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Public investment and technology choice in the road transport sector: Its effects on industrial growth in Madras

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Introduction

At the end of the Second Five Year Plan (1956-1961), Madras State was a major centre of the motor vehicle industry, in fact, the second largest in the country after Maharashtra. It accounted for about 15 per cent of both the fixed capital employed and value added in the industry. More importantly, perhaps, the industry in Madras had strong backward linkages to the metallurgical industries; and it was more horizontally disaggregated than was the case in other States.[1] In other words, the motor vehicle industry could be expected to have noticeable spread effects, and to encourage the growth of the motor vehicle component industry, and of the metal working industries in general.

This result was not at all an outcome of any perspective that the Madras authorities had laid out. As late as 1950, they had decided that as the motor-vehicle industry had no future in the State, there was no need for them to provide evidence before an expert committee established by the Government of India.[2] Possibly this attitude emerged from an unduly Madras-centric view point, which was, however, given some substance by an industrial growth perspective that emphasised the local utilisation of regional resources as a principle underlying the State's development process.[3] Notwithstanding this perspective, through a complex of local and national determinants, the motor vehicle industry in Madras developed, largely independently also, of the basic principles laid down by the Tariff Commission Report on the Automobile Industry, submitted in 1953.

The 1953 Report recognised three pre-conditions for the successful growth of the industry: the interdependence of the motor-vehicle production industry, and that of ancillary industries; the integration of defence and civilian demand for the products of the industry; and the generation of demand for motor-vehicles, by keeping their prices low (this, of course, was not achieved anywhere in India).[4]

This paper argues that with the adoption of the national policy bringing road passenger transport within the state level public sector, the various road transport corporations became a major influence on technology and brand choices, which helped the growth of firms in Madras. Nationalisation also brought the government into direct accountabillty, in terms of the need to add new routes, of the necessity of limiting the peak hour crowding, a minimum degree of reliability, and so on. Questions of technology had to be addressed in the context of the operation of a public utility.

Within the commercial vehicle field, an important issue in choice of technology arose: this was the question of whether diesel or petrol vehicles were to be preferred. An additional factor, which was to have its repercussions in Madras, was whether a chassis designed to operate with a petrol engine could be used satisfactorily with a diesel engine, given the latters' greater weight, and the consequent load on the front suspension, chassis and tyres.

All these, however, were policies that were related to the users, the public sector transport corporations, and determined principally the volume and pattern of demand for passenger transport vehicles. They could not determine how the desirable structure of the vehicle manufacturing industry, as outlined by the Tariff Commission, was to be operationalised. In the absence of thought on these issues, the industry developed a structure which was merely the end result of the foreign collaborators' willingness to transfer technology, and their Indian partners' capacity to execute the project. In other words, there was too little of technology planning and too much subordination of technological issues to financial, including foreign exchange budgeting. It is this point that is addressed in the following pages, by detailed analyses of case studies.

The rest of the paper is in seven parts. The first of these analyses the determinants of public investments in passenger transport and their effects on technology and brand choice, largely with reference to Madras. Import substitution subsequently operated to the advantage of firms that had been favoured by these choices, and the second part identifies the critical issue to be that of indigenisation with cost and quality control. The Tariff Commission assumed that linking permission for a firm's continued operation with its providing an approved manufacturing programme would solve these problems. This presumed that the businessmen involved in motor vehicle dealerships, who formed the bulk of the entrants into motor vehicle manufacture, would first be willing, and then able, to renegotiate agreements with their foreign principals. The third part of the paper examines the factual basis for this assumption. If public sector decisions on technology affected, differentially, the fortunes of competing firms during the early period of the First Plan, by the corresponding period of the second, these choices had decided the fate of most of the firms. This was, fortunately, in a direction generally favourable to Madras, as the discussion of the fourth part of the paper shows.

Inspite of the importance of defence and police orders for motor-cycles, the fortunes of the firms in private transportation in Madras were noticeably less bright. Largely, it would seem, this was due to a series of unwise decisions on brand and technology. These led, as part five shows, to a permanent, if slow, decline in the prospects for Enfield India, and Standard Motor Products. Part six discusses what should have been central to policy: the development of the ancillary industry. For reasons which appear to be largely political, firms in Madras were able to establish themselves in the field of component manufacture, in fact were able to dominate the field, until the revolution in technology introduced into the country in the 1980s. It was the growth of these ancillaries which, as the introductory paragraph of this paper describes, was the unique feature of Madras' industrial growth. The paper concludes with a discussion of the long term effects of this specific pattern of technological growth.

I

Effects of Public Sector Investment decisions on technology and demand

In Madras, nationalisation began with the bus services in the city itself.[5] In the initial stages little impact of public investment decisions on technology, or even on brand choice was evident, largely because technical expertise was absent in the decision making process.[6] In addition, with the prospects of opposition from the existing private operators In the city, it was evidently felt necessary to take the decision on nationalisation with as little scope for publicity as possible.[7] This meant that no assessment was undertaken of the roadworthiness of the private vehicles currently in use or, indeed, of the supply situation of new vehicles.[8]

It was initially estimated that 340 buses (with 40 as spares) would be required. The Bombay authorities had suggested that the specific model of bus was irrelevant as long as these were standardised in each depot. This implied, in the Madras context, three depots serving 100 buses each, to be allocated to diesel vehicles and two makes of petrol vehicles. The strong marketing presence of General Motors and Ford ensured that the depots were standardised with Chevrolet and Ford petrol vehicles. The diesels selected were Isotta Fraschinis, acquired in a purchase decision requiring some entrepreneurship, and raising its own share of controversy.[9]

Simpsons were in the forefront of dieselisation.[10] As distributors of the Perkins diesel conversion kit, they had been catering to the requirements of private operators when the question of major overhaul, or the purchase of a new engine arose, for a chassis that had still considerable economic value. For the Government Bus Service (GBS), this situation was reached with the extensive use of the petrol vehicles in the city

by 1949, and the application of depreciation rules which specified the life of a bus to be four years. Inspite of some reservations, a diesel conversion was allowed on an experimental basis.[11] The Travancore authorities, with substantial experience of passenger transport operation, had defined clearly the technological issues in the decision.[12] Only when the carrying capacity was more than 4 tons i.e. a heavy diesel, where the transmission and chassis were predesigned for diesel engines, or conversely, the engine itself designed for operation on a petrol chassis, was the diesel option desirable. Their own pre-war experience with a Commer chassis fitted with a Perkins engine had not been good.

However, initial experience in Madras with the diesel engine conversion showed that as much as 15 miles per gallon were achievable, as compared to 10, with the petrol engine. On 40000 miles of operation the fuel cost saving was almost as much as the price of the engine, and it was decided to buy 3 more engines.[13] Although the decision was favourable for Perkins diesel engines in the short term, it was ironical that the Madras Transport Commissioner had, from the beginning, disfavoured the acquisition of new petrol chassis fitted with diesel engines.[14] Thus as the scope of the replacement market contracted, so would the demand for conversion kits, at least from the public sector transport organisations.

Simpsons were in the process of beginning manufacture of the Perkins diesel engine, preparatory to which they had started assembly in component knocked down (CKD) form. The renovated buses, amongst the first batch to be bought, were fitted with the diesel engines, and this was followed by the acquisition of new chassis, also fitted with Perkins engines.[15] This purchase decision, in violation of the earlier expressed technical opinion on the inadvisability of buying new vehicles with petrol chassis and diesel engines, was apparently taken on the consideration of the lowest cost tender. A more scientific criterion of passenger seats per bus per year, which took into consideration the longer economic life of the heavier (diesel) chassis, was not introduced until quite a few years later.[16]

The acquisition of the new petrol bus chassis with diesel engine conversions implied the addition of the category of "light diesel" buses. The comparison of the merits of different types of vehicles was now more focussed, away from petrol or diesel towards that of the heavy and light variants of diesels. Underlying this change in focus, the main consideration was not the relative mechanical efficiency of the engines, as much as the difference in the price of the two fuels, compounded by variations in the taxes levied on them.[17] The pressure on the bus public transportation system was considerably increased with the closure of the tram services in Madras in April 1953. This increased the importance of passenger intensive modes of transport, and thus the merits of the heavy diesel.[18]

With nationalisation of passenger road transport an accomplished fact, the English motor-vehicle lobby began to take steps to question the near monopoly that General Motors and Ford had obtained over vehicle supplies. The Madras Minister for Transport was invited for a ride in one of London Transport's buses. He certified that the smoke and noise problems that "Madrasi" opinion associated with diesel operation (the Isotta-Fraschinis were blamed for this) were nonexistent in London. This provided the catalyst for the introduction of the two criteria which were to mould the future of the commercial motor vehicle industry in India. The first lay in the point that while the case for diesel engines was based on their greater fuel economy, city operation with its continual starts and stops, and the requirement of a minimum rate of acceleration, required an engine with a high torque (or turning momentum) at a relatively low engine speed. The second lay in the necessity for at least 45 seats for economical city operation. A wheelbase (the distance between front and back axles) of 225 inches was necessary for this (as compared to 158, 176 and 194 inches on the conventional short and long wheel-base buses). This, in turn, implied that for congested city roads forward (cab over engine) or semi-forward control was essential to keep the overall length within manageable limits.[19] In other words, the technology of city buses was distinct to those for long distance operation, in engine characteristics, cab design, and in the ratio of wheelbase to chassis length.

This, combined with the factor of maintaining the efficiency of the repair and overhaul facilities, which determined that not more than 2 models of vehicles should be acquired, was increasingly restricting the range of manufacturers for whose products there was adequate demand.[20] At a more specific level, considerations of fuel consumption under city operations was also becoming an explicit factor in determining vehicle choice.[21]

II

Initiation of import substitution : indigenisation and the approved manufacturing programme

On the basis of the progress that had been made by the last quarter of 1952, the Government of India laid down a restricted set of vehicles which it would allow to be imported by the State Governments for public transport purposes through the agency of firms that had either started manufacture, or had an approved manufacturing programme (Charts 1 and 2). For other requirements of these govemments, the Hindustan 14 car and the Dodge lorry, where the manufacture of essential parts had begun, were to be bought. Government officials, too, were to be encouraged to buy these vehicles. As the manufacture of other cars and lorries progressed, the State Governments were to be informed of the support to be extended to these manufacturers.[22]

The linkages between the procurement policy of public transport services, and the emphasis given to a phased manufacturing programme, had been indicated by the instructions given that tenders should be confined to those manufacturers whose products would continue to be available in the country.[23] As the Government of India was now going to limit imports to those firms which were prepared to set up a manufacturing base, acquisition policy came to be increasingly determined by the seriousness with which the process of indigenous manufacture was being accelerated.

It was a significant feature of the logic of the Government of India's "approved" list of manufacturers that by the middle of 1953, all the 5 technologically suitable models of buses out of the 19 which were tendered in Madras were British.[24] In other words, for metropolitan transport operations, even if not for long distance passenger transport, of the firms accommodating themselves to manufacture, those with British technology seem to have had more appropriate products (Chart 2).

With dieselisation increasingly cost effective, and the rapid expansion of nationalised public transport, the conflict between indigenous production and cost efficiency became apparent. At the 2nd conference of the State Transport Undertakings, Simpsons were alleged to be following a monopolistic pricing policy on the engines assembled by them. As a result of general criticism, the Government of India withdrew recognition of them as an approved manufacturer and discontinued their right to be the sole distributor of Perkins engines.[25] Direct import of assembled engines was now permissible and there followed a prolonged period of bargaining between Simpsons and the Madras authorities.[26] This was over the price mark up that Simpson's were due legitimately, over the cif price, owing to their small volume of assembly, and the higher overhead costs incurred.

The inducement for indigenisation lay in the assured imports of vehicles for a firm which could prepare an acceptable manufacturing programme. The foreign supplier, possibly the collaborator, and almost certainly the Indian buyer, would on the other hand be interested in the continued assembly, if not import, of vehicles. There were then subtle problems in ensuring indigenisation, while adhering to issues of quality control, and ensuring that the inevitably higher price was reasonable, given the limited scale of indigenous manufacture.

Chart 1

The Motor-Vehicle Industry in India, May 1952

1) Firms which had started manufacture	1) Hindustan Motors, Calcutta 2) Premier Automobiles, Bombay
2) Firms with manufacturing programmes	1) Automobile Products of India, Bombay 2) Standard Motor Products, Madras 3) Ashok Motors Ltd., Madras
3) Assemblers	1) General Motors India Ltd., Bombay 2) Ford Motor Co., Bombay 3) Addison and Co., Madras 4) Mahindra and Mahindra, Bombay 5) Dewas Garage and Eng.Works, Calcutta 6) Peninsular Motor Corporation, Calcutta 7) French Motor Car Co.Ltd., Bombay

Source : Dev 1841 20.4.1953; Letter Eng.Ind. -20(22)/52-I of 4.10.1952 from the Govt. of India.

Chart 2

Agents	***Motor Cars***	***Commercial Vehicles***
1) Hindustan Motors	Hindustan 14, Studebaker	Studebaker Champion
2) Premier Automobiles	Dodge, De Soto, Plymouth	Dodge, Fargo, De Soto Fiat
3) Standard Motor Products	Standard Vanguard	
4) Ashok Motors	Austin	Austin, Leyland
5) Automobile Products	Hillman Minx	Commer, Karrier of India

Source : Dev 1841 20.4.1953; Letter Eng.Ind - 20(22)/52/111 of 4.10.1952 from the Government of India.

III

Creating industrialists : the social origins and aspirations of the motor-vehicle dealers

The announcement of the formation of the Tariff Commission on the Automobile Industry aroused some anxiety amongst the motor-vehicle dealer community in Madras. The Tariff Commission had been asked to examine the position of various motor assembly plants, with specific reference to the gradual production of complete cars and lorries. By the end of 1952, both Ashok Motors and Standard Motor Products were assembling cars and lorries. In addition, the firms of India Pistons, Addisons, Addison Paints and Chemicals, and Simpsons (all part of the Amalgamations Group) were making components and equipment for the automobile industry. Inspite of this relative concentration of activity, the Madras authorities shared the community's concern that the claims of existing firms in the State might be overlooked. It was reported that the Commission was in favour of the "north" and, in particular, of the Birla House.[27]

The commercial vehicle market was the major concern. Apart from the necessarily limited demand for passenger cars, there was a gradual tightening of the options open to government organizations, by far the single biggest buyers of commercial vehicles. In 1952, all the State Governments had been asked to buy their requirements from "recognised" assemblers. In other words, only those firms which were already in the process of assembly (however loosely this term was interpreted) and where collaborators were, in principle, agreeable to the establishment of facilities for manufacture in India, could expect to get orders even for the import of vehicles in the future. It was this recognition that the Tariff Commission would bestow, and this was the reason why both the Madras assemblers and the Government of Madras were goaded into action.

Component manufacture was certainly better developed in Madras. India Pistons were making cylinder liners and rings, in addition to pistons, and were themselves to ask for tariff protection.[28] The Madras Transport Commissioner's note to the Tariff Commission suggesting that component manufacture should be centralised so as to achieve economies of scale, even if a number of chassis manufacturers were to be permitted, was logical.[29] It was, also, a defence of the claims of Madras for a share in the ancillaries which was more grounded in performance than was that of the vehicle assemblers.

Simpsons' had been granted a manufacturing license for Perkins automotive diesel engines in August 1953. The phased manufacturing programme, originally submitted in October 1953, was revised in February 1954, and revised again in December of that year. Initially, the degree of indigenisation was planned at 40% by value by December 1954. The first revision reduced this to 25.57% the second to 13.58% While Simpsons had wanted a 30 year agreement, the Government of India suggested 10 years, extendable by two terms of 5 years each. Eventually there was agreement on a 15 year collaboration, even though all components were expected to be indigenously available within 5 years. The reluctance to help in speeding up the process of Indian component manufacture was evident from Perkin's refusal to certify, as acceptable, parts which were sent to them.[30]

The position was even worse in the case of Ashok Motors, whose situation exemplified the problems of developing the automobile industry from scratch. In their defence, Ashok Motors claimed that, initially, they had lost time by complying with the Government of India's request that they locate in Madras, rather than Bombay, which was seen to be vulnerable from the defence point of view. It was also felt that geographic dispersal of the industry was desirable. They then started at Ennore in 1949, with the sole Indian rights to import and distribute Austin cars and Leyland commercial vehicles. In the following year, they submitted a five year manufacturing programme, prepared by Austins, to the Government of India. In a disarmingly frank admission, Ashok said that this programme had been severely criticised, by both the Expert Enquiry Committee on Automobiles and the Automobile Development Committee, and they were uncertain whether they would get approval as a manufacturing concern at all.

Although Ashok's initial share capital of Rs.30 lakhs had been increased to Rs.55 lakhs, attempts to increase the capital further were unsuccessful. Without such an increase the possibilities of investment in manufacturing activities were limited. The Nizam of Hyderabad, the principal shareholder had offered to invest substantially, if the collaborator did the same, but Austin had not agreed.[31]

Of the firms wishing to enter the motor vehicle industry in Madras, Ashok Motors was in many ways the most illustrative, in terms of the background and aspirations of its promoters. Apart from the Nizam, the range of the share holders is illustrated by the composition of the Board in late 1953. Colonel B.H.Zaidi, the Dewan of the erstwhile Rampur State and the Raja of Challapalli represented one bloc of investors, largely with landlord's funds. There were then the representatives of the major Bombay and Delhi motor vehicle dealers: C.B.Taraporevala; K.C.Varma, A.R.Wadia, Sohanlal G.Sanghi, V.T.Padmanabhan, R.Saran. The firm was, to a considerable extent, dealer-sponsored and this was to be a potential source of friction

when an agreement with Automobile Products of India, Bombay, was considered. Settlement of dealerships seemed to be a more critical issue in the negotiations with Rootes Motors (Automobile Product's principals) than any matter concerning manufacture.[32]

Ashok had by then realised that there was no future for assemblers, and had approached Daimler Benz, who had responded with a concrete offer of contributing to the increase in share capital to Rs.2 crores. This was towards a programme leading to the completely indigenous manufacture of diesel commercial vehicles in 5 years, and 50 per cent indigenisation of passenger cars. The proposal was to make a small car - the Austin 7 or an equivalent, light and heavy commercial diesel vehicles, and a diesel passenger car to be used as a taxi.[33]

Evidently the negotiations with Rootes Motors, as earlier with Austin, did not progress because by early 1954, Automobile Products of India had been removed from the list of manufacturers, and Ashok Motor's agreement with Leylands was the only one for heavy commercial vehicles, i.e. for those of over 5 ton capacity (Chart 2).[34] However, Ashok continued to feel the squeeze, perhaps because Leylands treated their continued market presence in India with too much complacency, and Ashok were unable or unwilling to press hard enough.[35] Not only did the Government of India refuse to accept the Tariff Commission's recommendation that the market segment for small cars should be effectively reserved for Ashok and the Austin 7, but they were evidently prepared to consider the claims of TELCO in the heavy commercial field, a case not even put before the Tariff Commission.[36]

Daimler Benz seem to have decided to switch to TELCO from Ashok Motors, as collaborators, shortly before the death of R.Saran, evidently the leading force behind the indigenous, if confused, evolution of Ashok Motors.[37] When Ashok Leyland was eventually formed, it was as a subsidiary of Leyland Motors, with effective financial and manufacturing control in the latters' hands, and marginal representation of anything but rentier interests on the Board.[38]

IV

Tha Effects of market concentration : manufacturing capability with foreign collaboration

Partly as a result of the slow progress of indigenisation and also based on the controversy about their pricing policies, considerable criticism was expressed about the entire Simpson's programme. In January 1955, they were no longer recognized as an "approved manufacturer" although their industrial license was not revoked by the Government.[39]

Such flexibility in the use of import control measures, to compel indigenous production, was recognized to be an effective policy tool by the 1956 Tariff Commission Report. The implication of this was that it was possible to import Perkins engines again, without the user having to deal with Simpsons, even as agents. The complaint was based on the 35% difference between the prime cost of assembly in ckd form, and Simpson's selling price. In the monopolistic conditions prevailing, the Madras Transport Commissioner argued, the overheads could not justify such a large margin: there was no need for expenditure on a sales force, and as major servicing would not be needed for at least 100 000 miles, there was equally little reason for Simpsons to have to provide service engineers at an early stage of their assembly operations. Particularly in the context of the reported move by Tatas to manufacture Mercedes-Benz diesels, it was important that the Government of India should persuade Simpsons to reduce the price to a level about 12 1/2% above prime costs. While forwarding this recommendation, the Government of Madras added that it presumed that the Tata venture would also be subject to price cohtrol. The margin was eventually reduced to about 20%.[40]

In addition to the Tata effort, the market was also being tested by the Coimbatore textile magnates who had developed some expertise in mechanical engineering, having moved from cotton textiles, to textile machinery and stationery diesel engines. However, when the firm of Textool applied for a license to make automotive diesel engines, without financial or technical collaboration, there was considerable scepticism within the Madras Government. It was speculated that if a "reputable" firm such as Simpsons required a technical collaboration, could a relatively unknown firm do without one? The attitude was one, of course, that betrayed an absolute lack of appreciation of the difference between a firm of automobile dealers, however reputable, entering the manufacturing field for the first time, and a mechanical engineering firm diversifying its activities. Textools did not, however, belong to the class of insignificant firms and the Director of Government Transport together with his mechanical engineer went to Coimbatore and wrote an enthusiastic report, endorsing the competence of the firm and certifying that it required no collaboration. The engine they proposed to make was similar to a (unspecified) German design. It would appear that there was recognition of the path of technology development through learning by doing. Interestingly, when a smaller firm in Coimbatore had applied for a licence to expand diesel engine production on an earlier occasion, the proposal had been rejected on the ground that they intended to copy Lister engines, and it was not considered appropriate to encourage copying without permission. An additional point was that the "firm seemed to be totally lacking in an appreciation of the technical and other problems that manufacture of diesel engines entailed and.... some existing manufacturers [Simpsons] were unable to sell their product."[41]

In the event, the Licensing authorities decreed that Textools did not require an industrial license, and that it was free to produce the engines. Freedom from industrial licensing was a double edged weapon in the competitive struggle. Unless the representative of the unlicenced (or small scale sector), the Development Commissioner (Small Scale Industries) was present at Licensing Committee meetings there was every chance that capacity already available in the small scale sector would be overlooked when proposals for further expansion were subsequently considered.[42]

The entry of TELCO with a phased manufacturing programme in mid 1954 allowed them to tender for the heavy diesel order, along with Ashok Leyland, for the GBS 1955-56 acquisition programme.[43] However the Mercedes bus offered by them was not found suitable, both in terms of its chassis dimensions, and on account of a six speed gearbox, considered unsuitable for city conditions. In any case, the Government of India further defined the parameters of choice, or rather limited them, by specifying that all heavy vehicles (of 5 tons or over) could only be bought through Ashok Leyland.

After an initial offer of reduction in the delivery time from 10 months to 6 months, Ashok Leyland returned to their original date.[44] This was probably not unconnected with the monopoly they now had in the heavy commercial field. As they intended to manufacture the Leyland Comet (a medium diesel) in the country, the Government of India quite naturally felt that consideration of a minimal commonality of parts should encourage the supply of other models from the same manufacturer.[45]

However, this policy inevitably increased the bargaining position of the supplier. As in the case of Simpsons, with the Perkins Diesel engine, complaints of Leyland's long and uncertain delivery schedules were voiced at the State Transport Undertakings' conference. Similarly in the field of components, Lucas insisted that their associate, Lucas Indian Service Ltd, be the sole distributor of their products in the country. The Government of India agreed with the criticism of the Leyland delivery schedule and suggested that if similar delays took place in 1956, they would be prepared to consider the import of alternative vehicles.[46]

The delay in the supply of heavy diesels by Leyland had led to the acquisition of light diesels. In fact, not only were Leyland Comets bought, but also vehicles with petrol chassis in order to overcome the increasing congestion on the Madras city services.[47] However, with the manufacturing programme of both the Ashok Leyland Comet, and the Tata Mercedes Benz, gaining ground this practice came to an

end in 1956-57. The mechanical engineer of the City Bus Service repeated the point made earlier, that diesel conversion of petrol vehicles was economical, but not the acquisition of new petrol chassis with diesel conversion kits. The petrol chassis had a life of 4 years, while the minimum expected of a medium diesel was 6 years. In fact, even in the case of authentic medium diesel chassis, the Leyland had a life of 8 years while that of the Mercedes was six. It was fortuitious for Madras' industrialisation prospects that by the criteria to be adopted for choice, that of vehicle seats per year, the relative merit of the local manufacturer (Ashok Leyland) was considerably enhanced.[48]

Another indication of the role that indigenous, if not geographically local, manufacture was to play in the choice of motor vehicle technology was provided by the controversy over the maintenance problems of the heavy duty Leyland Royal Tigers. It was alleged by Leylands that poor driving standards and maintenance capabilities were leading to the frequent breakdown of these imported vehicles. There was also a cautious admission that this might be the case from the subordinate levels of the Madras Bus Service.[49] What is significant, however, is that there was no attempt at any searching enquiry, which should have been expected, if the authorities had been convinced that for metropolitan transport, the heavy diesels were really the best option. Rather than this, the decision was taken to order 60 more of the Leyland Comets - a medium diesel vehicle then in the process of progressive indigenous manufacture.[50] This brought to an end Madras' brief attempt to match city transport requirements with vehicle characteristics as scientifically as possible. Thus while in 1950, in support of a decision to buy heavy diesels, the Transport Commissioner had said that a minimum torque of 250 ft/lbs at 1100 rpm was necessary for operating in city conditions, in 1957, this was arbitrarily reduced to 210, a figure within which both the Leyland Comet and the Tata Mercedes Benz were included.

Significant in the context of this considerable downgrading, was the exclusion of the Simpson's built Perkins diesel, which had a torque of 204 ft/lbs (merely 6 ft/lbs less than the specified minimum). Given that a decision had been taken that only two types of vehicles were to be bought in the future, this implied that tenders themselves would be confined to Ashok Leyland and TELCO. This was to be a major factor in determining the growth in demand for the Perkins engine, and for the prospects of Simpson's activities in the automotive engine field.[51]

There were two sources of demand for Perkins engines. The first was the replacement market when the original petrol engine had reached the end of its useful or economic life, while the chassis continued to be capable of further use.[52] The second lay in the installation of the engines in new chassis produced by some of the vehicle manufacturers in the country. This was a phenomenon of the 1950s, when the difference in diesel and petrol prices had given a decisive advantage in terms of fuel costs to the diesel, inspite of its greater initial price. Initially, the greater robustness of the diesel engine and its longer life does not seem to have tipped the balance against the petrol engine, and it was the difference in the fuel price which shifted demand towards diesels for commercial operations.

Both Hindustan Motors and Premier Automobiles fitted Perkins diesels to the Studebaker and Dodge chassis, respectively, made by them. Diesel engines in this range of commercial vehicles did not appear to be available from the collaborators in either of these cases. While there was apparently sufficient demand for the Dodge-Perkins combination, the Studebaker chassis did not perform reliably with the diesel conversion, and Hindustan Motors found that they did not have a marketable product, even within the oligopolistic market situation prevailing. In an attempt to remain within the commercial vehicle segment they imported the English Bedford chassis, and wished to import the Beford diesel engine, in addition, on the grounds that the Perkins engine did not perform satisfactorily. According to Simpsons, the reason for this was that Hindustan Motors were, in fact, importing 6/7 ton chassis under the guise of 5 tonners.[53] Simpsons were obviously concerned by the possible erosion of a segment of their market base.

Even before their phased manufacturing programme was complete for the manufacture of 3000 engines per year, in 1957, Simpsons had asked for a license to expand production to 12000 units a year. Although this was approved, the firm was asked to explore whether the collaborator was prepared to contribute to the capital investment necessary for the expansion.[54] Perkins evidently did not view the size of the Indian market favourably, and this was apparently not possible. After some negotiations, Simpsons suggested that they be allowed to expand by multiple shift working.[55]

Although Simpsons managed to block potential competition from Textools on the one hand, and the Bedford diesel on the other, with the exhaustion of the petrol-diesel conversion phase, the demand for Perkins engines depended critically on the sales of chassis produced by Premier Automobiles and Hindustan Motors. Evidently, they succeeded in persuading Ford to re-enter the Indian vehicle market, and applied for a license to make Ford chassis but this was not accepted. The 1956 Tariff Commission report on the automobile industry had, in fact, suggested that all future increase in capacity should come from the expansion of existing units, and while Simpsons were a beneficiery of this policy in so far as diesel engines were concerned, it was a barrier to their entry into commercial vehicle chassis.[56]

By the middle of the Second Five Year Plan, thus, the market for commercial vehicles was effectively filled by Ashok Leyland and the Tata Mercedes Benz made by TELCO. Production of Leyland vehicles was increased and manufacture of the heavy duty Royal Tiger and double decker Titan chassis was licensed. In 1960, at the beginning of the 3rd plan, production was again increased on a double shift basis. A significant indication of the market prospects was provided by the information that Leyland were to increase their equity participation to 60%, the increased capital inflow to cover the import of machinery.[57]

Developments in the private transportation sector : motor cycles and cars

If defence considerations had led to the location of Ashok Leyland in Madras, the demand from the defence forces and the police had an even more direct impact on the growth of Enfield India, the manufacturers of the Royal Enfield range of 350cc and 500cc motor cycles. As was the case with Ashok Motors and Simpsons, the originators of the project were formerly the agents for the vehicles they wished to manufacture. Madras Motors were established in 1946, having earlier been a part of the Royal Cycle and Motor Company. In 1954, they were given a license to manufacture 5000 motor cycles a year.[58]

The expectation on all sides seemed to be that the major portion of the demand would be from the defence services and the civilian arms of the government. Although the Government of India had indicated that it would only be able to direct its various offices to buy Enfield motor cycles when production began, it also stated that the Madras authorities were free to give instruction to their own departments if they wished. The Madras Home Department, in charge of police transport requirements, and the largest buyer of motor cycles agreed with the Government of India that procuring departments could be instructed to buy Enfield motor cycles only when actual production began. The Industries Department's case, on the other hand, for the issuance of an early order was that by concentrating demand, indigenisation was likely to be speeded up, as had apparantly been the case with Leyland and Ashok Motors.[59]

Enfield were later allowed to diversify into the manufacture of 150 3 wheeler chassis per month, based on motor cycle components within their sanctioned capacity of 5000 machines per year. However, competition was soon felt by them from the Lambretta Scooter, made in Bombay by Automobile Products of India.

As this company had been bought by another of the influential Madras based business groups (owners of the Southern Indian Automotive Corporation), and their claim for a licence could not be ignored, Enfields were presented with having to make a case that scooters and motorcycles lay in the same market genre of products. In this, they were supported by the Madras Industries Department which claimed that as orders has already been issued to the Heads of most Departments to buy Enfield motorcycles and transporters, a Government of India circular asking State Governments to buy Lambretta Scooters need not be circulated. However the Home Department insisted that the Transport Commissioner (under its administrative control) be sent the Government of India letter. Some time later 3 wheeler Lambretta chassis were bought by one of the Madras Departments.[60]

Under the system of industrial licensing, it was the central authorities who defined discrete segments of the transportation industry market, and determined the degree of competition that existed. Thus Enfield claimed that a 150cc motorcycle and a 150cc scooter were substitutable products and asked that they be allowed to expand production, including that of the smaller motorcyles. The licensing authorities, however, maintained that a scooter was a distinct mode of transport to a motorcycle of the same capacity, and that the market appeared to favour the scooter. Enfield were asked to forward a plan for manufacture of a scooter if they wished at all to expand capacity.[61]

The problem was not just that of scooters and motorcycles as private modes of transport. There were also mopeds, and motorised attachments to bicycles. Connected with these were the issues of the technologies for public transportation. In addition to passenger buses, there was the question of the role of the two seater taxi on a three-wheel scooter chassis (the autorickshaw) and the 4 seater taxi (usually on a war-surplus Harley Davidson motorcycle chassis) in addition to the more familiar "large" and "small" automobile-based taxis.[62] For each of these there were a number of applications from manufacturers. In effect, it was necessary to formulate an urban transport policy, and this would necessarily have to take account of the distribution of urban incomes.

This realisation came in September 1956, some months after the Second Five Year Plan had started. It was suggested that the transport policy be formulated after June 1957, presumably a time when consumer preferences would be revealed more clearly. In fact, by the time that decisions had to be taken, in mid 1958, it was clear that the scooter had a definite future, and that the demand for the 3 wheeler auto-rickshaw was also steadily increasing.[63]

It is not clear whether Enfield lost the market for the 150cc motorcycle to the Lambretta Scooter because of definite consumer preference for the scooter, or whether their slow pace of indigenisation reduced the volume of components they could import and thus their actual output and their ability to meet the demand. Enfield also seem to have failed in developing ancillary suppliers (an issue not unconnected with their pace of indigenisation).[64] Their own construction on the matter, however, was that the degree of vertical integration entailed by this led to overcapitalisation, and surplus capacity in some branches.[65]

The small car segment identified by the 1953 Tariff Commission Report (which Ashok Motors had presumed would allow them to produce the Austin 7) provided some space for expansion for Standard Motors. Admittedly, they did not show particularly impressive progress, when compared to the Birla firm, Hindustan Motors. They had been asked by the Government of India, in December 1948, to ensure that the engine block and brake drums for the Standard Vanguard were made by December 1950 in India. By 1954, 60 per cent of all components made in the parent factory were to be indigenously produced. In actual fact, a revised programme prepared in late 1952 was committed merely to the machining of imported cylinder blocks by June 1954. Originally they planned to manufacture the model '8', but on realising that its austere finish (no chromium fittings, no opening for the luggage boot from outside) would reduce its appeal, they switched to the more conventionally fitted-out '10' model. Standard Motors were to face serious problems when they introduced the 'Herald' model in

the 1960s, and their programme for the Vanguard was subjected to continual sniper fire from Hindustan Motors, with their nominally competing 'Ambassador'. Theirs was a case where the collaborator's offer of technology was accepted by the recipient, irrespective of its appropriateness to the Indian market. The rejection of the product, inspite of the enormous pent up demand for motor cars is a telling instance of the consequences of Standard Motor's entire absence of technological discrimination.

However, they had succeeded in identifing a distinct market segment, in preparing a plan for a 1 ton lorry and delivery van, based on Vanguard components.[66] This was a precursor to the light commercial vehicle (LCV) segment of the 1980s and Standard Motors could have been market leaders in this field, as the later experience with TELCO was to exemplify.

VI

The growth of ancillaries : adjuncts of vehicle manufacture

Motor vehicles, it has been forcefully asserted, are neither produced nor manufactured, they are assembled.[67] This statement underlines the importance of the horizontal disaggregation of the industry and the central role of ancillaries. Quite to the contrary, in Indian policy during the first two plans, ancillaries were seen to be merely suppliers of components that the assembler firm did not choose to manufacture itself. Only with the Third Plan was there some change in the policy, but the concrete outcome of this still remains to be investigated.[68]

Madras had a relatively better developed ancillary sector, possibly because many of the firms entering the field had diversified from the field of passenger and goods transport, by road. This experience had acquainted them with the volume of spare parts required in operating these services, and made them more early aware of the possibilities of their indigenous manufacture.

During the First and Second Five Year Plans, the Addisons - Amalgamations - Simpsons combine was the major initiator of ventures in the area of automobile ancillaries. The first enterprise of this group, India Pistons, established in 1949 in collaboration with Associated Engineering Holdings set the future pattern of such ventures.[69]

Most of the Simpson combine's ventures centred on engine components. They attempted to follow piston manufacture with engine valves, though this was a considerably more long drawn out process. The initial agreement, with Farnborough Engineering, was so completely at odds with the official guidelines that it proved impossible to bridge the gap. Initially the licensing committee suggested postponement of the application while rejecting a modified proposal some months later. When a second revised agreement was finally accepted, Amalgamations themselves withdrew, closing the first chapter of the saga.[70]

The third major area that Simpsons entered was that of engine bearings, and the gear rings fitted to engine fly-wheels. Both of these ventures were in collaboration with the Australian firm REPCO, leading to the formation of Bimetal Bearings and India Pistons REPCO, respectively.[71]

Interestingly, within a few months of Simpson's withdrawal from the engine valve venture, an ex-employee of Addisons applied for a license to manufacture them without collaboration. This proposal was accepted but the passage of the 1956 Companies Act, which required a greater degree of public accountability, apparently discouraged the venture's financial supporters. It was then necessary to raise finances and this, in the climate of scepticism about indigenous technological effort, implied the necessity of a foreign collaboration. Also, as

in the case of Saran with Ashok Motors, the entire project seems to have been driven forward by a single individual, the ex-employee of Addisons, and with his death confidence in successfully completing the technical tasks unaided seems to have waned. After negotiating with a German firm, who claimed that they were unable to undertake the venture, and with an Italian one which wanted extravagant terms for technology it was superseding, an agreement was finally signed with Farnborough Engineering, once more.[72]

An important issue arose, subsequently, when TELCO approached Engine Valves for the supply of valves as part of their own indigenisation programme. The 1953 Tariff Commission's recommendation that ancillaries be developed to cater to the requirements of motor vehicle producers implied that the design would be standardised so that scale economies were achieved. However, Mercedes Benz's own supplier (the German firm which had, in fact, been unwilling to initiate the venture) were now allowed to enter into another agreement for the manufacture of valves suitable for TELCO. It is not clear whether this was necessary because Engine Valves were held incapable of modifying the design to meet TELCO's requirements, or whether Mercedes Benz were unwilling to certify, as acceptable, an Engine Valve's product unless it was produced under license from their own supplier.[73]

At a particular stage of its evolution, Engine Valves seems to have been taken over by the second of the groups to begin manufacture of motor vehicle ancillaries, Rane (Madras). Their initial venture, for the production of tie-rod ends for the steering mechanism raised the same issue as that posed by the engine valve case. Rane had a collaboration with Quinton Hazell and were initially supplying parts to Hindustan Motors for the 'Ambassador', and to Premier Automobiles for the Dodge lorry. Subsequently they extended supply to the Fiat 1100, also made by Premier Automobiles and to Mahindra and Mahindra for the Jeep. The problem arose again with supplies to TELCO. They required complete steering linkage assemblies which, in Germany, were provided by the firm of A. Ehrenreich and Co. It was necessary for Rane to conclude a fresh agreement for this component. In this particular case, the fact that Rane was already supplying parts for 3 different manufacturers implies that the necessity for the new license came not from design or technological considerations, but from Mercedes Benz's concern to protect the markets of its suppliers.[74]

Unlike the earlier two groups, the Union Company was associated with a vehicle manufacturer, Standard Motor Products. As a result of this, their spread was considerably wider, and consisted largely of metal-worked components which had originally been manufactured by Standard Motors, such as radiators, seat frames, silencers and exhaust pipes. The rationale for collaboration-led manufacture in such items was questioned by the case of an independent supplier of radiators, not only to Ashok Leyland, but also to TELCO and Mahindras for Jeeps, established in 1956 in Madras. One of its partners had been trained abroad, but the firm had no collaboration. G.D.Naidu of the Coimbatore textile industry was one of the partners.[75]

The Union Company's two complex products were carburettors and fuel pumps, both with French collaboration. Beginning with Solex carburettors, they added fuel pumps at the tail end of the Second Plan. In this case, they had planned to achieve economies by standardising one design of pump for Standard, Fiat and Jeep vehicles. However, for reasons which they did not state, it became necessary for them to have three distinct designs all of which, in contrast to the TELCO-Engine Valve case, they appear to have developed with the original collaborator.[76]

The last major group involved in the ancillary field developed from the passenger transportation activities of T V Sundaram Iyengar, of Madurai. Starting with the manufacture of bus bodies in 1939, and small tools, used mostly in their own workshops, in 1941, TVS entered ancillary production proper with car and lorry wheels. Although the basic patents were held by Firestone and Goodyear, TVS collaborated with

Dunlop for a license issued at the end of the First Five Year Plan. National and Grindleys Bank's offer of a loan of 100 000 pounds sterling at 6 per cent, repayable over 5 years probably favoured the TVS offer over a competing application involving collaboration with Sankey.[77]

TVS, with their association with the major electrical equipment company, Lucas, also entered the motor vehicle electrical component sector. Starting with ignition coils and distributor caps and rotors, they diversified into the production of head, side and tail lights. Subsequently, they returned to engine electricals with starter motors and dynamos, together with horns and wiper motors. The manufacture of motor-vehicle electrical equipment was confined to a small number of firms internationally. Without the historical connection gained from their motor transport activities, it might not have been possible for TVS to obtain collaboration on terms acceptable to the Government of India.[78]

A curious feature of the growth of the motor-vehicle ancillary industry was its concentration in Madras City. Coimbatore, with its accumulated experience in cotton textiles, textile machinery and related fields does not make a major presence in this period.[79] A factor leading to this was, possibly, the preference of the licensing authorities for the stamp of foreign collaboration as a guarantee of performance. With the exchange crisis of the Second Plan Period, the preference for collaborations, which involved financial participation, was further strengthened.[80]

Another result of the decision making structure of the Licensing Committee was that indigenous technological effort was frequently bypassed. In particular, the importance of learning by copying as a stage in developing technological competence was overlooked. The authorities had an interpretation, probably fostered by competing interests often with foreign collaboration, that this practice was unacceptable. The Textool proposal for diesel engines and that of Vijaya Foundries, also for diesel engines, are cases in point. Similarly, Ramakrishnan Industries were unable to continue with their automobile steel casting industry, started without collaboration.[81]

The third factor that weighed against technological development was the unwillingness of the licensing authorities to concede the claims of smaller firms, which had grown with their own technology, to a size where they were liable to licensing. As a license was the key to entry into the national market, barriers to transition from the small to the large placed a major handicap on the growth of small scale efforts at developing technology. This policy, with critical implications for licensing decisions in all industries was made clear, in fact, in the case of the relatively more simple case of bicycle ancillaries. Small Scale firms were to be allowed to expand production, but would not be brought into the licensed sector as it was asserted that their technology would not allow them to compete successfully.[82]

VII

The Outcome

Madras' post-independence industrialisation shows sharp discontinuities with its earlier trajectory, and even with the perspective of officially appointed Committees. As has been mentioned in the Introduction, the 1948 Industrial Planning Committee Act emphasised the desirability of a pattern of growth based on the oil-seed resources of the region. The State's authorities had even asserted the right of restricting the utilisation of the oil-seed resources to ethnically local entrepreneurs.[83] An equally authoritative Report had rejected the advice of Coimbatore-based industrialists in favour of developing the automobile industry.[84] However, with the era of industrial planning, the situation changed. Madras entrepreneurs did not take up the full quota of oil-seed processing capacity available, nor did the authorities interest themselves in the issue.[85] The assertiveness was now in support of the automobile industry.

Madras's growth in the area of metal working and mechanical engineering during the era of planning was, therefore, a development from "on top" in two senses. Firstly, it depended on a passive acceptance of the geographical imperatives of investment location, which acted in its favour during that period. Admittedly the role given to State Governments was not likely to encourage activism. They were expected to examine issues such as location, raw material availability, power supply and not to consider other questions except for special reasons.[86] However, the Madras authorities developed this disengagement to a fine art. For the first 5 or 6 years after industrial licensing was introduced, no official represented the Madras Government at meetings of the Licensing Committee (unless special pleading was required).[87] Even when there was a change in attitude, and in 1959, the Madras representative suggested that the Industrial Development and Regulation Act should be amended so that the State Governments could be allowed to examine and investigate cases, a decision on this issue was deferred, and almost certainly, not taken up.[88]

Secondly, the State continued to respond to investment opportunities, by preferring the imported to the indigenous. The fact that this last characteristic was equally true at the all India level does not do more than provide solace. For when, by the 1980s, the geographical preference for investment locations moved away from Madras, this was accompanied by a movement towards new kinds of technology, which the firms in Madras were no more able to provide indigenously, than their entirely new competitors elsewhere in the country.[89] The 25 year lead that the State had gained was effectively lost in the import splurge for technology of Japanese origin, a situation in marked contrast to TELCO, which had also started with technical collaboration.

Notes

Records of the Government of Madras in the Development (Dev), Industries, Labour and Cooperation (ILC), Home, Public Works (PW) and Public Departments are available in the form of Government Orders (GO) in the Tamilnadu Archives, Madras. Confidential records (Cnfdl) of all Departments are kept in a common section (R1) in the Archives.

1. In 1961, out of the total demand for bought-out castings, forgings and stampings generated by the motor-vehicle industry, Madras State accounted for 54 per cent by value of stampings, and 17 per cent by value of forgings and castings. Government of India, Central Statistical Organisation, Annual Survey of Industries, 1961 (Calcutta, 1964), Volume 9, p.72.

   Data available for a later period show that the motor-vehicle ancillary industry in Madras accounted for 44 per cent of the fixed capital, and 56 per cent of the value-added of the motor-vehicle industry as a whole. At the all-India level, these proportions were around 30 per cent. Government of India, Central Statistical Organisation, Annual Survey of Industries, 1966 (Calcutta, 1972), Volume 10, p.29 and p.39 and Annual Survey of Industries, 1968 (Calcutta, 1976), Volume 10, p.42 and p.50.

2. The Expert Committee on Automobiles had the Director-General Industries and Supplies of the Government of India as Chairperson. Representatives of the major interests in the motor-vehicle industry were included. Four of these were firms which intended to manufacture vehicles: Hindustan Motors, Premier Automobiles, Automobile Products of India and Ashok Motors. Two were assemblers: General Motors and Ford. T.V.Sundaram Iyengar, a major passenger transport operator and later motor-vehicle ancillary producer, was also represented on the Committee.

The Government of Madras' indifference is surprising. Not only were Ashok Motors and T.V.Sundaram Iyengar both firms based in Madras, but the Committee visited several factories in Madras city: Binny's and Crompton's Engineering Works, Gordon Woodroffe and the Chrome Leather Company, and Addisons, Simpsons and the India Pistons Limited.

Dev 4033 4.10.1950.

3. A Committee set up specifically to outline a strategy of industrial development for Madras State had emphasised the potential of the oil-seed based chemical industry, a logical conclusion based on Madras' resource base. Government of Madras, Final Report of the Industrial Planning Committee (Madras, 1948).

4. Government of India, Tariff Commission, Report on the Automobile Industry, 1953 (Bombay, 1953) pp.28-29, 87; p.57; pp.63-64, respectively.

5. To this was added the Kanyakumari district services, allocated to Madras after the formation of Travancore-Cochin. Home 3333 21.10.1946; Home 3355 28.8.1947

6. Although an oficial was immediately transferred from the Department of Civil Suplies as a manager to the Goverment Bus Service, no mechanical engineer had been appointed by 1949, three years later. This was inspite of a visit in early 1948 by the Madras Deputy Transport Commissioner to the Hyderabad and Travencore State Transport Organisations. Home 3333 21.10.1946; Home 2066 23.5.1949; Home 834 6.3.1948.

7. 15 Ford petrol chassis were brought in 1946 to be run as buses additional to the private operators, even before the Cabinet had approved the nationalisation proposal. Home 3138 5.10.1946; Home 3333 21.10.1946; Home 3355 28.8.1947

8. Home 3325 20.10.1946; Home 3323 25.8.1947; Home 3355 28.8.1947; Home 3397 2.9.1947; Home (Cnfdl) 4419 4.11.1949.

9. General Motors had established assembling facilities as early as 1928, and Ford Motor Co. in 1931. Sanjay Kathuria "Commercial Vehicles Industry in India: A Case History, 1928-1987" Economic and Political Weekly XXII (1987):1809-1823.

   As the Isotta-Fraschinis were to be bought from the hard currency areas, no prepayments were permitted. Obtaining an import license was also difficult and was finally granted after ministerial intervention. Shipping space from Italy to India was scarce, and the delays in delivery led the Madras Government, ultimately, to cancel the second part of the order for 25 buses. Home 3323 25.8.1947; Home 3397 2.9.1947; Home 4628 16.12.1947; Home 417 2.2.1948; Home (Cnfdl) 2413 26.6.1948;

10. They had offered petrol chassis with diesel engines when it became clear that there had been an over-optimistic assessment of the condition of most of the private buses. This required the Government Bus Service (GBS) to buy more new vehicles than originally forseen. However, the Simpson's offer was not viewed as technically acceptable for a new vehicle. Initially the opinion was that a second batch of 25 Isotta Fraschinis should be bought, which was subsequently increased by another 25, making 75 in all. Subsequently, with a rise in the price of Isotta Fraschinis, 50 petrol vehicles from Ford and General Motors were substituted. Ultimately, as observed in note 9 above, the Isotta-Fraschini order was reduced to the original 25. Home (Cnfdl) 4419 4.11.1949;

11. Home 2066 23.5.1949; Home 3930 4.10.1949; Home 2553 24.6.1949

12. Their experience had been that diesel engine conversions were problematic. Such engines were heavy, leading to the collapse of the engine supports. The degree of vibration also led to problems such as breakages in the dynamo supports. Home (Cnfdl) 4419 4.11.1949

13. The price had risen by a third in the course of the year. This was the first sign of Simpson's oligopolistic pricing policies discussed in the text below.

The recommendation of a Committee set up to report on the GBS was cited in support of this dieselisation programme, though it was also noted that Simpson's representation on the Committee introduced uncertainty about its impartiality on this issue. Home 2949 27.6.1950; Home 3494 1.8.1950 contains the Report of the Committee. Possibly as a counter to the price rise in the Perkins engine, a decision was taken to buy a Hercules make of engine and reduce the number of Perkins to two. Home 395 1.2.1951.

14. This was discussed in note 9, above.

15. Home 3616 13.9.1951; Home 4322 28.11.1952; Home (Cnfdl) 697 28.2.1953; Home (Cnfdl) 1691 22.5.1953.

16. The Report of the Economic Advisor may have had an impact on general policy, but no discernable effect on techno-economic decisions of this kind. Home 5031 25.11.1950. Depreciation rules specifying distinct rates for petrol, diesel conversion, and light and heavy diesel chassis were specified in 1954, but they were not operationalised in terms of purchase decisions until 1956. Public Works (PW) 376 3.2.1954; PW (Cnfdl) 1273 8.3.1956.

17. The sales tax on motor vehicle fuel was levied by State Governments. In Bombay, the legislation was amended to allow for differential taxation on distinct grades in 1950, in response to a request from the Government of India. Economic Weekly II (1950): 988.

    The importance given to fuel economy was illustrated by the recommendation for the acquisition of Chevrolet buses rather than Ford, because of their lower petrol consumption. Home (Cnfdl) 3863 1.10.1951.

18. Buses which were intended to be withdrawn from service were retained to deal with the increased load. In addition, the allocation for new buses was doubled so as to allow the purchase of heavy diesels. Home (Cnfdl) 697 28.2.1953; Home (Cnfdl) 2439 30.7.1953; PW 4514 3.12.1953.

    There was another complication in that the tramways which had earlier been subsidised by the surpluses from electricity distribution, were able to keep their fares low. After the separation of the two activities, the losses could not be sustained by the tramway company. This meant that a large section of urban commuters, now dependent on the bus service, would exert strong resistance to increases in passenger fares. The techno-economic obsolescence of trams was, however, clear. Economic Weekly V(1953): 481

19. Home 3778 26.8.1950

20. Home (Cnfdl) 3863 1.10.1951

21. The two models suggested by the Transport Commissioner were English: the Guy Arab and the Leyland Royal Tiger. The choice was later expanded to include the Daimler which, like the Guy Arab, had a Gardner diesel engine. After an initial decision to buy one each of the Leyland and Guy, orders were placed for 8 more Guys because their supply position was better than that for Leylands.

    Home 3778 26.8.1950; Home 5401 26.12.1950; Home (Cnfdl) 2196 1.6.1951; Home 3534 7.9.1951; Home (Cnfdl) 535 13.2.1952; Home (Cnfdl) 756 27.2.1952.

22. Industries, Labour and Cooperation (ILC) 1841 20.4.1953; ILC 2900 23.6.1953.

23. Home 3534 7.9.1951.

24. Home (Cnfdl) 1691 22.5.1953

25. Home 2866 8.9.1953; ILC 2334 28.8.1954.

26. Home 4322 28.11.1952; Home 2866 8.9.1953; PW 251 22.1.1954; PW 2843 16.8. 1954, Development (Dev) 5343 12.12.1952;

27. ILC 1841 20.4.1953. While it may have been true that the Commission was actually (in addition to being perceived as such) to be partial to the "North" or, specifically, to the Birla House, there could have been a more objective reason for this. Both Birla's Hindustan Motors, and Premier Automobiles of Bombay were considerably more advanced in terms of indigenous manufacture, and both had been victims of the policy of permitting imports of competing vehicles on the grounds that they would eventually be produced in the country. "Automobile Industry in India" Economic Weekly IV (1952): 822-823 and "Tariff Commission on Automobiles" Economic Weekly V (1953): 635-636.

28. ILC 2842 14.10.1954; ILC 1081 23.3.1955

29. Dev 1841 20.4.1953

30. A 6 cylinder fuel pump manufacturered by MICO was sent to them in February 1954, nozzle holders in October of that year. No response was forthcoming from Perkins even by the end of December. Dev 5343 12.12.1952; ILC 1572 1.4.1953; ILC 3913 28.8.1953.

31. Austins, who had refused to revise the programme were, in fact, at that time involved in secret negotiations with Nuffield towards a merger. With the merger, they blithely suggested that Ashok Motors should coordinate with Birla's Hindustan Motors (who were, in turn, in collaboration with Nuffield).

    Letter from Ashok Motors to Secretary, Development Depart- ment, Madras dated 10.1.1953 in Dev 1841 20.4.1953.

32. A meeting of the Board of Directors of Ashok Motors held in Hyderabad on 22.11.1953 discussed the issue of a merger with Automobile Products of India. ILC 1163 3.5.1954.

33. Ashok's application for an industrial licence in collaboration with Austin is in Dev 3690 22.8.1952.

34. ILC 1163 3.5.1954

35. The complacency arose out of the monopolistic situation that had arisen as a result of the policy of restricting imports to firms that had a manufacturing programme. In the case of the GBS acquisition plan for 1954-55, the initial choice of 40 Leyland Royal Tiger and 10 Guy Arab chassis was modified to an exclusively Leyland Order. PW (Cnfdl) 4563 7.12.1953; PW 2609 27.7.1954

36. Letter from Ashok Motors to Secretary, ILC, Madras of 20.7.1953 in Dev 1841 20.4.1953.

37. Letter from R.Saran of Ashok Motors to Secretary, Ministry of Commerce and Industry, Government of India, No.RS/10000 of 28.9.1953 in ILC 1743 29.6.1954. See, also, Economic Weekly VI (1954):216.

38. According to the terms of agreement between Ashok and Leyland, there were to be 3 Leyland directors on the Board of 10. Both Executive and Administrative control of the factory was to rest in an official who was to be nominated by Ashok, only after approval by Leyland. An Executive Committee consisting of 1 Director nominated by Ashok, 1 by Leyland, and 1 by the Managing Agency was to have complete and direct control over the factory, finances, sales and distribution during the entire period of 20 years of the agreement. Changes in the memorandum and articles of association required Leyland's concurrence.

    While the agreement with Leyland was signed in September 1953, after Daimler Benz withdrew their offer, Automobile Products of India terminated negotiations in December 1953. Letter from Ashok Leyland to Secretary, Industries Labour and Cooperation dated 16.6.1954 in ILC 1743 29.6.1954.

39. Government of India, Tariff Commission, Report on the Automobile Industry (Bombay, 1956).

40. ILC 2334 28.8.1954.

41. ILC 50 7.1.1954; ILC 793 29.3.1954; ILC 890 6.4.1954.

42. ILC 3541 3.8.1956; ILC 3574 6.8.1956; ILC 1609 17.4.1959. ILC 3079 7.8.1959, p.75

43. ILC 3482 9.12.1954; PW (Cnfdl) 400 5.2.1955.

44. PW (Cnfdl) 400 5.2.1955

45. PW (Cnfdl) 960 23.2.1956

46. PW (Cnfdl) 960 23.2.1956

47. PW (Cnfdl) 2360 17.6.1955; PW (Cnfdl) 2744 16.7.1955

48. Although the Tata Mercedes Benz tender was accepted for medium diesels, and the Ashok Leyland tender for heavy diesels, there was a gradual movement towards Leyland in the succeeding years. PW (Cnfdl) 716 11.2.1956 PW (Cnfdl) 1273 8.3.1956; PW (Cnfdl) 2273 15.5.1958. When the 1957-58 acquisition programme was postponed to 1958-58, the initial order of 12 for each make was modified to 60 Leyland and 12 Mercedes Benz.

49. Note by Mechanical Engineer dated 3.7.1956 in Home (Cnfdl) 1981 10.7.1956

50. During discussion for the 1955-56 acquisition programme there had been considerable controversy, with the Minister-in-charge of Transport demanding that tenders be placed for medium diesels, when a decision had already been taken that heavy diesels alone would be bought. At this stage the relative merits of the two seem to have been clear. The unexpected decision to buy the medium Leyland Comet in the immediately following year is in Home 2448 30.8.1956. More substantively, in the case of similar complaints from the police in the case of Enfield Motor-cycles, a conference was held in which the mutual charges and counter claims could, at least, be discussed. So also, when the quality of Hind Cycles, manufactured in Bombay, was criticized, there was a long drawn out process of discussion. See ILC 2342 7.7.1955 and Public 616 29.4.1954.

    It may be noted that the results of a Conference to discuss the performance of GBS, which had before it notes on the Engineering Branch, on the Traffic Section, and on the Organisation, and also the Report of the 1949 Committee seems, again, to have had no discernible effect on decision making.

51. Home (Cnfdl) 2952 13.11.1957; ILC 1738 6.5.1958.

52. In Madras, this source of demand seems to have dried up by 1956-57. PW 2468 28.5.1956; Home 3339 30.11.1956.

53. ILC 3421 8.8.1958

54. This was in the context of the deteriorating foreign exchange position. Its implication for licensing had been noted within 4 months of the start of the Second Plan, at the 40th Meeting of the Licensing Committee in August 1956. It was reiterated in October 1956. By December the reserves were being depleted at the rate of Rs.5-6 crores per week. Encouragement to foreign capital began explicitly from the 43rd Meeting of the Licensing Committee in December 1956. ILC 254 24.1.1957; ILC 5294 20.12.1956; ILC 255 24.1.1957; ILC 1218 28.3.1957.

55. They suggested 8000 automotive engines on the basis of 3-shift working, 3250 tractor engines and 750 stationery power sources, with some flexibility to adjust production between these categories. A re-revised scheme, forwarded a year later, suggested 6000 automotive engines on double shift and 1000 tractor and stationery diesel engines, combined.

    ILC 2166 27.5.1959

56. ILC 901 5.3.1957; ILC 2326 16.6.1958; ILC 1850 14.5.1958.

    However, Automobile Products of India appeared to have begun manufacture of Meadows diesel engines in 1956. Economic Weekly VIII (1956):1294

57. The rapid growth of Ashok Leyland during the Second Plan period, under the encouragement given to firms in a position to finance their own requirements of foreign exchange, can be traced in ILC 1197 28.3.1958; ILC 4606 29.11.1958; ILC 3337 28.8.1959; ILC 2646 27.5.1960; ILC 4513 28.9.1960.

58. ILC 4020 3.9.1953; ILC 68 9.1.1954; ILC 4536 8.10.1953; ILC 5246 24.12.1953

59. ILC 2342 7.7.1955

60. ILC 268 21.1.1956; ILC 1092 13.3.1956

61. ILC 4807 13.12.1958

62. There Is an interesting and important discussion of these issues in the proceedings of the Ad-Hoc Committee for Reviewing the Scooter, Motor-Cycle, Moped and 3-Wheeler Industry contained in Office Memorandum Con.Ind (B) - 66 (20)/57 dated 26.8.1957, of the Ministry of Commerce and Industry. ILC 4807 13.12.1958.

63. This was discussed at the 55th Meeting of the Licensing Committee held on 30.7.1958.

64. The Ad-Hoc Committee recommended that every application should be examined on Its own merits. ILC 1273 2.4.1958.

    A number of cases of agreements attempted explicitly to prevent subcontrating. See, for example, the case of Simpson's proposal to manufacture cylinder liners and sleeve valve liners ILC 2993 17.6.1960.

65. ILC 3692 27.7.1960; Enfield attempted to use the unbalanced capacity for steel fabrication work. ILC 590 12.2.1959.

66. Letter from K.Gopalakrishna, Deputy Chairperson of Standard Motor Products to Chairperson, Tariff Commission, dated 31.12.1952 in Dev 1841 20.4.1953.

    Standard Motor Products seem to have taken a series of unwise steps. The decision to manufacture the Model '8' and the changeover to the Model '10' was the first. See ILC 137 17.1.1955. Subsequently, they faced problems from the workers union in 1957 and constraints on imports due to their slow indigenisation progress (according to the 1956 Tariff Commission, they were producing only 5 % of the value of the vehicles indigenously). Economic Weekly VIII (1956):1424.

    In 1958, this culminated in a complete cessation of imports of the Standard Vanguard. In 1960 they found that the Vanguard was placed in a higher excise bracket than the Ambassador due to its higher horse-power rating. Subsequently they were alarmed at the prospect of Tatas entering the passenger car field allegedly by subsidising their manufacturing programme from profits earned on (decontrolled) prices of commercial vehicles. Standard Motor Products had also made an unsuccessful entry into tractor manufacture from assembly, which had to be terminated when the foreign principal changed. IIC 4298 23.12.1955; ILC 3486 15.7.1960; ILC 3482 9.12.1954.

67. "Automobile Industry in India " Economic Weekly IX (1957) :308-310 and "Ancillary and Feeder Industries" Economic Weekly XI (1959):1256-57.

68. The Report of the Ad-Hoc Committee on Automobile Industry had recommended in 1960 that import of both finished and semi-finished components should end by 1962 and, presumably to this end, ancillaries should be encouraged. ILC 4521 27.9.1960. It was also decided that proposals for establishing ancillary industries would be approved in principle by the Licensing Committee (though they would still face the hurdle of obtaining foreign exchange) ILC 1469 21.3.1960.

    On the other hand, a close reading of the Report of the Ad Hoc Committee displayed a continuing mistrust of ancillaries. PBM "The mirage of an Automobile Policy" Economic Weekly XII (1960): 680-684.

69. Four out of the five directors of the company were non-Indians, two of these nominated by the collaborator. Amalgamation's role was as secretary to India Pistons, which was floated as a Private Limited Company. The agreement was for 20 years, with a royalty of 5 per cent, and covered not only pistons. but a number of related components, including piston rings and cylinder liners. Both of these were made from cast iron. The demand for aluminium piston rings was met either through imports, or through the import of suitable aluminium alloys, presumably using imported dies. In 1956, production of die castings for pistons made of aluminium was approved, without the need for an additional license. ILC 2842 14.10.1954; ILC 1929 11.5.1956; ILC 3704 23.9.1959.

70. ILC 3482 9.12.1954; ILC 1582 14.6.1954; ILC 1762 17.5.1955; ILC 1970 22.7.1954; ILC 647 24.2.1955.

71. ILC 4436 17.11.1959; ILC 3714 28.7.1960

72. ILC 2376 12.7.1955; ILC 2549 28.7.1955; ILC 656 19.2.1957.

73. ILC 4777 11.12.1959; ILC 1591 25.3.1960; ILC 3693 27.7.1960

74. Subsequently, Rane integrated backwards by starting the manufacture of forgings for tie-rod ends and diversified into clutch discs and facings, and brake linings. ILC 2104 22.5.1959; ILC 5133 5.11.1960; ILC 1707 31.3.1960; ILC 4683 10.10.1960; ILC 4568 310.1960.

    An early attempt to manufacture brake linings in Madras by M A Chidambaram of the Madura South India Corporation, distributors of Rootes vehicles ended with the promoter's decision to acquire Automobile Products of India in Bombay. ILC 1828 7.7.1954.

    Subsequently, API began the manufacture of clutches and hydraulic brakes under license from Borg and Beck and Lockheed, respectively ILC 2376 12.7.1955.

75. ILC 4788 12.12.1958; ILC 2064 18.4.1960.

76. ILC (Ind) 1395 26.3.1959; ILC 2047 19.5.1959; ILC 2657 7.7.1958; ILC 3731 28.7.1960; ILC 2908 13.6.1956

77. ILC 4920 21.12.1959; ILC 3442 4.9.1959.

    An attempt by the Rane group to negotiate terms for wheel manufacture for Jeeps and Dodge and TELCO commercial vehicles failed to materialise ILC 3835 6.10.1958.

78. Two earlier attempts at establishing motor vehicle electrical equipment had failed. In 1956, the Union Co. had been given a license to make coils and condensers in collaboration with Esswein and Co. of France. These negotiations were not fruitful. Subsequently, in 1958 Best and Co. applied for a license in collaboration with Simms Motor Works, a company smaller than Lucas or Bosch. In 1963, Simms sold their electrical division to Autolite Motor Products of London. ILC 1850 14.5.1958; ILC 1888 5.5.1959; ILC 2550 19.5.1960; ILC 5198 10.11.1960.

    The TVS combines grew at a spectacular rate in the 1960s and 1970s through an incestuous interlocking of inputs and outputs of all the firms in the group. See Padmini Swaminathan, "Liberalisation, Market Concentration and Prospects for Growth; A Study of the TVS Group of Companies" Economic and Political Weekly XXIII (1988): 1026 - 1031.

    A proposal by George Oaks, an associate of Simpsons, to make air and vacuum brake accessories in collaboration with Clayton-Dewandre, to be fitted to chassis using the Perkins engines, and for the Leyland Comet, had been accepted by the Licensing Committee in 1959. When negotiations failed to produce acceptable collaboration terms, the license was cancelled in 1960. Subsequently the TVS Group began negotiations, culminating in the establishment of Sundaram Clayton. ILC 4423 16.11.1959.

79. This was ironic, given that historically support for the motor-vehicle industry was voiced by Coimbatore industrialists. (fn.84 below)

The firms associated with L.G.Balakrishnan and Co., were an exception. Starting with bus body building, they moved into the area of timing chains and later that of industrial roller chains. ILC 2353 17.6.1958; ILC 1609 17.4.1959; ILC 1706 31.3.1960.

80. By 1958, as liabilities on account of deferred payments were expected to be heavy upto 1963, even this procedure was not encouraged. The Exim Bank of the USA was prepared to give foreign currency loans for supplies from the US Summaries of applications for the Licensing Committee were expected to include details of the source of plant and machinery ILC 1470 18.4.1958.

81. ILC 383 7.2.1955.

82. ILC 4617 1.12.1958.

83. Dev 429 5.2.1952.

84. See the proceedings of the Subcommittee on Machines and Machine Tool Industry contained in Dev 4313 31.10.1945.

85. ILC 250 16.1.1953; ILC 3125 6.7.1953.

86. Dev 4737 6.11.1952.

87. As in the case of the TVS application for a license to produce caustic soda. The Secretary, ILC attended the 21st Meeting of the Committee in October 1954, and pressed TVS' claim. A license was granted at the subsequent meeting. ILC 2969 23.10.1954; ILC 5 3.1.1955.

88. ILC 1888 5.5.1959.

89. For an early appreciation of the geographical, technological and demand implications of this change, see T.S.Kannan and C.B.Rao "Automobile Ancillaries - A Review" Bulletin, Madras Development Seminar Series XV (1985) :369-386.

The nature of R and D activity in the motor-vehicle industry has been documented in V.Gumaste "Anatomy of In-House R & D:A Case Study of Indian Automobile Industry" Economic and Political Weekly XXIII (1988), 22: M67-M72.