

Natural Rubber: A Better Future

The market conditions for a better future for natural rubber seem to be in place: it is up to the producers to take advantage of this opportunity, argues Grilli, the present Chief of the Commodities and Export Projections Division of the World Bank. Reproduced here are conclusions from his recent paper on "The World Rubber Economy: Structure, Changes, and Prospects".

In 1973, the world rubber economy suffered its first severe jolt: the oil crisis and subsequent sharp rise in crude oil prices and then the recession in the industrial countries. For synthetic rubber, which depends so heavily on petrochemicals, the sudden drastic increase in crude oil prices in 1973-74 implied a major change in costs and production (see Chart 1). As much as 70 per cent of the production cost of synthetic rubbers depends on the costs of petrochemical ingredients and energy. Between 1973 and 1975, these costs more than doubled, labor and overhead charges went up, and as a result, the average cost of producing synthetic rubber from existing facilities increased by 70 per cent to 100 per cent in the industrial countries.

Natural rubber was less affected directly—the average direct cost of producing rubber in Malaysia went up by about 30 per cent between 1971 and 1974. The industry was, however, still subject to all the indirect effects of the oil crisis: acceleration of world inflation, changes in consumer expectations, and rising doubts about the long-term future of world demand for rubber in the energy-intensive automotive sector.

Doubts about the long-term future of the rubber industry deepened during the economic recession that affected the industrialized countries after 1973. As industrial production fell, so did the output of the automotive industry, and so did world demand for rubber. Between 1978 and 1980 the price of crude oil again increased sharply in real terms, bringing the cumulative increase since 1973 to more than 400 per cent. Costs and prices of synthetic rubbers went up again and the expected profitability of new investments, facing in addition to severe cost pressures a more uncertain outlook for demand, deteriorated further. Actual investments as well as plans for new investments in synthetic rubber capacity have virtually come to a halt outside the centrally planned economies.

It is generally expected that the future rate of expansion of world demand for all rubbers will be below

historical trends in the next 10-15 years—perhaps by as much as 1 to 1.5 per cent per annum. These expectations are borne out by detailed analysis of future world demand for rubbers. The basis for this analysis is, first, the prospects of slower growth in economic activity in the 1980; and, second, the structural changes expected in the relationships between economic activity and rubber demand, brought about by changes in consumer choices in transportation and by government policies affecting the production and use of motor vehicles.

This slowdown is likely to be more visible in industrialized countries, where the major structural changes in demand are expected to occur and where demand for rubber is already high. The reduction in demand is likely to be less marked in the centrally planned economies, where the consumption of rubber is lower and is less affected by consumer choice and by changes in income and industrial production. Strong growth is still expected to continue in developing countries, particularly in high-income developing countries, where the use of motor vehicles is increasing.

BETTER MARKET PROSPECTS

A key question posed by these developments is whether the relative market position and future prospects for natural rubber have also deteriorated with the worsening prospects for the overall demand for rubbers. The prospects for rubber depend critically on the competitive position of natural vis-à-vis synthetic rubbers and on those developments of technology that affect the choice of rubber inputs in the production of rubber products. Analysis of these factors shows that on both counts natural rubber is potentially in a better market position than at any other time in the recent past.

The long-term competitiveness of producing natural rubber from existing trees has improved considerably, given the evolution of costs and prices in the second half of the 1970s. It is estimated, for example, that to have invested profitably in SBR production in Western Europe in 1977, the industry would have needed future real prices of at least 40 cents per pound. Equally profitable investments in natural rubber in Malaysia would have required a future real price of about 35 cents per pound. The profitability of natural rubber investment would have been even greater in relation to kinds of synthetic rubbers, such as polyisoprene. The 60 per cent increase in the real price of oil between 1977 and 1980 has added at least another 7 cents a pound to

the future expected price necessary to invest profitably in SBR. The crude oil price increases expected price necessary to invest increases expected in the 1980s will further improve the long-run competitiveness of natural rubber.

Closely reflecting the climb in the prices of synthetic rubbers (which in turn followed the upward trend set by crude oil prices), the prices of natural rubber increased markedly in the second half of the 1970s (see Chart 4). Natural rubber price trends are set to a large extent by those of synthetic rubbers. While in the late 1960s, falling synthetic rubber prices pulled down natural rubber prices since 1973. More important yet, rising synthetic rubber prices and favourable product developments—such as the spreading use of radial tires, which require relatively more natural rubber than other types of tires—have contributed to reverse the long-term decline in the real price of natural rubber. After falling by more than one half in the 1960s, real prices of natural rubber have increased by about 45 per cent between 1972 and 1979. This reversal is not likely to be a temporary phenomenon. It is expected that the real prices will continue to increase in the 1980s, as demand for natural rubber goes up and the prices of synthetic substitutes follow the trend set by rising real energy costs.

Another reason to be sanguine about the future for natural rubber is that the scope or future productivity gains in the synthetic rubber sector appears to be more limited than it was. Outside the field of specialty rubbers, technological innovations in production and economies of scale, which were the major factors behind the exceptionally fast growth of general-purpose rubbers in the postwar period, appear to have almost run their course. Their future effect is likely to be much less strong than in the 1950s and 1960s—although it will by no means be negligible. The synthetic rubber industry outside the centrally planned economies is reaching a nature stage where emphasis is likely to be on rationalization, consolidation, and better planned growth. Inside the centrally planned economies, expansion programs are likely to continue for the sake of self-sufficiency, regardless of developments in world rubber markets.

Part from these economic constraints to further rapid growth, the synthetic rubber industry will also face greater uncertainties than in the past about the availability and prices of chemical feedstocks and mounting pressures over environmental and health issues.

EXPLOITING THE POTENTIAL

The natural rubber industry is in a favourable position to take advan-

tage of the present good market opportunities. Despite these favorable prospects, however, natural rubber producers will need to fulfill several important conditions in order to take full advantage of this potentially favorable market situation:

● Natural rubber supply will have to keep pace with the expected growth in demand for the synthetic replica isoprenic rubber, and a secure supply will have to be assured.

● Existing successful production technologies will have to be adopted both within and across countries.

● Research, development, market demand for isoprenic rubbers is clearly of the utmost importance—yet it is uncertain that natural rubber producing countries can fulfill it. On the basis of current information on the area under rubber, on projected yields of trees already in the ground, and on expected rates of replanting and new plantings, it appears likely that beyond the early 1980s natural rubber supply will grow at rates below potential market needs. Even on the basis of relatively conservative assumptions concerning the growth of demand for isoprenic rubber outside the centrally planned economies and a relatively optimistic assessment of the likely growth of natural rubber supply from existing plantings and from plantings scheduled to come into production, there is likely to be a gap between supply and demanded by the end of the 1980s.

If this gap is not filled by increased supplies of natural rubber, it will probably be met by synthetic polyisoprene. Synthetic polyisoprene producers outside the centrally planned economies have spare capacities and, more important, much shorter investment lags. Since their production can be increased more rapidly, their investment risks are lower. Yet analysis shows quite clearly that natural rubber producers have a substantial competitive cost advantage over polyisoprene (at least under known production technologies) and that, with its technical and economic potential, natural rubber can fill the potential demand gap for isoprenic rubber in the late 1980s.

Enough capital from public and private sources should be available to expand the world production of natural rubber. The technology is not only available but also reasonably well proven. Land for new planting and replanting is plentiful in countries such as Indonesia and Thailand and, to a lesser extent, Malaysia, Brazil, the People's Republic of China, India, the Philippines and West Africa also offer scope for new and higher production of natu-

ral rubber. Even with current acreage, supply can be increased considerably by speeding up current replanting and using higher yielding varieties of trees. Chemical stimulants can also increase output rates from existing old trees.

Expanding output to meet market needs will involve, over the next 25 years, substantial changes in the country distribution of natural rubber production. The relative importance of Indonesia and Thailand, where new land and labor are more abundant than in Malaysia, will probably increase. In the long term, the People's Republic of China, and eventually Brazil, could become major natural rubber producers. The modes of production may also change substantially, with single smallholders becoming less important at the expense of cooperative types of smallholding organizations, offering members common infrastructural support in both the production and the processing of the rubber latex and sharing the ownership of the productive unit. There are strong economic and technical reasons—as well as examples of success—for this type of organization. Geographically, however, the location of the industry will not change much, with Asia accounting for most of the world output.

The possibility of expanding natural rubber production will also offer unique employment opportunities in agriculture to countries having a large and underemployed labor force. It also offers scope for tangible and sustained productivity growth. Expected future price and productivity trends should leave ample room for increasing real returns to producers.

Natural rubber producing countries have shown willingness to cooperate with each other, to share technological advances, and to further research. In October 1979 they also entered into a new agreement with consuming countries to stabilize market prices. The new International Natural Rubber Agreement that came into effect in 1980 foresees the use of a fairly large buffer stock to keep market prices from exceeding a predetermined, but flexible, band of fluctuation. If it is successful, market stabilization will make natural rubber supply more secure and reduce the volatility of the price of natural rubber for its users. Together with sound policies concerning production and exports, the Agreement can give added impetus to the resurgence of the natural rubber industry. The market conditions for a better future for natural rubber seem to be in place: it is up to the producers to take advantage of this opportunity.