WORKING PAPER No. 203

COMPETITIVENESS IN THE INDIAN TYRE INDUSTRY: 1936-1984

SUNIL MANI
and
P.K. MICHAEL THARAKAN

(This paper forms part of a project report being prepared by Sunil Mani, Chiranjib Sen, Lata Sen and P.K. Michael Tharakan at the Centre for Development Studies, on "Indian Rubber Products Industry" for the Industrial Development Bank of India)

Centre for Development Studies
Ulloor, Trivandrum 695 011

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An analysis of the origin, and early development of Indian Tyre Industry will provide a historical insight into contemporary problems facing the industry. In a historical analysis of this sort, we will focus upon the evolution of the structure of the industry in the early years. This is expected to throw more light on the question of competition in the industry.

Indian tyre industry was marked till around 1960 with an apparently weak element of competition between firms. On the contrary it was observed that the firms in the industry could collude in price fixation and output sharing. The government of India's decision to increase licensed capacity in the industry around 1960 was a result of this observation.[1] Neverthless there are reasons to believe that except for a short period the possibilities for collusion in price fixation and output sharing continued till the early part of the next decade, than developed competition.

The situation requires some explanation. How would one explain the lack of inter-firm competition in an industry which at least in other countries showed elements of severe competition?[2] The circumstances which led to collusion being preferred over competition becomes important in this context. There was also the possibilities for competition being expressed more in terms of the quality of product and after sales services. Moreover the firms themselves could have transfered the element of competition to the level of dealers[3] rather than indulging in price competition between themselves. All these varying possibilities require close scrutiny.

The presence or absence of competition in an industry which produce a commodity for mass consumption would naturally be related to the changes

in consumer demand. It is possible that in the case of tyres, the characteristics of the product which could be judged on technical grounds; (and not on special personal preferences) the choice of one brand over others could also be based on the consumer's knowledge and assessment of the technical characteristics.[4] Particularly in the case of the tyre industry in which so much emphasis has been on quality of product and after sales services, consumer demand might have been influenced by the subtle changes in specific characteristics that is looked for by consumers.[5]

The role of price factor in determining the profit margin is another important aspect to be looked into in this study of tyre industry. Whichever way the profits are calculated; either as the excess of sale proceeds over the actual costs or with reference to the money spent on goods for sale, the role played by price and competition therein becomes important.[6] From this observation it may also be said that firms interested in increasing profit margins must have also concentrated on the price mechanism on the one hand, and the share of market on the other.

In a case like that of tyre production we can think of several constraining factors operating against the rise of competition. For instance, the working of credit market, technological innovations and also the availability of export market are all factors to be taken into account.[7]

Keeping such factors in mind let us look at the origin and development of tyre industry in India.

Beginnings

The rubber manufacturing industry in India was started in 1920, with the establishment of a general rubber goods factory named The Dixie Aye Rubber Factory Ltd., in Calcutta; which did not survive for long.[8]

Though the beginnings were made in the 1920's, it was only in the 1930s that the rubber manufacturing industry stabilized on the Indian scene. One of the factors which tiltod the balance in favour of rubber manufactu ing units in India was the International Rubber Regulation Agreement of 1934.[10] This agreement which was the result of the crisis emnating from t world wide economic depression, tried to curtail export of raw rubber fro the different producer countries; by fixing a quota for exports for each country. This inturn created circumstances favourable to manufacturing o rubber goods, by both foreign and Indian companies operating in India.

There were two types of advantages to the manufacturers of rubber goods in India in this context. First of all, the rubber which was avai - lable as surplus over the export quota were being sold at a considerably lower price within the country.[11] Another factor was the availability of cheap labour.[12] Along with these points, there seems to have been operating other factors, particularly in the case of foreign companies investing in India in the area of rubber goods production.

For instance, Dunlop Rubber Company started a plant at Calcutta in 1936. Of the factors which prompted it to take such a step was the anti- cipation of its main competitor's behaviour, that is of Good Year, and also the intention to give strength to the firm's local identity in the face of growing nationalist movement.[13] Togethor with these was the desire to tap the growing tyre market in India, which still remained to be based upon the purchases of government in mid - 1930s. Another factor seems to be the interest taken to preferences being given to Indian registered companies by the government of India.[14] How far comparative price advantages and cheap labour costs played a role is to be looked at within these favourable factors too.

It is interesting to note that rubber goods industry and particularly the tyre industry stabilized and grew in India during the period of the depression years. For this peculiar development two factors seems to be responsible. One obviously was the role of the government which helped Indian registered companies to tap whatever increases in demand that occurred. Secondly India must have been at a stage of growth in transportation and communication which provided a higher growth rate of demand for accessories including tyres. Finally, and to a lesser level, the improvement in road construction which seemed to have happened elsewhere and therefore caused a relatively lesser increase in demand for tyres compared to automobiles,[15] could not have taken place within India at that time.

The demand for tyres that increased as a fall out from the automobile industry sales must have started to register in India also around late 1930s. In this the public expenditure on highways which is supposed to have turned out as a hidden subsidy elsewhere was also apparently a factor to be taken not of.[16]

In the beginning of the 1920s there was a boom associated with anticipations of a post-war economic recovery, which got reflected particularly i the imports of motor ars and cycles a ong other things.[17] This boom sustained over for the whole decade till 1929 when the world-wide slump started eating away the demand for industrial goods; though in this respect the hardest hit was the agriculturist.

How far competition between sales agents and importers of tyres and tubes operating in India in the period before the starting of a Tyre factory is indeed an interesting story. But we do not have any reliable information on this. One could only say, that price competition

was absent as a survey of Motor Transport published in 1935 says that "the price variations in tyre makes are not very considerable" even at this stage when all vehicles including trucks were equipped with pneumatic tyres.[18]

In the preceding section we have seen the basic background against which the automotive tyre industry evolved in India. We shall now concentrate on its subsequent evolution. Analytically from the point of view of competition or lack of it, the evolution of the industry can be divided into three phases.

Briefly the first phase is from early 1930s upto early 1960 when there were only two manufacturing firms. This was a period of rather heavy concentration in production. The second phase is from the early 1960s to the mid 1970s when the government licensed more units. This phase also marks the entry of Indian firms into the industry. This was a period of both competition and collusion. Finally in the third phase, which commences with the mid 1970s, we see the entry of Indian Business Houses. It is a phase of vigorous competition.

Phase 1: 1936 - 1960

The first phase begins with the year 1936, when the first tyre plant viz., Dunlop was established in the country. The proximate causes for setting up of the plant were seen in the previous section. This phase was characterised by heavy concentration in production, namely, in the hands of two manufacturers. The manufacturers, Dunlop and Firestone were both subsidiaries of foreign MNCs.[19] In addition to these two, there were two other companies, viz., Good Year and India Tyre and Rubber (ITR). But both of them were only trading firms using Dunlops manufacturing facility. In fact there were many intercompany arrangements between the three firms. Good Year had arrangements with Dunlop in respect of several markets, according to

which one of the units manufactured tyres and tubes for the other in markets where it had a prominent position.[20] Similarly there was an agreement between Dunlop and ITR of the same nature.[21] This kind of arrangement was a common business reaction to the economic vicissitudes of the 1930s and was found in many industries.

The concentration in production had its repercussions on tyre prices. This will be evident from the features of the pricing system which prevailed during that period. The main features of the pricing system were that:

(i) Tyres and tubes were sold at the same price throughout the country irrespective of the differences in transport costs from the place of production;

(ii) There was very little price differential between the manufacturers for the same type and size of tyres and tubes; and finally as a corollary of (ii)

(iii) Competition between different manufacturers being carried out on the basis of quality and service and not of price.

The system of uniform prices were to some extent the natural and inevitable outcome of the organization of the industry. The series of reciprocal agreements between Dunlop, Good Year and ITR precluded any form of price competition between these firms. Firestone, the other manufacturing company also was not in a position to engage in price competition, with any material advantage to themselves. The specific reasons for this are as follows:

First of all at the uniform price, Firestone made more profit than Dunlop since its cost of production was lower than that of the latter. This is evident from the following table which shows the net profit and the rate of profit to capital employed of these two firms for the period 1947 to 19

Table 1

Net Profit of Dunlop and Firestone : 1947-1953

(Rs. in crores)

	DUNLOP		FIRESTONE	
	Capital Employed	Net profit	Capital employed	Net profit
1947	3.14	1.17 (35)	2.29	1.22 (53)
1948	4.13	1.17 (28)	2.06	1.59 (77)
1949	4.80	1.28 (27)	1.89	1.30 (69)
1950	4.84	1.17 (24)	2.05	1.30 (64)
1951	5.71	1.40 (24)	2.52	1.74 (69)
1952	6.73	1.33 (20)	3.27	2.32 (71)
1953	6.63	1.25 (19)	3.54	1.68 (48)

Figures in brackets indicate ratio of net profit to capital employed

Source: Report on the Fair Prices of Rubber Tyres and Tubes, Tariff Commission, Government of India, 1955, p.130.

Secondly, any reduction in the prices by Firestone would have invariably be matched by counter price cuts by other companies for the simple reason that all of them had large financial resources and were able to offset their losses in one market by gains in other. Finally all of them were making substantial profits on their existing sales. Hence a price war was avoided which would have proved too costly to all of them.

It should be clear from the above that the organization of the industry was such that the producers had to act in collusion in their own interest.

Since price competition was ruled out on these grounds the one mechanism by which individual manufaoturers could seek to expand their respective market shares was on the basis of competitive claims in regard to the quality and after sales service. This resulted in excessive reliance

being placed on publicity, personal liaison and service attractions of various sorts leading to a competitive increase in selling and distribution expenses (Or what is called post manufacturing expenses in modern parlance)[22].

Thus the element of competition between firms being rather weak, gave them quite a leverage by which they could collude in price fixation and output sharing. This being the case, at the selling prices fixed by the firms, they could also earn very high profits.

The excessive profiteering attracted the attention of the government which therefore asked the Tariff commission in 1952, to undertake an enquiry into the tyre industry. The terms of reference of the enquiry were:

(i) Whether prices charged by the tyre manufacturers between 1946 and 1963 were fair in relation to costs

(ii) What should be the fair prices of tyre and tubes manufactured by existing producers

The commission found that prices of tyres and tubes charged by the firms were excessive in relation to costs and adopting the cost of production of Dunlop for the period April - June 1955, it recommended a fair price. They also recommended a formula for price escalation to cover a rise in cost of production. Its report which was submitted in 1955 was accepted by the government. The prices fixed as per formula where to be till 1957. But in practice they remained in force till 1963.

However the most significant recommendations of the commission were the measures to increase the degree of competition in the market. For this it suggested that special assistance should be offered to Indian enterprises wishing to enter the field, either independently or in collaboration with foreign firms. With this we enter the second phase in the

history of the tyre manufacturing industry.

Phase II: 1960 - 1974

The commencement of the second phase roughly corresponds to the beginning of the Third Five Year Plan. In view of the shortfall in the supply of tyres compared to the demand for it and due to the collusive practices of the existing producers which reflected in terms of abnormal prices in relation to costs, the need was felt for expanding the productio base. Licensing of new units rather than allowing the existing units to expand was accepted as the best policy, as it would inject a modicum of competitiveness into the industry. However this was soon to be proved false.

The target for tyres for the Third five year plan period was fixed at 3 million. And subsequently five new units were licensed. Of this, Good Year and Ceat were subsidiaries of foreign MNCs and the remaining three (Premier, MRF and Inchek) were Indian companies with foreign technica collaboration.[23/]

The entry of these new firms and especially the Indian firms resulted in certain degree of competition in the market. This was understandable as all these firms being new and especially the Indian firms had higher capital investments compared to the others. Being novices in the field, they preferred to act on their own in matters of price and output decisions and anticipating improved supply position, government lifted price control in December 1963. Though no formal price control was reintroduced thereafter, a gentleman's agreement was reached between government and the representatives of the industry, whereby the industry voluntarily agreed to maintain the price level and to consult the government if any price rise was contemplated. The system worked well between 1963 and 1968.

In that year conditions began to emerge making the manufacturers to reconsider their positions on price and output decisions. Specifically this meant whether or not to act in collusion to arrive at a consensus on these decision variables. We will elaborate upon the so called "facilitating market conditions" below, which drew even the Indian manufacturers into the purview of consensus.

The total installed capacity of all the tyre units in the country, including those already in existence and those which were licensed afresh and came into production during that time amounted to 2.5 million. At 80% of capacity utilisation, the actual production was only 2 million. However with the increased production of vehicles, the requirement of tyres reached around 4 million. The consequent market conditions induced the manufacturers to collude in price fixing and output sharing.

In this context it is important to digress a bit into the theoretical explanations for this kind of a collusive behaviour as opposed to other options available to the manufacturers.

One way of avoiding the uncertainty arising from oligopolistic interdependence is to enter into collusive agreements. There are two main types of collusion; cartels and price leadership. Both forms generally imply formal (written) or tacit (secret) agreements. However open collusive action is commonly illegal in most countries at present. Successful collusion encourages oligopolistic coordination by strengthening the participants financially. Once most firms in the industry have gained sufficient financial strength, price wars and vigorous competition offer few rewards. Higher returns can be obtained by formal or tacit co-operation. Oligopolistic coordination is also fostered by the exchange of information that takes place during collusion.

The Indian tyre industry consisting of seven firms during this phase can quite justifiably be characterised as a cartel with formal or written collusion. We will substantiate this below.

There used to be a formal and written collusive agreement between the manufacturers. The agreement was known as "The General Code of Conduct For Members of the Automotive Tyre Industry of India". This was a comprehensive agreement which restricted the members from acting on their own in matters of production, selection of customers, terms and conditions of sale, mode of transport and the prices of tyres. It also provided for limiting the output and range of production of tyres in a mutually agreed manner. This elaborate agreements thus effectively precluded any meaningful competition between the firms. For all practical purposes it functioned as a cartel.

This however did not proceed without interruption. In 1971, the Registrar of Restrictive Trade practices of the then newly formed Monopolies and Restrictive Trade Practices Commission instituted, on its own, an inquiry into this alleged cartelisation by the tyre companies. Incidentally this was the first RTP inquiry conducted by the MRTPC since it was formed in 1971. The commission commenced its inquiries in early 1972.

Though between 1968 and 1973, the manufacturers were not allowed to increase prices, the 'Agreement' helped them to bring about manipulation of prices and conditions of delivery. In November 1973, however, they announced a joint price hike on grounds of increases in cost of production. However the government reacted sharply and imposed statutory control on prices and compelled the industry to revert to pre-November 1968 prices.

In 1974 government decided to decontrol the prices. The reason for this change in policy was stated thus: "The difficulties of enforcing price control on end-product at a time when the prices and availability of essential raw materials for that product were fluctuating are well known. Under these circumstances, government have decided that formal price control imposed in November 1973 on certain categories of tyres and tubes should be withdrawn and conditions created for augumenting production rather than refixing prices now and revising them further at short intervals in response to the changes in raw material prices".[24]

The "conditions for augmenting production" reflected itself in terms of granting as many as 14 letters of intent. Hitherto most of these have not been converted into licenses. Lack of adequate financial resources have been identified as the main reason.[25] Meanwhile the existing producers have all obtained further endorsements of their licenses for substantial expansion. In addition they were also allowed to exceed their respective licensed capacities by 25 percent if they have the requisite extra in built capacity or the same can be reached by the installation of balancing equipments. In short the governments effort to increase the installed capacity was, by and large, taken advantage by the existing producers themselves. This helped them to continue their collusive practi[illegible] though quite tacitly in view of the ongoing (MRTPC) enquiry. Another severe jolt to them was from one of the recepients of the letter of intent[illegible] M/s. Modi Industries Ltd., converting it into a license and deciding to enter the market. The entry of the Modis, the first Indian Business House to enter the tyre industry, has completely altered the working of the Industry and with this we enter the third or the latest phase in the evolution of the industry.

Phase III: 1975 to 1984

The characteristic features of this phase are the entry of Indian business houses into tyre manufacturing and the resultant competitive struggle in the industry and the vertical and horizontal integrations which have shown itself in rising concentration. Simultaneously we also see the exit of important MNCs like Dunlop, Ceat, and Firestone. The industry is in a continuous succession of changes, all having their impact on the state of intra industry competition.

The Modis started their commercial activities in late 1974. Within a period of two years or so i e., by 1977 they were able to achieve a significant share of the market, and became a force to be reckoned with.

Being a new entrant, Modis found that it was not in their interest in joining the cartel. This is because as a result of the sellers' market which prevailed during the period 1968 to 1974, the existing manufacturers did not face any problem at all in marketing whatever they produced. Quality was therefore given only least importance. Not much of enthusiasm was shown by the existing manufacturers in giving effect to the important technological changes that have been taking place in tyre design and manufacture and specifically in the introduction of Nylon tyres.[26] Sensing the mood of the market, the Modis came out with a product which was technologically superior. Coupled with an independent and effective sales net work (as opposed to the uniform distribution policy of the cartel) it was not difficult for them to make deep inroads into the market.

The impressive rise of the Modis is also sometimes attributed to their taking full advantage of the various concessions/reliefs extended by the central and state governments and streamlining of their operations for achieving higher production etc.[27]

The Modis were soon followed by J.K. (Singhania group) and Apollo (Raunaq group) in 1977. To take advantage of the rising demand for two wheeler and three wheeler tyres, Falcon tyres came up in 1975, for the exclusive manufacture of these items. It is interesting to note that it came up in technical collaboration with MRF - the first case of horizontal transfer of technology in the industry. Finally Vikrant Tyres was set up in 1980 manufacturing different kinds of tyres. It was also the first tyre company in the joint sector.

Meanwhile the MRTPC enquiry was completed in 1976. The commission found sufficient evidence for cartelisation and hence passed a "cease and desist" order against the tyre companies. This led to the formal breaking up of the cartel. By this time with the strong challenge provided by the Modis and with the increase in the number of new firms, we see a phase of rather vigorous competition. Modis soon emerged as the price leader, beating even well established names like Dunlop.

The tyre industry during the late 1970s and early 1980s affords a classic example of price leadership used to establish a price structure which tended to yield collusive profits. The Big Four (viz., Modi, Dunlop Coat and MRF), selling from 70 to 73 percent of industry output, clearly recognized their mutual interdependence. A higher installed capacity than the projected demand for all kinds of tyres made licensing of new units difficult to justify. It should also be borne in mind that licensing remains to be the main barrier to entry in the India manufacturing sector. There is no substitute for tyres, and so the tyre manufacturers enjoyed a certain degree of discretion in choosing the price of their product.

However this proposition is subject to certain conditions. The demand for tyres originates from two kinds of markets; original equipment

and replacement, with the former constilating 1/3 and the latter 2/3 of the total demand. Because of the high price of tyres, consumers in the replacement market and especially those for passenger car tyres, have been increasingly turning their attention to retrading their old tyres than purchasing a new one. There are of course definit limits to which a tyre can be retraded. But the latest developments in retrading technology and especially the cold process precured retreading systems, have considerably enhanced the retreadibility factor and mights in the years to come pose a serious challenge to the demand for new tyres from the replacement market.

In the 1980s, the industry is once again in a state of flux -- changes which are altering the structure of the industry.

Inchek Tyres, one of the three Indian firms which came up during the second phase ran into severe managerial and technical difficultires which finally resulted in its nationalisation by the central government. Now known as the Tyre Corporation of India, it has become the first public sector company in the industry. Dissatisfied with the provisions of the FERA and due to the difficult financial position of its parent firm, Firestone decided to sell off its Indian subsidiary. It was acquired by the Modis in 1981 and by virtue of this it was able to control approximately 25 percent of the market.

In the same year Ceat was taken over by the Goenkas -- a Calcutta based business house, which has acquired a reputation for take overs in the country. Very recently the Goenkas have taken over Dunlop also and consequently they have emerged as the largest group in the industry, controlling about 60 percent of the market which would mean that the concentration in the industry is once again on the increase.

The Goenkas have also controlling interests in a number of related industries like Carbon black, Nylon tyre cord, Beadwire, Tube valves and Tyre Machinery. All these will have important implications for the further growth of this group and might pose a serious threat to Modis in wresting the leadership.

The following table gives a picture of the present structure of the industry.

Table 2

Structure of the Indian Tyre Industry (As on 31.12.1983)

Sl. No.	Name of the firm	No. of plants	Licensed capacity	Installed capacity	Actual productio
(1)	(2)	(3)	(4)	(5)	(6)
			(In lakh Nos)		
1.	Dunlop[a]	2	23.05 (14.62)	22.55 (17.54)	16.98 (17.98)
2.	India Tyre & Rubber[b]	*	1.06 (0.67)	1.06 (0.82)	0.82 (0.86)
3.	Ceat[c]	2	17.72 (11.24)	10.10 (7.86)	15.64 (16.56)
4.	Bombay Tyre International (Firestone)[d]	1	11.00 (6.98)	11.00 (8.56)	11.85 (12.55)
5.	Modi Rubber	1	18.92 (12.00)	13.50 (10.50)	11.22 (11.88)
6.	MRF	4	18.00 (11.24)	18.00 (14.00)	12.20 (12.92)
7.	Good Year	1	11.74 (7.45)	9.00 (7.00)	6.23 (6.6)
8.	Premier	1	6.00 (3.81)	6.00 (4.67)	2.03 (2.15)

Contd.....

(1)	(2)	(3)	(4)	(5)	(6)
9.	J.K. Industries	1	13.12 (8.32)	8.84 (6.89)	5.07 (5.37)
10.	Apollo[e]	1	4.00 (2.54)	4.41 (3.43)	3.44 (3.16)
11.	Vikrant	1	10.00 (6.34)	6.60 (5.13)	3.44 (3.64)
12.	Tyre Corporation of India (Inchek)	1	5.00 (3.17)	5.50 (4.28)	0.10 (0.11)
13.	Falcon[f]	1	12.00 (7.61)	8.00 (6.22)	5.85 (6.23)
14.	Srichakra[g]	1	6.00 (3.81)	4.00 (3.11)	NA
15.	KTC[h]	1	5.5		

Note: Figures in brackets indicate percentage share of the total.

a. Taken over by Goenka - Chhabria team in December 1984.

b. Wholly owned subsidiary of Dunlop India. Uses DIL's manufacturing facility.

c. Since 1981 under the management of the Goenkas.

d. BTI is former Firestone. Since 1981 the management of the Modis.

e. A second plant with a capacity of 8.25 lakh nos. is to be set up in Gujarat.

f. Manufacture only 2/3 wheeler tyres

g. Manufacture only 2/3 wheeler tyres. Commercial production commenced in November 1983.

h. Project under implementation. Expected to commence commercial production by July 1985. Manufacture only 2/3 wheeler tyres.

Source: Annual Reports, Automotive Tyre Manufacturers' Association, Assocham Parliamentary Digest.

It should also be mentioned that Kesoram Industries and cotton Mills, a Birla concern, has also secured an industrial license for the manufacture of one million tyres and tubes. But the project is yet to be implemented.

We see that the government has tried to deconcentrate the industry mainly by licensing more units. However the collusive practices and off late the horizontal integrations have effectively neutralised this policy. The result has been that the concentration in the industry which had declined for a while, especially in the early part of the second phase, is once again on the increase. Another important feature is the exit of some of the original and well known MNCs like Dunlop, Firestone and Goat. However this has to be seen in the context of the severe recessionary conditions obtaining in the Western tyre industry and the consequent impact of it on the operations of their respective parent firms.

Conclusion

The survey given above gives us some interesting insights into the situation on to which the Indian tyre industry has evolved. First of all the circumstances of its origin, in the midst of the vicissitudes of the Depression become a major determinant factor in its later behavioural patterns. The vicissitudes of the times, along with the high concentration in production, forced the firms to adopt a strategy of collusion rather than open competition. Together with this their accent on post sales services etc. caused the high incidence of 'post manufacturing expenses'. This level of expenditure, has thus a historical origin.

Even when Indian firms with local financial backing and foreign technical collaboration entered the scene and did operate for a time

on their own, the level of competition desired by the government and the consumers could not be maintained. Instead there was the formation of a cartel.

In more recent times the entry of Indian Business Houses into tyre production has for the first time broken the constraints of cartelisation and collusion most decesively, though only for a short period, say between 1974 and 1977. Yet on the contrary we have also seen growing concentration of the market share in the hands of two business houses, leading to conditions which could constrain further competition.

Notes and References

1. See Tariff Commission Report on the fair prices of rubber tyres and tubes, Government of India, Bombay, 1955, p. 139.

2. See Reyonlds, Lloyd G. "Competition in the Rubber Tire Industry", The American Economic Review, Vol.28, No.3, 1983, pp. 459-468.

3. See for instance, Woodruff, William. "Growth of the Rubber Industry of Great Britain and the United States", The Journal of Economic History, Vol. 15, No.4, 1955, pp. 376-391, wherein we get a description of similar development elsewhere

4. This line of theorizing was preliminarily substantiated with a study of the automobile market in the United States (See Lancarter, Kelvin. Consumer Demand, A New Approach, Columbia University Press, New York, 1971). It is logically possible that such assumptions will hold good in the care of tyres as well, reflecting some of the special aspects of demand in an advanced consumer society such as choices made on the basis of product variations and differentiates, model changes etc.

5. This seems to be reflected in the fact that excepts for the case of cars and two-wheelers to some extent, other vehicle owners do not seem to show any discernible consumer's loyalty to the original tyre brand fixed on to the vehicle. Especially in the case of large Truck owners and Motor Transport undertakings technical considerations seems to be the deciding factor in their decision to choose one tyre or another.

6. Munshi, M.C. Industrial profits in India, 1936 - 1944, Research Department, FICCI, New Delhi, 1948, Ch. XI.

7. See for instance, Harrison, A.E. "The Competitiveness of the British Cycle Industry, 1950 - 1914", Economic History Review, Vol.XXII, 1969, pp. 289 - 303.

8. See Tariff Commission: Report on the Revision of Prices of Raw Rubber, Government of India, Bombay, 1962, p.47. This report also give information on other early rubber manufacturing industries including the Bengal Waterproof Works which was started in Calcutta in 1923. The Diecie Tyre Factory apparently used raw rubber imported from the Straits. See Government of Madras: Development (1922) Department, G.O. No.292, dated 28.2.1922, p.8.

9. Most of the initial efforts made in this decade seems not to have had a sustained growth. Among other things the lack of development of a potential market seems to have been the main reason for failure of initial efforts. See Government of Madras, G.O.292, op.cit., p.7 and p.11. For a descriptive account of the growth of rubber good industry elsewhere; see Woodruff, William, op.cit.

10. Radetzki, Mariam: International Commodity Market Arrangements, A study of the effects of post-war commodity Agreements and compensatory Finance Schemes, C.Hurst and Co., London, 1970, p.39.

11. While export price was around 25 paise per pound domestic price of surplus rubber was around 10 paise per pound. See Shetty, H.P.; The Tyre Industry of India, Polymer Publications, Bombay, 1976, p.12.

12. Differences in wage rates across countries such as U.S.A. and U.K. are also discussed as a matter of importance in explaining competition in the case of cycle industry. See Harrison, A.E. op.cit.

13. Jones, Geoffrey. "The Growth and Performance of British Multinational firms before 1939: The case of Dunlop", The Economic History Review, Vol.37, No.1, February 1984, p.50. Dunlop decided on local manufacture through a local rupee capital company instead of selling its products through an agency.

14. Ibid.

15. See Woodruff, William, op.cit., pp.385-6 and also Gadgil, D.R. and Gogate, L.V., Survey of Motor-bus transportation in Six districts of the Bombay Presidency Gokhale Institute of Politics and Economics, Poona, Publication No.4, 1935, Chapter VII and Chapter II, p.13. Wherein it is said that "The road system of the tract as it exists today is in all essentially the same as it was in the pre-motor epoch".

16. Herbst, Anthony F and Joseph S.K.WU : "Some evidence of subsidization: the U.S. Trucking Industry, 1900-1920", The Journal of Economic History, Vol. 33, No.2, June 1973, pp.417-433.

17. Gadgil D.R. The Industrial Evolution of India in Recent Times, Oxford University Press, Bombay, 19 p.242.

18. Gadgil D.R. and Gogate, L.V , op.cit. pp. 90-91.

19. While Dunlop was a Public Limited Company with Indian minority participation, Firestone was a private limited company, fully (100%) owned by its parent firm, Firestone Tyre and Rubber Co., U.S.A. The Firestone's plant was set up in 1939 at Bombay.

20. In 1934, this co-operation was extended to a series of reciprocal manufacturing agreements, based on the general understanding that wherever either Dunlop or Good Year have a plant (other than in the USA, Canada and UK) they will favourably consider the question of manufacturing from the other part in that territory. As part of this arrangement Dunlop agreed to manufacture for the American Company in India, Newzealand and in South Africa. In Argentina, Peru and Sweden, Good Year have plant wherein they manufacture Dunlop products.

See Jones, Geoffrey, op.cit., pp.50-51.

21. India Tyre and Rubber Co., of Scotland commenced distributing their products in India through distributors in 1930. In 1938, it was incorporated as an Indian company, from which date distribution of their products was handled by the company itself. Though it had become a wholly owned subsidiary of Dunlop U.K. as early as 1933, it was only in 1979 that it became one of Dunlop India Limited. However since 1938 ITR was using Dunlop's manufacturing facility and marketing the product through its own distribution network.

22. The tyre manufacturers have been consistently inflating their selling and distribution expenses, right from the beginning. This was because this item or what is currently termed as post manufacturing expenses were not exciseable. However recently (i.e. September 1983) the Supreme Court ruled that the tyre companies (among others) have to pay excise duties, not just on current manufacturing costs, but also on post manufacturing expenses, as the total of both go to determine the final selling price.

23. MRF had a financial cum technical collaboration Agreement with Mansfield Tire and Rubber Co., U.S.A., wherein the latter owned 20% of the paid up capital.

24. NCAER: A Study of Price control and Impact of Excise Duty on Selected Industries, New Delhi, 1978, p.99.

25. Most of these letters of intent were obtained by the State Industrial Development Corporations. The actual reasons as to why some of the recepients did not convert them into licenses and commence commercial production requires much more careful study and investigation.

26. There was of course shortage of Nylon tyre cord in sufficient quantities which would have hampered a smooth change over from Rayon to Nylon tyres.

27. The dynamism shown by Modis as well as the Goenkas who also figure prominently in the Tyre industry is due to various factors. A more detailed discussion of the evolution of competitive factor in Tyre industry, primarily as a result of the working of Modis and Goenkas, is to be included in later parts of the larger study of which this paper forms a part For insights into "Marwaris" entrepreneurship, See Timberg, Tomas A. The Marwaris, From Traders to Industrialists, Vikas, Delhi, 1978, pp. 15-40.

Bibliography

1. Aubrey, Henry, G. "Industrial Investment Decisions: A Comparative Analysis", The Journal of Economic History, Vol. 15, No.4, December, 1955, pp. 335-351.

2. Basu, B.D. Ruin of Indian trade and industries, R.Chatterjee, Calcutta, 1935.

3. Donnithorne, A.G. British Rubber Manufacturing, An Economic Study of Innovations, Gerald Duckworth and Co. Ltd., London, 1958.

4. Ehrenberg, Illya, The Life of the Automobile, (Translation from Russian) by Joachim Neugrosch, Urizen Books, New York, 1976.

5. Gadgil, D.R. The Industrial Evolution of India in Recent Times, Oxform University Press, Bombay, 1942.

6. Gadgil, D.R. and Gogate, L.V. Survey of motor-bus transportation in six districts of the Bombay Presidency, Publication No.4, Gokhale Institute of Politics and Economics, Pune, 1935.

7. Hancock, W.K. "Agenda for the study of British Imperial economy, 1850-1950", The Journal of Economic History, Vol. 13, No.3, Summer, 1953, pp. 257-273.

8. Harrison, A.E. "The Competitiveness of the British cycle Industry, 1890-1914", Economic History Review, Second series, Vol. XXII, 1969, pp. 289-303.

9. Herbert, Anthony F and Joseph S.K.WU. "Some Evidence of subsidization: The U.S. Trucking Industry, 1900-1920", The Journal of Economic History, Vol. 33, No.2, June 1973, pp. 417-433.

10. Jones, Geoffrey. "The growth and performance of British multinational firms before 1939: The Case of Dunlop", The Economic History Review, second series, Vol.37, No.1, February, 1984, pp.35-53.

11. Jennings, Paul. Dunlopera, The works and workings of the Dunlop Rubber Company, Privately published, London, 1961.

12. Lancaster, Kelvin. Consumer Demand, A New Approach, Columbia University Press, New York, 1971.

13. Little, I.M.D. "Indian industrialization before 1945" in Theory and Experience of Economic Development, Mark Gersowitz et.al. (ed), George Allen and Unwin, London, 1982,

14. Livesay, Harold G. and Patrick G. Porter. "Vertical Integration in American Mnufacturing, 1899 - 1948", The Journal of Economic History, Vol. 29, No.3, September 1969, pp.494-500.

15. Munshi, M.C. Industrial profits in India, 1936-1944, Research Department, FICCI, New Delhi, 1948.

16. NCAER. A Study of price control and impact of excise duty on selected industries, NCAER, New Delhi, 1978.

17. Philip, K.M. Memoirs of a working life, Polymer publications, Bombay, 1977.

18. Radetzki, Marian. International Commodity Market Arrangements, A study of the effects of post-war commodity agreements and and compensatory finance shcemes, C.Hurst and Col, London, 1970.

19. Reynolds, Lloyd G. "Competition in the Rubber-Tire Industry", American Economic Review, Vol.28, No.3, September, 1938, pp. 459-468.

20. Sharma, K.P. "The rise of entrepreneurship in Haryana. A case study of Raunaq Enterprises", Ph.D. thesis, Kurukshetra University, 1977, in Indian Dissertation Abstracts, Vol. VIII, No.2, April-June, 1979, pp. 130-3.

21. Shetty, H.P. The Tyre Industry of India, Polymer Publications, Bombay, 1976.

22. Tan, C.S. World Rubber Market Structure and Stabilization, An Economic study, World Bank staff commodity papers, No.10, The World Bank, Washington, 1984.

23. Tariff Commission Report: on the Revision of Raw Rubber Prices, Government of India, Bombay, 1952.

24. Tariff Commission. Report on the Fair Prices of Rubber Tyres and Tubes, Government of India, Bombay, 1955.

25. Tomlinson, B.R. "Private Foreign Investment in India 1920-1950", Modern Asian Studies, Vol.12, 1978, pp.655-77.

26. Woodruff, W. "Growth of the Rubber Industry of Great Britain and the United States", The Journal of Economic History Review, Vol. 15, No.4, 1955, pp. 376-391.