

The Global Rubber Market Riding the Oil Wave

A Long-term Call Option on Oil

We have witnessed how oil prices have sky rocketed in recent years. And we have seen how individuals, companies and even countries have amassed a fortune over the high oil price period. The trouble is, however, that investing in oil has always been a game for big guys with the dough. In principle, this may not be fair for investors lacking of deep pockets like them. In our eyes, this is perfectly all alright because we have got rubber (and we don't mean condoms).

Despite NR supply declining, NR stock continues to increase

Even though world production of Natural Rubber (NR) is lower, the more pronounced decline in consumption has resulted in widening of the global NR surplus from 150,000 tonnes at the end of 2008 to 290,000 tonnes in the year to March 2009. SR consumption is estimated to have plunged by -11.3% in the twelve months to March 2009, compared to a production decline of -4.6%. This has only resulted to NR stockpiling as demand for rubber products declined drastically since the global recession in 2007.

While NR stockpiles, NR prices have been trekking nowhere but upwards

As of 4th quarter 2008, NR stockpiles amount up to 2,172,000 tonnes with NR price falling 65% at 1.12 US dollars per kg in the week ended December 13. When anything stockpiles, it will only mean one thing; prices have fallen concurrently. Contrary to conventional wisdom, NR stockpiles have been increasing with prices as Chinese buyers saw the revival in demand in the tire industry. Additionally, the US\$ to SDR has gradually weaken since beginning of 2009, resulting in higher NR prices.

Even with high prices of NR, SR is too expensive to substitute NR

Global NR consumption declined by over 0.4 million tonnes between the end of 2008 and March 2009, with the rate of decline in consumption accelerating from -1.6% to -6.8% in year-on-year terms over the period; global SR consumption fell by over 0.7 million tonnes over the same period, with year-on-year consumption growth declining from -4.5% to -11.3%. To put things into perspective, the decrease in consumption of SR has been more drastic as the price of SR has been rising more rapidly than that of NR. In fact, SR is derived from petrochemical feedstock which explains its high correlation ($R^2=0.81$) between SR price and crude oil price. Oil prices has been raising over the past three years which has resulted in the price ratio of New York TSR 20 and USA SBR falling from a high of 123.6 in 2006 to 108.7 in 2008.

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Shortage of NR in the Long Run

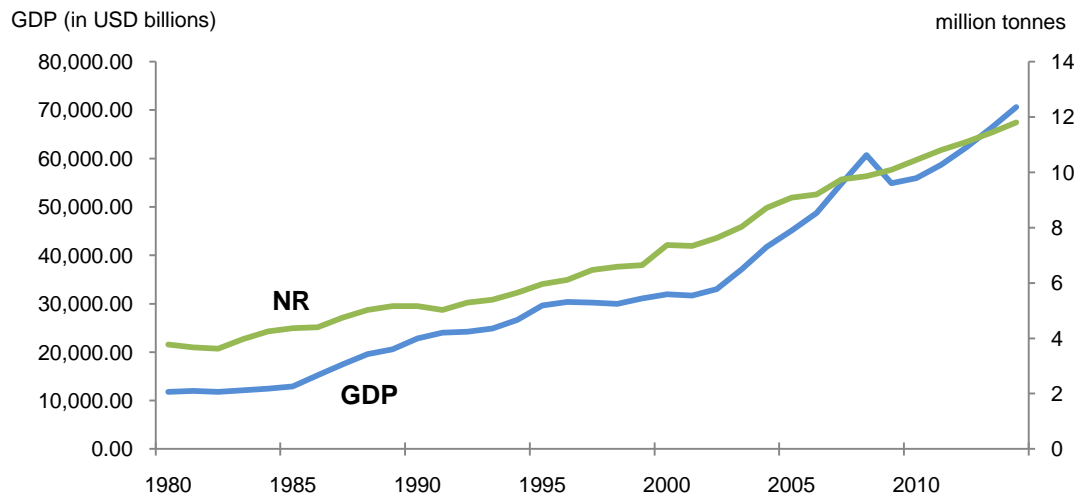
In view of crude oil price hovering around the \$73 dollars mark in June 2009, we believe crude oil price will continue to escalate. We expect a shortage to hit the NR sector as early as 4th quarter of 2009 when the global economy recovers.

Demand for NR Poised to Grow

High correlation between NR consumption and world GDP

To a large extent, NR is not replaceable by SR. For the past 30 years, the demand for NR has move in tandem with world GDP. With no surprise, our research has shown a high positive correlation (with a $R^2 = 0.98$) between demand for NR and world GDP. In the long run, we expect this relationship to continue, resulting in greater demand for NR.

Chart 1: 1980 to 2014 world consumption of NR and world GDP

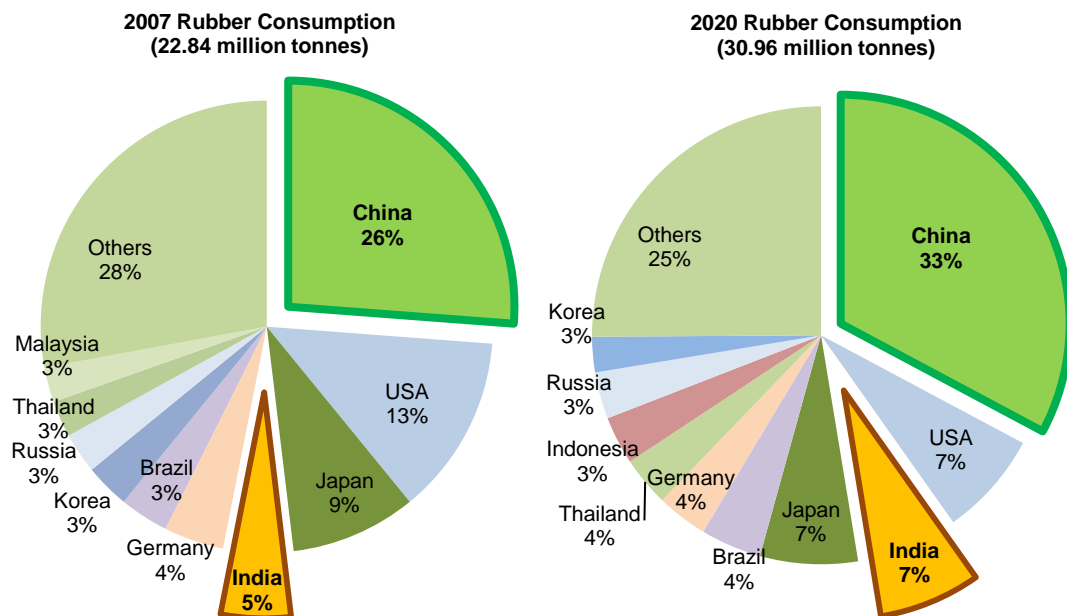


Source: Colombo Rubber Traders Association. IMF Global Forecast of GDP

Shift of rub consumption towards Asia Pacific

As a result of world economic growth and population trends, the centre of gravity of the world's elastomer industry has shifted from the West to the East. The Asia Pacific region has been the largest consuming region since 1986 and until the Asian Financial crisis in 1997 also recorded the fastest growth in consumption. In fact, the Asia Pacific's share of world consumption fell slightly from 43.4% in 1996 to 41.0% in 1998 before recovering rapidly since then. The recovery effect from the crisis coupled with the dramatic growth in China has brought Asia Pacific's share to 55.6% in 2007. To understand the source of demand better, we shall take a closer look at the NR consumption levels of the top 10 countries globally.

Chart 2: Comparison of the top 10 NR consuming countries



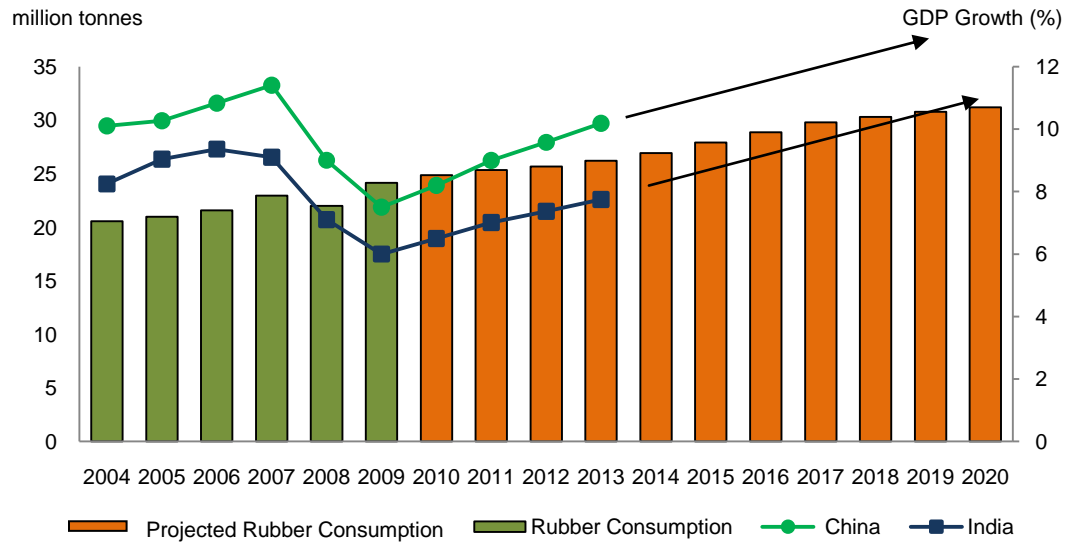
Source: Colombo Rubber Traders Association

China the largest rubber consumer

More recently, China's passenger-vehicle sales rose 48% in June, the biggest jump since February 2006, as government stimulus spending spurred a revival in the world's third-largest economy. In line with higher auto sales, the Chinese economy grew 7.9% in the second quarter from a year earlier after expanding at the slowest pace in almost a decade in the previous three months. To put this into perspective, China is the only one of the 10 biggest economies that is expanding, highlighting the role the nation may play in easing the current global recession.

Since 2007, China has dominated the NR consumption market and became the fastest and largest rubber consuming country in the world. The Chinese will continue to extend this dominance to 33% in 2020 with India taking the second spot followed closely by America and Japan. With NR consumption increasing from 22.84 million tonnes in 2007 to a projected 30.96 million tonnes, we believe the growing dominance of the Chinese and Indian markets will have significant impact on demand for NR. To illustrate this point, Chart 3 shows that the consumption of NR and the forecasted GDP of the two economic powerhouses' moving in tandem in an upward fashion until 2020.

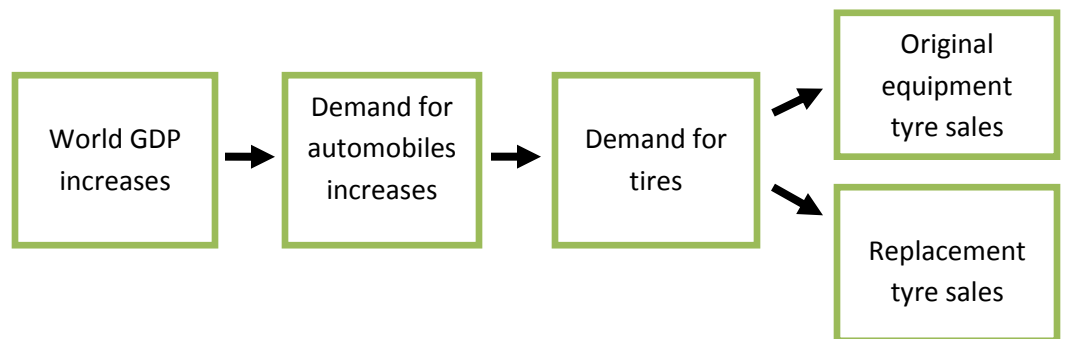
Chart 3: 2004 to 2020 world consumption of NR with China and India GDP



Source: Colombo Rubber Traders Association, IMF Global Forecast of GDP

The underlying factor that determines the strong correlation between consumption of NR and world GDP will be demand for automobiles; or more appropriately, rubber tires. According to the Colombo Rubber Traders Association, the tire industry is expected to grow at a CAGR of 2.77% until 2020. By 2020, the tire industry will consume approximately 61% of the NR produced, amounting to 19.03 million tonnes.

Chart 4: The underlying factor in demand for rubber through automobiles

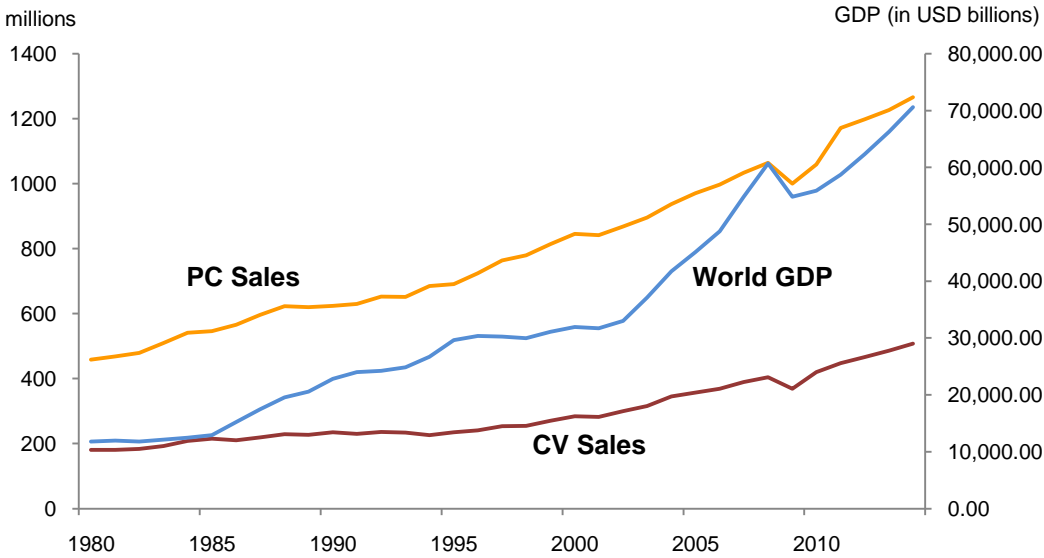


Source: Calamander Capital Analysis

High correlation between automobiles and world GDP

Our research has further substantiated a very high correlation ($R^2=0.98$) between automobiles (commercial vehicles and passenger cars) and world GDP. From a long term perspective, we expect that world GDP to continue to increase with demand of automobiles. In addition, technological innovations will also boost consumption of NR.

Chart 5: 1980 to 2014 demand for commercial vehicles (CV) and passenger cars (PC) with world GDP



Source: Colombo Rubber Traders Association, IMF Global Forecast of GDP

Supply Having a Hard Time Catching Up with Demand

Drastic fall in NR supply in 1st Quarter 2009

The first four months of the current year witnessed a drastic drop in production of NR across countries. With the exception of China, production dropped in all the Association of Natural Rubber Producing Countries (ANRPC) which together account for about 94% of the commodity's global supply. In sharp contrast to the other producing countries, China's NR production posted more than five-fold increase during January-April 2009, according to estimates from Rubber Research Institute in Hainan Province. As per revised forecasts, the country's NR production during 2009 would be 610,000 tonnes or 15.1% higher than the output in 2008. This substantial increase largely shadows the drastic fall in output in the previous year caused by weather related calamities. Production had dropped by 9.9% during 2008.

A major structural change in the NR industry has been the steady decline in estate involvement (as companies switched to less labour-intensive crops such as oil palm) and the increasing importance of the smallholder area.

Chart 6: 1998 to 2005 output of estates and smallholders ('000 tonnes)



Source: UNCTAD

Smallholders are increasing in numbers

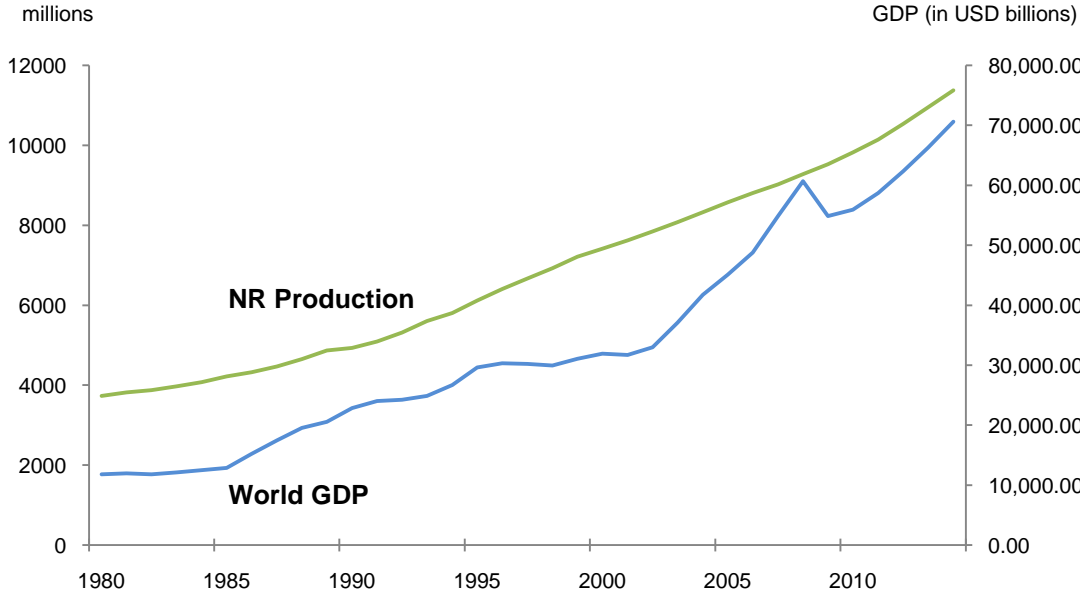
According to estimates from the International Rubber Study Group (IRSG), smallholdings (by convention, less than 40 ha) accounted for over 78% of world NR production over the period 1998-2003. The balance of planted area and output was accounted for by rubber estates. Smallholding production edged upward from 5,270 thousands of tonnes in 1998 to 6,310 in 2003 (that is, it grew by an average annual rate of 3%, or about 173 thousands of tonnes). Estate production moved from 1,550 thousands of tonnes in 1998 to 1,670 thousands of tonnes in 2003, or increased by an average annual rate of 1% per cent. It should be noted that the 40 ha threshold is somewhat academic (in most countries the average smallholding size is likely to be 2-3 ha). In addition, statistics on smallholdings are inevitably less reliable than those available for estates.

Smallholdings do not enjoy economies of scale

NR production is technically and economically viable for both estates and smallholdings. However, there is an apparent technological divergence between smallholder and estate production. Estates capture sizeable economies of scale and vertical integration (as well as some diseconomies -notably, bureaucratic costs, and negative social externalities). They have a serious propensity to innovate. By contrast, smallholdings do not enjoy economies of scale and are in general more conservative.

Due to the lucrative nature of rubber commodity, trends of replanting, newplanting as well as yield have also risen over the years. As a result, production output of NR has been rising over the last 30 years. Our research has also displayed a strong correlation ($R^2=0.98$) between production of NR and world GDP.

Chart 7: 1980 to 2014 NR production and world GDP



Source: Colombo Rubber Traders Association, IMF Global Forecast of GDP

Productivity Increases Moderately

NR average yield has been increasing

The average yield of ANRPC member countries have been increasing over the past six years at a CAGR of 4.36%. This has been the result of greater involvement from the government into the commodity sector. According to the Rubber Research Institute of Sri Lanka, NR yield per hectare has increased up to 3,000 kg in May 2009 compared to 350 kg in the past. There is also evidence that there is strong collaboration between the major rubber producing countries. More recently, India imported high yielding chemicals from Malaysia to boost rubber yield. As such, we expect the average yield to continue to increase in the long run.

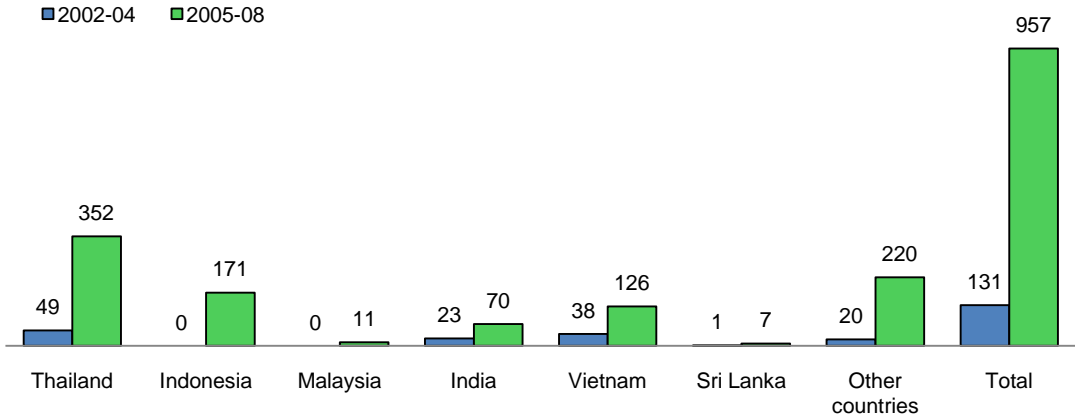
Chart 8: 2002 to 2008 average yield ANRPC (kg/ha)



Source: ANRPC

Of the 1.1 million ha new planted rubber trees during 2002-08, close to 87% (0.96 million ha) was planted in the period of 2005-08. Despite relatively large areas of new planted rubber trees in the period of 2002-08, rubber tree planting rate was too low prior to 2004. Within the period of 2005-08, planting rate from 2006 was much higher than projections. Governments of major NR producing countries have taken a more proactive role in sustaining their supply. For instance, Malaysia aims to maintain a land area of at least one million hectare every year for rubber cultivation, with an annual new planting of 20,000 ha. We expect new planted rubber plantation to be grow at a relatively moderate rate in the coming years.

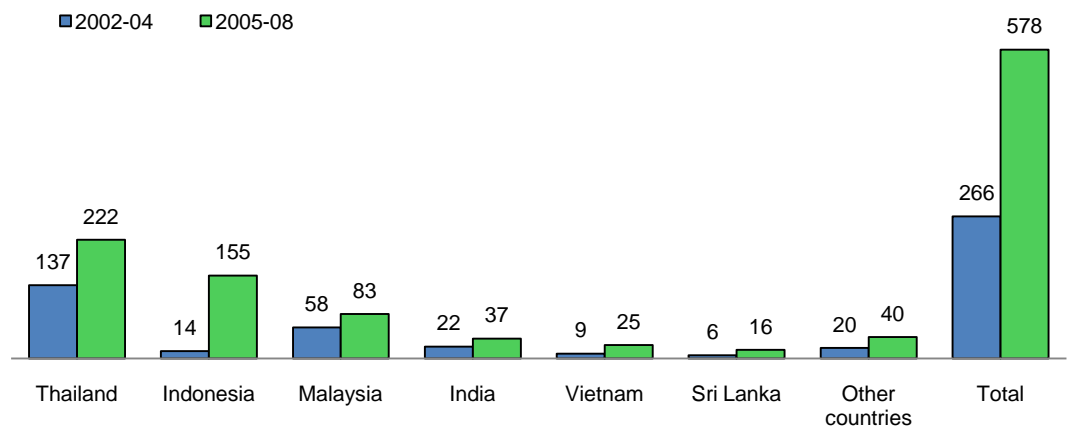
Chart 9: 2002 to 2008 Total area newplanted ('000 ha)



Source: ANRPC

Notwithstanding current trends in replanting, it is still considered to be cyclical. Replanting rubber trees is largely dependent on age structure of trees, which in turn depends on historical planting trends. There has been planting booms in the past, largely in response to cycles in NR prices. In the period of 2003 to 2008, high NR prices has induced postponement by 2-4 years. This is primarily due to the fact the income loss arising from yield decline (due to ageing) can be compensated by higher prices. Some extent of area that had to be replanted in the past four years might have been postponed. This postponed replanting may take place in the next couple of years as area enters into gestation phase. In line with our expectation on replanting, we anticipate that there will be an increase of replanted rubber plantations in the near future.

Chart 10: 2002 to 2008 Total area replanted



Source: ANRPC

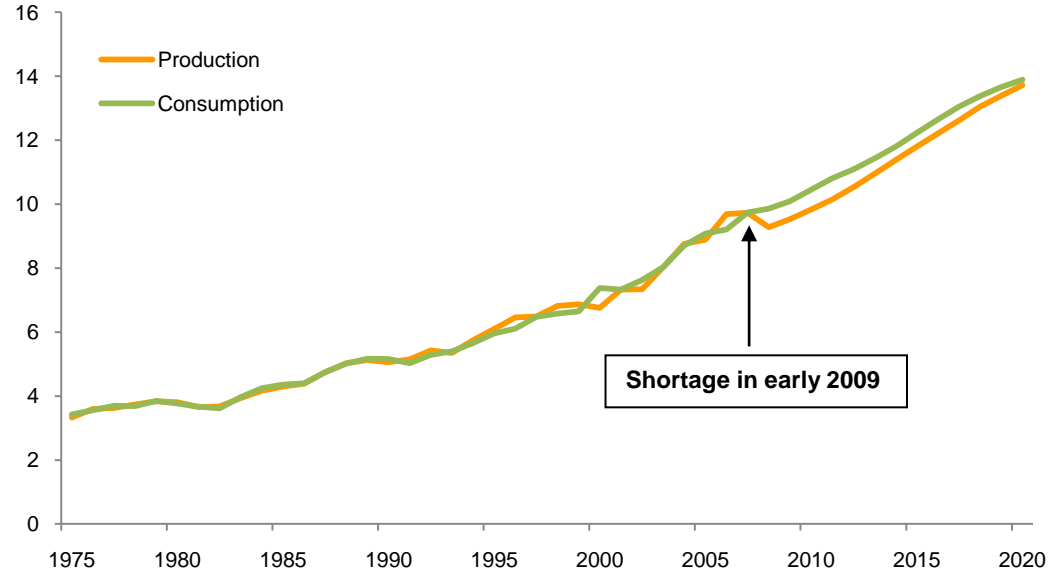
Imminent Shortage

Though production of rubber supply will increase, the increasing opportunity cost will eventually be faced by all rubber producing countries when the time comes. Next will most likely be Thailand, followed by Indonesia. The top three NR producing countries, namely Thailand, Indonesia and Malaysia have been increasing their emphasis on the manufacturing sector at the expense of the agricultural sector. Most Malaysian plantation workers are now foreigners, whose employment requires a government levy plus recruitment expenses. Malaysia, Thailand and Indonesia have developed downstream commodity industries, e.g. Malaysia is now the world's largest producer of latex rubber-goods.

More importantly, demand from the emerging economies will grow much faster than rubber production. Our research has shown that as early as late 2009, consumption will overtake production, resulting in a probable shortage. This scenario will most likely happen as supply is relatively fixed in the short run due to maturity of rubber trees.

Chart 11: 1975 to 2020 consumption and production of NR

Million tonnes



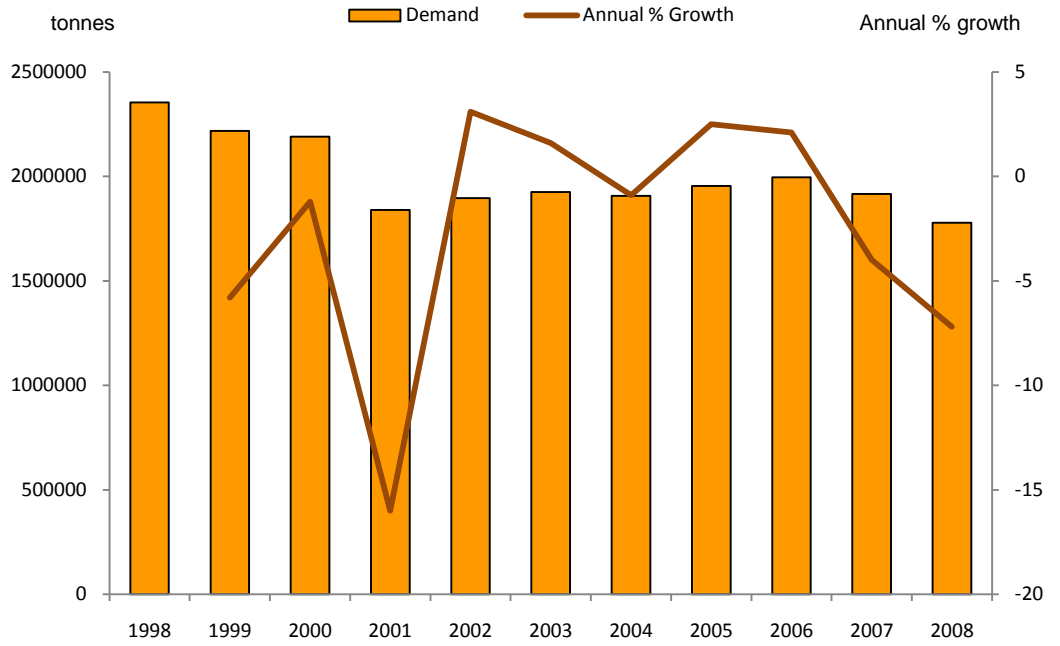
Source: Colombo Rubber Traders Association

SR is not the Perfect Substitute

From 1914 to 1942, the only elastomer available in commercial quantities was NR, but in the latter years, the United States Government implemented a programme to develop the synthetic material which eventually contributed to the success of the Allied war effort. By 1944, output of SR was over 800,000 tonnes. It should be understood that SR and NR are to some degree substitutes as well as complimentary products to each other. Their relationship is through both their similarities and their differences. It has to be pointed out that in recent years, NR has been gaining dominance over SR.

Dwindling SR Consumption

Since 2003, demand for SR in the US has been declining 1.6% annually. The primary application is tires and tire components, with other end uses being industrial and automotive rubber products. Automotive industry being the largest SR market, led the largest decline of 2.9% of the demand for SR used in tire and tire component applications.



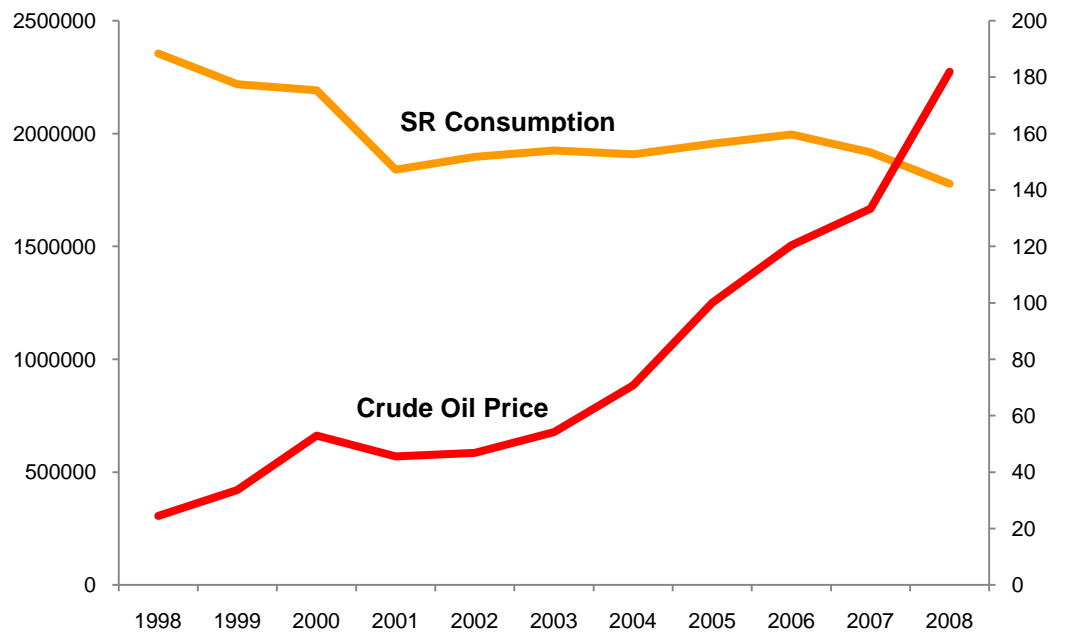
Source: Freedonia Focus on SR 2009

As SR is derived from petrochemical feedstock, we believe that there is a moderately strong relationship ($R^2 = -0.58$) between consumption of SR and crude oil price. This makes absolute sense as higher crude oil price will translate into higher SR price, resulting in making NR a more attractive option as an alternative.

Chart 13: 1998 to 2008 consumption of SR and crude oil price

tonnes

Price index, 2005=100



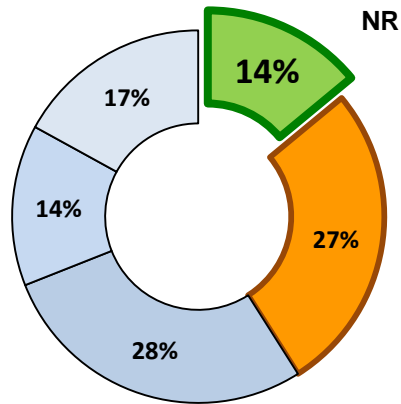
Source: Freedonia Focus on SR 2009, IMF

Growing dominance of NR

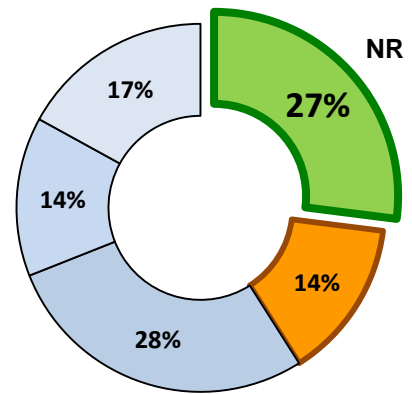
Emerging economies has industrialized at an unprecedented rate that requires end products that consumes NR to support their economic development. One major end product that requires a large composition is that of commercial vehicle tires. In fact, the larger the tire, the more NR it consumes.

Chart 13: Composition of passenger and truck tires

Average Weight:
New 25 lbs, Scrap 20lbs



Average Weight:
New 120 lbs, Scrap 100 lbs

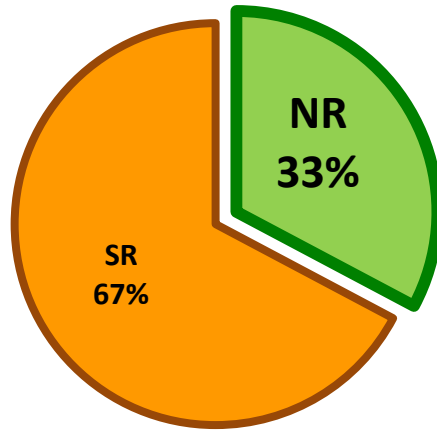


Source: UCTAD

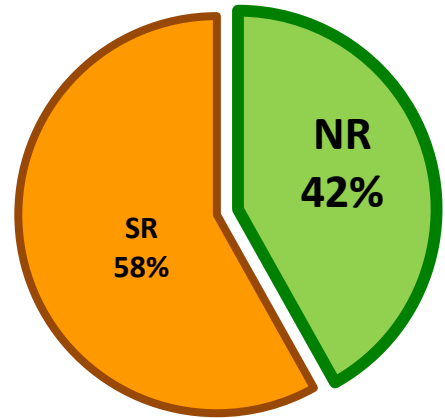
The 1950s and 1960s saw a period of intense market competition between NR and SR. Within 20 years, improved types of SR began to dominate industrial consumption, holding almost 71% of the market by 1979. Technological changes, including the development of radial tires and the increasing use of NR latex products, have caused this share to drop quite rapidly since then. World consumption of NR rose by about 32% while that of SR increased by only 4% and total elastomers by 14%. Growth in NR usage has been stronger than that of SR for the period of 1998-2005 (a growth rate of 4% -annual average- as compared to 3% for SR). NR consumption indeed grew of 5.5% in 2005 compare to 1.3% for SR consumption, which led to a ratio of 57.7% (the weakest since 1964).

Chart 14: 1975 and 2008 consumption of the type of rubber

1975 total world consumption of 10.47 million tonnes



2008 total world consumption of 23.56 million tonnes



Source: Colombo Rubber Traders Association

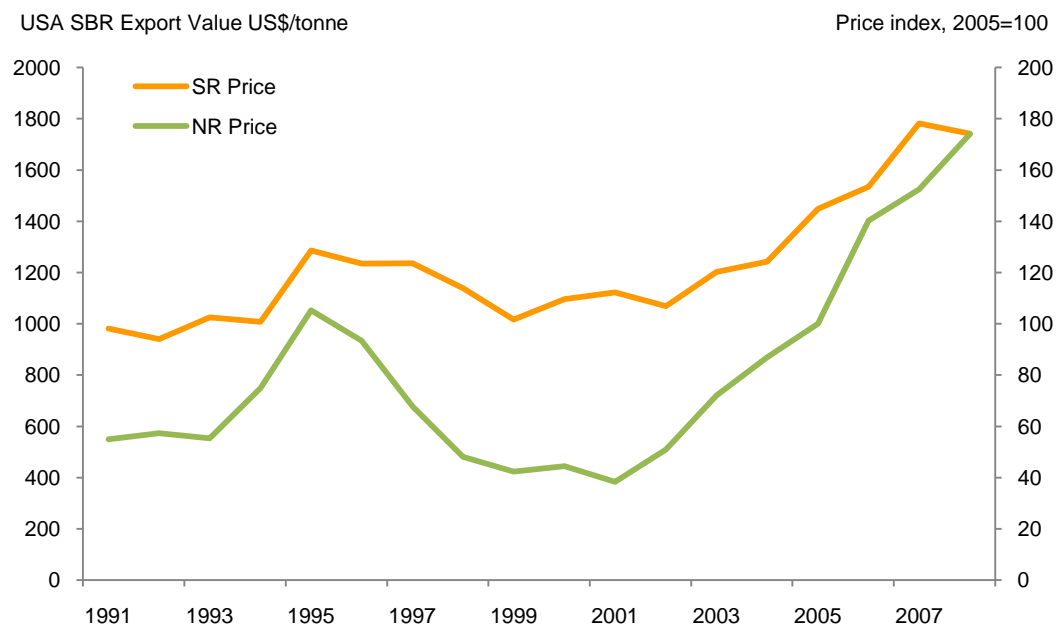
One of the fundamental reasons in the dominance of NR consumption is the collapse of the Soviet Union, which consumed a massive amount of rubber, with less than 10 percent NR. There was also a significant change in the relative share in the utilization of NR between the developed and developing regions. Example would be the share of the developing countries in global consumption of NR rose from 42 percent to 48 percent between the periods of 1988-1990 and 1998-2000. As crude oil price is forecasted to rise in the long run, leading to escalating prices of SR which makes NR more favourable as a raw material

The price of light crude has been on an upward move again, rising from its lowest level in over five years of US\$31.41/barrel in late December 2008 to the current price of \$73.02/barrel in early June. Rising crude oil price has implications on NR price. With the peak oil theory, we believe that NR will dominate the rubber industry in the long run.

NR Price Moves in Tandem with SR Price

Our research has shown that there is a strong relationship between prices of SR and NR (with a strong correlation of $R^2=84.93\%$). This has strong implication on the pricing of NR as this indicates that NR is a price taker.

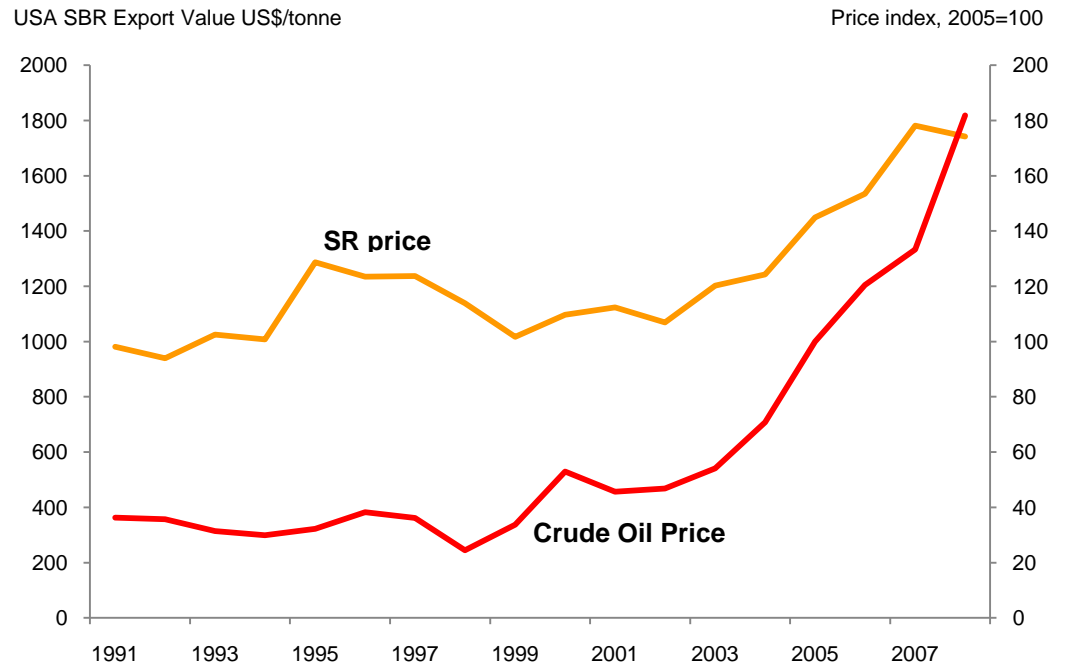
Chart 15: 1991 to 2007 synthetic and NR price



Source: United Nations Commodity Trade Statistics Database, IMF

Since SR is derived from petrochemical feedstock, it is of no surprise to anybody that there exists a fundamental relationship between SR and crude oil prices. Our research has indicated a strong positive correlation ($R^2= 81.2\%$) between SR and crude oil prices.

Chart 16: 1991 to 2007 SR and crude oil prices

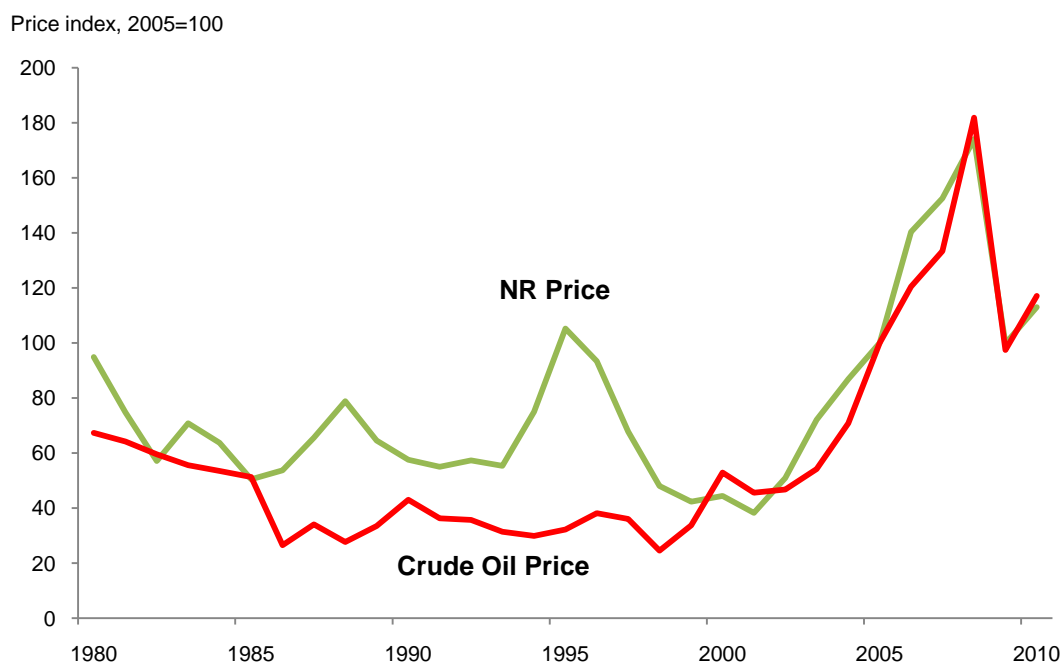


Source: United Nations Commodity Trade Statistics Database, IMF

Price of NR increased by 57% in early June 2009 from their low of US\$1.10 per kg reached on 9 December 2008. Factors contributing to the upsurge in prices, amid low underlying global demand, included slow production after wintering (mainly due to heavy rains in Thailand, Malaysia and Vietnam) as well as buying demand from China and India; prices also advanced on market sentiment over signs of an easing of the recession. The most important factor contributing to this upsurge will be the recent rise of oil prices.

The historical trend between NR and crude oil price is not indicative of any future movement of the two prices. This is primarily due to the era of high oil prices in the new century. Our research has shown a very strong correlation ($R^2=93.45\%$) between NR and crude oil price. We expect this relationship to remain strong leading to escalating NR prices. Statistical analysis revealed that each percentage change in crude oil price induced 0.76% change in NR price, in the same direction.

Chart 17: 1980 to 2010 NR and crude oil prices

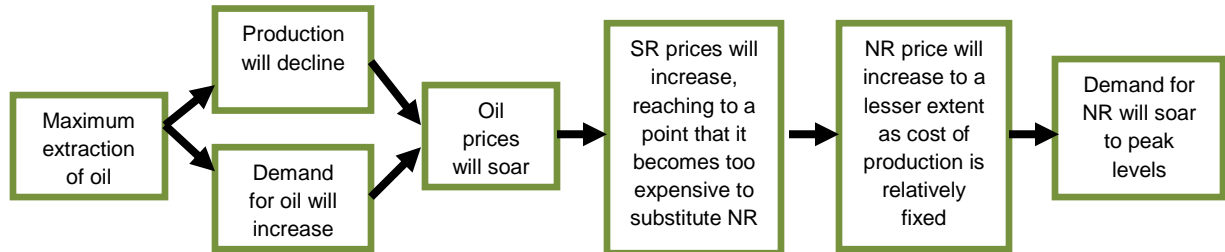


Source: IMF

Peak oil theory as NR's triumph card

Based on Energy Information Administration (EIA) long-term projections to 2030, world oil price is believed to reach a high of \$200/barrel by 2030. With rising crude oil price, this would mean that SR price will rise as well. The price ratio of New York TSR 20 (NR) and USA SBR (SR) fell from a high of 123.6 in 2006 to 75.9 in the first four months of 2009. Though NR follows in tandem with crude oil prices, NR prices do not increase as much as that of synthetic. Currently, NR is less expensive than SR. In the long run, we expect that this trend to continue, resulting in greater demand for relatively cheaper NR

Chart 18: The link between rising crude oil prices and NR demand



Source: Calamander Capital Analysis

Value Creation through Manufactured Rubber Goods

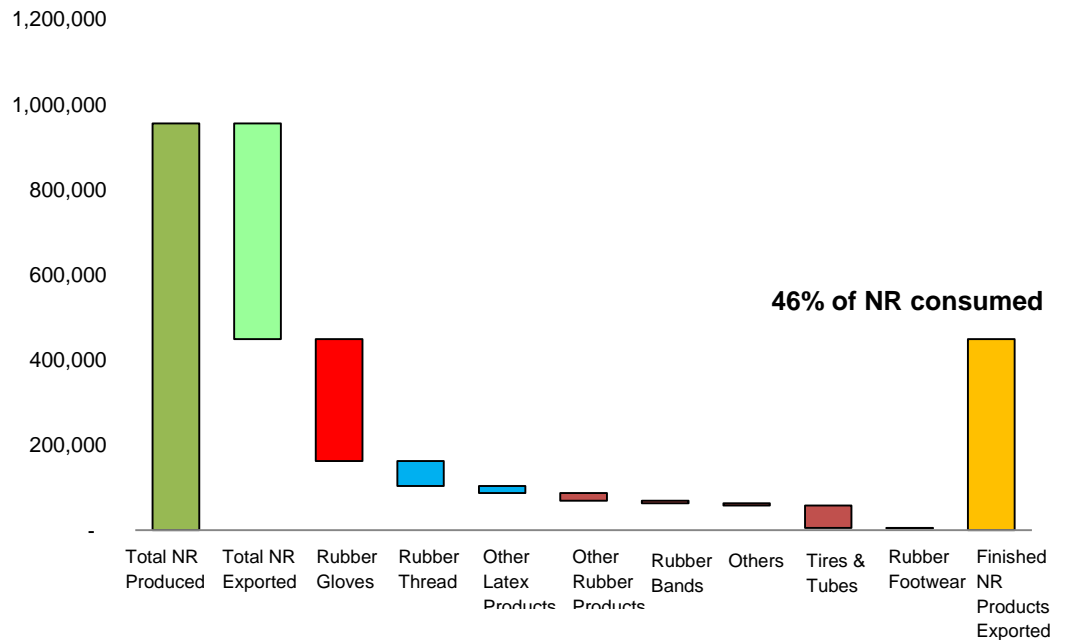
In response to the growing demand for rubber tires and rubber consumer goods, many rubber consuming countries have undergone vertical integration in the early 1960s to early 1990s. As a result, many Asian countries have established presence in the respective niche markets.



The Malaysian rubber growth story

Malaysia had been the largest NR producing country for most of the 20th century, until it was relegated to third position in the early 1990s. Back in the mid-1970s, Malaysia accounted for almost half of the world's NR output. Following the steady decline in production since the second half of the 1980s, its share dropped to 11.5% in 1999. It has been argued that as the Malaysian economy advanced with more attention paid to its vertical integration of rubber. Furthermore, the cost of opportunity of producing NR increased. Higher wages in the city attracted workers, which made labour scarce as well as land and capital relatively expensive for NR production. Hence, making manufactured rubber goods a more lucrative option for Malaysia. Today, Malaysia is the number one supplier of medical rubber gloves, foley catheters and latex thread and cord.

Chart 19: 2007 composition of the use of NR in Malaysia (tonnes)



Source: ANRPC Volume 32 No. 2 June 2008

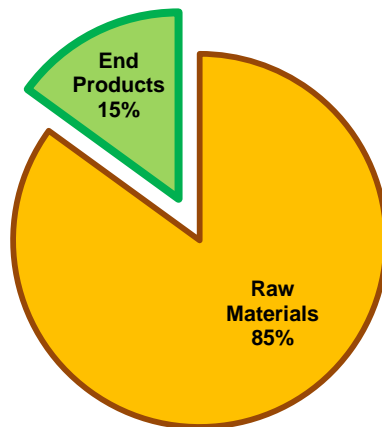
The Sri Lanka rubber growth story

Rubber production was established in Sri Lanka in 1876 with the planting of rubber plants imported from Brazil. The rubber products manufacturing industry emerged in the 1950s primarily to retread tires and the industry expanded rapidly after the introduction of free trade policies and investment promotion zones in the late 1970s. At present, the value of the rubber products manufacturing sector is five times greater than the export value of raw rubber from Sri Lanka. However, the plantation sector remains an important component as it is the 'resource base' or the primary competitive advantage of Sri Lanka's rubber industry.

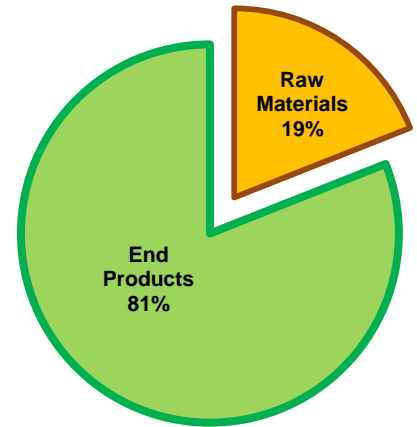
This trend continues with Sri Lanka exporting about 30% of the rubber production in raw form while 70% is used by the domestic industries. Value of Sri Lanka's rubber industry exports has been growing steadily from approx. US\$ 135 mn in 1995 to more than US\$ 283 mn in 2004 and increasing to US\$ 442 in 2005. Out of this value, rubber products export value consists of around 80%. Sri Lanka can boast of international accepted products such as solideal branded industrial tires manufactured here by Loadstar Ltd. Dipped products are sold all over the world, their household and industrial gloves being marketed under many brand names. Loadstar enjoys more than 20% of the international market There are multinational companies too in operation in Sri Lanka namely Ansell Lanka Ltd and Richard Pieris Exports Limited

Chart 20: 1970 and 2008 Sri Lanka proportion of export earnings (in terms of value)

1970 Sri Lanka Proportion of Export Earnings (in terms of value)

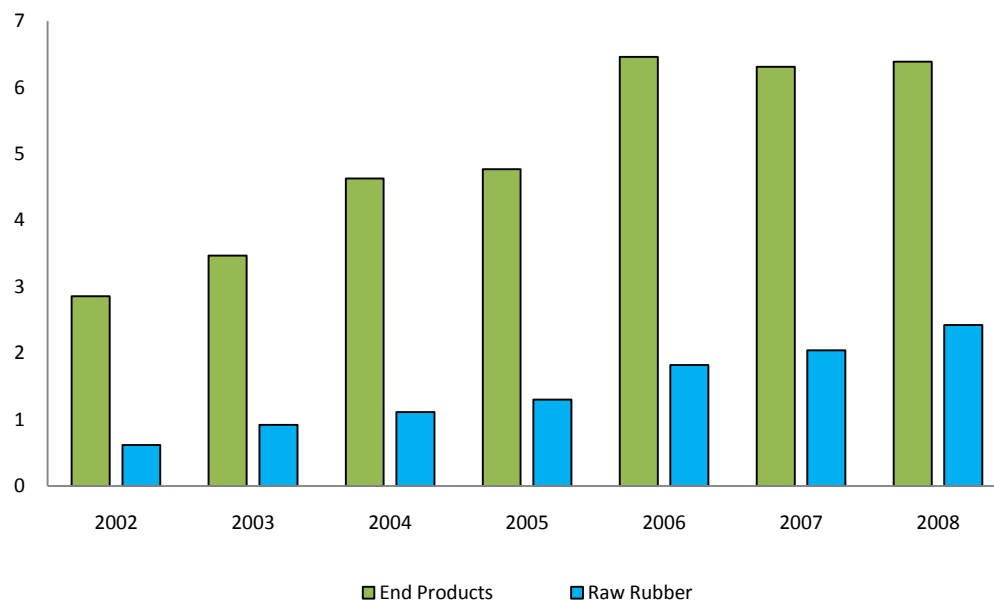


2008 Sri Lanka Proportion of Export Earnings (in terms of value)



Source: Rubber Research Institute of Sri Lanka

Chart 21: 2004 to 2008 value addition to exporting raw NR and manufactured rubber goods (USD/million kg)



Source: Rubber Research Institute of Sri Lanka