

CHAPTER 2

THE NATURAL RUBBER INDUSTRY

2.1 Historical Development of Malaysia's Rubber Industry

Natural rubber or *Hevea brasiliensis* was first introduced to Malaya in 1877 as an ornamental plant. For more than ten years since its introduction, little progress was made in making rubber a commercial crop in Malaya. However, towards the end of the 19th Century, the discovery of a new tapping technique by Henry Ridley and the slump in prices of other commodities such as coffee gave planters the impetus to undertake the planting of rubber on commercial scale. Once started, the commercial planting of rubber never look back. Area under rubber grew quickly. In 1900, there were already about 2,400 hectares of rubber in Malaya and by 1910, the hectarage had risen to 218,900 hectares. The rapid expansion of rubber at the beginning of this century was fueled by rubber prices that soared in tandem with increase in demand. In 1900, the average annual prices for rubber was RM2.36 per kg, and by 1910, it soared to an all time high of RM9.70 per kg (Barlow 1978). The substantial returns to planters of rubber not only encouraged more western planters to venture into this new industry but had attracted local smallholders into the industry as well. Although their planting was on a much smaller scale, the area under these smallholdings grew rapidly. It was estimated that by the year 1910, there were already 50,000 hectares of rubber area cultivated by smallholders.

The early part of the development of Malaysia's rubber industry was dominated by western plantation companies which organized rubber planting in the form of estates. A number of factors were instrumental in aiding the expansion of these western firms in the rubber industry. First and foremost was the expertise these western firms had in the plantation industry. Many of the western firms that invested in rubber were planting other commodities such as coffee and sugar earlier. Their skill and expertise in the management of estates had enabled them to transform large track of areas including coffee plantations and virgin jungles into rubber estates. The second factor was the financial support given by British merchant companies such as Guthrie, Boustead and Harrison and Crossfield etc. whose names in the plantation industry remain well known today. Many of these companies provided the planters much needed capitals and eventually got themselves directly involved in the industry. The third factor was the colonial government's policy that encouraged rubber planting. Under such policy, infrastructure which is vital for rubber plantation improved substantially which in turn fueled the development of rubber.

The estate sector grew steadily until World War II when economic activities in the country were disrupted by war. After the war, dominance of the estate in the rubber industry began to decline. Although the rubber area under estates increased again following the outbreak of the Korean War, the total hectarage soon began to decline after 1953. On the contrary, the area planted under smallholdings increased steadily after World War II. From a total of 607,100 hectares in 1946, area under smallholders increased to 823,500 hectares in 1961 when for the first time in the history of rubber that total hectarage under smallholders overtook that of the estates.

Today, rubber remains an industry dominated by the smallholders. In 1994, total hectarage under smallholding stood at 1.44 million hectares while that of the estates was only 282,000 hectares.

Looking back, one has to admit that rubber has been the most important commodity in the history of Malaysia's economic development. Rubber, together with tin had often been referred to as the twin pillars of Malaysia's economy. The importance of rubber could be seen from its contribution to the country's export earnings over the years. In 1960 for instance, rubber alone accounted for up to 55 percent of Malaysia's export earnings in that year. Even until 1978, amidst the robust growth of the manufacturing sector and also other commodity sectors such as oil palm and timber, rubber still contributed about 21 percent to the country's export earnings. Apart from that, rubber was also a major source of employment in Malaysia, providing livelihood to more than 100,000 workers in the estates and half a million smallholders in the past.

2.2 Natural Rubber's Contribution to Malaysia's Economy

Today, Malaysia's rubber industry no longer assumes the role as that of the olden days. Following the government's decision to diversify the economy since the late 1950s, the country had seen the rapid expansion of other commodity sectors such as oil palm and timber, and also the manufacturing sector which have been assuming greater roles compared to rubber. In 1994, rubber contributed only about 2 percent to the total export earnings of the country. In terms of production, there has also been a substantial decline. From an all time high of 1.66 million tonnes in 1988, total

production went down to 1.29 million tonnes in 1990 and subsequently to an even lower level of 1.1 million tonnes in 1994. As a cash crop, it pales in comparison to oil palm which is still expanding at a rapid pace.

Notwithstanding its less significant role compared to the past, rubber is still an important industry in Malaysia. In fact, if the rubber product industry is considered as part of the natural rubber industry, it will be noted that the entire industry (upstream and downstream) measured in terms of export earnings is still expanding. In the past one decade, the downstream sector of the rubber industry has been expanding rapidly. From a small industry that consumed only 70,620 tonnes of rubber (both natural and synthetic rubber) in 1985, it has expanded to one that consumed 284,295 tonnes of rubber in 1994, a fourfold increase in ten years. The export earnings for 1992 and 1993 accounted for RM2.48 billion and RM2.98 billion respectively even surpassed that from raw rubber. The combined export earnings of raw rubber and rubber products in 1994 reached RM6.29 billion. As such, although the size of Malaysia's rubber industry in terms of hectareage and production may be declining, total earnings from the entire industry, including both upstream and downstream sectors, is still increasing. In the light of the problem of labour shortage in the plantation sector and greater emphasis on industrialization currently, the future of rubber seems to lie in the downstream sector. As for raw rubber, the industry is turning to the production of higher grade rubber and also the production of speciality rubber such as Epoxidized Natural Rubber (ENR) and Thermoplastic Natural Rubber (TPNR) which reportedly could widen the usage of natural rubber vis-à-vis synthetic rubber. Nonetheless, the markets for such new rubber are still small and their prospects a little hard to predict.

2.3 World Production and Consumption of Natural Rubber

Since the post-war period until 1994, the world production of natural rubber had more than doubled. From close to 2 million tonnes in 1955, the world production of rubber increased to 5.69 million tonnes in 1994. In terms of geographical distribution, majority of the rubber produced is found in South-East Asia particularly in Malaysia, Thailand and Indonesia. In 1994 these three countries combined produced more than 73 percent of the total rubber produced in the world (Appendix II). The other major rubber producing countries include India, China and Sri Lanka. In 1994, India, China and Sri Lanka produced 464,400 tonnes, 335,000 tonnes and 103,800 tonnes of rubber respectively. However, India and China are net importers of rubber since the total consumption of rubber in these two countries exceed that of their total production. Traditionally, Malaysia had been the leading producer of natural rubber and dominated about 39 percent of world production in 1960. In the following two decades, Malaysia's share of world production continued to increase. By 1979, rubber production in Malaysia accounted for 44 percent of world total production. However, since then, Malaysia's dominance in the world rubber scene began to decline. In 1980, its share in world production fell to 40.1 percent and declined further thereafter. By the late 1980s, it was evident that Malaysia could no longer hold on to its position as the biggest rubber producer in the world. In 1991, both Thailand and Indonesia eventually overtook Malaysia to become the leading rubber producers in the world. Today, Thailand remains the largest producer of rubber, producing 1.71 million tonnes of rubber in 1994, or about 30 percent of the world's total production of natural rubber (Fig. 2.1).

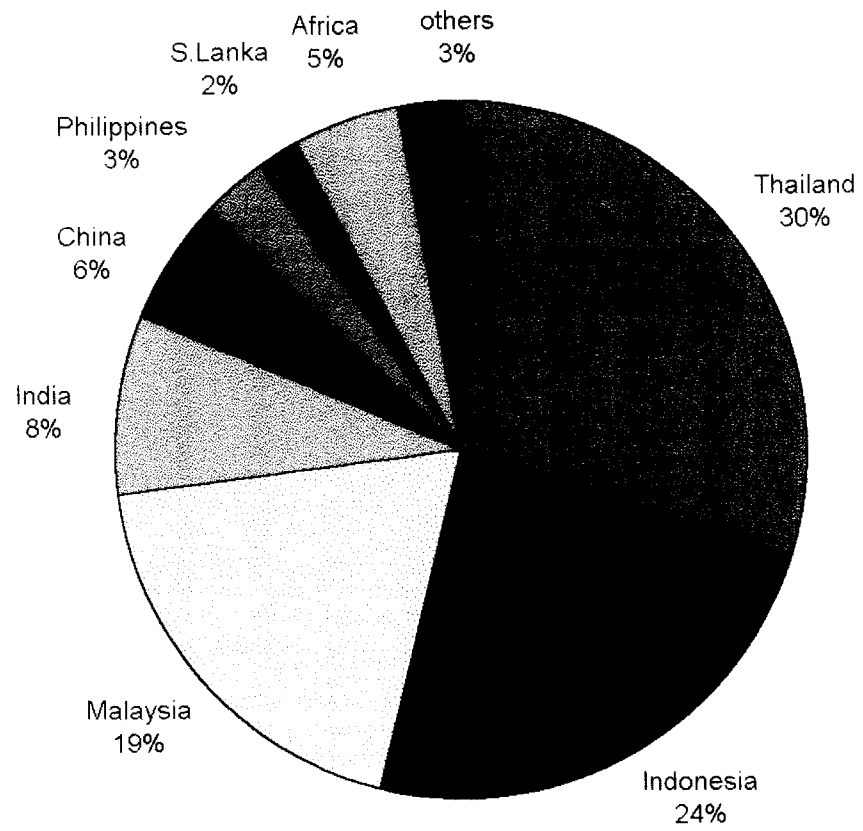


Fig.2.1 Major Producing Countries of Natural Rubber, 1994

Of late, there appears to be revived interest in rubber among some other South-East Asian countries such as the Philippines, Vietnam and Cambodia. Among these countries, development in the Philippines appeared most promising. From about 69,900 tonnes in 1980, Philippines' rubber production went up to 175,800 tonnes. Vietnam too, showed remarkable progress. Its production at 45,800 tonnes in 1980 surged to 113,000 tonnes in 1992 before coming down to 89,000 tonnes in 1994. In the past few years, Vietnam has shown keen interest in the revival of its rubber industry and was known to have solicited technical aid from Malaysia. With improved technological progress and better management expertise adopted in its rubber industry and newer clones of rubber which have much higher yield, Vietnam's rubber industry is expected to continue to grow in future. Apart from South-East Asian countries, African countries are another source of rubber supply though on a much smaller scale. Among the major rubber producing countries in Africa include Liberia, Nigeria and Cote d'Ivoire. In 1994, total rubber production in African countries amounted to 278,900 tonnes. With regard to Latin American countries where rubber originated, there has been little progress in rubber production. In 1994, Brazil, Guatemala and other Latin American countries combined produced about 67,500 tonnes of rubber.

About 70 percent of the world production of natural rubber ended in international market. The bulk of this rubber was largely consumed by western countries such as the United States and EC countries. Traditionally, the United States and EC countries had been the most important importers and consumers of natural rubber. In 1970 for instance, the U.S. and EC countries imported 50 percent of the

world supply of natural rubber. The only important importing countries in Asia were Japan and China. Today, the U.S. and EC still remained the biggest natural rubber importers although their share in the international market had declined to about 40 percent. The dominant position of the U.S., EC and also Japan in the international natural rubber market is attributed to the automobile and tyre industries in these countries which are the biggest users of natural rubber. About 70 percent of the world's total natural rubber is consumed by the tyre industry.

In the past two decades, the world has seen some changes in the pattern of consumption of natural rubber. First and foremost is the emergence of major consumers in the East, particularly South Korea, Taiwan, China and India. In the past twenty years, China's consumption had almost tripled from 210,000 tonnes in 1971 to 610,000 tonnes in 1992 while that of India jumped from 93,100 tonnes in 1971 to 404,600 tonnes in 1992. It should be noted that both China and India are also producers of natural rubber in the world. However, due to the rapid expansion of their rubber product industries, they have become net importers of natural rubber. South Korea is another East-Asian country that emerged as a big consumer of natural rubber. In 1994, Korea imported 143,000 tonnes of natural rubber from Malaysia, making it the biggest single importer of Malaysian rubber.

The other phenomenon is the increase in rubber consumption in producing countries. The three leading producers of natural rubber, Malaysia, Thailand and Indonesia, have shown remarkable progress in the development of their rubber product industries in recent years. The most prominent among the three is Malaysia.

In the past fifteen years, Malaysia's natural rubber consumption had increased from 62,064 tonnes in 1981 to 255,564 tonnes in 1994. However, contrary to the pattern of consumption in other countries where the bulk of the rubber consumed is sheet and block rubber, most of the rubber consumed in Malaysia is latex. Such pattern of consumption reflects the characteristic of Malaysia's rubber product industry which is dominated by latex-based sectors such as examination gloves and condom. Consumption of natural rubber in Thailand and Indonesia too have increased in the past few years. Between 1989 to 1994, consumption of natural rubber in these two countries have increased from 77,600 tonnes and 105,000 tonnes to 132,200 tonnes and 116,000 tonnes respectively.

2.4 Supply of Natural Rubber

The production or supply of natural rubber is influenced by both long-run and short-run factors. Among the factors that affect rubber production in the long-run include new planting, replanting, yield and the adoption of new technology in the rubber industry. The new planting of rubber could be seen from the increase in total area planted with rubber in the respective countries. It was estimated that there are about 9.07 million hectares of rubber land throughout the world (Barlow, Jayasuriya and Tan 1994). The bulk of rubber hectarage is found in the three leading producing countries i.e. Thailand, Indonesia and Malaysia. The effect of new planting on the supply of rubber is normally felt after a time-lag of several years. In the past, rubber trees took up to seven years to mature before latex could be extracted. However, the new breed of rubber trees have much shorter gestation period with some having maturity period of about five years only. Once tapping begins, the new trees normally

show an increasing trend of productivity for a few years before they level off for about ten to fifteen years. Thereafter, the productivity of the trees will taper until they are considered no longer productive and replanted. Unlike fruit bearing perennial crops such as oil palm and cocoa, the harvest of latex from rubber trees is not affected by seasonality. Rubber trees produce latex throughout the year except during wintering when the productivity of trees decline drastically for a duration of about six weeks. According to Tan (1984), the effect of wintering on world supply of rubber is not very significant as the timing of wintering varies from country to country. The shortfall in production in one country due to wintering could be compensated by increased production in other parts of the world. Such compensation is possible as the production of rubber is susceptible to control at any point in time. In the short-run, the amount of rubber produced depends on the decision to tap or not to tap the trees. When the intensity of tapping increases, production of rubber could be stepped up instantly. But once tapping intensity is reduced, production output slows down. It has to be mentioned here that the flexibility in rubber output is limited by the potential productivity of the trees. If the tapping of trees is done at the maximum feasible rate, increasing output by stepping up tapping intensity, though possible, could bring severe adverse effect in the long-run, something which most estates and smallholders are reluctant to do.

Comparing the estate sector and the smallholders, there is greater flexibility among smallholders in so far as controlling output is concerned. Because of their substantial investment and the inflexibility in adjusting the size of their labour force, most estates follow strictly the tapping of trees according to schedule. Consistent

income from the output of trees is essential in maintaining the labour force. As for the smallholders, particularly those with alternative sources of income, their output varies according to the price of rubber. The impact of fluctuation in prices on the smallholders is rather peculiar. A decline in the price of rubber may cause an increase or a decrease in production of smallholders depending on the quantum of decline. When the price of rubber declines slightly, there appears to be the tendency among smallholders to step up their production in the bid to compensate the decline in price with increase in output. However, when price declines substantially, the smallholders may simply abandon tapping and seek alternative sources of income which could lead to a drastic decline in rubber output. Such peculiar behaviour by the smallholders is made possible in areas where there are alternative sources of income. In the mid-1980s for instance, the average rubber yield of smallholders in Malaysia increased from 992.7 kg/ha in 1985 to 1,191.8 kg/ha in 1988 following steady increase in rubber price. However, when the price of rubber declined after 1988, the average rubber yield of smallholders declined to 987.9 kg/ha and 909 kg/ha in 1989 and 1990 respectively. Such drastic fluctuation in yield in the smallholding sector is attributed to the smallholders' return to the rubber industry when prices were good and also their departure from the industry when prices declined. The easy entry into and exit from the industry was made possible by the economic boom of Malaysia in the late 1980s which provided the smallholders alternative sources of income.

As in the case of price, the effects of replanting on rubber output is also twofold. In the long-run, replanting leads to higher output as the old rubber areas will be replanted with newer rubber clones with higher productivity. Since the inception

of research into rubber, there has been substantial improvement in the breeding of rubber which have far greater yield compared to the older clones. In 1988 for instance, the average rubber yield of Malaysia was 1,267 kg/ha compared to only 586 kg/ha in 1960. The substantial increase in yield is attributed to Malaysia's successful breeding programmes which have produced rubber clones with not only higher productivity but shorter gestation period as well. In the short-run however, the immediate result of extensive replanting leads to a decline in rubber output. The cutting of old trees which still produce latex, albeit at a lower level, reduces rubber output immediately. In 1974 when Malaysia introduced its Six-Point Crash Programme to rationalize production, expedition of replanting was considered one of the effective measures that could reduce rubber output immediately but improving productivity in the long-run

The impact of new technology on rubber output is normally felt in the long-run. Although it is capable of increasing rubber yield, the absorption of new technologies in the rubber industry is relatively slow. Two factors account for the time-lag between the introduction of new technology and its effect on rubber output. First and foremost, the assessment on new technology on perennial crops takes a long time. Before a new technology could be introduced to the industry, comprehensive test and experimentation have to be carried out to ensure that it will not have adverse impact on the trees. A case in point is the introduction of REACTORRIM to the smallholders in Malaysia. REACTORRIM is a new technique of extracting latex from rubber trees which combined the use of a special device that emits stimulants into holes punctured in the trees. The latex that flows from the hole will be collected

in a plastic bag which could be collected once a week. By using such method, it is said that rubber tappers need only to puncture the trees once a week thereby solving the woes of labour shortage faced by the industry currently. However, such new technique which was invented by the Rubber Research Institute of Malaysia (RRIM) a few years ago was not recommended to the smallholders until lately. The reason is that it takes at least a few years to experiment if such new technique of extraction will have any adverse effect on the economic lifespan of rubber trees. In particular are the new clones of rubber which may have the tendency of producing high yield in the first few years, but dry up after only a few years of production. The second reason being that the absorption of new technologies by the industry is relatively slow. The use of new technology particularly that of labour-saving which entails the collection of latex once every few days was plagued by problems. One common problem is the destruction of devices attached to rubber trees by pests and animals. Another is theft problem in the estates and smallholdings which again causes substantial losses to estate owners and smallholders.

2.5 Demand for Natural Rubber

Compared to the supply of rubber, determinants of demand for rubber is much more complex. Generally, demand for rubber is a derived demand. It is derived from the consumption of rubber by end products such as tyres and general rubber goods whose demand is again determined by a number of other factors such as income, prices and consumer preference etc. However, the most important determinants of rubber demand are development in the tyre and automobile industries. Tyres have always been the most important determinant of rubber demand. Despite a lessening

share in terms of rubber consumption amidst the rapid expansion of the general rubber goods sector lately, tyres still account for some 50 percent of all elastomer (natural and synthetic rubber) produced in the world today (Barlow, Jayasuriya and Tan 1994). In the case of natural rubber alone, about 70 percent of natural rubber is consumed by the tyre sector.

Tyres may be classified into passenger vehicle tyres, commercial vehicle (e.g. trucks, earthmover) tyres and aircraft tyres etc. The content of natural rubber in these tyres varies from one to another. In passenger vehicle tyres, the content of synthetic rubber is generally greater than natural rubber due to its low rolling resistance and its good wet grip which are attributes essential for the performance of passenger car tyres. In commercial vehicle tyres and aircraft tyres however, the content of natural rubber is much higher than that of synthetic rubber since the essential quality of these tyres is heat resistance rather than low rolling resistance. However, due to the domineering position of passenger car tyres in the tyre industry, it is the consumption of natural rubber by the passenger car tyre industry that has the biggest impact on the demand for natural rubber.

Traditionally, tyre makers in North America and Western Europe have been the major users of natural rubber, producing tyres for their automobile industries which are the largest in the world. As there is a direct relationship between consumption of tyres and demand for automobile in these two continents, at one time, the demand for rubber hinges directly on the development of the automobile industries and economic condition in the west. When there was general improvement

in the economic growth in North America and Western Europe which usually led to greater demand for cars, both demand for and prices of rubber could be expected to move up. However, when the western world was hit by recession, rubber planters, both estates and smallholders could expect difficult time ahead. Compared to North America and Western Europe, Eastern European countries have much less influence on the rubber market. One major factor that accounts for the lack of influence of these countries on natural rubber demand is their bias against natural rubber. Most industries in Eastern Europe prefer to use synthetic rubber rather than natural rubber. Such bias perhaps stems from the fact that synthetic rubber could be produced locally in these countries but natural rubber must be imported overseas. In the mid-1980s, the Asia-Oceania countries have emerged as important tyre producers as well. Among the major producers of tyres in this region are Japan, China and Korea. While Japan's production seemed to have slowed down, China and Korea's production have been expanding rapidly. Such rapid expansion in their tyre industries is a result of the economic growth of these two countries which leads to increased demand for automobiles and commercial vehicles which in turn generates demand for tyres.

Since the tyre industry is the single most important determinant of rubber demand, technological changes in tyre manufacturing also cast significant impact on the demand for rubber. Until the 1960s, tyre manufacturing was dominated by cross-ply tyres¹ which consumed greater proportion of synthetic rubber. By 1980s however, most of the cross-ply tyres in the world had been gradually replaced by radial tyres² which have higher content of natural rubber vis-à-vis synthetic rubber. The popularity of radial tyres is attributable to its higher tread life, greater comfort at speed,

improved cornering power and greater stability. The effect of radialization in the tyre industry on demand for rubber is again twofold. Although the higher proportion of natural rubber in radial tyres leads to more consumption of rubber, the longer tread life of radial tyres may reduce the demand for tyres thereby leads to decline in consumption of natural rubber in the long-run. However, there has been no evidence thus far to suggest that radialization will cause decline in rubber consumption.

Apart from tyres, the other products that are made from natural rubber include industrial products such as belts and hoses, footwear, seals, rubber-covered fabrics, sheet linings etc. Since the mid-1980s, latex-based industries that produce products such as gloves and condom have also become important users of natural rubber. In 1994, the world total consumption of natural rubber latex stood at 666,000 tonnes, an increase of about 12.7 percent compared to the total consumption of 591,000 tonnes in 1989. Among the important users of latex, Malaysia is the most prominent. In 1994, the rubber-based industry of Malaysia consumed 175,200 tonnes of latex, making this country the single largest user of latex and the biggest producer of latex-based products. The large amount of latex consumed in this country also made the pattern of rubber consumption peculiar compared to other countries. In Malaysia, about 70 percent of the natural rubber consumed is latex, a pattern in stark contrast to the world pattern of natural rubber consumption where latex accounts for only about 12 - 13 percent of the total natural rubber consumption.

2.6 Natural Rubber and Synthetic Rubber

The relationship between natural rubber (NR) and synthetic rubber (SR) is more complex than most people would have thought. SR is both a competitor and substitutes to NR. When SR was first created, there was no doubt that it was meant to be a substitute for NR. The severe shortage of NR and its rising prices during and after the Second World War was among the major factors that has pushed rubber consuming countries to intensify R & D on SR with the intention of making SR the dominant rubber in the elastomer sector. However, due to the distinct technical properties of NR and SR, we find that NR and SR are more complements rather than substitutes. Although the market shares of NR and SR still vary from year to year, they do not change drastically.

One major advantage of SR is its cheaper and stable prices. Unlike the planting of NR which is characterized by labour-intensive techniques and vast amount of land, SR is a capital-intensive product requiring heavy investment in equipment and large amount of chemicals, and is made in big plants by processes with great economies of scale. Being an industrial product, the price of SR can be fixed on a cost-plus basis and thus has greater stability compared to NR. The stability in SR price makes it easier for rubber product manufacturers to estimate the cost of materials used in their products. Another cost consideration is the proximity between the areas of production and consumption of SR. Unlike NR which is mainly found in South-East Asia, SR production facilities are located in countries in North America, Europe and Japan, which are also among the biggest users of elastomer. The shorter

supply lines of SR between areas of production and consumption means considerable cost saving for the manufacturers.

Another advantage of SR in comparison to NR is the technical progress that has been achieved in SR since the post-war period. It has been said that the present array of end-users for rubber gives priority to SR. The main reason being that the biggest users of NR such as U.S.A., EC countries and Japan are not NR producers themselves. In their effort to ensure a steady supply of elastomer for their rubber product manufacturers, and also to reduce their dependence on NR which must be imported from foreign countries, most of the R & D carried out in the rubber manufacturing industry is based on SR technology. In fact, the main groups of rubber products manufacturers are intimately involved in the SR industry.

Today, based on end-use performance grounds, the elastomer market can be divided into three areas;

- i) where NR possesses technical superiority;
- ii) where SR possesses technical superiority;
- iii) where neither NR nor SR possesses absolute technical superiority and competition exists.

It is thought that area (i) accounts for about 25 - 30 percent of the elastomer market, and area (ii) accounts for about 25 percent of the market leaving 45 - 50 percent of the market for area (iii). In other words, NR and SR competes directly for

about 45 - 50 percent of the elastomer market and the decision of manufacturers to use either NR or SR is made on the basis of cost consideration, reliability of supply and processibility. Because most SR are cheaper than NR, they have succeeded in capturing most of the remaining elastomer market (EIU 1980). Since the 1980s however, there appeared to be the trend for rubber product manufacturers to increase the utilization of NR. In 1980, NR accounted for slightly less than 30 percent of the world consumption of elastomer with the rest dominated by SR. In 1994 however, the market share of NR had increased to 39 percent.

2.7 Natural Rubber Price Formation

As in the case of most other commodities, the price of natural rubber is determined by the interaction of supply and demand forces. Factors such as new planting, replanting, technological progress in rubber planting cast significant impact on rubber price as they tend to increase the supply of natural rubber in the long-run and thus depress natural rubber price. However, rising labour cost and the competition for land are among the factors that will enhance natural rubber price. The labour cost element is particularly important since rubber planting and tapping are labour-intensive tasks. It has been estimated that labour cost alone accounts for up to 70 percent of the total cost of production of natural rubber. The key short-run factors that affect natural rubber price and supply are tapping intensities which again are influenced by price levels and also buyer-seller relationship operating in spot markets dealing with temporary imbalances. As stated above, although the supply of natural rubber is price-inelastic, it could still be adjusted provided that the tapping of

rubber is not done at its optimum rate. Rubber tappers could increase output by raising tapping frequency or reduce output by stopping their tapping task

The long-run factors affecting natural rubber price through demand include the general income level in consuming countries that determines rubber consumption. As noted above, the demand for rubber is derived from its consumption by the rubber product manufacturing sector. When increased income leads to greater consumption of rubber goods, there will be greater demand for natural rubber and natural rubber price will be pushed upward. On the contrary, a decline in general income level which causes lesser consumption of rubber goods leads to reduced demand for rubber and poorer price. In the short-run, one major factor for natural rubber on the demand side is stock. Stocks include stocks stored in producing and consuming countries plus stocks stored in ships on ocean journeys. In the early 1990s, about 30 percent of world natural rubber stocks were stored in producing countries and 45 percent stored in consuming regions with the remaining 23 percent stored in ships heading towards various destination. Among these different stocks, the ones stored in consuming countries have the largest impact on natural rubber prices (Barlow, Jayasuriya and Tan 1994).

Apart from the above, natural rubber price is also affected by the price of synthetic rubber. Natural rubber price generally moves in tandem with that of synthetic rubber. An increase in synthetic rubber price leads to increase in natural rubber price while a decline in synthetic rubber price brings down natural rubber price as well. Since 1973 when the price of oil, a major raw material used for the

making of synthetic rubber, became more volatile, movement in the price of oil has often been taken into account in forecasting the future movement of natural rubber. When the Gulf Crisis broke out in 1990, concern over the supply of oil from the Middle-East gave the dampened natural rubber market a much needed push. However, the much awaited stimulus only brought a short-spell of bullish sentiment in the market. Prior to the mid-1980s, natural rubber prices had been maintained at a premium over those of synthetic rubber. In fact, synthetic rubber prices were a stabilizer that checked the further decline in natural rubber prices. However, in the last quarter of 1984, the first quarter of 1985, and from 1989 to 1991, the prices of natural rubber were at a discount to synthetic rubber. Natural rubber price only gained back its position in 1993 when the price rally in the rubber market pushed prices to a level that had not been seen in many years (Fig. 2.2).

In the late 1980s, there was the argument that the practice of direct trade was one major factor that has depressed natural rubber price. Advocated by Malaysia in the 1970s, direct trade is currently the dominant trade practice in natural rubber market. It has been estimated that about 60 - 70 percent of the total amount of natural rubber traded goes into direct trade while the rest ended in open market. Direct trade includes direct purchasing on long-term contracts by the tyre manufacturers and the state corporation of countries such as China, India and the former Eastern European countries. Those who believe that direct trade depresses rubber prices argued that the expansion of direct trade, mainly for TSR 20 and RSS 3, has rendered the interaction of the supply and demand forces in the open market inefficient. Due to the small volume of rubber traded in the open market, there is little supply and demand forces

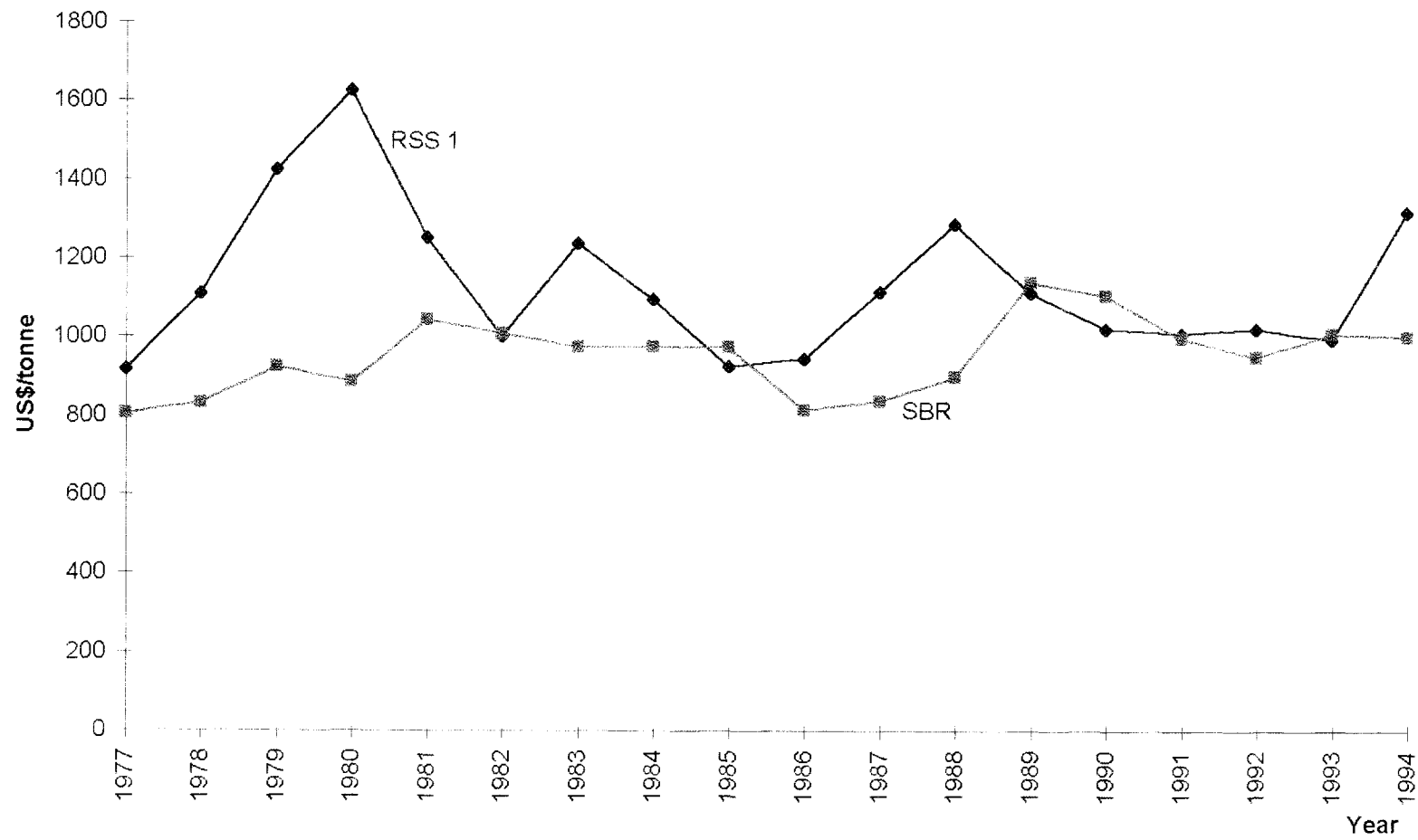


Fig 2.2 RSS 1 and Styrene Butadiene Rubber (SBR) Prices in New York Market, 1977 - 1994 (US\$/tonne)

Source: Rubber Statistical Bulletin

in play. The lack of interactions between supply and demand in the rubber market not only render the market mechanism ineffective but has caused prices to become less transparent. In addition, since the bulk of natural rubber traded in open market are of the lower grades TSR³ and RSS, the prices determined in the open market do not reflect the prices of natural rubber of higher grades. When these prices are used as reference for higher grade rubber in direct trade, the prices of such rubber are depressed.

The argument that direct trade depresses natural rubber price received pretty wide acceptance in the late 1980s and early 1990s when the price of natural rubber remained low despite the deficit in production compared to consumption. However, the rally in rubber price in 1994 and 1995 seemed to suggest that such argument no longer hold. In this two years, natural rubber price had been persistently maintained at very remunerative level for producers. The high price of natural rubber following shortfall in supply suggests that in the long-run, it is still the fundamentals that determine prices.