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**37**

**RUBBER GOODS INDUSTRY  
(NON-TYRE SECTOR) IN INDIA UNDER  
GLOBALISATION**

**S. Mohanakumar**

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## ABSTRACT

The objective of the study is to analyse the impact of NR price hike on micro and small enterprises in the non-tyre sector of the rubber products manufacturing sector during the economic reform period from 1991. The study looks also into the process of transformation in the non-tyre sector of the rubber goods industry during the economic reform phase. The rubber goods manufacturing industry includes an advanced technology based and large capital owned automotive tyre sector and predominantly labour intensive, technologically primitive and small capital based non-tyre sector. The products in the non-tyre sector, particularly the latex based segment, is manufactured with natural rubber accounting for more than 60% of the cost of production. The viability of non-tier products from the micro and small enterprises are contingent on the price of NR. During the economic reform phase in India, the price of NR became volatile with a sudden spurt during the first half of 1990s and a prolonged trough period from 1997 to 2002, followed by a steady hike in price from 2003. The upward movement continued, to a great extent, till 2012. The hike in NR price has destabilized the micro and small peasant industries, particularly in the non-tyre sector. It is concluded that micro and small enterprises of the rubber goods industry have been largely eliminated from the market rendering a large chunk of the workforce jobless. The institutional mechanism to intervene in the crisis of the small producers is fragile and inadequate. Transformation in the rubber goods industry has resulted in the concentration of market for rubber goods in fewer and large enterprises. In a situation of market concentration in a few hands, the market for NR may turn into a buyers' market dominated by a few large enterprises like automotive tyre corporations, which would in turn augur doom for a million of sub-marginal and marginal NR farmers in India.

## **Introduction**

Natural Rubber (NR) production sector enjoys a vast and diversified rubber goods manufacturing sector in India. The rubber goods industry manufactures about 35000 items spanned over 5000 units, employing half a million workers directly and more than 5 million workers indirectly (Simon, 2013). The rubber goods industry can broadly be classed under two groups; (i) capital intensive automotive tyre sector; and (ii) labour intensive and technologically primitive non-tyre sector. The non-tyre sector can be further divided into dry rubber and latex based products. The rubber goods in the non-tyre sector, particularly the latex based segment, is manufactured with latex accounting more than 75% of its cost of production. The viability of non-tyre rubber goods from the micro and small industries are dependent on the price of latex and dry rubber. The market for NR as well as NR based goods has been subjected to the following changes during the economic reform phase in India: (i) unprecedented hike in NR price for more than a decade and the price hike has rendered a major segment of the non-tyre sector economically unviable; and (ii) cheap imports of non-tyre products from external markets has flooded domestic market. The objective of the study is to analyse the impact of NR price hike on micro and small enterprises in the non-tyre sector of the rubber products manufacturing sector during the economic reform period. The analysis focuses on transformations in production and external trade rubber goods industry in India.

There is a considerable body of literature on the impact of neo-liberal economic policies driven trade liberalisation on micro and small

enterprises in different sectors of the economy. Micro enterprises mostly do operate either on the periphery or outside the capitalist production relations. A major part of the labour force in such enterprises is simple or semi-skilled women labour. These enterprises use outmoded technology and the social productiveness of labour is below the average social product of labour in a given period of time. Further, enterprises are fragile and are likely to be out of business for a mild change in market conditions as micro units do possess little staying capacity to withstand competition from large scale product. The small enterprises extract surplus not through the usual capitalistic wage-profit route but making of rent (land), interest (capital) and gains from unequal exchange (Harris-White 2009). The micro enterprises operate on the periphery of wage labour-capital relations of production and are known widely as petty commodity producers. Petty commodity producers include small and marginal producers in the primary, secondary and service sector of the economy. It is now acknowledged that the neoliberal economic regime has been detrimental to the small producers notwithstanding the fact that formal production sectors needs the informal economy for its sustenance, especially in the era of neoliberalism driven fierce competition in the international market (Harris-White 2009). A recent UN study has reported that small interpreted particularly artisans in India, have been eliminated by 30% over the last 30 years (Scares 2003). Further, Scares observed that village artisans fluctuate between unemployment and poverty as globalisation has led to separation of arts and crafts from work of artisans. People engaged in artisans village industries are pushed to a precarious, fractured and marginalized existence under globalisation (*ibid*).

The state's approach to petty commodity producers in third world countries including India, in general, is ambivalent and contradictory. While the policies drive the petty commodity production units out of business on the one side, the state promotes such production along with large scale production units by making available bank credit through

Self Help Groups (SHGs) and Micro Finance Institutions under neoliberal policy frame. The state, therefore, purposely promotes family- labour-based small capital to enable the large capital to be super-exploitative by resorting to strategies such as sub-contracting, out-sourcing, in-sourcing and home-working. The state facilitates reproduction of petty small enterprises to contain mass unemployment and poverty on the one hand and to enable the large capital to thrive in the international market. The nutrition-bed of small enterprises includes purposive relaxation in statutory stipulations on tax evasion, which enable small enterprises to compete with the mass production of large industries. Further, activities of small enterprises are exempted from labour laws and state registration (MSME Act 2006) by the state to legitimize the super-exploitative production conditions. Moreover, cheap and abundant labour force available in rural economy supplemented with family labour reduces the supply price of commodities. It enables large producers to procure raw materials and intermediate goods at a cost below the market rate.

Rubber goods can be classed into tyre and non-tyre goods . The non-tyre sector is further divided into latex based and dry-rubber based goods. The latex goods manufacturing unit is an extension of the farm activity. Value added goods from latex is produced employing partly or fully family labour. The farm-produce-dependent non-farm enterprises working in or adjacent to farm premises are called peasant industries. Peasant industries carry out production in small manufacturing units housed either in farm premises or in places adjacent to it. Farmers with relatively more farm produce with financial manurability to make small investments mobilised from past savings venture the extended non-farm activity. The distinguishing features of peasant industries are: (i) products are sold directly to the end-user or to the consumer by the manufacturer; (ii) peasant industries check competition with the existing institutional set up;and (iii) limited role of trading capital or middlemen in both raw material and finished product markets (Lenin 1967); (iv)more

often than not, such industries do extract absolute surplus from unskilled or semi-skilled man power and operate with minimum constant capital. The advantage of industries in rudimentary form is its extension from agricultural sector and the petty producers in agricultural sector resorts to such industrialists for the immediate sale or processing of their agricultural produce .As the capitalist relations of production thrives into a branch of industry, petty producers are consolidated into large manufacturing units either by way of transforming themselves into satellite units of the large industry or opt to be self-eliminated. The fragility of the capital base, survival need of the family labour and impenetrability into the large market guarded with brand loyalty, drive the micro units out of business.

The demand for NR based goods is mostly of derived in nature. It implies that the demand for rubber goods is closely linked to the performance of the macro economy. The very nature of derived demand imposes restrictive conditions on the market price of rubber goods. Rubber goods, in the non-tyre sector are used either as intermediate product like conveyor belts or packing like rubber bands. Primarily for the reason that the volatility in the price for NR do destabilise the micro and small industries as the hike in raw material cost is difficult to be passed over to the final product due to the following reasons: (i) increased cost of production due to hike in raw material cost (NR) cannot be transferred over to the final product since there are perfect substitutes for most of the products in the segment; (ii) variable capital required for the industry enormously increase with the rise in raw material price that the micro units find difficult to transfer to the end user; and (iii) the non-tyre segment is incapable to influence the market outcome for NR as the individual consumption of NR is negligible.

The study has used both primary and secondary data. The study has the limitation that reliable data on non-tyre sector at the disaggregate level is hard to come by. Annual survey of Industries published data on



two broad segments of the rubber goods industry, viz., (i) tyre and tube (ii) rubber and plastic footwear. The Rubber Board publishes annual data (Indian Rubber Statistics) on certain characteristics of the rubber goods industry in India. The limitation of data available with the Rubber Board is that it does not explain the concepts, sampling procedure and method of data collection. For the study, the secondary data from the Rubber Board is supplemented with a primary survey of the non-tyre segment of the rubber goods industry in Kerala. The primary survey of non-tyre sector, comprising primarily latex based goods, was held in 2007 and a sub-sample of the units were revisited in 2013.

The study is presented in five sections. The first section analyses the trend in NR price. In section I, the trend in NR price is compared between the pre- and economic reform phases. The non-tyre sector of the rubber goods industry is described in section II. The external trade of the rubber goods industry is analyzed in greater detail in the section III. Major observation from a sample survey of micro enterprises in the non-tyre sector is reported in Section IV supplemented with three case studies of micro enterprises in the non-tyre sector, followed by conclusion and policy implications.

## **Section I**

### **NR Price Trend: Comparison of Pre and Reform Phases**

The Government policies on NR production sector and the NR based industry have been equally instrumental in the development of rubber goods industry in India (Mani 1993). Policies for the NR producing sector were directed at reducing the supply price of its raw material as well as making NR sufficiently available to the nascent and growing rubber goods industry, particularly the automotive tyre sector. In the development of the NR and NR based industries in India, the external trade policies have significantly contributed even before the onset of Five Year Planning. The cheap and abundant quantity of NR

was made available to the industry during 1930s by regulating exports of NR invoking provisions in the International Rubber Regulation Agreement:1934-42 (Mani 1993). Alongside, there had also been stringent regulations on the import of rubber products, particularly tyre products to India. It was estimated that tyre products (tyres for buses and lorries) had enjoyed an effective rate of protection of more than 200% in the domestic market (*ibid*) in the 1980s. In order to promote the rubber goods industry, particularly the tyre sector, the price of NR had been regulated with statutorily fixed minimum and maximum prices. Until the first half of 1990s, to a very great extent, the NR farmers and rubber goods industry had enjoyed protection from external competition.

The direct impact of trade liberalisation policy on the NR sector came into effect on 1, April 2001. Restrictions on the import of NR were removed and the import was made free on payment of import duty, which had been subjected to progressive reduction since 1991. The bound rate fixed for NR under the World Trade Organization (WTO) Agreement stipulated that the duty should not exceed a maximum of 25% for all forms of NR except latex, for which the quantity of import was abysmally small and could be used only for specific purposes. The tariff rate prevailed prior to the WTO agreement was 70% and was supplemented with non-tariff restrictions. In addition to it, there was a restriction on the import of NR through customs ports in India. The import of NR was allowed only through Kolkata and Visakhapatnam customs ports till August 5, 2004 and the restriction on ports of entry for NR was removed with effect from 6 August 2004. Now NR can be imported under the following channels, viz., (i) open; (ii) Asia Pacific Trade Agreements; (iii) Duty Entitlement Passbook (DEPB); (iv) Advance License Scheme; (v) Duty-Free import Authorisation Scheme (DFIAS); Scheme for 100% EOUs and Units in Special Economic Zones and Export Processing Zones.

The tariff structure of NR was indeed of little relevance prior to 1991 as imports of NR goods were regulated more with non-tariff barriers

during the pre-reform phase. Since India has become a signatory of WTO in April 1994, non-tariff barriers on imports of NR goods have been removed and the tariff rate has significantly been curtailed. The MFN tariff prevailed was 20% for all forms of NR and 70% for latex with effect from January 9, 2004. As automotive tyre sector demanded, the import duty on all form of NR was reduced to Rs 20 or 20% of the *cif* value of imports of NR with effect from 22<sup>nd</sup> December 2010. In the light of the overwhelming pressure from farmers' group, the import duty of NR has been increased from Rs 20 to Rs 30 or 20% whichever is less with effect from 20<sup>th</sup> December 2013. The import duty of latex form of NR was capped to Rs 49/kg if the import duty on latex form of NR exceeds 70% of *ad valorem* with effect from 17<sup>th</sup> January 2012 Further, 4% countervailing duty has also to be paid on import of all forms of NR with effect from March 1 2006. The substantial reduction in import tariff has increased the import of NR over the years. For instance, the quantity of NR imported to India was only 8970 metric tonne in 2000-01, which increased to 2.14 lakh tone in 2011-12. The quantity of NR imported was 2.14 lakh MT against the excess demand of NR over its production was only 0.61 lakh MT in 2011-12.

### **NR Price and its Instability**

Natural Rubber is used in three forms, viz., (i) sheet rubber; (ii) crump rubber; and (iii) latex. NR in sheet form is the predominant form of rubber accounting for more than 80% of total NR consumed in India. Crum rubber is the crude form of coagulated rubber with no element of processing and latex is sold or used in its form obtained directly from the rubber tree. For most of the rubber products, a mix of NR, RR and SR is used. RR is a form of NR manufactured by treatment of old and worn out tyres, tubes and other used rubber articles with certain chemical agents at a high temperature. RR is used in the manufacture of goods usually in blends with natural or synthetic rubber. The price analysis is therefore confined to sheet form of NR.

In the non-tyre sector, especially the latex based goods, NR is the major input component accounting for more than 75% of the cost of production. NR is one of the few *lucky* crops in the international market, which has witnessed steady and unprecedented hike in its price consecutively for almost a decade since 2003. Price instability of agricultural commodities is theoretically postulated as an effective mechanism to eliminate the less efficient producers from the market. The commodity characteristics of the non-tyre sector do not allow the transferring of the increased cost of production to its end user. The outcome is that small producers would be forced to close down giving way to consolidation of production in a few firms.

It is important to note that the impact of economic liberalisation package is likely to effect on the NR production sector through its price regime. NR is one of rare crops in India which has enjoyed a stable and remunerative price for the last five decades with mild and less frequent fluctuations. There had been an institutional set up for market intervention in the NR market till the opening up of the domestic market of NR in 1991. NR price volatility and its unprecedented hikes are attributable to the integration of domestic market with the international markets (Mohanakumar, 2013). The rate of growth as well as the price instability<sup>1</sup> of NR has been estimated to understand the impact of the hike in NR price on micro segment of the rubber goods industry.

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1 Measuring instability in the long-run movement of any economic variable is a daunting task. The literature on instability measures are divergent and yield contrasting results from the same variables. However, irrespective of measures used to estimate variability, there is a convergence on two properties that any instability index should satisfy: (i) comparability across data sets with different mean, and (ii) should exclude deviations in the series arising from secular trend. On having satisfied these two properties, we have used the instability index of the form given below to measure the price volatility of NR.

$$\text{Price Instability} = \text{SD of } (\ln P_t / \ln P_{t-1})$$

Where

$\ln P_t$  = Natural logarithm of price of NR at 1999-2000  
base in the year t;

$\ln P_{t-1}$  = Natural logarithm of price of NR in the year  $t-1$   
SD = Standard Deviation

The area under NR cultivation was 0.712 million hectare, of which 77.82% was under marginal holdings in 2010-11. The state of Kerala accounts for 80.59% and 91.25% of area under NR and of its production respectively (2008-10)<sup>2</sup>. Area under NR in Kerala increased from 0.07 million hectare in 1952 to 0.534 million, which accounted for 20% of the gross cropped area in the state in 2010-11. In term of area expansion, NR ranks first among major crops grown in Kerala. A stable and relatively remunerative price for more than half-a-century after independence, made possible by the tariff and non-tariff protection extended to the domestic producers of the crop, has contributed to its area expansion.

Table1 shows the price instability of NR during the pre-reform (1976-77 to 1990-91) and reform phases (1991-92 to 2011-12). Following observations can be made from Table1: (i) Price instability of NR has shown significant increase from .0270 in the pre-reform phase to 0.0561 during the reform phase.

**Table 1. Instability Index of Prices of NR, (2004-05 base)**

| Period             | Instability Index |
|--------------------|-------------------|
| 1976-77 to 2012-13 | 0.046             |
| 1976-77 to 1990-91 | 0.0270            |
| 1991-92 to 2011-12 | 0.0561            |

During the pre-reform phase, price of NR has registered a significant and negative growth rate of growth of -3.40 %. The growth rate has increased to 1.09% during the reform phase (Table 2).

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2 Indian Rubber Statistic, 2008. The rest of the area under the crop is situated in North Eastern states, mainly in Tripura (6.48%) and Assam (2.7%). In the south, Kanyakumari district in Tamilnadu (3.05%), certain parts of Karnataka (4.53%) grow NR.

**Table 2. Rate of growth in NR price ( 2004-05base)**

| Year               | Growth rate |
|--------------------|-------------|
| 1976-77 to 2011-12 | 0.020**     |
| 1976-77 to 1990-91 | (-)3.40**   |
| 1991-2 to 2011-12  | 1.09**      |

\*\*-Significant at 1% level

## Section II

### **The Structure, Composition and Growth performance of Rubber Goods Industry**

This section examines the hypothesis that the non-tyre sector of the rubber goods industry has consolidated the market during the economic reform period. The market consolidation is measured in terms of NR consumption, density of manufacturing units and NR dealers. Table 3 shows the trend in the density of manufacturers by the annual quantity of NR consumed. There is a decline in the density of manufacturers from 5595 units in 1997-98 to 4356 in 2010-11. The observed trend was set in by the late 1990s. Moreover there has been a concentration of manufacturing units towards large size class of NR consumption over the years. Manufacturing units consuming less than 10 Metric Tone (MT) of NR declined from 53.42% to 36.89% between 1996-97 and 2010-11. Similarly, manufacturing units consuming more than 100 MT of NR has increased from 7.33% to 13.98% during the reference period. Table 4 analyses the trend in NR consumption by rubber goods manufacturing units by the quantity of NR consumed. A noteworthy feature of the change in the structure of NR consumption is that the relative share of small manufacturing units declined from 19% to 10% between 1990-91 and 2010-11 and the decline was made up by large manufacturing units. Table 4 confirms the findings in Table 3 that there has been a concentration of production of rubber goods towards large size class. The NR consumption by large size class of manufacturing units recorded an increase from 60.50% to 71.08% during the reference period.

**Table 3. Density of Rubber Goods Manufacturers by Size Class (% share)**

| NR Consumption (MT) | 1990-91 | 2000-01 | 2005-06 | 2010-11 | Annual Average Compound Growth Rate (2010-11 over 1990-91) |
|---------------------|---------|---------|---------|---------|--|
| Less than 10        | 53.42   | 38.86   | 37.98   | 36.89   | -2.54  |
| 10-50               | 32.60   | 40.28   | 38.45   | 35.47   | -0.29  |
| 50-100              | 6.66    | 10.85   | 13.24   | 13.66   | 2.91   |
| 100-500             | 5.79    | 7.78    | 8.02    | 10.95   | 2.50   |
| 500-1000            | 0.68    | 1.11    | 1.03    | 1.29    | 2.53   |
| More than 1000      | 0.86    | 1.13    | 1.28    | 1.74    | 2.89   |
| Total               | 100.00  | 100.00  | 100.00  | 100.00  | -0.71  |

Source: Indian Rubber Statistics, relevant issues.

**Table 4. Relative share in NR Consumption by Size of Manufacturers (% share)**

| NR Consumption (MT) | 1990-91 | 2000-01 | 2005-06 | 2010-11 | Annual Average Compound Growth Rate (2010-11 over 1990-91) |
|---------------------|---------|---------|---------|---------|--|
| Less than 10        | 3.03    | 1.78    | 1.32    | 0.94    | -1.05  |
| 10-50               | 10.55   | 9.98    | 8.34    | 5.02    | 1.07   |
| 50-100              | 5.23    | 5.83    | 5.30    | 4.04    | 3.55   |
| 100-500             | 15.51   | 14.18   | 12.35   | 11.37   | 3.28   |
| 500-1000            | 5.19    | 5.36    | 3.89    | 3.69    | 3.13   |
| More than 1000      | 60.50   | 62.88   | 68.81   | 74.93   | 6.02   |
| Total               | 100.00  | 100.00  | 100.00  | 100.00  | 4.90   |

Source: Indian Rubber Statistics, relevant issues.

The rubber goods manufacturing industry in India fall broadly under 30 different categories of end-products. The different 30 product groups can again be sub-classed under 10 broad divisions, viz., (1) automotive tyre and tubes, (2) cycle tyre and tubes; (3) camel back; (4) footwear products; (5) belts and hoses; (6) latex foam; (7) Cables & wires; (8) battery boxes, (9) dipped goods; and (10) others. Dry rubber products, in general, are manufactured with a mix of NR, Reclaimed Rubber (RR) and Synthetic Rubber. The structure of rubber goods industry is presented in Table 5. The latex foam and dipped goods use only NR while rubber goods such as cycle tyre and tubes, belts and hoses consume both RR and SR.

**Table 5. Structure of NR based industries in India-2010-11**

| Product                    | NR     | SR    | RR    | Total  |
|----------------------------|--------|-------|-------|--------|
| Automotive tyres and tubes | 68.53  | 25.57 | 2.96  | 100.00 |
| Cycle tyres and tubes      | 63.90  | 17.91 | 18.91 | 100.00 |
| Camel black                | 68.24  | 23.62 | 8.14  | 100.00 |
| Footwear products          | 54.67  | 38.03 | 7.30  | 100.00 |
| Belts and hoses            | 68.05  | 20.24 | 11.70 | 100.00 |
| Latex foam                 | 100.00 | 0     | 0     | 100.00 |
| Dipped goods               | 100.00 | 0     | 0     | 100.00 |
| Others                     | 55.49  | 24.91 | 19.60 | 100.00 |
| Total                      | 69.63  | 24.59 | 5.78  | 100.00 |

Note: NR-Natural Rubber; RR-Reclaimed Rubber; SR-Synthetic Rubber

Source: Indian Rubber Statistics 2011

Automotive tyre sector accounted for 54.57% of the total NR consumed in India. Cycle tyre and tube Segment consumes 11.39% of the total NR consumed followed by footwear (8.05%), belts and hoses (5.29%) and latex foam (4.47%). An important observation from



Table 6 is that the market for rubber goods industry as well as its raw material market are closely knit together. The broad trend observed at the aggregate level of NR consumption hold good for both tyre and non-tyre segments of the industry. Analysis of consumption of NR indirectly points out to the changes in the non-tyre segment of the industry. Table 7 is indicative of the trend in the consumption of NR by broad group of rubber goods from 1980-81 to 2010-11. The relative importance of products such as foot wear, cables and wires, camel black, belts and hoses are on the decline.

**Table 6. Composition of NR based industries in India-2010-11**

| Product                    | NR    | SR    | RR    | Total |
|----------------------------|-------|-------|-------|-------|
| Automotive tyres and tubes | 54.57 | 58.79 | 23.50 | 53.46 |
| Cycle tyres and tubes      | 11.36 | 7.97  | 28.88 | 11.75 |
| Camel black                | 4.97  | 4.94  | 6.17  | 5.04  |
| Footwear products          | 8.05  | 15.05 | 8.96  | 9.74  |
| Belts and hoses            | 5.29  | 4.47  | 7.06  | 5.22  |
| Latex foam                 | 4.47  | 0.00  | 0.00  | 3.13  |
| Cables and wires           | 0.19  | 0.77  | 1.26  | 0.40  |
| Battery boxes              | 0.21  | 1.05  | 13.34 | 1.29  |
| Dipped goods               | 4.48  | 0.00  | 0.00  | 3.13  |
| Others                     | 6.41  | 6.97  | 10.85 | 6.84  |
| Total                      | 100   | 100   | 100   | 100   |

Source: Indian Rubber Statistics, 2011

**Table 7. Relative Share of Rubber Products in NR Consumption-1980-81 to 2010-11**

| Product                    | 1980-81 | 1990-91 | 2000-01 | 2010-2011 |
|----------------------------|---------|---------|---------|-----------|
| Automotive tyres and tubes | 50.28   | 44.35   | 45.18   | 62.2      |
| Cycle tyres and tubes      | 11.90   | 13.77   | 13.08   | 9.2       |
| Camel black                | 5.26    | 6.98    | 6.03    | 4.6       |
| Footwear products          | 10.25   | 10.31   | 11.17   | 6.6       |
| Belts and hoses            | 6.80    | 7.02    | 6.05    | 4.6       |
| Latex foam                 | 3.31    | 5.38    | 5.01    | 4.0       |
| Cables and wires           | 0.45    | 0.34    | 0.27    | Neg.      |
| Battery boxes              | 0.28    | 0.35    | 0.30    | Neg.      |
| Dipped goods               | 2.85    | 4.28    | 5.08    | 4.1       |
| Others                     | 8.62    | 7.21    | 7.83    | 4.7       |
| Total                      | 100.00  | 100.00  | 100.00  | 100.00    |

Note: Neg. – Negligible quantity of NR

Source: Indian Rubber Statistics, Relevant issues

### **Regional Structure NR Based Industries**

Regional composition of NR consumption from 1970-71 to 2010-11 is presented in Table 8. There has been a change in the pattern of regional consumption of NR over the period. Observations from Table 8 are: (i) relative share in NR consumption by states has changed over the years; (ii) among major NR consuming states in India, Kerala topped (14.43%) followed by Maharashtra (12.29%), Punjab (8.35%) and Tamilnadu (9.45%); (iii) there has been a substantial decline in the relative share of NR consumption of certain states, viz., West Bengal (11.61% to 2.59%); 2.Uttar Pradesh (12.84% to 8.89%); 3.Delhi (4.29% to 0.86%) and Haryana (6.24% to 4.81%) during 1970-71 to 2010-2011. Certain states, viz., Andhra Pradesh (2.44% to 6.09%); Gujarat

(1.89% to 7.12%); Karnataka (4.66% to 7.48%); and Orissa (0 to 3.95%) have recorded an increase in NR consumption. Table 9 shows the rate of growth in NR consumption by major rubber goods manufacturing states in India. Following observations can be made from the Table 9. (i) rate of growth in NR consumption has set in a declining trend since the mid 1990s. During the 1980s through mid 1990s, NR consumption grew from 5.35% to 6.29% per annum with a mild upswing in the second half of 1980s; (ii) since the mid 1990s, rate of growth in NR consumption has started falling by half and the declining trend still persists. It reached its trough during the last quinquennial phase (2006-11); (iii) the observed decline in NR consumption was more or less evenly distributed across major NR consuming states such as Kerala, Andhra Pradesh, Haryana and Punjab; (iv) important NR consuming states, viz., Andhra Pradesh, Delhi, Haryana and West Bengal recorded negative rate of growth in NR consumption between 2006 and 2011. The exemption to the general pattern is the state of Gujarat. Gujarat recorded a rate of growth of 5.71% in NR consumption during the last five year period. Observations from Tables 8 and 9 together confirm that five states in India, viz., Kerala, Maharashtra, Tamilnadu, Punjab and Gujarat account for more than 55% of NR consumption and the price of NR, to a great extent, is influenced by the trend in the demand for NR in those five states. It is worth mentioning that the rate of growth in NR consumption in four out of five major NR consuming states have registered a fall during the last five years as compared to the rate of growth in previous five year period. Further, the extent of decline is much pronounced in states like Punjab, Kerala and Maharashtra.

There is yet another dimension to the regional pattern in NR consumption. It is found that there is a close association between the density of licensed manufacturers and the consumption of NR. Table 10 shows the relative share of licensed manufacturers of rubber products in

India from 1995-96 to 2010-11. Following observations can be made from Table 10. (i) density of licensed manufactures of rubber goods is the highest in Kerala (16.52%), followed by Maharashtra (11.53%), Tamilnadu (10.98%) and Uttar Pradesh (8.97%); (ii) the first four states accounted for more than 47% of the licensed manufacturers in India. However, the density of licensed manufactures has declined for the last 15 years. It has registered a negative rate of growth of (-) 1.8% during the reference period. The registered manufacturers have recorded positive growth rates only in three states, viz., Haryana, Rajasthan and Goa (Graph 1). For others states, number of licensed manufacturers have recorded negative rate of growth for the period 1996-2011. The empirical observation confirms that there has been a consolidation of rubber goods manufacturing units. Micro and small manufacturing rubber goods units have either died down or large firms have consolidated small units; (ii) unskilled and semi-skilled female workers engaged in micro industries have shifted to other occupations as the industries failed to give remunerative wage rates commensurate to competing sectors in the rural non-farm economy. It is important to examine the association between the quantities of rubber consumed (all kinds of rubber) and the density of licensed manufacturers across states in India. It implies that the economic reforms have not impacted qualitatively on the rubber goods industry in India. The Spearman Rank correlation (Table 11) indicates that consumption of rubber by rubber goods industries are higher in states where the density of licensed manufacturers is also higher. It supports the hypothesis is that the economic reforms in India have not consolidated to any significant extent to move towards market monopoly in rubber goods production sector. However, the observed trend could be an indicator to the direction of change taking place in the non-tyre segment of the rubber goods industry.

**Table 8. Relative share in NR consumption by states**

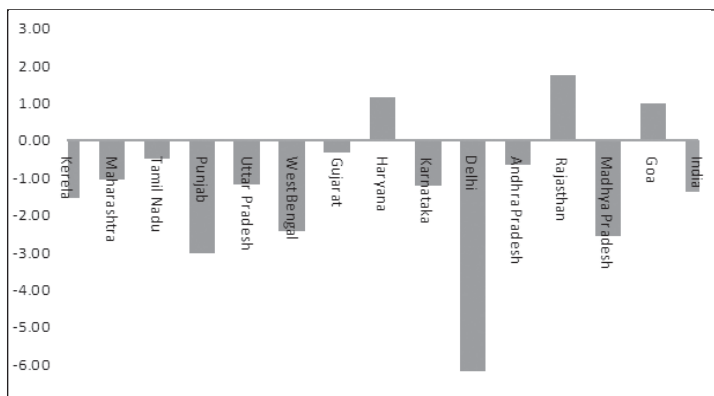
| State          | 1970-71 | 1975-76 | 1980-81 | 1985-86 | 1990-91 | 1995-96 | 2000-01 | 2005-06 | 2010-11 |
|----------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Andhra Pradesh | 0       | 0       | 1.28    | 1.91    | 2.44    | 3.62    | 3.15    | 4.64    | 6.09    |
| Bihar          | 0       | 0       | 0       | 0       | 0       | 0.22    | 0.21    | 0       | 0       |
| Delhi          | 2.24    | 3.32    | 3.63    | 4.3     | 4.29    | 3.77    | 2.91    | 0.86    | 0.86    |
| Goa & Daman    | 0       | 2.77    | 1.39    | 1.76    | 1.71    | 2.22    | 3.73    | 4.39    | 2.08    |
| Gujarat        | 1.37    | 1.7     | 1.75    | 2.09    | 1.89    | 4.61    | 5.56    | 7.12    | 7.12    |
| Haryana        | 5.13    | 8.84    | 8.62    | 7.91    | 6.24    | 5.94    | 6.12    | 4.81    | 4.81    |
| Jharkhand      | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0.15    | 0.08    |
| Karnataka      | 0.72    | 1.53    | 3.32    | 4.91    | 4.66    | 4.62    | 4.95    | 6.92    | 7.48    |
| Kerala         | 7.72    | 7.37    | 11.11   | 11.94   | 15.2    | 14.31   | 13.97   | 14.43   | 14.43   |
| Madhya Pradesh | 0       | 0       | 0       | 0.39    | 1.13    | 3.65    | 4.39    | 3.83    | 3.87    |
| Maharashtra    | 22.58   | 22.59   | 19.07   | 15.73   | 12.96   | 11.96   | 10.82   | 13.24   | 12.29   |
| Orissa         | 0       | 0       | 0       | 0       | 0       | 3.21    | 3.81    | 3.95    | 3.95    |
| Pondicherry    | 0       | 0       | 0       | 0       | 0       | 0.58    | 0.4     | 0.34    | 0.25    |
| Punjab         | 2.61    | 4.57    | 7.62    | 11.44   | 12.67   | 11.8    | 13.12   | 8.35    | 8.35    |
| Rajasthan      | 0       | 0       | 3.16    | 5.16    | 4.92    | 4.23    | 5.68    | 6.74    | 6.71    |
| Tamil Nadu     | 20.12   | 16.63   | 9.82    | 8.04    | 5.82    | 4.92    | 5.16    | 6.18    | 9.45    |
| Uttar Pradesh  | 1.33    | 7.7     | 13      | 12.41   | 12.84   | 12.4    | 8.82    | 4.05    | 8.89    |
| West Bengal    | 35.52   | 21.72   | 15.79   | 11.6    | 11.61   | 7.59    | 6.85    | 3.88    | 2.59    |
| Others         | 0.66    | 1.26    | 0.43    | 0.41    | 1.61    | 0.33    | 0.35    | 5.36    | 0.70    |
| Total          | 100     | 100     | 100     | 100     | 100     | 100     | 100     | 100     | 100     |

Source: Calculated from Indian Rubber Statistics, Relevant Issues

**Table 9. Quinquennial Compound Growth Rates in NR Consumption by States**

| States         | 1980-85     | 1985-91     | 1991-96     | 1996-01     | 2001-06     | 2010-11    |
|----------------|-------------|-------------|-------------|-------------|-------------|------------|
| Andhra Pradesh | 12.63       | 11.90       | 13.47       | 0.62        | 11.15       | 9.2        |
| Delhi          | 9.62        | 6.83        | 4.06        | -0.77       | -2.99       | -12.4      |
| Goa & Daman    | 8.54        | 5.62        | 11.11       | 12.32       | 6.99        | -10.9      |
| Gujarat        | 3.85        | 3.23        | 23.33       | 4.97        | 6.87        | 6.9        |
| Haryana        | 12.46       | 6.45        | 5.42        | 4.09        | 3.43        | -1.2       |
| Karnataka      | 6.63        | 11.81       | 6.15        | 3.43        | 10.93       | 5.1        |
| Kerala         |             | 28.39       | 5.24        | 2.43        | 7.73        | 0.1        |
| Madhya Pradesh | 2.02        | 3.98        | 29.22       | 5.65        | 2.36        | 3.6        |
| Maharashtra    |             | Na          | 4.88        | 1.48        | 7.53        | 1.9        |
| Orissa         | 12.74       | 9.23        | Na          | 5.65        | 4.90        | 3.7        |
| Punjab         | 14.35       | 6.55        | 5.05        | 4.17        | 0.74        | -0.9       |
| Rajasthan      | 1.91        | 1.77        | 3.66        | 9.11        | 6.25        | 3.3        |
| Tamil Nadu     | 4.53        | 8.02        | 3.35        | 3.62        | 7.54        | 12.6       |
| Uttar Pradesh  | 0.08        | 7.41        | 5.67        | -0.90       | -10.14      | 5.9        |
| West Bengal    | 4.27        | 35.16       | -0.96       | 1.23        | -5.25       | -4.6       |
| Others         | 4.27        | 35.16       | -18.52      | -3.47       | 13.35       | 76.7       |
| <b>India</b>   | <b>5.35</b> | <b>7.40</b> | <b>6.29</b> | <b>3.02</b> | <b>4.14</b> | <b>3.4</b> |

Source: Calculated from Indian Rubber Statistics, Relevant Issues

**Graph 1. Compound Rate of Growth of Licensed Manufacturers**

**Table 10. Distribution of Licensed Rubber Goods Manufactures in India (percentage share)**

| State          | 1995-96 | 2011-12 |
|----------------|---------|---------|
| Kerala         | 16.98   | 17.33   |
| Maharashtra    | 11      | 11.29   |
| Tamil Nadu     | 9.64    | 10.99   |
| Punjab         | 11.18   | 8.37    |
| Uttar Pradesh  | 8.72    | 9.07    |
| West Bengal    | 9.19    | 7.14    |
| Gujarat        | 7.43    | 9.37    |
| Haryana        | 5.47    | 7.71    |
| Karnataka      | 4.54    | 4.67    |
| Delhi          | 6.42    | 2.80    |
| Andhra Pradesh | 3.12    | 3.47    |
| Rajasthan      | 1.88    | 3.03    |
| Madhya Pradesh | 1.72    | 1.39    |
| Others         | 2.67    | 0.75    |
| Total          | 100     | 100.00  |

Source : Indian Rubber Goods Manufacturing Directory, Relevant Issues

**Table 11. Spearman Rank Correlation**

| Variable   | Correlation Coefficient |
|--|-------------------------|
| Quantity of rubber Consumed by states (2001 to 2009) X Number Licensed Manufacturers | 0.721**                 |
| Number of observation  | 119                     |

\*\* - Significant 1%

### Section III

#### Foreign Trade of Rubber Products

Trade liberalisation is intended to expand the volume of trade. Trade policies have been designed to increase export over imports. There has been a spurt in the quantity and value of exports of rubber products in India during the last two decades. For any industrial product, external trade strengthens with the expansion of the domestic market as the product is tested and proved quality superior in the home market. The rubber goods industry in the domestic market is dominated by automotive tyre segment and therefore the external trade of rubber products concentrated towards the tyre segment. Automotive tyre products accounted for more than 65% of the value of exports from rubber products in 2010-11. The devaluation of Indian currency and various other export promotion policies have enabled rubber goods to increase the quantity and value of exports during the economic reform phase. As in the case of other commodities in India, substantial reduction in the import duty coupled with the removal of non-tariff measures of imports have reduced the level of protection for rubber goods industry in the domestic market. India exported Rs 2630.50 million worth rubber goods in 1991-92 and it increased to Rs 79266.58 million in 2010-11. The value of imports of rubber products has increased from Rs 992.40 million to Rs 50741.55 million, leaving a positive trade balance of Rs 28525.03 million in 2010-11 (Table 12). The rubber goods industry has not fared in the export market as that of India's export sector in general. The rubber goods industry accounted for 0.87% of India's exports in 2005-06 and it marginally declined to 0.81% in 2010-11. The United States of America is the largest importer of rubber products from India, importing primarily tyres for truck and bus of cross ply type and more than 25% of the value of exports of rubber products from India find its destinations in five countries, viz., USA, Germany, UAE, the Netherlands and



**Table 12. Value of Exports, Imports, Trade Balance of Rubber Products (Rs million)**

| Year        | Export        | Import        | Trade Balance |
|-------------|---------------|---------------|---------------|
| 1991-2      | 2630.5        | 992.24        | 1638.26       |
| 1995-6      | 9429.50       | 2044.29       | 7385.21       |
| 1996-7      | 10952.90      | 3508.46       | 7444.45       |
| 1997-8      | 12251.40      | 3342.69       | 8908.71       |
| 1998-9      | 13410.00      | 4552.77       | 8857.23       |
| 1999-00     | 14336.90      | 5499.89       | 8837.01       |
| 2000-1      | 21001.30      | 5903.16       | 15098.14      |
| 2001-2      | 21650.10      | 6458.98       | 15191.12      |
| 2002-3      | 25283.10      | 7703.57       | 17579.53      |
| 2003-4      | 31990.70      | 9259.09       | 22731.61      |
| 2004-5      | 36062.30      | 11291.98      | 24770.32      |
| 2005-6      | 45331.50      | 13876.61      | 31454.89      |
| 2006-7      | 52105.20      | 21047.86      | 31057.34      |
| 2007-8      | 57500.80      | 27060.12      | 30440.69      |
| 2008-9      | 68828.90      | 33076.95      | 35751.96      |
| 2009-10     | 64133.50      | 36879.01      | 27254.50      |
| 2010-11     | 79266.58      | 50741.55      | 28525.03      |
| Compound GR | <b>17.61%</b> | <b>20.61%</b> | <b>14.58%</b> |

Source: Indian Rubber Statistics, Relevant Issues

Philippines. The export destinations of India remain more or less unchanged for the last two decades. Although the balance of trade in rubber product is positive, the imports grow at a higher rate as compared to exports. The export value of rubber products registered a growth rate of 17.61% while the value of imports from the rubber products grew by 20.61% between 1991-2 and 2010-11 (Table 12). The intra-industry trade in rubber products has been highly pronounced in the recent past and

the value of tyres for passenger car and for other automotive vehicles still has a prominent share in the basket of imports of rubber goods to India. Although the value of exports and imports of rubber goods has remarkably increased in the 1990s and 2000s, value of imports of rubber products grows much faster than the export value and the rate of growth in the value of imports is primarily contributed by rubber goods in the non-tyre sector. It was noticed that certain product groups in the non-tyre sector has declined in importance in the export market while a few other goods have bettered their prospects over the years. From a policy perspective, identification of the sunset and sunrise rubber goods has immense significance (Tables 14).

**Table 13. Value of Exports by Tyre and Non-Tyre Products (Percentage)**

| Year    | Tyre  | Non-Tyre |
|---------|-------|----------|
| 1990-91 | 70.92 | 29.08    |
| 1995-96 | 71.83 | 28.17    |
| 1996-97 | 71.25 | 28.75    |
| 1997-98 | 73.75 | 26.25    |
| 1998-99 | 65.01 | 34.99    |
| 1999-00 | 67.44 | 32.56    |
| 2000-01 | 65.20 | 34.80    |
| 2001-02 | 64.18 | 35.82    |
| 2002-03 | 60.00 | 40.00    |
| 2003-04 | 55.94 | 44.06    |
| 2004-05 | 60.42 | 39.58    |
| 2005-06 | 66.97 | 33.03    |
| 2006-07 | 70.19 | 29.81    |
| 2007-08 | 73.92 | 26.08    |
| 2008-09 | 72.79 | 27.21    |

Source: Indian Rubber Statistics, relevant years.

**Table 14. Value of Exports by Rubber Products in the non-tyre Sector (Percentage share)**

| Year    | Belts | Cycle tyre & Tube | Hoses | Pharma ceutical Items | Foot wear | Rubber Soled Foot wear | Rubber Cots | Belts |
|---------|-------|-------------------|-------|-----------------------|-----------|------------------------|-------------|-------|
| 1964-65 | 1.88  | 9.88              | 5.60  | 0.92                  | 4.67      | 67.69                  | 9.37        | 0.92  |
| 1965-66 | 0.66  | 12.45             | 4.25  | 1.14                  | 4.74      | 75.35                  | 1.42        | 1.14  |
| 1966-67 | 0.89  | 16.27             | 2.37  | 6.20                  | 1.91      | 71.02                  | 1.34        | 6.20  |
| 1967-68 | 1.34  | 22.22             | 1.37  | 15.96                 | 1.56      | 54.13                  | 3.42        | 15.96 |
| 1968-69 | 1.80  | 19.88             | 2.39  | 16.54                 | 1.56      | 52.40                  | 5.44        | 16.54 |
| 1969-70 | 2.98  | 12.49             | 2.78  | 14.82                 | 6.11      | 56.64                  | 4.19        | 14.82 |
| 1970-71 | 4.34  | 11.56             | 4.99  | 16.38                 | 4.21      | 57.16                  | 1.36        | 16.38 |
| 1971-72 | 1.90  | 11.89             | 4.40  | 2.22                  | 2.79      | 76.44                  | 0.37        | 2.22  |
| 1972-73 | 2.31  | 13.76             | 1.96  | 2.21                  | 6.33      | 70.53                  | 2.90        | 2.21  |
| 1973-74 | 5.48  | 20.30             | 3.05  | 6.47                  | 3.98      | 58.28                  | 2.45        | 6.47  |
| 1974-75 | 13.66 | 17.56             | 2.83  | 3.72                  | 4.38      | 56.73                  | 1.13        | 3.72  |
| 1975-76 | 18.49 | 20.59             | 5.70  | 5.00                  | 2.83      | 45.29                  | 2.10        | 5.00  |
| 1976-77 | 10.91 | 21.96             | 5.08  | 10.37                 | 2.31      | 47.17                  | 2.19        | 10.37 |
| 1977-78 | 12.78 | 21.37             | 5.24  | 12.75                 | 2.31      | 42.41                  | 3.13        | 12.75 |
| 1978-79 | 30.66 | 15.62             | 7.06  | 7.06                  | 2.60      | 31.32                  | 5.69        | 7.06  |
| 1980-81 | 28.46 | 17.21             | 5.47  | 13.92                 | 2.43      | 27.78                  | 4.72        | 13.92 |
| 1985-86 | 73.96 | 1.87              | 12.17 | 1.32                  | 0.94      | 8.43                   | 1.31        | 1.32  |
| 1986-87 | 62.44 | 1.97              | 8.43  | 6.25                  | 1.78      | 15.39                  | 3.75        | 6.25  |

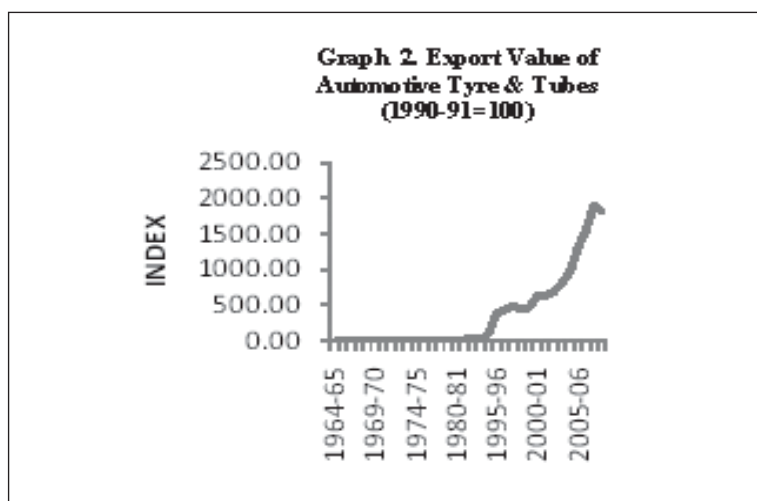
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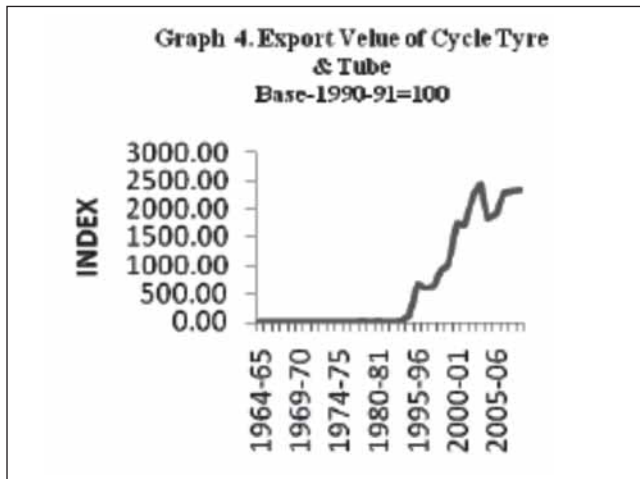
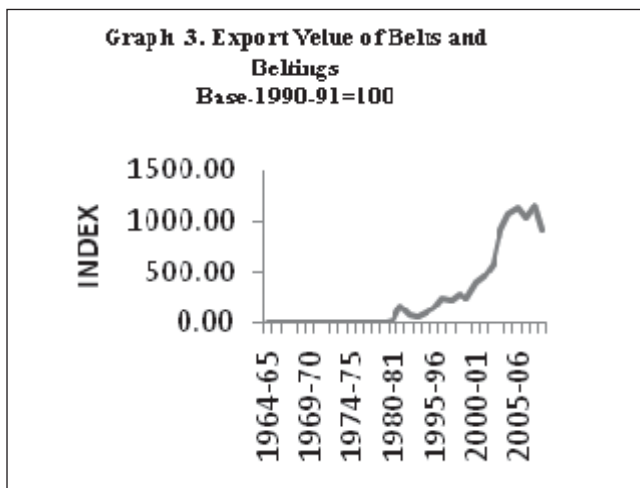
| Year    | Belts | Cycle tyre & Tube | Hoses | Pharmaceutical Items | Foot wear | Rubber Soled Foot wear | Rubber Cots | Belts |
|---------|-------|-------------------|-------|----------------------|-----------|------------------------|-------------|-------|
| 1987-88 | 50.26 | 6.20              | 9.17  | 8.58                 | 2.02      | 20.17                  | 3.59        | 8.58  |
| 1990-91 | 32.19 | 16.03             | 10.28 | 18.56                | 1.00      | 14.96                  | 6.98        | 18.56 |
| 1995-96 | 13.12 | 28.69             | 2.53  | 45.77                | 2.99      | 4.77                   | 2.13        | 45.77 |
| 1996-97 | 18.05 | 22.20             | 2.76  | 46.07                | 2.84      | 5.48                   | 2.60        | 46.07 |
| 1997-98 | 16.77 | 23.02             | 2.82  | 41.60                | 3.21      | 9.71                   | 2.88        | 41.60 |
| 1998-99 | 15.69 | 24.80             | 3.85  | 36.15                | Na        | 17.13                  | 2.37        | 36.15 |
| 1999-00 | 14.66 | 29.89             | 3.53  | 33.27                | Na        | 14.89                  | 3.76        | 33.27 |
| 2000-01 | 15.57 | 33.77             | 3.68  | 30.38                | Na        | 14.04                  | 2.55        | 30.38 |
| 2001-02 | 16.66 | 31.86             | 6.19  | 22.91                | Na        | 19.13                  | 3.25        | 22.91 |
| 2002-03 | 16.83 | 32.28             | 6.54  | 25.59                | Na        | 15.88                  | 2.88        | 25.59 |
| 2003-04 | 19.24 | 25.19             | 6.59  | 18.96                | Na        | 27.27                  | 2.75        | 18.96 |
| 2004-05 | 22.64 | 18.91             | 9.58  | 17.95                | Na        | 28.87                  | 2.06        | 17.95 |
| 2005-06 | 23.11 | 19.51             | 10.51 | 22.31                | Na        | 20.67                  | 3.90        | 22.31 |
| 2006-07 | 20.59 | 22.66             | 12.33 | 21.20                | Na        | 18.31                  | 4.90        | 21.20 |
| 2007-08 | 22.88 | 22.64             | 15.62 | 22.36                | Na        | 15.04                  | 1.46        | 22.36 |
| 2008-09 | 18.15 | 22.68             | 14.58 | 28.92                | Na        | 15.67                  | 0.00        | 28.92 |

Note:NA -Not Available

Source: Indian Rubber Statistics, relevant years.

The prominence of the primary production sector places considerable demand for transport of agricultural commodities as well as human transport. On the contrary, passenger car tyre and non-tyre products dominate the production structure of the rubber goods industry in advanced countries. The external trade of any commodity is an extension of its domestic industry and performance in the export market presupposes perfection in the domestic market. The export basket of rubber goods industry in India is dominated by tyres for truck and bus of cross-ply type. Table 13 shows the relative share in the value of exports of tyre and non-tyre products in India. It indicates that tyre sector grows much faster than non-tyre sector. The share of tyre products in the value of exports from rubber products was 56.89% in 1965-65. It increased to 72.79% in 2008-09. The non-tyre sector too grew but at a slower pace as compared to automotive tyre segment. The strength of an industrial production base and its structure is measured in terms of its diversification. It is observed that the rubber goods industry has not yet broadened its production base over the years and the relative underdevelopment of the non-tyre sector is reflected in the ballooning of the value of imports of rubber goods.





There is product concentration in the non-tyre sector of the rubber product industry too. Table 14 shows the relative share in the value of exports of rubber products within the broad group of the non-tyre sector in India. There has been a shift in the importance of rubber products in the export market over the years. Soled footwear accounted for more than 50% of the value of exports during 1960s and 1970s and its share has declined to 15% in 2008-09. Conversely, relative share in the

value of exports of items such as pharmaceuticals, cycle tyre and tube and belts and beltings have improved. More than 50% of the value of exports of non-tyre rubber products was contributed by three product group, viz., cycle tyre and tubes (22%), Pharmaceutical articles (29%), and Belts (18%) in 2008-09. It may be noted that there are sunset and sunrise rubber products with respect to the relative share of products in the external markets. Foot wear of all types, rubber cot and cycle tyres have registered decline in the relative share of value of exports (sunset industries) in the external market while pharmaceutical articles, belts and hoses can be called sunrise industries. Rubber contraceptives are one of promising products in the non-tyre sector. Table 14 shows the trend in production, value of exports and import of rubber contraceptives in India. During the last five year, rubber contraceptives has registered a rate of growth of 10% per annum while the import of the same did decline by (-)10%. Graphs 2 to 8 show the trend in the value of export of rubber products exported from India during the last two decades. There has been a perceptible increase in the value of exports of rubber products from India between the late 1980s and the 1990s. Automotive tyres and tube experienced a marked lift in its value of exports by 1992-93 and it is attributable to cheapening of tyre products in the international market on account of the devaluation of Indian rupee in 1991 (Graph 2). The export value of products such as belts and beltings (Graph 3) and cycle tyre and tubes (Graph 4), value of exports showed marked upward shift since the first half of 1980s. The rising trend did further strengthen by the first half of 1990s. The devaluation of Indian rupee did make visible effect on the export performance of rubber products such as pharmaceutical articles (Graph 5), rubber cots and aprons (Graph 6) and rubber foot wear (Graph 7) have also increased in the 1990s and 2000s. There has been significant and sudden spurt in the value of exports of rubber Hoses (Graph 8). It is used for industrial purpose is an important item of exports from India and it contributes 10% to 15% of the value of exports of rubber products in 2000s. However, it needs to be underlined

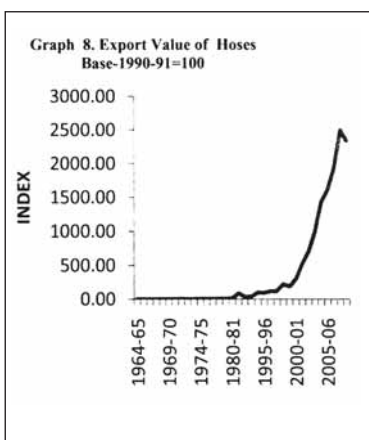
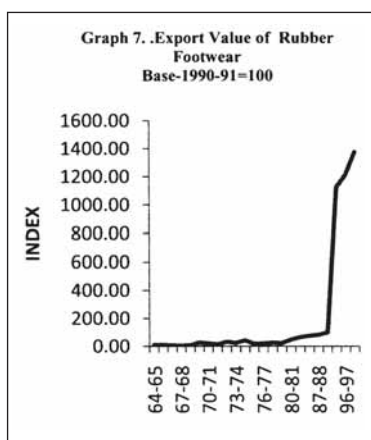
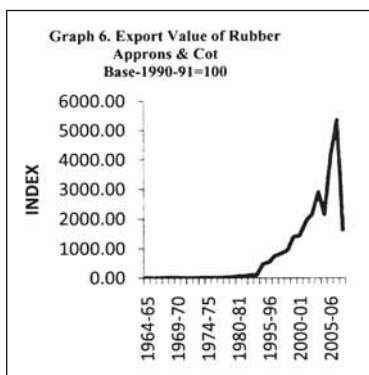
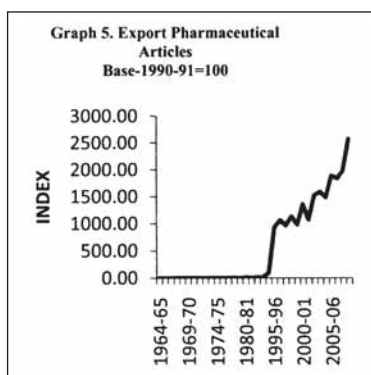
**Table 15. Production, Export and Import of Rubber Contraceptives in India 2005-06 to 2010-11**

| Year    | Production<br>(million no) | Export<br>(Tone) | Export<br>Value (Rs crore) | Import<br>(Tone) | Import<br>Value(Rs Crore) | Domestic<br>Consumption<br>(Rs Crore) |
|---------|----------------------------|------------------|----------------------------|------------------|---------------------------|---------------------------------------|
| 2005-06 | 3498.6                     | 6158.1           | 188.3                      | 300.7            | 12.3                      | 334                                   |
| 2006-07 | 3730.3                     | 4909             | 161.2                      | 270.9            | 10.6                      | 499.4                                 |
| 2007-08 | 3723.3                     | 5514.1           | 179.4                      | 429.7            | 13.9                      | 554.5                                 |
| 2008-09 | 3131.6                     | 7706.2           | 270.9                      | 3664.7           | 10.8                      | 459.9                                 |
| 2009-10 | 2956.2                     | 6844.4           | 244.5                      | 238.5            | 9.5                       | 515.1                                 |
| 2010-11 | 3331.7                     | 6734.1           | 278.5                      | 221.4            | 6.3                       | 602.8                                 |
| Average | -0.47                      | 3.80             | 10.41                      | 140.18           | -10.14                    | 14.50                                 |

Source: Indian Rubber Statistics, relevant issues.



that the observed shift in export performance has been rather general for the industrial products in India during the reform phase. In the non-tyre –latex based goods, contraceptives is an important item for the domestic as well as external markets. In the recent past, the quantity of imports of contraceptives has considerably increased and the intra-industry trade in contraceptives have turned against the domestic market. There has been a decline in the production of contraceptives to the tune of -0.47% between 2005-06 and 2010-11 (Table 15). The strong prevalence of internationally established brand loyalty works against even large industries in the domestic market in the case certain non-bulky and easy to transport commodities like contraceptives.



## Section 1V

### **Non-tyre Goods Sector: Observations from the Field**

It is worth mentioning that the promotional schemes for micro and small enterprises

in the initial decades of Five Year Planning had encouraged the non-tyre sector in general notwithstanding the fact that the policies were specific for the indigenization of capital and technology of tyre industry (Mani 1992). The tyre industry grew much faster than non-tyre sector because the income elasticity of demand of the tyre products is higher than that of the products in the non-tyre sector. Data for the non-tyre sector at disaggregate level is hard to come by from national level industrial statistics like Annual Survey of Industries or Index of Industrial Production. However, the present study is based on a field survey of 70 manufacturing units in the non-tyre sector in Kerala and Tamil Nadu. Table 16 shows the distribution of manufacturing units by products in India. It is found that molded rubber goods, footwear products and tread rubber accounted for more than 40% of the total rubber goods manufacturing units in India. In NR producing states like Kerala and Tamil Nadu, latex based products are more prominent than dry rubber products in the non-tyre sector.

Table 17 shows the period of establishment of rubber goods manufacturing units selected as sample for the study. It assumes significance especially in the post-liberalisation phase because farmers with better asset positions diversify their occupation by venturing into value addition. The shift is rather forced by the declining return from the farm sector. In the sample, most of the rubber goods manufacturing have started in the late 1990s or 2000s. The price of NR declined consecutively for a period of almost five years from 1997 and it was during the low price regime of NR that entrepreneurs had established latex based manufacturing units such as gloves and rubber bands. The capital invested per unit of establishment including the cost of factory

**Table 16. Distribution of Non-tyre Product Manufacturing Units**

| S.No | Rubber Product                           | Number of units | % of units |
|------|--|-----------------|------------|
| 1    | Adhesives                                | 306             | 4.46       |
| 2    | Adhesives tapes                          | 67              | 0.98       |
| 3    | Auto & cycle parts                       | 318             | 4.64       |
| 4    | Beltings                                 | 180             | 2.63       |
| 5    | Cables                                   | 30              | 0.44       |
| 6    | Dipped goods                             | 227             | 3.31       |
| 7    | Ebonite products                         | 46              | 0.67       |
| 8    | Extruded rubber goods                    | 234             | 3.41       |
| 9    | Foam Products                            | 384             | 5.60       |
| 10   | Footwear Products                        | 993             | 14.48      |
| 11   | Gloves                                   | 190             | 2.77       |
| 12   | Hoses                                    | 158             | 2.30       |
| 13   | Latex Thread                             | 60              | 0.88       |
| 14   | Leather Board                            | 50              | 0.73       |
| 15   | Modified Forms of Rubber                 | 7               | 0.10       |
| 16   | Moulded Rubber goods                     | 1118            | 16.30      |
| 17   | Rubber Bands                             | 113             | 1.65       |
| 18   | Rubber Covered Rollers                   | 150             | 2.19       |
| 19   | Rubberized Coir, Jute & woollen Products | 129             | 1.88       |
| 20   | Rubberized Fabric Products               | 57              | 0.83       |
| 21   | Rubber Linings                           | 123             | 1.79       |
| 22   | Rubber Mating                            | 78              | 1.14       |
| 23   | Rubber Sheeting                          | 147             | 2.14       |
| 24   | Rubber Tubing                            | 42              | 0.61       |
| 25   | Sports Goods                             | 174             | 2.54       |
| 26   | Surgical Pharmaceutical goods            | 115             | 1.68       |
| 27   | Tread Rubber products                    | 689             | 10.05      |
| 28   | Tyre, Tube & Flaps                       | 375             | 5.47       |
| 29   | Miscellaneous                            | 297             | 4.33       |
|      | Total                                    | 6857            | 100.00     |

Source: Rubber Goods Manufacturers Directory, 2005

building showed that latex based products such as rubber band, gloves, rubber thread and finger caps are relatively small. Average amount of investment per rubber band unit is as small as Rs 4.70 lakh (including factory building) and the investment outlay for gloves is even smaller. The nature of work in a rubber band manufacturing enterprises is confined to dipping rubber band moulds into the compound, drying in the sun shade, cutting, piecing and packing. Dipping is usually performed by male labour because the dipped moulds are too heavy for women labour to lift from chemical compound-barrel. Other activities are often performed by unskilled female workers and the number of male workers in manufacturing units with an employment size of 25 workers is limited to less than five. More or less the same type of workers and work exist in the case of other latex based micro enterprises. Moreover, these manufacturing units do not have fixed working hours and are not covered (in most cases) under the Factory Act. Average daily wage rate for female workers in the latex-based industry is Rs 200/ and a male worker receive Rs 350/- in Kottayam district in 2014 against the spot daily wage rate of Rs 400 for female and Rs 550 for male worker in 2014. It is widely reported that the latex-based low paid peasant industries find hard to get workers particularly after the introduction of MGNREGA and adds to the woes of the crisis ridden micro enterprises.

**Table 17. Year of establishment and average amount of capital invested**

| Products              | Year of establishment | Initial capital invested (Rs lakh) |
|-----------------------|-----------------------|------------------------------------|
| Rubber band           | Late 1990s            | 4.70                               |
| Gum                   | 1970s                 | 18.00                              |
| Gloves                | 1980s and 1990s       | 2.00                               |
| Rice polisher         | Late 1990s            | 20.00                              |
| Tyre flaps            | 1980s                 | 30.00                              |
| Tread rubber          | Early 2000            | 50.00                              |
| Micro cellular sheets | Early 2000            | 200.00                             |
| Footwear              | 2000s                 | Na                                 |

Source: Primary survey

Prior to the hike in NR price, the ratio of fillers (low priced clay added in NR compound) in latex based and dry rubber products were relatively less and remained within the permissible threshold of less than 30% (rubber band). The quantity of fillers (clay and other chemical powder) was increased from 40% to 60% after the hike in NR price. The NR was replaced with the low cost fillers and it became inevitable because the price of the product did not increase on par with the NR price. To a certain extent, dilution of quality of rubber goods to stay in the market has driven several of the micro enterprises out of business. As manufacturers of rubber products reported, filler content during pre and post-hike in NR price is presented in Table 18.

**Table 18. Share of NR in products in the pre and post-liberalisation phase**

| Products                | Pre-liberalisation phase |        | Post-liberalisation phase |        |
|-------------------------|--------------------------|--------|---------------------------|--------|
|                         | NR                       | Filler | NR                        | Filler |
| Rubber band             | 70                       | 30     | 30                        | 70     |
| Gum                     | 35                       | 65     | 20                        | 80     |
| Gloves                  | 95                       | 5      | 80                        | 20     |
| Rice polisher           | 30                       | 70     | 20                        | 80     |
| Tyre flaps              | 25                       | 75     | 15                        | 85     |
| Tread rubber            | 55                       | 45     | 40                        | 45     |
| Mats and moulded rubber | 4                        | 96     | 3                         | 97     |

Source: Primary survey

Table 18 shows the change in raw material content in six products, viz., rice polisher, gloves, mats, Hawaii chapel, tread rubber, rubber bands and other products before and after the hike in NR price. Rubber band units in Kerala are concentrated in Kottayam district. It was reported that there were 32 rubber band units in Vazhoor Block of Kottayam district in the early 1990s and the density was reduced to three in 2014 (as reported by a Rubber Band Manufacturer in Vazhoor Block). Rubber

band units experienced the maximum casualty for two reasons: (i) cost transfer to the final product is limited by the commodity characteristics as rubber band is an auxiliary product used for packing; (ii) there was cut-throat competition in the market, which would price out the products from the market. The Hawaii chapel showed a decline in the use of NR to the extent of 15%. Rubber thread, tread rubber production, rubber mats are other products in the non-tyre sector with a sharp decline in the quantity of production. The NR content in rubber mats was reduced to 2% from 4% and after the hike in NR price. The micro enterprises without any captive market did remain without much dilution in the quality dilute the quality of the products to stay in the market were forced to be locked out. However, as price of NR became steady at a higher level, the price of rubber products did rise to a certain extent. Table 19 shows the price of important products considered in the study from 2003 to 2013. Products in the non-tyre sector have increased the price of their product *albeit* after a lag of about a year. Rubber band units increased the price per kg from Rs 55 for ordinary brand in 2003 to Rs 120 per kg in 2007 and further to Rs 210/ kg in 2011. As NR price started declining from Rs 230 to Rs 140, rubber band price too declined to Rs 170/kg between 2011 and 2013. However, the price of other major inputs such as rubber compound, SR, carbon black, Zinc Oxide, steric acid and processing oil, to a great extent, have increased more or less on par with NR price and remain high.

**Table 19. Price of rubber products (Rs/Kg)**

| Products               | 2003 | 2007 | 2013<br>(November) |
|------------------------|------|------|--------------------|
| Rubber bands (Rs/kg)   | 55   | 120  | 170                |
| Tread rubber (Rs/kg)   | 85   | 125  | 200                |
| Hawai sheet (Rs/sheet) | 60   | 120  | 180                |
| Gloves (Rs/ Pair)      | 85   | 110  | 160                |
| Rice polisher (Rs/kg)  | 90   | 118  | 170                |

Source: Primary Survey

Among the rubber goods manufacturing units studied, rubber band units were in the most primitive stage of production and the rubber band segment in the non-tyre sector experienced the maximum causality. Out of 29 units closed down, 11 units were from rubber band segment, followed by Hawai sheets and tread rubber. Since the beginning of the unprecedented hike in NR in 2003, unproved ented have NR in 2013. It is important to note that the closing down of manufacturing units have been reported from all segments. Table 20 shows the number of units closed down after 2003.

**Table 20. Manufacturing units closed after 2003**

| Product             | Units closed down | Total Sample |
|---------------------|-------------------|--------------|
| Rubber band         | 11                | 27           |
| Gloves              | 2                 | 7            |
| Rice polisher       | 1                 | 3            |
| Tyre flaps          | 2                 | 6            |
| Tread rubber        | 6                 | 9            |
| Rubber Thread       | 1                 | 3*           |
| Hawai chappal sheet | 7                 | 18           |
| Total               | 30                | 73           |

Note: \*. There were three machines in a unit in 2001. Now there is only one machine working. Production capacity of a machine is one tone rubber thread a month. It was reported that 14 workers are required if all three machines are put into operation while 10 workers are required if only one machine is operated. It means the productiveness of labour declines as machines are withdrawn from production.

Source: Primary Survey

A series of issues have cropped up with the hike in NR price from 2003. The micro enterprises could not stay in business as profit margin had significantly declined with the hike in NR price and chemical inputs and NR. Further, there were cheap imports, especially the items like

rubber band, from China. The response of micro enterprises to the crisis situation varied and the response of small producers can be grouped as follows: (i) leased out the factory to large firms and joined as wage labour; (ii) temporarily stopped manufacturing expecting a normal NR price regime; (iii) labour force is retained by paying off half of the wage during lay off period, The market situation is expected to improve any time; (iv) shifted to high quality product. In all the above scenarios, the outcome was the consolidation of production and concentration of markets. The representative of a large enterprise in the tread rubber opinioned that-

*It is always good to have unsteady price and higher interest rate because the tiny industries manufacture low quality products and distorts the market. Once they are died out, we can perform better in the market and supply quality products with a profitable price. Given the trend, I hope the industry is heading towards it'* (Cochin Traders)

Several of the small enterprises reported that they had stopped selling in the market as they could not compete with large firms. Further, brand loyalty had also been slowly emerging even in the case of tiny products in the non-tyre sector.

## **Case Study-1**

### **Tread Rubber Unit**

The tread rubber is used for the retreading of tyres used in auto motive tyres, particularly in truck and bus. As the original tyres are worn out, tread is fitted on tyres to increase the run life of tyre. Tread rubber manufacturing units are generally small scale industrial units operated with small amount of capital outlay and a 5-10 unskilled or semi skilled male labour. Recently, medium and large industries have entered into the production sector and the entry of large capital has changed the very characteristics of the industry. The Tread Rubber Manufacturing Unit is set up in the industrial estate of Manjeri in Malappuram district. The



Tread Rubber Manufacturing unit was established in 1979. In 1981, another tread rubber manufacturing unit was purchased at Manjeri industrial estate. Now there are two units under the management and is run by the entrepreneurs in the second generation.

***What are the types of products manufactured?***

The units manufacture different variety of tread rubber. Tread rubber is graded on the basis of the quality of inputs used in its manufacturing. The price of tread rubber vary from Rs 110-Rs 180 (as on January 2013). In the first grade tread rubber (Rs 180/kg). Natural Rubber (RMA V) is used while Reclaimed Rubber (RR) is used for the manufacture of low grade (Rs 110/kg) tread rubber. The inferior quality tread rubber is used in JCBs and tractors while superior quality tread rubber is used in truck and buses. These two units manufacture mostly the superior quality tread rubber.

***What is the trend in Tread Rubber Production during the last one decade?***

During 1980s annual production of tread rubber from two manufacturing units totalled between 180 and 200 metric tonnes. In the 1990s, annual production has declined to 150 metric tonnes and now we do not manufacture more than 120 metric tonnes. There has been a drastic decline in annual production. It is not the case of my industry alone, but the general trend observed in the production of tread rubber.

***Has it affected the turnover the company?***

A manufacturer is not very much concerned about the turnover. Turnover of the company varies with the product price and is dependent on the market conditions. Manufacturer is more concerned about the volume of production because the profit level depends on production. Annual turnover of the company in 2012 was Rs 30 million. During the last few years there has not been much change in turn over. In 2010, turnover was about Rs 20 million and it has increased by Rs 50 million

during the last two years. It is primarily because of the change in the price of NR which is major input component in tread rubber. A high turnover does not mean a higher rate of profit per piece of output.

***What are the major changes in the product market during the last few years?***

The demand for tread rubber has been on the decline. It is on account of the superior technology of tyre production. Radial tyres and new generation tube less tyres render more road life to tyre and therefore there is less demand for retreading and tread rubber. Another major change in the market is the large scale production of tread rubber by large and medium industries and the small scale manufacturers find it difficult to compete in the market as the cost per unit of production of large scale units are significantly lower than small scale units.

***What are the major changes in the input market?***

Important inputs, in terms of cost of production, used for the manufacture of tread rubber are: NR (40% ), PBR (30%), carbon black (30%), processing oil comprising (elasto), zink oxide, antioxidants and sulphur (10%). Other than NR, all other inputs are closely linked to the price of crude oil as those are the by-products of petroleum. As the price of petroleum products goes up the raw material price too sky rocket more than proportionately. Tyre is retreaded only if there is a substantial difference between new tyres and retreaded tyres. The rise in the price of inputs escalates the cost of production of tread rubber and its price hike dissuades retreading of worn-out tyres.

***How the price of NR does influence the product and the market?***

Price volatility of NR is major cause of concern for more than a decade. As NR constitutes about 40% of the cost of production of tread rubber, an increase in the price of NR by a rupee will throw tread rubber manufacturing unit out of business. The tread rubber manufacturers had relatively less risk during the period between 1997 and 2003 when the

price of NR had either been falling or remained stable. The price of NR has been constantly increasing at rate unprecedented in the price history of NR since 2003-04. However, 2012 and 2013 (from the beginning of the year) has been relatively tension free for tread rubber manufacturers because the price of NR has settled and remains stable.

***Does Globalisation influence the prospects of the industry?***

Yes, in a forbidding sense. As part of globalisation, tyre imports have significantly increased, particularly tyres for truck and bus. Imported tyres are manufactured with different input combination (more SR and less NR ratio). Moreover, truck and bus tyre production in India is mostly of cross ply type whereas imported tyres are radial ones with longer road life and therefore less requirement of retreading. Globalisation works in favour of Large Scale Manufactures and bias against small scale producers. With the introduction of globalisation as a development strategy of India, numerous government subsidy schemes existed for small scale units have been withdrawn. Moreover, large scale units have been granted permission to enter into arenas hitherto earmarked for small scale and cottage units. Large scale units have both domestic and international market and the loss in one market is often compensated by gain in the other market. Conversely, small scale and cottage industries, where a major part of units in the non-tyre sector operate and survive, do not enjoy any such facilities. Globalisation favors large scale manufacturing units in another respect too. When the price of NR is high in the domestic market, large scale manufacturers import Reclaimed Rubber using facilities of export subsidy scheme and use the raw material for the manufacture of tread rubber. The low cost products of large industries could easily compete out in the market. On the contrary, small scale manufactures do not avail any such facilities. As part of level playing field, the concession to small scale units on electricity tariff has been withdrawn. Excise duty to large scale units has been reduced from 16% to 12% which improved the competitiveness of large units on small units.

***Have you increased the number of workers in the industry?***

During 1980s and 1990s, there were 60 workers in the tread rubber manufacturing units (two units). The workers strength continued till 2004. As the price of NR became highly volatile, it became hard to keep the volume of production in the previous scale and the curtailment of production did reduce the number of workers from 60 to 20 in 2013.

***How do you find the prospects of manufactures engaged in Tread Rubber Production?***

The tread rubber manufacturing unit was established by my father in 1979. With the profit from the unit, another one was established in 1985. Alongside, number of workers employed has increased to 60. Now the situation is totally different. Tread rubber manufacturing units could not even provide subsistence and the major part of the income is generated from the Chemical Distribution Unit established in 1997. If the present scenario (NR price volatility) is continued, in a short while tread rubber units will be closed.

**Case Study - 2**

**Rice Polisher Unit**

Rice Polisher is used in rice mill to shell out chuff from rice. It is an important product in the non-tyre sector with NR constituting major share in the input cost. A major threat of the industry is the fall in rice production in major states. Although Kerala has the location advantage which stem from the production of its raw material, its use in the state has almost seized to exist. The unit under consideration is housed at the industrial estate in Changanacherry, Kottayam. The cost of establishment of a rice polisher is about Rs 25 to 30 lakh. An advantage of rice polishing unit as compared to other products in the sector is the total absence of large industrial houses in the sector.

### ***How does the Rice Polishing Unit do?***

The rice polishing unit was established in 1967. It is established by his father and the unit has been doing well until a decade ago. The rice polishing unit has been encountered multiple problems for the last two decades. The first and foremost is the price volatility of NR which has become the order rather than the exception in the recent past. The other issues is the falling demand for the product on account of the emergence of close substitute in state like Karnataka and Andhra Pradesh, two major markets for the products and the area decline under rice in the southern part of Kerala.

### ***What is the cost structure of Rice Polisher?***

On an average a rice polisher weighs 2 kilogram, of which 50% is NR. Other major input is filler and chemicals. RMA 5 is used for the manufacture of rice polisher. A rice polisher is priced about Rs 230 in the market. The cost of production of rice polisher is about Rs 210. As the price of NR increases, the ratio between NR and clay is altered in favour of clay. The cost of clay or filler is Rs 15-20 while NR costs about Rs 150-200. Other major inputs are SBR and other petroleum products. As the clay component increases, it deteriorates the quality of rice polishers and eventually losses its market. The emergence of mechanical rice polisher emerged in the market by mid 1990s when the price of NR increased from Rs 20 to Rs 50-60 range. The mechanical rice polisher emerged in Karnataka and gradually substituted NR based rice polisher in Andhra Pradesh and other states.

### ***What are the major changes in the market for Rice Polisher?***

There has been a major shift in the market for rice polisher. In the 1980s and 1990s, Karnataka, Andhra Pradesh and Tamilnadu were major market. Now the market in the south has already been substituted with mechanical polisher. Now the market has been shrunked to Punjab, Haryana and other north Indian states.

***How is the trend in the production of Rice Polisher?***

The production of rice polisher in 2002 was 5000 bundles. A bundle is comprised of 24 pieces. On the contrary, number of bundles manufactured was reduced to 2000. Besides, low profit due to hike in raw material cost and lack of demand on account of the emergence of perfect substitutes. There are four workers in the unit. The piece rate of manufacturing a piece of rice polisher has increased from Rs 2 to Rs 2.5 during the last three years. As the demand for rice polisher declined, the income of workers has also significantly reduced.

***How has the fall in production impacted on the turnover of the industry?***

Early 2000 was the golden period of the industry because the price of NR was the minimum and stable. Turnover of the industry has been on the decline for the last three years. In 2010, the rice polishing unit recorded a turnover of Rs 80 lakh and it has reduced to Rs 40 lakh in 2012.

***How does the NR price impact on the prospects of the industry?***

Rice polisher is sold to rice mills. The rice mill place order first with price quotations and the product is supplied after a month or two. When the price of NR fluctuates to upper end, the final product price shoots up substantially while the producer is not compensated in the market for the increased raw material cost. On the contrary, if the price of NR falls, the rice mill owners put up hard bargain to reduce the price.

***What are the prospects of the Industry?***

The future of the industry is not bright at all. If the price volatility of NR continues, the industry will meet its natural collapse. It is obvious now as very few new comers enter the field notwithstanding the fact that there is no large scale manufacturers in the market as in the case of other products in the segment.

### Case Study - 3

#### Rubber Band Unit

Rubber band, known widely as elastic band or lackey band or laggy band, is a short length of rubber, formed in the shape of a circle used to hold multiple objects together. The rubber band was patented in England on March 17, 1845 by Stephen Perry. Rubber bands are manufactured by extruding Natural Rubber compound (NR) into a long tube (mandrel) to provide its general shape, putting the tubes on mandrels, curing the rubber with heat, and then slicing it across the width of the tube into little bands. The notable industrial characteristics is its production is centered mostly in village and small scale industries and there is hardly any large industrial houses engaged in the production of rubber band. Mostly, unskilled women labour work in the industry and in the total labour force, 80-85 percent of the labour force is women performing physical labour like dipping mandrel in the latex compound, spreading it for drying, slicing and heating. About 90% of the Rubber Band in India is produced in Kerala.

Rubber bands are manufactured out of natural rubber and the product differentiation is brought in by size of the product and its quality. A rubber band has three basic dimensions, viz., length, width and thickness. A rubber band's length is half its circumference and its thickness is the distance from the inner circle to the outer circle, and its width is the distance from one edge to the other. If one imagines a rubber band in manufacture, that is, a long tube of rubber on a mandrel, before it is sliced into rubber bands, the band's width is decided by how far apart the slices are cut. Here is case study of a rubber band unit run by one of the office bearer of All Kerala Rubber Band Association.

#### ***When the unit was started?***

The unit was started in 1978 jointly with another entrepreneur. In 1980, a new unit was established in Chenappally, Post Office area,

Kanjirappally, Kottayam. In order to avail the tax holiday concession of the government of Kerala for small scale industries, the existing unit was rechristened as Chenappally Rubber Works in 1994. The unit was established because the rubber band unit could be used as a main source of livelihood then. Further, the profit from the unit was recommitted in buying land and the main stay of the living the family is rubber plantation and the rubber band manufacturing is only the secondary occupation.

***What are the Brands and Type of Products Manufactured in the Unit?***

The unit manufactures two varieties of rubber bands. Broadly, these products can be classed under industrial purpose rubber bands. About 60% of the volume of production is accounted for by 6 inch rubber band used in textiles mills. The market for the product is confined to Surat and Ahemdabad. The other type of ordinary rubber band is used in shops and banks to tie currency notes. These two types are considered to be superior in quality as compared to consumer rubber band variety.

***What is the Price Trend of the Product?***

The price of rubber band as on January 2013 is between Rs 150-160 per kilogram. In 2012 beginning the price was Rs 200-240/kg and Rs 180/kg in 2011. The fluctuation in price is mainly influenced by the price of important raw material, viz., NR. In addition to the price, 2% CST is levied on buyers. However, buyers from north India often refuse to pay CST and therefore the manufacturer is compelled to pay the CST. For a kilogram of rubber band priced Rs 160/- CST is about Rs 3.20/-.

***What is Volume of Sales and Turnover?***

Turnover in 2012-2013 is Rs 0.6 million. It was Rs 8.5 million in 2011 and Rs 9 million in 2010. There has also been a substantial reduction in the physical volume of production too during the last three years. The volume of production of rubber band has declined from 25 metric tone in 2010 to 12 metric tone in 2012. For the industry in general, last three years are considered to be worst.



### ***Does the Product have Seasonal Market Fluctuations?***

Yes. The peak season in the market for rubber bands is during Deepavali, especially in north India. Rubber bands are used packing sweets and crackers. The production for Deepavali starts by March and end the season by November. Last year the import from China wreaked havoc in the market.

### ***How did Import of Rubber Bands from China carve out the Market for Indian Products?***

Making use of the provision under WTO, China imported millions of rubber bands made of cheap quality synthetic rubber packed under scrap. Scrap is used as raw material and therefore it does not attract duty if it is exported back after value addition. During the peak demand season in the domestic market, Chinese rubber band ruled the roost and the Indian products were competed out. However, the Rubber Band Association of India represented the case to the Ministry of Commerce and finally the import of scrap rubber has been partly banned. But the threat still exists and may happen any time in another disguise. As a result of the loss of the peak season, many small and cottage industries lost the market in 2012. Given the poor and fragile staying power of cottage industries, it was a hit below the belt for the small entrepreneurs of rubber band units.

### ***What are the Major Markets for Rubber band in India?***

For the product in the unit under question, we do not sell in the Kerala market. Major share of the volume of the product is sold in Surat and Ahmadabad. Other markets are Madras,. Bangalore, Hyderabad, Mumbai, Jaipur and Delhi.

### ***What is the Input Structure and Share of Different Components of Rubber Bands?***

Rubber band is a latex based product. In its cost, 75% is accounted for by NR (centrifugal latex). Other inputs are sulphur (used as bonding

agent), chemicals, processing oil, antioxidants and filler. Filler is the another raw material costing about Rs 5-7 per kg. One kg of sulphur cost Rs 25 which was Rs 20/kg in 2011. Also the price of other raw material has also significantly gone up, NR contributing about 75% of cost of production, variation in NR price is the single most important factor influencing the cost. The raw material is sufficiently available in the market. NR is collected from the plantations in the locality.

### ***What are major problems of the Industry?***

**1. Instability in NR Price:** The time gap between order and delivery varies between 1-2 months. The price is quoted and agreement is signed on the basis of the NR price prevailed at the time of signifying the agreement. During the last three years, price of NR (barring a few months in 2012) has violently fluctuated to an upper end leaving the producers in doldrums. The hike in raw material cost can not be claimed from the buyer and therefore more than 50% of rubber bands units were closed down in Kerala during the last 3 year period.

**2. Non-availability of labour:** Rubber band manufacturing units operate in households as cottage or small scale units employing unskilled women labour in the locality. The daily wage rate for a female labour working from 8 am to 5 pm is Rs 200/- in the industry. Female labour perform the work of dipping mandrels in the compound, putting them in sun light for drying up, slicing and packing while male labour do mostly preparation of compound. Male labour wage is Rs 400-450/. In this unit there are seven workers, of which 5 are females and 2 are males. Recently, female workers are not available for the kind of work like rubber band unit manufacturing.

**3. Cheap imports of rubber band made out of factory waste of synthetic rubber in China:** Although, it is being stopped for a while, it can be re-emerge anytime from now and the financial capacity of almost all rubber band units is that they can not withstand even a single bad season or warehouse their products for a year.

**4. Withdrawal of state's Support Small Scale Units.** In the 1990s, there was tax holidays for seven years of establishment of small units. Now, no such benefit exist and the large and small scale units are put in equal footing. As a result, there was a cost price difference or market up of about Rs 5-10 per kilogram of rubber band in 1980s and 1990s. Now, it is difficult to make a mark up of even Rs 0.50 from a kg of output. Precisely, for this reason, many of the units in Kottayam has been closed down because rubber band manufacturing has seized to be a primary occupation.

**5. Rubber band units have come up in major markets in Surat and Ahmadabad:** Recent years have witnessed a serious of factory units producing rubber bands have sprang up in quick succession in and around Rajasthan and Gujarat. This has reduced the size of the market for Rubber bands manufacturers from South India.

***What are the Suggestions from your side to protect the rubber Band Industry in India?***

The rubber band industry can sustain only if it is uplifted to the status of primary occupation of entrepreneurs as well as workers. Given the rate of profit and marketability of the product, it is difficult to attain the common goal. Therefore, government should protect the industry from the onslaught of cheap imports from China, subsidy/incentives to workers in the industry, ensure availability of quality NR (centrifugal latex) at stable and industry-friendly price. Otherwise, the industry will die down in the near future.

**Institutional Intervention and Non-tyre Rubber goods**

The institutional intervention refers to the interventions from the government to effect on the supply price and intercessions in the market when the market forces fail to clear the glut. Interventions in the market are crucial especially for small entrepreneurs or petty forms of capital. The crisis of small and micro enterprises in the non-tyre sector is an

extension of the reproduction crisis of small capital during the economic reform phase in India. Promotional schemes for micro industries of the state and central governments are limited to tax concession and interest subsidy for the bank loan of small capital. The intervention of the Rubber Board with respect to rubber goods manufacturing sector are primarily confined to providing consultancy service to the manufacturers. The Rubber Board has instituted the Technical Consultancy (TC) unit under the Rubber Technology Division in its Research Department. Services rendered to the rubber goods manufacturers by the Rubber Board are: (i) project development services; (ii) technology development services and (iii) non-conventional uses of NR; and (iv) training to entrepreneur. It has been estimated that the TC division of the Rubber Board has taken initiative in the setting up of 400 enterprises in different states in India. In addition to it, the Rubber Board has initiated two common facility sector (Rubber Parks) for the promotion of rubber goods manufacturing sector in the recent past. However, in a period of crisis of the small capital, the institutional intervention required is different from what the Rubber Board cater to. There exists little provision under the institutional intervention to keep the micro enterprises float in the market. Further the increase in the population density in major NR producing districts like Kottayam and Pathanamthitta have been posing serious threat to the working of micro enterprises in the rubber goods industry as land area available for processing of NR is limited. The environment pollution related issues of rubber band and gloves units, particularly in thickly population area in Kerala, pose serious threat to the existence of such industries. Under the Peoples' Planning in Kerala, about 30% to 40% of the plan fund is devolved to Local Self-Government Institutions (LSGIs) for implementation of development projects. The trend and pattern of LSGIs even in the major NR producing districts have not yet seriously considered the NR goods manufacturing as an important area of intervention in the local development process.

## Conclusion

Analysis of the rubber goods manufacturing industry has proved categorically that micro enterprises, particularly latex based and farm-produce extended valued added peasant industries have been driven out of the market during the trade liberalisation phase. The elimination of small producers is attributable primarily to the intra-week-month volatility in NR price and its unprecedented hike for more than a decade from 2003. The NR price hike has destabilized micro enterprises primarily on account of two factors: (i) latex based goods such as rubber band, gloves and rubber thread could not transfer the hike in cost of production to its consumers; (ii) the variable capital requirement of enterprises of latex products have increased many fold due to raw material price increase which the micro enterprises failed to mobilise and invest in an uncertain market. Associated with the counteraction geographical concentration of production is the NR consumption during the reform period. The emerging pattern is in conformity with the theoretical paradigm underlined in the economic reform policy of fostering capitalistic development in the non-tyre sector of the rubber goods manufacturing sector. There exists little institutional intervention mechanism to keep the small capital float in the market. In the liberalisation phase, imports of rubber products grew faster than exports especially in the non-tyre sector. It is indicative of the lack of competitiveness of non-tyre sector goods in the international market. Further, international market has been carving out a larger share of the domestic market for rubber goods. In the value of exports, the prominence of non-tyre sector has reduced from 45% in the 1960s to less than 25% in the 2000s.

Although the economic reforms is intended to reorganise production, it entails elimination of the inefficient manufactures from the arena of production, shifting the production possibility frontier up imply more employment opportunities of workers and augmentation of

the social productiveness in the system. The observed trend in the non-tyre sector of the rubber goods industry is in conformity with the generalized knowledge as widening and deepening of market relations would eliminate small enterprises which operate in the periphery or outside the full-blown capitalist mode of production leading to concentration of production and market power. An impending danger of such market concentration, in addition to rendering a vast size of works jobless and small capital to perish, is that the market for NR will be controlled by a few large buyers.

### **Policy Implication**

1. In order to ensure the existence of a wide and diversified domestic market for NR, the existence of tyre and non-tyre sector is equally important. The tyre sector continues to be the price maker and the non-tyre sector as price taker. If the non-tyre sector is concentrated in a few firms, NR will become a buyers market and the bargaining power of small and marginal farmers will be significantly reduced.
2. The institutional mechanism of the state and central governments for the micro enterprises are inadequate to outlive short-term crisis in the market. It is suggested that the intervention policies of the Rubber Board has to be significantly beefed up for the small enterprises in the sector to survive. The intervention has to be designed from both output and input markets. Establishment of more common facility centre for micro industries in the non-tyre sector is an important step towards facilitating the micro units from supply side.
4. In the decentralised planning process, LSGIs have not yet effectively intervened in the rubber goods sector in areas where NR production is constituted. To a great extent, it is attributable to lackluster policy outlook of the concerned agencies to promote the micro and small industries in the sector. The small

entrepreneurs need market identification, promotion, technological know-how and product development including rigorous training. The consciousness building process should also be extended to the functionaries of LSGIs and policy makers of the central and state governments for the facilitation manufacturers of the non-tyre sector.

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