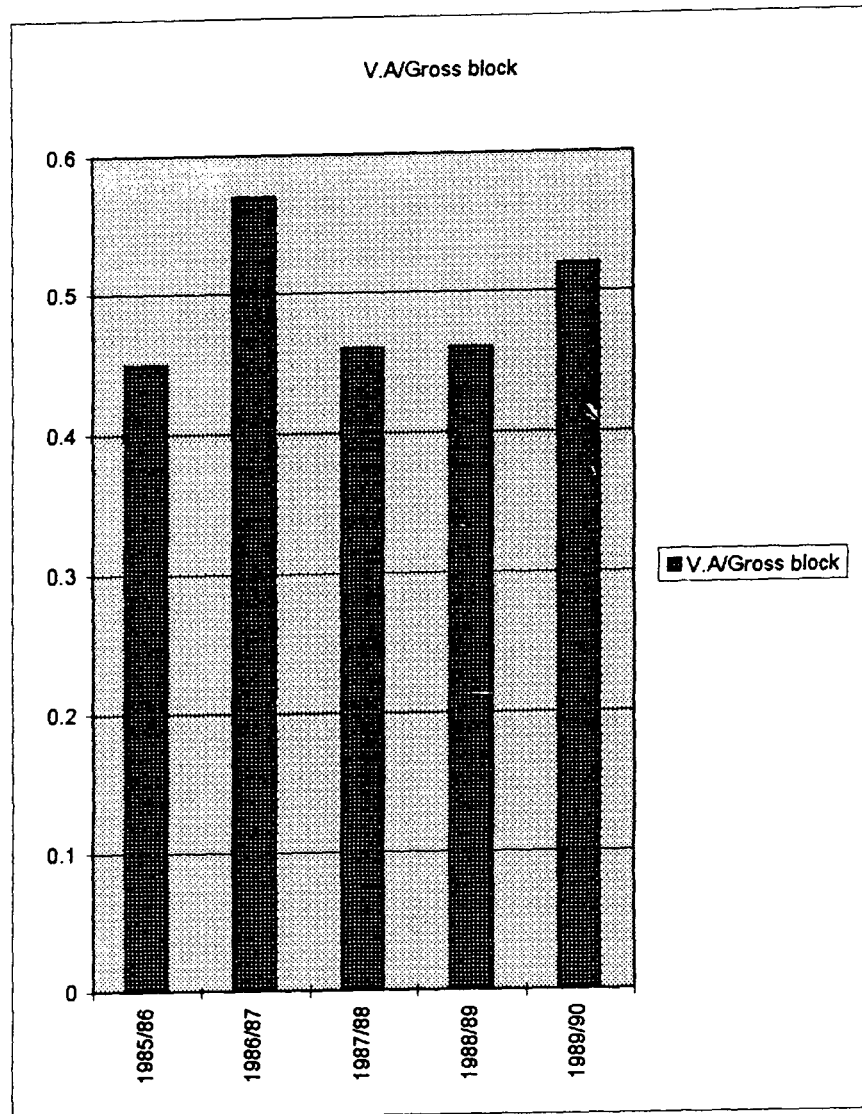
Table 5.9 : Cost Efficiency Ratio of Maruti

	1985/86	1986/87	1987/88	1988/89	1989/90
V.A/Gross block	0.45	0.57	0.46	0.46	0.52
V.A/Value of plants, machinery etc.	0.63	0.67	0.54	0.56	0.63
V.A/Value of production	0.21	0.23	0.17	0.15	0.15
Wages/material cost	0.26	0.24	0.26	0.25	0.32
Wages/total cost	0.22	0.19	0.21	0.21	0.26

Source : Same as in table 5.8

Cost Efficiency Ratio of Maruti-I

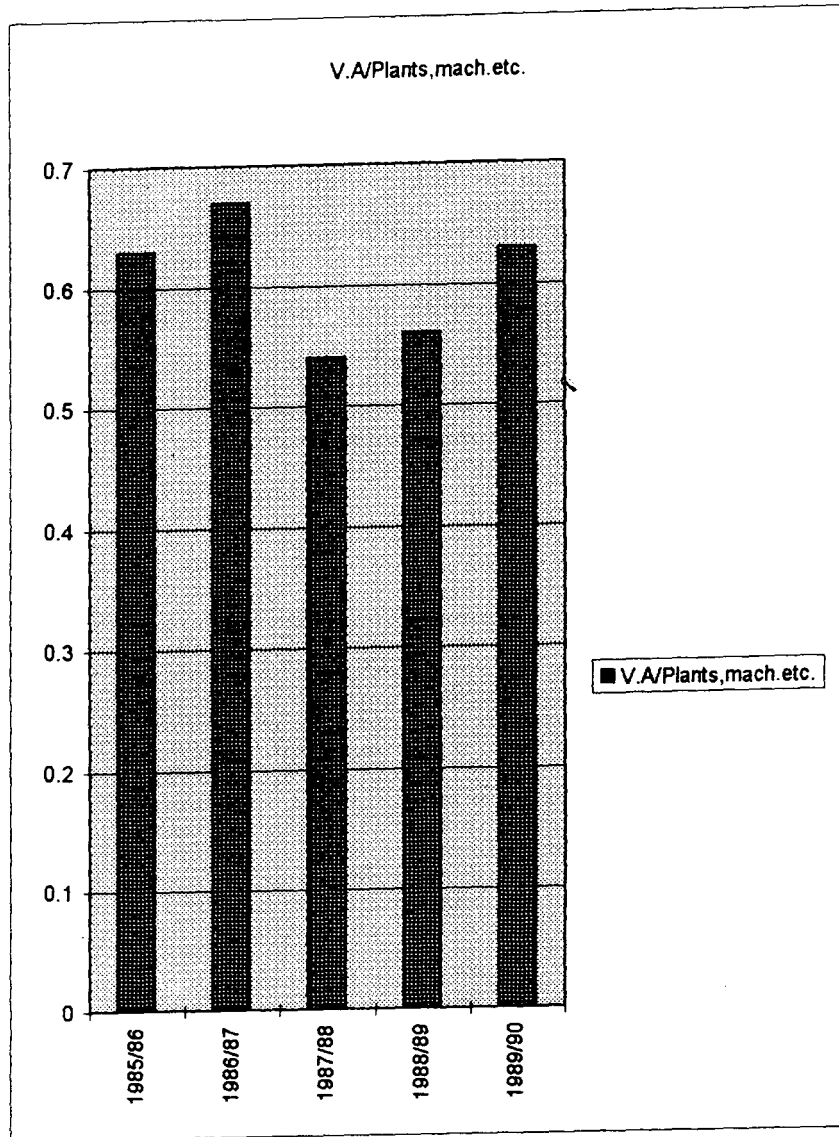
	1985/86	1986/87	1987/88	1988/89	1989/90
V.A/Gross block	0.45	0.57	0.46	0.46	0.52



V.A.= Value added

Cost Efficiency Ratio of Maruti-II

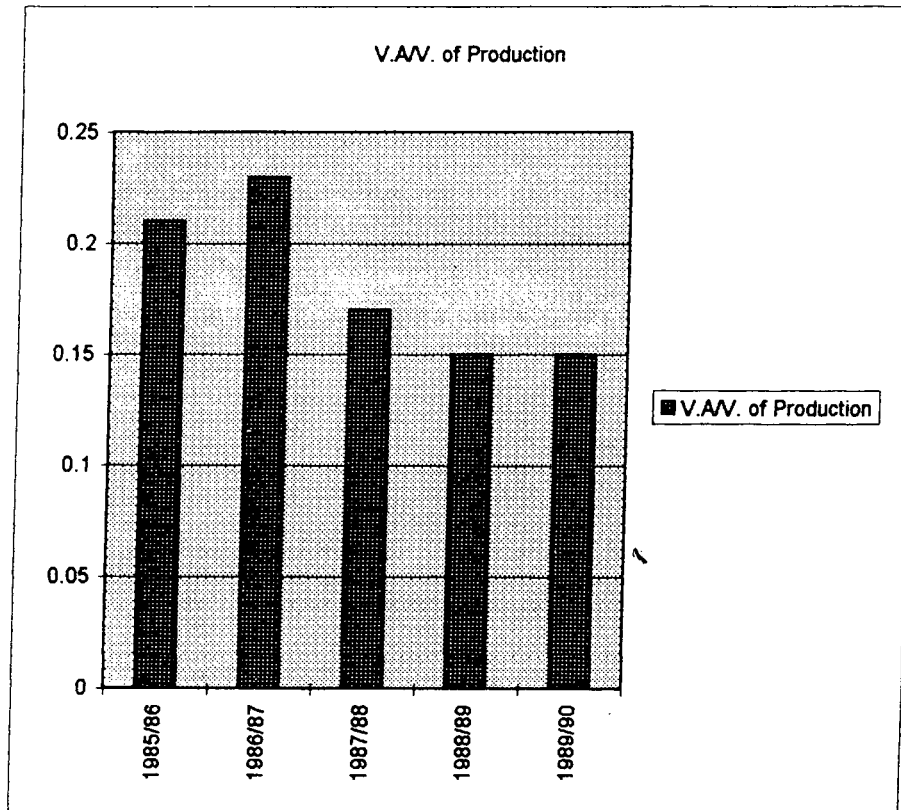
	1985/86	1986/87	1987/88	1988/89	1989/90
V.A/Plants,mach.etc.	0.63	0.67	0.54	0.56	0.63



V.A. = Value Added
Plants, mach. etc. = Plants, machinery etc.

Cost Efficiency Ratio of Maruti-III

	1985/86	1986/87	1987/88	1988/89	1989/90
V.A/V. of Production	0.21	0.23	0.17	0.15	0.15



V.A = Value added
V. = Value

during the period under review. As regards the trend in output-fixed capital ratio, it was a declining trend, if we take 1986/87 as the base year, for reasons stated above.

The question that follows is whether there is sufficient ground for anticipating that, these structural characteristics associated with the technology of MUL have an inherent potential for yielding better performance in future or whether the structural ratios would change in favour of a cost-reducing structure.

One way of answering the question is to anticipate the share of imports relative to capital intensity. As regards capital intensiveness, figures in Tables 5.8 and 5.9 are indicative of a very high figure. But that can be inherent in the high degree of dependence on components and ancillaries in the car industry everywhere. Import intensity of capital then, is the factor that distinguishes a firm in the matter of cost efficiency.

Our figures indicating a high share of fixed (directly productive) capital are corroborated by Rao's figures for capital intensity. By his measure of capital intensity during 1986/87-1989-90, PAL had an intensity of 2.04, HML had 4.60, and MUL had 16.96.¹⁰ Besides, our point regarding the effect of high import dependence on costs with high relative shares of material cost and fixed plant and machinery is strengthened by Rao's figures of MUL's import dependence. He measures material import dependence of PAL for the aforesaid period at 22.72 and machine tool import dependence at 9.13. For HML, the figures were 43.56 and 36.59 respectively. In case of MUL, these were 54.95 and 40.05 respectively.

¹⁰ C Bhaktavatsala Rao, *Structural Configuration and Strategic Investments: Indian Automobile Industry*, Economic and Political Weekly, February 20-27, 1993, p M-21.

Evidence about the car industry, in general, or MUL in particular, thus, does not provide support for concluding that it has achieved, or is on its way to achieving, the level of effective cost efficiency which could have given it export competitiveness or would have expanded the domestic demand base by pricing its products at a range necessary for entering the consumption basket of larger sections of households. MUL in particular was expected to do that, mainly because it is this firm which had the required technology. We have not discussed the cost efficiency of the two other manufacturers, since, faced with a low and falling market share, their options, within the existing mix of technology and brands, were virtually closed. What, however, is important for our study, is that, they had acquired little strength during the pre-Maruti period when they were the only beneficiaries of protection.

Technological Upgradation and Technology Transfer

The technology question has a great relevance to our scrutiny for a number of reasons. Be it upgradation of the level of technology that is embodied in domestic production of components and ancillaries, or be it upgradation through transfer of technology from abroad, it has direct implications for the foreign exchange question, and therefore, a wide range of implications arising from the balance-of-payments situation. Second, its effect on cost and price is very strong. Even when these are produced in the country, prices of components and ancillaries have the highest weight in price formation of the finished product, as evident in the role of the ratio of materials cost to total cost. Thirdly, in case of personal cars, distinctive facilities, apart from fuel efficiency and durability, are extremely important for gaining the minimum share in the international market.

On the basis of whatever little elementary knowledge about some basics of automobile technology we have been able to gather, we present below some of the important structural and functional characteristics of the three cars referred to in the discussion so far.

The aforesaid study on Road Costs and Road User Charges noted the following functional features of cars.

Vehicle Parameter	Maruti SS80FR	Fiat Padmini	Ambassador Mark IV
HP (metric)	39	39	50
Gross Weight (tonne)	0.91	1.23	1.53
Max used Driving HP	26	26	31
Max used Braking HP	13	17	21
Desired Speed (kmph)	62.5	62.5	62.5

As regards some important structural features, it is evident from the literature on structural characteristics of some well known international brands that none of the Indian models has the levels of qualities these cars have. In case of the clutch for example, Maruti's dry single disc is generally considered better than Ambassador's Single dry plate, or the dry single plate on flexible hub which Premier Padmini has. But, when it comes to brakes, or gear box, most of the international brands have functionally more efficient systems.

There are, of course, different views about country-specific requirements of technology transfer. One view is that, the gap between the technology 'we have' and the technology 'we want' is not as large as "many would have us believe".¹¹ At the same time, the main directions in which technological changes are taking place in advanced countries, are weight-shedding, automatic transmission, and alternative fuels. If the choice of technology is to be based only upon Indian conditions, then, it cannot simultaneously enhance international competitiveness. Besides, the question of scale cannot be overlooked anyway. The estimated cost changes due to change in the scale of output are the following: 40 per cent reduction in unit cost when output rises from 10,000 to 50,000 units; another 15 per cent reduction when output goes up to 100,000; further 10 per cent reduction if output rises to 2,00,000. ¹² In sum, in the cost function, the value of the scale factor is very high, and cost moves exponentially according to the value of the physical output variable X.

The question of indigenisation cannot be studied in isolation from these factors. As regards the extent of indigenisation, a high degree has often been cited by some manufacturers. MUL too, has claimed that the share of indigenous components and ancillaries has been rising. What is usually not mentioned is that, a high proportion of output of domestic components is produced under foreign collaboration and most do not involve transfer of technology. Besides, the foreign exchange requirements of these units are not identifiable in the data relating to the car producing units. Besides, technology transfer actually means that the entire chain of linkages in the production of components and ancillaries --beginning from machines for

¹¹ V Gumaste, Anatomy of In-House R & D: A Case Study of Indian Automobile Industry, Economic and Political Weekly, May 28, 1988, p M-71.

¹² UNIDO cited in *ibid*.

producing machines and equipments to a particular intermediate product that goes into the car as a finished product. The 157 collaboration agreements operating in the production of automotive components-- as referred to earlier-- were producing or intended to produce 78 items. Demand projection for ancillaries of cars and jeeps however showed that bulk imports were necessary .

Experience of Other Countries

A glimpse of the world automobile/car industry and the experience of some other countries, mainly developing ones, can be useful references by way of providing an idea about what happened in these countries. That is what we move forward to. More than 80 per cent world wide production today takes place in OECD countries. The share of different regions in 1986 is given below:

Japan	26 per cent
USA	24 per cent
Western Europe	30 per cent

Developing countries account for 8 per cent (assembling operations included) of world-wide auto production. This share, of course, rose from 1 per cent in 1960 to about 3.5 per cent in 1970. Altogether some 46 per cent of LDCs currently host production or assembly activities of OECD based companies. Only five of them are major producers -- Brazil, Korea, Mexico, India and Argentina.

Brazil:

Production began in 1956 and the government decided that the local content of a vehicle should rise up to 90-95 per cent of its weight by 1961. However foreign investors were neither excluded from ownership nor obliged to take minority equity positions. Nine out of the eleven firms, which took up production were traditional FDI ventures. Locally owned ventures found it difficult to compete with subsidiaries of OECD-based countries.

As regards protection, not only were import duties high, but also Governmental subsidies to foreign investors, continued at 89 cents for every dollar invested. Auto producers approved by the Government were also exempted from duties and taxes on imported parts and machinery and got special credit facilities from Brazil's National Development Bank.

With Government subsidies, the size and growth potential of the market, attracted a large number of multi-national auto companies. Proliferation of models, (79 in 1980) fragmented the market even further. That raised cost by way of wide division of the market. Rising prices led to smaller volume of domestic demand.

As regards export prospects, the adverse BoP effect of the industry's growth due to imports of plants, machinery, and equipments, and repatriation of royalty by foreign companies, caused great concern in the 1960s. Consequently, imports were linked to exports in the 1960s through provision for fiscal incentives. By 1978, most MNCs had accepted this clause. Exports kept growing thereafter, and export went up from 3 per cent of total output in 1973 to 14 per cent in 1981, and over 20 per cent in 1984, and later.

The Brazilian auto industry, the largest among developing countries, is largely owned and controlled by US and European auto companies, operating there. Particularly since mid-1970s the country's auto industry had become relatively more integrated into the international production network of the large multi-national auto companies.

Mexico and Argentina:

The Mexican and Argentinean auto industry too has gone through phases of shifting Government policies. In the fifties multi-national auto companies, based in Mexico accounted for more than 50 per cent of the country's auto production. (the situation was similar in Argentina) A new set of fiscal incentives and tariff protection, was introduced in the sixties in order to attract local assemblers and domestic content was set at least 60 per cent (higher in case of Argentina). In Mexico, all imported parts and components had to be approved by the Government and the Government set quotas for producers in order to carve out market share for domestic firms. Despite all that, locally owned companies without production bases in OECD countries, had problems in competing locally with the subsidiaries of multi-nationals. After the mid-sixties, most of them disappeared completely, or at least, abandoned production of cars.

The growing negative impact of the industries on the countries' BOP was sought to be corrected by promoting exports. Governments of both the countries, adopted export incentive-schemes and in Argentina, fiscal incentives and subsidies to exports, provided since 1971, were expanded even further by the mid-seventies. While in Mexico, incentives like greater production quota--if imports were somewhat offset by increased exports--

were given. Even though Argentinean production and exports increased, these policies met with little success.

In 1978, the Argentinean automotive industry was put open to foreign competition on the ground that the industry was inefficient and excessively dependent on subsidies. The effective ban on imports of parts and finished vehicles was removed by reducing tariffs to 45 per cent on cars. The import content was allowed to be increased to 12 per cent by weight for automobiles. Domestic production rose by nearly 50 per cent in the next two years. But with the world-wide recession of 1981 domestic sales plummeted. Imported vehicles which had been around 500 units in 1972 and 1978, went up to 60,000 units in 1981. The import competition period was over, and strict import controls and stricter domestic control rules were again brought in. Production again saw a rising trend.

As regards Mexico, new performance requirements to promote both exports and local content, were decreed in 1977. These along with major tax incentives and Mexico's petroleum boom between 1977-'81, saw production go up significantly. Export incentives led to some increase in exports but not to the extent predicted. The 1982 crisis hit the industry badly with all, except one producer, cutting down their production.

In 1983 again the Government issued a new decree with the objective of achieving self-sufficiency in foreign exchange; a progressive increase of local content; elimination of government subsidies and so on.

Korea:

The Korean auto industry developed out of the Jeep repair industry which arose during the Korean war. In the late-1950s domestic production consisted of the assembly of CKD of Toyota Corollas. In 1967 Hyendar assembled Ford Cortinas and Asea began assembling Fiat kits in 1970. In 1974, nine thousand cars were produced.

In 1962, import of assembled articles was banned and majority domestic ownership was made a prerequisite for assembly in Korea. Domestic content requirement in Korea was started at a modest level and increased later as the ability of domestic part manufacturers rose. In 1969, 19,500 cars were assembled. In 1974, however, output level fell way below 1969 levels. In 1975, some changes in government policies were introduced. By 1979, passenger car production levels were as high as 1,14,000. The government tried to rely on export-led growth for the auto sector. As a result, domestic consumption was discouraged through high sales-tax on cars, and the high cost of petrol. In 1979, of the 1,14,00 produced, only 89,000 were sold, in domestic markets.

The oil price shock of 1979-'80, led to a recession in the Korean auto industry. Output fell by 50 per cent. The Government reacted quickly to the slump of 1980, and quick estimate of high production costs of 1979. Car production was limited to two producers. In 1986, the auto industry was selected as an 'infant industry', and entry by foreign firms were forbidden until 1994.

Japan

The history of the development of the Japanese automobile industry provides an interesting case of the role played by the state in the success of

the industry. Government involvement in promoting the industry dates back to first world war when the Japanese army became interested in trucks. But this failed to stimulate domestic production and only a major earthquake in 1923 raised domestic demand for motor vehicles. Ford and General Motors set up subsidiaries in Japan in 1925 and 1927 respectively in response to this demand. The Army's interest in the industry grew throughout the 1930s because of invasion of Manchuria in 1931. On the Army's persistence the Ministry of Commerce and Industry (MCI) passed a legislation in 1936 requiring license for companies producing more than 3,000 vehicles a year and only majority Japanese-owned companies were eligible for license. Companies that were granted license were given numerous exemptions on imports, loans etc. Operations of Japan GM, and Japan Ford on the other hand, were made difficult by raising import duty on complete vehicles and knocked down sets in 1936. Further, revisions in the foreign exchange regulations made it difficult for American subsidiaries to pay for the parts they imported. As a result, both the firms left in 1939. Thus the 1936 legislation made a major impact on the structure of the industry. Three domestic producers were granted a 'monopoly' by the Government. Nissan and Toyota alone accounted for 85 per cent of the domestic production till the end of World War II.

After the War, the Government restricted production of cars because of shortage of raw materials. But all along, the three domestic companies continued to get favours from the Government. Huge loans from government and private banks kept them going. The automobile industry, because of its wide backward and forward linkages within the domestic sphere, was seen as a growth generator and hence was to be protected and promoted. The

Bank of Japan, Japan development Bank and the Industrial Bank of Japan provided funds to the three producers to keep them out of bankruptcy.

By 1950-51, the industry was on its way to recovery. Additional funds were provided to invest in new equipments and passenger car production. The Ministry of International Trade and Industry (MITI) combined in 1956, low interest loans with tax exemptions and also exempted companies from import duties on machinery and tools purchased from abroad.

In 1960, Japan ranked seventh in the world as four wheel vehicle producer, and it was only in 1967 due to pressure from IMF and Britain that import restrictions were lifted on 257 items. But even the lowering of duties had a catch. By redefining what was meant by 'small cars' and lowering commodity taxes on these from 30 per cent to 15 per cent--with a minimum of 34 per cent for all other cars-- small cars were protected from foreign competition. This was because most automobiles produced by Nissan and Toyota fell within the range of small car while none of the American or European models were this small. This helped domestic auto-makers to develop small car models.

The domestic market was opened to foreign competition and investment--but only with great reluctance, in 1968. Import duty on standard size car was dropped to 17.5 per cent in 1969 from 28 per cent in 1968. But, tariff on small cars was not reduced until 1970 and then left at a still high rate of 20 per cent. In 1972, complaints from other nations prompted MITI to lower import duties on all cars to 8 per cent, and finally, totally eliminate it in 1978.

Other than high tariffs and prohibitions on investment from abroad, other measures were used to protect the domestic industry. Extremely high commodity taxes and high prices of petrol penalised purchase of car with an engine displacement above 2000 cc (small car). This was there even as late as 1983. Many other methods also were adopted to restrict the market shares of foreign companies. By the early 1990s it had become the turn of Japan's trading partners to restrict automobile imports.

Chapter Six

Conclusion

In Chapter Five we argued that the period 1955-1984 was one long-run period in experience. As regards the other long run, we have experienced only about a short-run period of six years. The next long-run therefore, will include a longer time period in future, which cannot be strictly defined. Yet, we can think of the 15 or 20 years since 1990, as the end of the second long -run period since the beginning of the nineties.

We have called the growth record of the first period as historical growth, and have tried to observe both the extent and nature of protection and the effect of protection. Projecting the effect during the next period, however, cannot be done without some assumptions about the possible combination of circumstances at the macro-economic level.

Starting from the point that efficiency in production is the most important factor in international competitiveness, one can assume two types of possibilities open to the Indian car industry. One, it can go through periodic technological improvement for acquiring state-of-art technology through technology transfer, within a system of collaboration with one or the automobile giants of the world, which together dominate production of cars almost all over the world. Second, it can combine domestic innovation with a limited transfer

under a system of production wholly or mainly under the control of domestic firms. We assume that the second one is not possible, mainly because it has not been so in history. Even the Korean car industry is dominated by General Motors and Daweoo is actually its Korean subsidiary. As regards the first option, technology transfer is very likely to be limited to some components and accessories and not to designing and production techniques of the basic parts.

That has a series of unavoidable implications for the industry, partly depending on a number of macro-economic factors. So long as one postulates an export-led growth, with a high average annual output growth rate, the foreign exchange question can be bypassed. If, on the other hand, domestic sales provide the main source of demand, then the BoP problem enters as a barrier to increasing import of components and accessories. (We have discussed this in Chapter II).

Domestic production as a substitute to imports has, however, still not been abandoned as a policy preference, though the earlier PMP programme has been widely liberalised. Most domestic production of components and ancillaries also is partly import-dependent as we have cited in the preceding chapter. The latest development about renewal of Maruti's agreement with Suzuki clearly indicates that technology transfer can go on only up to a limit. The Indian chief of Suzuki said in last July that, whatever the Indian keenness for indigenisation, at least 25 per cent of the value of all components and ancillaries will have to be imported. Cost efficiency, to the extent, a periodic renewal of it is feasible, has thus to be import dependent. One has to examine the scope for such technology renewal to be extended to India, under the given oligopolistic

structure of the car industry and recurrence of keen competition among the MNCs for a higher market share especially in periods of recession.

The demand side arguably presents a more difficult problem. We can define only the outline of framework for anticipating domestic demand growth. Taking that motor car as both a capital good and a consumer durable--depending on the purpose for which its is used-- the aggregate demand is the sum of business and Government demand and household demand. Besides, in each time-period it combines new demand and replacement demand. So, projection of future demand has to be done separately for capital and consumer goods and also for replacement demand.

Taking replacement demand first, one can make a distinction between the time rate of replacement in the stock of cars owned by business and Government and that of households. Most fuel efficient cars, are less durable due to their integrated frame, and lower body weight. The time rate of replacement is higher among these cars. Specialists put 12 years as the functionally effective life period of a fuel efficient car, and even for Ambassador a German automobile engineer had put its efficient life, as in 1953, to 12 years, in his statement before the Tariff Commission in 1953. In general, durability and heavy weight have been rejected by the world car industry except in case of cars of 2000 cc or more.

Thus, one can reasonably take that while replacement of business and government stock may take place after 10 years, for avoiding inconveniences of an old car, replacement time for households may vary. We take the average at not more than 12 years. Thus, in the aggregate domestic demand for cars, in

2000 AD, the replacement demand will equal the new purchases by business and Government in 1990 and purchase by households in 1988. Taking the former as even as high as 30 per cent of all purchases in 1990, and the latter as only 60 per cent in 1988, the replacement demand in 2000 will approximately come to 99,000 cars.

For estimating the aggregate demand in 2000 then we need some estimate of new demand in that year. The correlation of past demand growth rate with the growth rate in the corresponding non-agricultural GDP can be useful, but not enough. In the Indian case, the demand 'explosion' in the second half of the eighties was rarely influenced by current or otherwise short-run GDP growth. It ranged between 8.1 per cent in 1989-90 and 35 per cent in 1985-86, and the annual average rate was 12.07 per cent during 1985/86-1990/91. So, its relationship with non-agricultural GDP growth rate has to be seen over a longer period and in combination with other factors which boosted household demand.

Essentially, household demand is a function of a range of income, range of car prices, and the running cost of the car. The decisive question for our purpose here is regarding the prospect of proliferation of households (Chapter V) which are potential buyers at the price within a range. We can use the concept of a 'rate of proliferation' as the rate of increase in the number of households which are potential buyers. That rate should be higher than the GDP growth rate for the growth rate in new demand to reach a double-digit figure. But, for that. The distribution of income should favour relative concentration with more and more percentiles of households reaching the level required for being potential buyers.

It is such concentration which gave rise to a sudden jump in demand in the eighties. We have discussed the concentration in chapter Five. The relative importance of business and Government demand, we have pointed out, was declining over time. In states like Maharashtra, the number of registered companies was much higher than in states like Delhi. The number of individual and Hindu Undivided Family payers of income tax, on the other hand, was disproportionately high in Delhi. One has to remember that Delhi has less than one per cent of total Indian population. If all that is seen in combination with high concentration in a few metropolitan cities, it comes out that, household demand kept occupying a rising share over time, and that, by the end of our period it was household demand which had the lion's share of car stock.

Therefore, if a high growth rate in GDP comes to be inseparable from regional and other types of concentration (discussed above), the demand for cars may not keep step with GDP growth as such. Since what is necessary is that, a high GDP growth should be combined with regional dispersion. It is not therefore, enough to achieve a GDP growth rate much higher than 5 per cent or 6 per cent so long as population growth rate hovers around 2 per cent. We have no basis for anticipating all these necessary combinations to be realised.

The possibility of the repetition of the eighties is, therefore, seriously restricted. Replacement demand then, can continue to sustain a reasonably high proportion of aggregate demand, as it has been doing in several developed countries. That can support a certain degree of constancy in demand over the long period, but not an accelerating domestic demand. Whether the industry would keep expanding its output-- important for economies of scale-- without

protection, cannot be answered with any certainty. At the same time, experience strengthens the argument that some protection will be necessary, though in new and old forms. Domination of the industry by MNCs may be an alternative as it has happened in several Latin American countries. Whether that is synonymous with growth *per se*, is a different question.

Appendix One

List of Important and Special Components of Automobiles

1. Engine

Cylinder block	Fuel tank
Cylinder head	Pistons
Cam shaft	Pistons pins
Crank shaft	Piston pinbushings
Connecting rods	Piston pin retainer rings
Connecting rods bolts	Piston rings
Flywheel	Cylinder liners
Starter gear ring	Roller chians
Oil pan	valves
Timing Gears	Valve springs
Tappets	Valve seat inserters
Rocker shafts	Carburettor
Rocker levers	Injection pump
Valve guides	Injection nozzles
Exhaust manifold	Fuel pump
intake manifold	Fuel filter
Water pump	Fuel lines

1. Engine (contd.)

Cylinder gasket	Tank cap
Radiator	Exhaust muffler
Radiator cap	Exhaust pipe

2. Power Train

Clutch	Rear axle side shafts
Clutch housing	Crown wheel and pinion
Clutch lever	Shift fork
Transmission case	gear shift lever
Transmission case cover	Shifting shafts
Universal joints	Spline shafts
Propeller shafts	Synchroniser parts
Secondary shaft	Gears

3. Chassis frame with axles, wheels and steering

Frame brackets	Suspension leaf springs
Rear axle housing	King pin
disc wheels	Steering knuckle
Cast wheels	Steering arm
Wheel bolts and nuts	Steering column
Hub caps	Steering gear
Front axle	Foot brake levers
Tosion bars	Spring centre bolts
Wheel hub	Hand brake levers
Spring chassis	Spring U bolts
Brake shoes	Brake shoe holder
Spring shackle bolts	Spring shackle pins
Spring bushers	Spring clips
Chassis frame	Suspension coil springs
Hydraulic brakes	Shock absorbers
Brake drums	Brake drum covers
Compressed air brakes	Vacuum servo brakes

4. Electric Equipment

Dynamo	Wire harness
Starter motor	Fuse box
Battery	Fuses
Starter cable	Wind shield wiper
Ignition coils	Bulb sockets
Distributor	Bulbs
Voltage regulator	Horn buttons
Ignition cables	Horns electrical
Sparking plugs	Stop lamp switches
Ignition switch	Switches
Head lamps	Flash switches
Tail lamps	Direction indicator
Stop lamps	Control lamps
Side lamps	Spot lights
Fog lamps	Reversing lamps

5. Rubber- asbestos parts ; Gaskets

Brake hoses	Fuel hoses
Cylinder head gasket	Fuel pump diaphragms
Brake linings	Rubber carpets
Clutch facings	Rubber bumpers
Tyres	Rubber hoses
Tubes	Rubber sections
Flaps	Rubber mounting pads
Tyre repair equipment	Rubber couplings
Fan belts	Oil seal rings

6. Bodies

Speedomotor	Mudgaurds
Oil pressure gauge	Passenger car bodies
Fuel gauge	Thermometwer
Air pressure gauge	Hair lock cover
Number plates	Tipping gears

6. Bodies (contd.)

Cabs	Ammeter
Seats	Rear view mirrors
Seat runners	Trimming sections
Seat adjusters	Upholstery
Spring cases	Anti drum materials
Door locks	Ornamental fittings
Foam rubber cover	Window guides
Hinges	Window regulators
Wind screens	Windows

7. Service Equipments

Tool kits	Hand tyre inflators
Starter cranks	Air pressure gauges
Tyre mounting levers	Lubricating equipments
Jacks	Towing cranes

Appendix Two

Some parts and components falling under I.C.T items 75(9), 75(10), 75(11) and 75(12)

I.C.T Items	
75(9)	75(11)
Rubber mountings	Glass items
Hose pipes	Multi-cylinder pumps
Fan belt	Speedomotors
Fuel pump diaphragms	Air pressure gauges
Exhaust pipes	Vaccum gauges
Mufflers	Ampere meters
Tail pipes	Electrical switches
Trim material	Fuel gauges
Gaskets all sorts	Temperature gauges
Cushions	Filters
Door and window fittings	Generator and altenator
75(10)	Starter motor
Clutch assembly	75(12)
Radiator	Brake asembly
Propeller shaft	Wheels
Indicator lamps	Servo mechanism\
Castings of all types	Control cables

Source : Report on the Continuation of Protection to the Automobile Industry, Tariff Commission, Government of India, 1968.

Appendix Three

World Growth of Vehicle Production

Year	USA and Canada	Europe	Japan	Others
1981/80	-1.09	-6.5	1.24	-3.33
1982/81	-10.5	2.5	-4.0	-3.0
1983/82	30.1	6.0	3.5	10.0
1984/83	18.6	-2.6	3.17	5.8
1985/84	6.5	4.74	7.0	6.5
1986/85	-2.92	4.4	-0.08	1.08
1987/86	-4.77	5.12	-0.09	1.33
1988/87	4.8	3.70	3.68	5.0
1989/88	-2.18	4.08	3.5	1.8
1990/89	-9.07	-1.65	3.5	-1.68
1991/90	-8.47	-5.72	1.68	-3.8

Source: Computed from data given in Automobile Engineers and Traders, Annual number 1993.

Appendix Four

Growth in Passenger Car Production in Some Selected Countries in 1991 over 1990

Country	Growth Rate
Canada	2.5
France	-3.25
Germany, East	-1.6
Germany, West	-0.025
Italy	-12.9
Japan	-2.0
Korea, South	17.3
Spain	5.6
U.K	-4.5
U.S.A	-10.5
U.S.S.R.	-2.5
Yugoslavia	-25.4

Source : Computed from data given in Automobile Engineers and Traders, Annual Number 1993.

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