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## CHAPTER III

### THE DEMAND SITUATION IN THE INDUSTRY

#### The Characteristics of Demand

The demand for natural rubber comes from the industrial countries like the United States, United Kingdom, Germany, France and sometimes the Communist countries (U.S.S.R. and Communist China). Together these countries purchase the bulk of the natural rubber produced in South East Asia. Although South East Asia produces the bulk of the world supply of natural rubber, she herself consumes very little of it. The main producers of natural rubber are Malaya, Indonesia, Ceylon and Thailand. These countries compete among themselves for the consumers which are relatively few. About 2/3 of the total world rubber is consumed by 5 of the largest rubber goods manufacturers. In the United States we have U.S. rubber, Goodyear, Goodrich and Firestone. In Europe the Dunlop Rubber Company is the largest. This Dunlop Rubber Company uses 1/3 of Malaya's total output of rubber and on top of that it produces its own rubber. It has more than 80,000 acres of rubber in Malaya.

A very small proportion of rubber is consumed in its raw form. The bulk of it is used for the production of motor tyres and tubes. Since these two outlets account for 2/3 of the total rubber consumed, then we can safely say that the rubber industry depends on the transport industry. The heavy reliance on rubber demand from the Western industrial countries has been the main factor causing the economic instability of the producing countries. The possibility of substitution by synthetic rubber and reclaimed rubber adds to the sensibility of demand.

A small change in the economic activity of the consumer countries will affect the price and quantity of rubber sold. The import instability of United States and United Kingdom have great repercussions on the economic conditions in Malaya. This is because Malaya is very dependant on her sale of rubber for her revenue. Her national income, employment, and standard of living are very closely related to the conditions of rubber. Her position is made more unstable by the fact that rubber price does not depend on supply as much as it depends on demand. In the post-war period the price of rubber has been determined mainly by the fluctuation in the demand for rubber.

Table 10 shows that there is no correlation between rubber price and the volume of output, e.g. although the price of rubber was very high in 1948-50 output was very high. Conversely when the price of rubber reached peak level in 1951 estate output in Malaya was only

ANNUAL PERCENTAGE CHANGES OF PREVIOUS YEAR'S FIGURE  
IN THE PRICE AND IN THE MALAYA AND WORLD  
OUTPUT OF RUBBER 1948-58

Year	Average Annual Rubber Price RM\$1	Malayan Output		Total World Output
		Estado	F.M.S.M.	
1948	+13.1	+11.9	+ 3.0	+21.0
1949	- 9.5	- 0.7	- 2.1	- 2.3
1950	+183.2	- 6.0	+17.2	+24.8
1951	+56.7	-12.7	-12.9	+ 1.3
1952	-43.3	+ 4.0	-12.3	- 5.0
1953	-29.9	0.0	- 4.1	- 3.5
1954	- 0.0	+ 1.2	+ 3.6	+ 4.6
1955	+69.7	+ 2.0	+13.7	+ 6.1
1956	-15.2	- 0.3	- 4.2	- 1.6
1957	- 8.3	+ 4.3	- 2.0	+ 0.3
1958	- 9.7	+ 6.0	+ 1.4	-

Source: Rubber Trends

34% and total output was only 83% compared with that of 1948-50. All along the role of supply had been quite passive. Because of this inelasticity of supply, prices climbed steeply with the pressure from demand.

The Determinants of Demand

In the United States and western Europe about 2/3 of the annual consumption of natural rubber is used for the manufacture of tyres and tubes. This percentage has slightly declined now. But still the demand for natural rubber comes from the demand for motor cars. It was largely due to this demand in 1900 that led to the great demand for and the rise of the price of rubber. Registration of cars show an increase from 8,000 units to over 1,600,000 units. Since the demand for natural rubber is dependent on the manufacture of tubes and tyres, a drastic decline or increase of these two will affect consumption of rubber. Statistics show that in 1932 tyres account for 4/5 of

total rubber consumed in the United States,  $\frac{3}{4}$  in France,  $\frac{2}{3}$  in United Kingdom and  $\frac{1}{2}$  in Germany.

Although the price of rubber depended so much on the demand from the industrial countries, the price of cars have very little to do with the price of rubber. This one way relationship is due to the fact that the value of the amount of rubber used in the car tyres is very small compared to the value of the motor car itself<sup>1</sup>. So a rise in the price of rubber will have almost no effect on the price of car. The price of rubber may fluctuate greatly from year to year without having any fluctuations in the demand for or the price of cars. But unfortunately for the rubber producers, fluctuations in the price of cars, or demands for cars, will cause violent fluctuations in the demand for and so price of rubber. We are now taking the demand of the rubber industry to indicate the total demand for rubber as the transport industry consumes the bulk of the rubber imported. In the early 20th century because of the rise of the motor car industry there was an uprising in the demand for rubber whereby bringing up the price of rubber. But should there be a sustained increase in the price of rubber then the prices of tyres and tubes may be affected in the long run. But it is doubtful as to whether this rise in the price of rubber will affect production of tyres and tubes. This is because there is relatively low elasticity of cars and the insignificant proportion of the value of cars represented by the price of the tyres.

Another factor which determines demand for rubber is replacement demand. When the average age of a car increases which may be due to improvement in quality, then there will be less demand for motor car at any period of time. But with higher standard of living and the philosophy of trying to keep up with the Jones' would lead to higher replacement demand for cars and there would also be a lower number of people per car. In this modern decade a car is no longer a luxury as it used to be, but a necessity. The table below will show the increase demand for cars between the period 1936-1958.

Another factor that determines the demand for rubber lies within the synthetic rubber industry. The United States government made the consumption of a certain amount of synthetic rubber compulsory within the country. This is the measure taken to safeguard the economic position of United States. The Americans had learnt a lesson from the war time experiences when natural rubber was cut off from them at the time when they needed it most. So even at peace time a law was passed stating that the synthetic plant should be kept in motion and supply a certain percentage of rubber requirements. This protection of synthetic rubber industry influences the demand for natural rubber.

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<sup>1</sup>Knorr - World rubber and its regulation - Stanford University Press, 1945. He calculated the sales values of tyres and tubes and estimated them to be between 5% and 6% of the sales value of a car. The cost of natural rubber is only  $\frac{1}{3}$  of the total value of tyres and tubes.

TABLE 11

NUMBER OF PERSONS AND VEHICLES FOR  
SELECTED COUNTRIES IN 1936-53

Countries	Year 1936	Year 1953
U.S.A.	4.5	8.5
France	19.0	7.4
United Kingdom	21.0	8.6
Sweden	37.0	7.0
Belgium	41.0	11.0
West Germany	49.0	15.0

Source: Compiled from various sources.

(1) Automobile Facts and Figures 1960

(2) Journal of the Royal Statistical Society 1933

The stockpiling policy of the United States and United Kingdom governments also affect demand for rubber. These emergency reserves of rubber was started in 1939 and the constant manipulation of stocks within the stockpile control the price and the general demand for rubber. The governments usually rotate their holdings of natural rubber to prevent them from deterioration in quality and the methods by which the stocks are replaced affect market conditions. Sometimes a higher grade of rubber will be replaced by a lower grade and vice versa. This state of affairs lead to speculation and uncertainty in the market.

### Trend in Rubber Consumption

Consumption of natural rubber has been rising steadily through the years. It has been estimated that the United States and western Europe between 1951-60 consumed about 60% of the world's total consumption of natural rubber. In the post-war period the market for elastomer has been the most dynamic. Although the United States remains the most important consumer of natural rubber, the rate of growth is much faster elsewhere so that its share of the market declined from 54% to about 40% over the period of 10 years from 1951-61. This fall in the use of natural rubber was due to the increased use of the domestically produced synthetic rubber. The

United States consumption of natural rubber is not dependent only on the relative prices of natural and synthetic rubber but the consumption of a certain amount of synthetic rubber is compulsory.

The other major-consuming countries are the U.S.S.R., the United Kingdom, Japan, the Federal Republic of Germany, France and Canada. Even in these western European countries there is a rising demand towards the use of synthetic rubber. Statistical data are not available for U.S.S.R. and other communist countries whose purchases of natural rubber is not stable and varies from year to year.

In 1950 Western Europe consumed about 660,000 tons of natural rubber. This was about 37% of world's imports at that year. United Kingdom, France, Germany, and the Soviet Union accounted for 3/4 of the total European consumption.

World consumption of natural rubber in 1965 is estimated by the International Rubber Study Group to be 5,230,000 long tons, comprising of 2,330,000 tons of natural rubber and 2,900,000 tons of synthetic rubber. Although rubber consumption has been increasing steadily the shares of natural rubber has not been increasing as fast as that of synthetic rubber. The consumption of synthetic rubber rose three-fold and that of natural rubber rose only by 1/2 between 1949-59.

### Demand Prospects

Under the assumption that competition between natural and synthetic rubber will continue right up to 1975 and the factors prevailing in the market are the same. The production of natural rubber will rise to between one million to 1.2 million tons. Industrial production will continue to play its role in determining demand for natural rubber. Besides we shall have other uses of rubber coming in. It is estimated that by 1975 United States demand for natural rubber would be only 21% leaving the other 79% to synthetic rubber. This figure seems quite reasonable as now 1965, United States demand for synthetic rubber is already 75.1%. Now with the discovery of the new stereo regular synthetic rubber consumption in United States as well as in Western Europe is expected to go up. Now, with so many new countries building their own synthetic rubber plants and striving to be self-sufficient in rubber, the natural rubber share in the market will certainly go down. But this does not mean that there will be less consumption of natural rubber. Natural rubber consumption would still increase but its rate of increase will be slower than that of synthetic rubber.

By 1975 it is expected that the price of rubber will be brought down to as low as US 20¢ or US 13¢ per lb. This is possible as natural rubber has tremendous potentiality for an expansion of production which can be brought about by means of stimulation and the new "wonder clones" RM 700. The cost of production can be

TABLE 12

CONSUMPTION OF NATURAL AND SYNTHETIC RUBBER IN THE MAIN CONSUMING COUNTRIES, '000 LONG TONS

Period	U.S.A.		United Kingdom		France		Germany	
	Natural	Synthetic	Natural	Synthetic	Natural	Synthetic	Natural	Synthetic
1950	552.5	270.3	169.6	8.2	74.2	12.9	40.0	5.9
1960	503.9	276.5	179.9	35.2	127.3	90.8	145.7	104.4
1961	499.0	250.3	166.1	34.6	127.0	95.5	135.8	120.3
1962	427.3	263.4	162.6	36.2	125.1	108.3	145.9	129.3
1963	462.8	263.7	167.8	35.4	125.4	123.4	149.9	142.9
1964	457.2	263.2	179.5	36.9	124.2	139.3	152.7	174.3

Source: International Study Group.

reduced with time and so can still face competition from synthetic rubber. Moreover, the price of synthetic rubber is largely dependent upon the prices of its feedstocks and unless the prices of the feedstocks go down synthetic rubber price will not go down.

Dr. John McDevack<sup>2</sup> asserted that in the long run cost of production of synthetic rubber will always be higher than that of natural rubber. All raw materials, required by synthetic rubber will be secured by the synthetic plant at higher and higher prices. In contrast he said that all the requirements of natural rubber, can be met in nature, e.g. sunlight, carbon dioxide, etc.

Moreover, with the transference of ownership of synthetic rubber plants from public to private hands would bring about some changes which would be beneficial to natural rubber. There would probably be no more government's interference with synthetic rubber production regarding national security or common defence. Furthermore, the transference of ownership would lead to higher pricing of synthetic rubber goods and this itself would release pressure on price competition with natural rubber. This would come about because every producer would be motivated by profit maximization. This would come about because there would now be competition among producers. This happened when the BBN plant in America was transferred to private hands. The price was raised by 0.95 a lb for some period of time.

As evidenced by statistics present demand for natural rubber comes from countries like U.S.S.R., and countries like Japan. These are the countries that are rapidly going into industrialization. But America, who was once a great consumer of natural rubber, has decreased her purchases of natural rubber and concentrate more on synthetic rubber consumption.

In the last few years Malayan direction of trade is shifting more and more to the Communist countries. In 1953-60 the Communist country purchased 439,000 tons per annum of rubber, i.e. 22% of world production. With the coming years, Soviet Russia is expected to use more and more rubber and so she will be an expanding market for our Malayan rubber. In 1961 alone Soviet Union purchased 567,750 tons of rubber.

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<sup>2</sup> "The Future of Natural Rubber". Rubber Age. February 1959, page 790.

TABLE 13

## IMPORTS OF NATURAL RUBBER 1952 TO 1966 ('000 LONG TONS)

Year	United States	Other Synthetic Rubber Producing Countries <sup>1</sup>	Potential Synthetic Rubber Producing Countries <sup>2</sup>	Central Planned Countries <sup>3</sup>	Others	Total <sup>4</sup>
1952	803	634	103	123	82	1,820
1953	639	704	99	165	141	1,748
1954	590	776	115	110	109	1,700
1955	617	855	124	130	159	1,925
1956	553	738	104	234	169	1,798
1957	543	814	121	235	165	1,920
1958	459	727	113	451	174	1,924
1959	557	792	109	440	180	2,078
1960	398	696	113	437	304	1,953
1961	365	793	126	573	113	2,070
1962	413	813	119	540	243	2,128

Source: International Rubber Study Group. Statistical Bulletin.

<sup>1</sup> Excluding central planned economies. Including Canada, United Kingdom, France, Federation of Germany, Italy, Netherlands, Japan, Brazil, and Australia.

<sup>2</sup> Belgium, Mexico, Argentina, India, South Africa.

<sup>3</sup> Partly estimated.

<sup>4</sup> Allowance already made for local consumption.

TABLE 14

 EXPORTS BY COUNTRY OF DESTINATION OF THE UNITED STATES &  
 TERRITORIES, 1960-1964

Destination	1960 (tons)	1961 (tons)	1962 (tons)	1963 (tons)	1964 (tons)
U.S.A.	119.5 (11.1%)	141.3 (12.1%)	192.7 (16.4%)	151.6 (12.9%)	142.2 (12.1%)
United Kingdom	154.4 (15.2%)	170.6 (14.6%)	135.8 (11.6%)	125.1 (10.7%)	119.5 (10.7%)
U.S.S.R.	7.5 (6.6%)	146.2 (12.5%)	190.2 (16.2%)	198.7 (16.9%)	205.7 (18.5%)
West Germany	95.8 (9.9%)	89.4 (7.6%)	85.0 (7.2%)	94.2 (8.0%)	92.8 (8.0%)
Japan	95.7 (8.9%)	119.2 (10.2%)	105.9 (9.0%)	93.1 (7.9%)	64.6 (5.5%)
China	29.5 (2.7%)	3.4 (0.3%)	-	9.0 (0.8%)	0.1 -

Source :- Rubber Statistical Bulletin