

Plehwe, Dieter

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Change and concentration in the world rubber industry: an ICEF sector study

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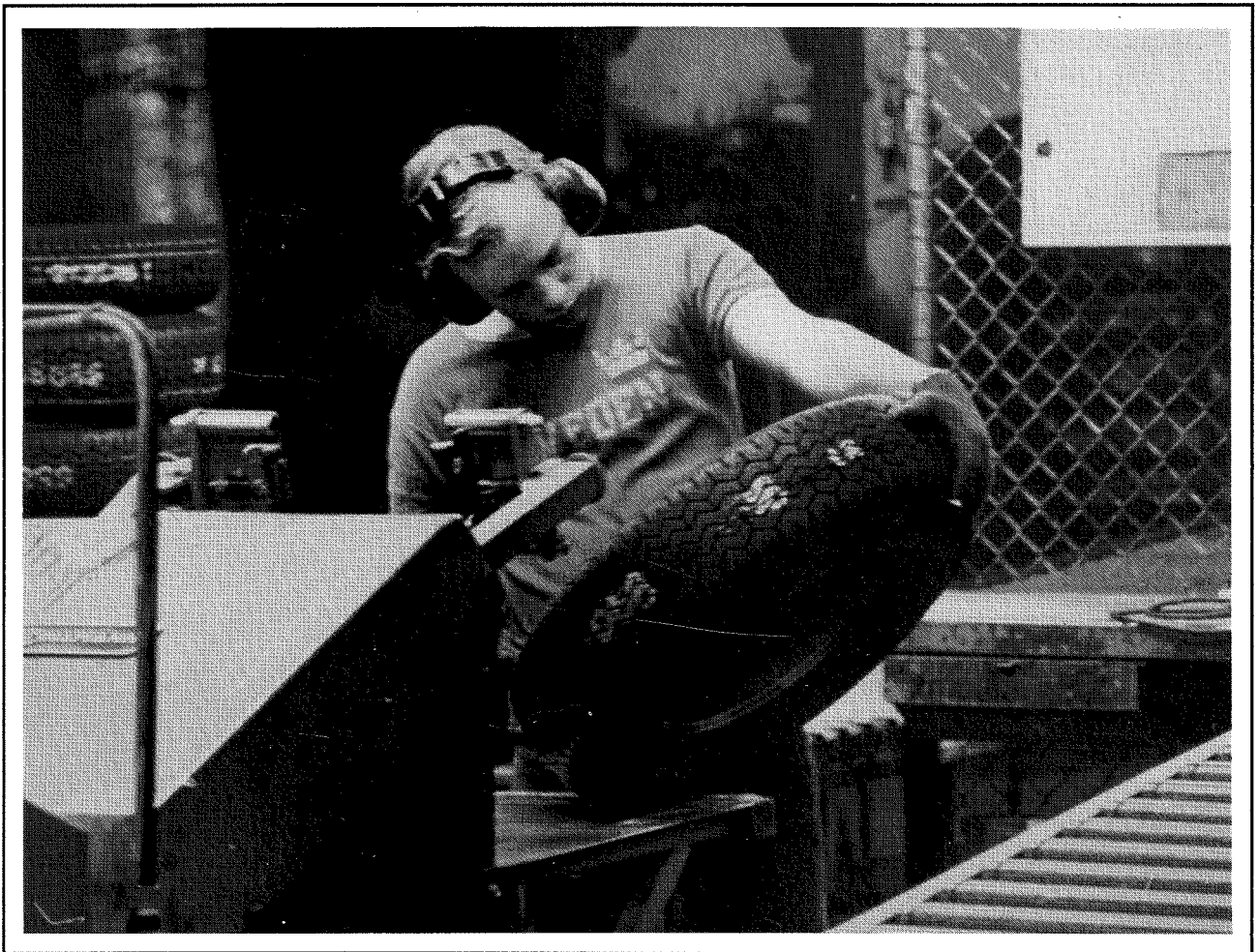
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CHANGE AND CONCENTRATION IN THE WORLD RUBBER INDUSTRY



An **ICF** Sector Study
Researched and Written by Dieter Plehwe

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Foreword

by Kenneth L. Coss

President, United Rubber, Cork, Linoleum & Plastic Workers of America (URW)

Chairman, ICEF Rubber Industry Section

Big, tough multinational employers and new work practices are among the major issues facing trade unions in all industrial sectors. Nowhere more so than in the rubber industry, which has gone through unprecedented change over the last decade.

What can we, the representatives of that industry's workers, learn from recent experience? Even more important, what further developments should we be planning for? To be forewarned is to be forearmed. That is why I welcome this new ICEF study on *Change and Concentration in the World Rubber Industry*. Thorough and analytical, without ever losing its trade union perspective, it will prove an important source of information for rubber industry workers and their unions everywhere.

The tire industry, and therefore the rubber industry, worldwide is now dominated by just three massive companies - Michelin, Goodyear and Bridgestone. These have rapidly globalized their production, to the point where the world is becoming one single market for rubber products. As the results of the ICEF's 1990 survey show, concentration, internationalization and new technology have gone hand in hand with job losses in many countries' rubber sectors.

A single world market for rubber products means a single world market for rubber workers' labor. In this context, we all have a vital interest in helping each other to achieve the best possible pay and conditions. As the present study points out, "It is the value of international comparisons of collective bargaining data that they can be used very often to counter company arguments of the 'Can't Pay' variety." All ICEF affiliates in our sector should ensure that our International receives the data needed to continue and expand such comparisons.

Even allowing for differences in pay structures, it is clearly unjust that an unskilled rubber industry worker's basic monthly wage can range from US\$2,543 in the USA down to just US\$156 in Brazil. Unjust - and dangerous. A leveling up is urgently needed. Not for the first time, workers are finding that solidarity and self-preservation are one and the same thing. That is as true between nations as within them.

We will all need all the solidarity we can get because, as this study clearly shows, things are not going to become any easier. Overcapacity looms in the world industry. Wherever there is overcapacity, there is a threat to the livelihoods of industry's real "risk-takers" - the workers. At the same time, industries that use rubber products, notably the automobile industry, have been squeezing their suppliers very hard indeed. To quote the study again, it is not difficult to imagine that "supply companies that are forced to 'make concessions' will recover some profits by passing the burden on to their employees. Concessionary bargaining and relocation in cheap labor countries (modeled after US developments) are likely to be observed in many more places including some Western European countries and in Japan."

Similarly in the belting and hose sectors: "If US developments are matched in Europe, a lot of organized workers could be under threat in the near future. Smaller units of production and less employees in general due to higher productivity play into the hands of anti-union employers."

Not that jobs are any more secure in the newly industrializing, underpaid countries. As the chapter on rubber sanitaryware shows, the sudden multinational investment boom in production of rubber gloves and condoms, a result of the worldwide AIDS crisis, often proved a short-lived, unreliable source of employment for workers who toiled under grossly exploitative conditions in those nations.

Health and safety are high among ICEF rubber sector affiliates' bargaining priorities, the 1990 survey showed. Here too, international solidarity is urgently needed, because of "signs that the spread of the industry to new operating countries...has led to a falling off of health and safety protection that has no objective grounds other than the direct intention of some companies to spend less on health and safety whenever they feel they can get away with it."

Closely linked to workplace health and safety is our concern for the general environment. The advent of synthetic rubber is generating a serious waste disposal problem everywhere, particularly as regards tires. The study rightly suggests that "unions can help to push for effective and environmentally sound ways of recycling." Here too, jobs are at stake. These days, any industry's long-term future is closely related to its environmental acceptability.

For an international view of health and safety questions in our sector, I recommend the ICEF publication *Health Hazards in the Rubber Industry*. More detailed coverage of the links between health, safety and the environment can be found in *Organizing for Safety*, a new book that draws together the findings of our International's conference on these subjects, held in Miami, USA.

It was in Miami, too, that the ICEF Rubber Industry Section held its World Conference in October 1990.

As it happened, one of my first duties as the newly elected President of my union, the United Rubber, Cork, Linoleum and Plastic Workers of America (URW), was to address the rubber union leaders from 31 countries who attended that conference. I was happy and proud to do so, and to accept the trust that they placed in me by electing me Chairman of the ICEF Rubber Industry Section.

I believe that international trade union solidarity is essential within our industry, not as an abstract exercise in diplomacy but as a concrete, day-to-day defense of our members' interests. For that reason, it will be my endeavor to help implement the action points decided by that conference, notably:

- ▣ Exchange of information between our unions
- ▣ Organizing and information-gathering drives within rubber multinationals
- ▣ A code of conduct for multinationals, including a "neutrality clause" by which a multinational would undertake, as a matter of global corporate policy, not to oppose trade union organizing efforts
- ▣ Industry-specific ICEF publications, of which the present study is an excellent example
- ▣ ICEF assistance programs for rubber unions in newly industrializing countries.

The world's rubber manufacturers have internationalized their thinking, their strategies and their action. We, the rubber workers' trade unions, can do no less.

CHANGE AND CONCENTRATION IN THE WORLD RUBBER INDUSTRY

INTRODUCTION

"It truly is accurate to say that the only constant today is change"

(Frank R. Tully, Vice President, Goodyear Tire Company, addressing the ICEF World Conference on the Rubber Industries in Miami, USA, 11th October 1990)

The 1980's have, indeed, proven to be a decade of change with the large-scale restructuring of dominant players in the rubber industries. The industry now comprises merely 10 to 20 huge transnational conglomerates of which 3 companies can be said to dominate the world market. These three majors, Michelin, Goodyear and Bridgestone, are predominantly tire manufacturers and together account for 56% of world tire sales. Even the highly concentrated car manufacturing industry displays a lower big three concentration ratio: GM, Ford and Toyota control "only" 38% of the world automobile market.

Three more rubber/tire manufacturers are closely shadowing the leading three. Continental, Pirelli and Sumitomo strive to match the company structure of their bigger fellows - worldwide presence becoming the most important characteristic. Five years ago, 13 tire manufacturers accounted for 80% of industry turnover. Today, the six companies mentioned above share 85% of market turnover.

Table 1: World's largest rubber manufacturers (1988 rubber sales more than \$1 billion)

| Company | Country | Sales (\$bil.) | Rubber as % of total sales |
|----------------|---------|----------------|----------------------------|
| Michelin* | France | 9.925 | 93 |
| Goodyear | U.S.A. | 9.729 | 90 |
| Bridgestone | Japan | 8.508 | 93 |
| Pirelli | Italy | 4.544 | 74 |
| Continental AG | FRG | 4.201 | 93 |
| Sumitomo | Japan | 3.070 | 97 |
| Yokohama | Japan | 2.401 | 95 |
| BTR | U.K. | 2.320 | 25 |
| Toyo | Japan | 1.380 | 98 |
| Gates Corp. | U.S. | 1.018 | 79 |
| Freudenberg | FRG | 1.010 | 50 |

* 1988 sales of Uniroyal Goodrich added

Source: *Rubber & Plastic News*: July 10, 1989, p.27 and October 2, 1989, p.11; * *European Rubber Journal*, 1988/89 special issue

The first and second-ranking triumvirates are active in other rubber production areas as well. Thus, together with a few specialist producers, the six companies control most segments of the rubber industries around the world. The following table summarizes the biggest rubber companies.

Only five years ago this table would have looked quite different. Technological innovation, slow market growth, mergers and acquisitions and other factors have contributed to erase many well known company names, a lot of production sites and many jobs. It is fair to say that never before have changes in the tire industry hit as hard and affected so many of its 500,000 or so employees around the globe. And, contrary to previous problem periods, the major changes were not only and directly the offspring of an economic crisis.

A process of takeovers, beginning in the late seventies and speeded up after 1985, has shaped a new and distinctive pattern in manufacturing and distribution of rubber products of all kinds, and even in the production and supply of raw materials (natural and synthetic rubber, carbon black, etc.). This shakeup has been most dramatic in the international tire producing industry. But, on a somewhat smaller scale, manufacturers of other rubber products followed suit in reallocating their productive capacities and in remodelling their work processes.

This publication made an appearance in its initial form as a discussion document for the ICEF World Conference on the Rubber Industries held in Miami, Florida, October 11 and 12, 1990. One of the decisions of that Conference was that a series of industry-specific publications should be produced by the International to give a wider perspective to national trade union action within the rubber sector. This text has therefore been modified and expanded to describe and explain some of the important trends that have dominated the past decade of change and will shape the global rubber industry in the decade to come. Three such trends may be readily identified:

Firstly, the dominant transnational companies of the rubber industry for the first time in history tried to enter into all relevant markets, worldwide. In this process of 'globalisation', the U.S. disappeared as a rather autonomous region on the world map of the rubber industry, enjoying the dubious privilege of being the most embattled territory. The prime objective of the most recent wave of restructuring has been the integration of production in a truly global space, the creation of a global factory resource.

Secondly, this new objective - another step in an ongoing process - has been largely a consequence of the increasing dependence of the individual companies on the "world market". More precisely, on the internationalization of the giant customer industries of the rubber manufacturers. Even more precisely, on the preceding "restructuring" in the automotive industries. The forceful drive toward international restructuring has compounded the implications of technological innovation that has led to a shorter product cycle for many rubber parts.

Thus, the industry strategy itself is at least partly a reaction to previously shaped interdependencies in the world economy. This leads to several considerations. We must take into account both rubber industry management strategies and developments outside the industry per se (e.g. changing supply patterns under new logistics management techniques, environmental problems, international debt, market saturation for vehicles, etc.) as well as the interaction of these elements.

Thirdly, the increasingly important element of competitive labor markets adds a new dimension to the diverse challenges facing the world labor movement. Mexican workers laboring for U.S. companies don't have to look far to witness a brother or sister doing the same job for ten times the money. Employees in Ireland are considered much "cheaper" by German tire manufacturers than their employees at home. Michelin workers in Brazil earn 1/15th of Michelin workers in the U.S., although they perform the very same task; while rubber workers in Ghana would be glad to enjoy the remuneration of their Brazilian colleagues.

Geographical and social inequalities continue to have particularly severe implications where skewed income structures do not allow workers to buy the goods they produce. The task of improving the social position of workers is a primary objective of trade unionism. To meet the challenge today, however, unions have to watch developments outside their direct bargaining sphere more than ever.

More marginal territory in Eastern Europe comes in handy for the transnational giants. "It's...an opportunity", comments a trade journal with honest modesty on the political changes there, "for forward-thinking rubber product companies to get in on the ground floor of an economic restructuring...and... companies that were there first with joint ventures will be the beneficiaries."

Excitement over the new 400-million-consumer market is limited, however, by the intrinsic corporate fear of competition. The (U.S.) journal fiercely warns that if "...American companies don't (invest in Eastern Europe now), you can be sure the Japanese and Western Europeans will" (R&P News: 11/13/1989, p.8).

Some important questions with regard to the causes and implications of these ongoing developments thus have to be addressed. Why did the merger wave after 1985 occur? Why did so many workers lose their jobs well before any economic downturn became evident? How will the "change of bosses" involving an increasing share of foreign ownership in any nation affect manufacturing and labor-management relations? How can the unions restrain transnational "social dumping"?

The need for strategic planning by unions is obvious: many workers already fell off when the train of "restructuring" gained speed. Many more, while still on board, labor under an increasing workload for less pay. Many workers in many different countries, both developed and developing, have been adversely affected by this industrial upheaval. The various important issues for rubber industry employees in most countries - employment security, decent living standards, industrial democracy, a sound environment, and occupational health, among others - have merely been identified. The new international division of labor not only increased competition for the companies, but is dangerously strengthening management's ability to pit workers of different countries against each other.

The most important purpose of the following analysis, therefore, is to provide some answers as to how workers and their trade unions can meet the challenges posed by the new circumstances of universalized competition. Whereas scattered internationalization of businesses may have required only occasional recourse to international contacts and solidarity by unions, present capital strategies aimed at global control demand a new countervailing strategy of interdependent union operation.

The first chapter deals with the changes preceding the "rubber restructuring": Technological innovation in rubber manufacturing and the new set-up of international car production figure most prominently in the development of this sector and demand a brief review. The 'Just-In-Time' (JIT) management logistics chain has particularly contributed to the changing structure of rubber manufacturers supplying the car industry - and will do so increasingly.

The second chapter examines international tire production, the history of this sector's globalization, the process of technological innovation with its ramifications and the most recent merger wave. In the context of tire manufacturing, some information on related sectors will be provided, including the production of carbon black and of natural and synthetic rubber. Last but not least, some information on the huge problem of scrap tires will be provided.

Changes in the production of molded goods in general and belting and hose in particular will be the subject of Chapter 3. Again, most of the production from these segments goes to the automobile manufacturers.

Chapter 4 deals with rubber sanitaryware (gloves and condoms). Here the international "AIDS crisis" contributed to an industrial development in South-East Asia that is strikingly similar to the history of early industrialization in Europe. A short Chapter 5 reveals the relocation of rubber footwear manufacturing to South East Asia and to integrated Europe's cheap labor reservoir, Portugal. Chapter 6 looks at rubber roofing, one of the potential growth areas in rubber manufacturing.

Finally, the results of an international comparison of wages, living standards and social conditions of rubber workers all over the world will be presented. This Chapter 7 provides substantial insights into important concerns of the unions from the countries that participated in the survey.

The delegates to the ICEF World Conference on the Rubber Industries from which this document emanates adopted a program of action for the future work of the ICEF in this important sector of its activities. The main points of this program are:

- Multinational companies which dominate economics and employment within the industry will be targetted for special trade union organising campaigns.
- ICEF member unions will increase their exchange of information through the International, which will establish networks of correspondents throughout the global operations of each company targetted for organising.
- The ICEF will collect and publish data on collective agreements, shiftworking and other key data both on a company and general industry basis.
- A Good Practice Agreement will be drawn up for multinational companies in the rubber industry, including a "neutrality clause", under which companies will be pressed to agree not to oppose trade union organising efforts in their plants or subsidiaries right around the world.
- Training and organising assistance will be provided through the ICEF to rubber workers seeking to establish unions in newly industrialising countries. Publications and technical help to support these efforts will be made available.

If history has any lessons to teach workers, one of its most important is surely that industrial development leads only to social inequality and injustice unless accompanied by the parallel growth of a strong and democratically based trade union movement. In the process of economic and social development the highest task of labor is therefore to inform and to organise. This publication is a first response to the call made by the ICEF World Conference on the Rubber Industries for better quality information for trade unions to face the resources of multinational employers. It is hoped that it will be helpful in creating a basis for international trade union efforts to deal with the results of global restructuring in the rubber industry as this works out its inevitable logic in the years ahead.

CHAPTER 1:

RUBBER AND AUTOMOBILES

Rubber manufacturers sell the overwhelming majority of their products to vehicle manufacturers (original equipment/OE) and driving customers (replacement). Technological innovation by auto parts manufacturers and pressures resulting from the “restructuring” of the motor vehicle industry have been the two factors primarily responsible for the industry upheaval in the tire and automotive component segments of the rubber industry - quantitatively the most important rubber industries.

Major changes from within the rubber industry followed a traditional pattern of industrial development. The invention of radial tires or long-life automotive driving belts, for example, gave technical advantage but lengthened the product cycle, thereby shrinking sales. Steel belted, radial-ply tires last almost twice as long as older types and new technology doubled the life expectancy of automotive driving belts. If overall market growth does not offset the shrinking volume of sales due to such improved quality, simple mathematics indicates that not all the companies in the market can survive. The rubber industries experienced the sum of such simple mathematics in the 1970's when the market remained flat throughout a prolonged period of (international) crisis.

The innovating companies, however, profited in many ways despite the sales squeeze brought about in part by the longer product cycle. Superior products are more likely to be used as original equipment and they enjoy greater success in the replacement market. Profits in the aftermarket are much higher, but competition is fierce for the major producers due to the marketing power of huge retail stores.

The construction of company-owned distribution and sales networks (downstream integration) has been one way to fight for replacement market shares. Replacement counts for roughly 65% of all tire sales and margins are on average double those achieved in the OE market. Further technological innovation constitutes another way to outperform competitors. Michelin's radial technology forced the entire industry to follow the French invention. By the mid-70's, radial tires became standard equipment all over the world. Thus all producers were forced to catch up on product innovation. Smaller companies, however, usually lack the resources needed for R&D (research and development) and innovators' patents do not come cheap. Thus new products add to the dominance of the bigger companies that are more likely to develop them through their superior R&D investment.

At the same time, the desire of tire manufacturers to supply a new product has been limited by auto makers' power to allow or prohibit such innovation. Both Michelin and Dunlop have been left with runflat tires that nobody wanted to buy. These tires, otherwise “successful” innovations, only fit on special wheels, leaving the customer with only one source of supply; a solution not exactly favored by independent-minded automobile manufacturers. The fate of Continental's newly developed runflat tire (secretly developed together with Michelin) has not been decided yet. The new tire (CTS = Conti Tire System) has also been constructed for “exclusive” fitting and might be used as OE for some Mercedes vehicles.

Such attempts to “monopolize” product markets are both a result of and add to the intense competition between major tire manufacturers on the one hand and between tire and auto manufacturers on the other.

To sum up, technological innovation and the resulting general squeeze on rubber product sales can be understood as an internal process that limits the growth prospects of smaller firms in particular. The other factor adding to the “fight to the death” development in this segment is the result of a process external to the industry itself.

The Automobiles Changed First

The innovation-induced process described above was compounded by the pressures deriving from change(s) particularly in the international vehicle manufacturing industry. Once automobile producers had to face shrinking profit margins or even collapse during the crisis period of the mid 1970's and the early 1980's, their highly concentrated customer power (monopsony) allowed them to pass on much of the burden directly to suppliers.

The first tire company to feel this dramatic change was British Dunlop. Suffering from lower sales due to longer-life radial tires and the decline of the UK motor vehicle industry, Dunlop sold out to Sumitomo of Japan (1983/4). American companies were next. US manufacturers tried to block the entrance of Michelin-invented radial tires into “their” markets, with little success. Managing to delay the introduction of radial technology in the USA,

they allowed the Europeans and Japanese to dominate technological progress first-hand. Most American manufacturers furthermore exported little to Europe or Japan and their OE market share in the USA was declining due to increasing imports of vehicles. The list of the six biggest tire companies in the world only three years ago named three American companies including the industry leader. Today only one big American player remains and Goodyear's leadership has been lost to Michelin. Tire manufacturers and other rubber auto supplies businesses worldwide had to cope with a profoundly changed structure in the motor vehicle industry.

Transplantation of Vehicle Production

Five major Japanese vehicle manufacturers have started production in the USA during the last decades, exploiting American producers' ignorance of the rapidly developing small vehicle market in the wake of the recession and the oil crisis. Today, all Japanese-owned production sites in the USA can together turn out 2.5 million vehicles per year in a market with total sales of 8.5 million. Alongside this incoming effort, they brought supply companies along that did not want to write off OE business lost in Japan to competitors in other countries with new Japanese auto production investment. Toyota, Nissan, Honda, Mazda and Mitsubishi have all since become major players in the US automobile industry, thus capturing a significant share of control over who delivers original equipment. Once OE contracts have been obtained, a supply company can count on gaining a better share in the replacement market, too. Fierce competition in the vehicle manufacturing industry led to the elimination of weaker companies and to a profoundly changed pattern of production among the companies.

Apart from the rapidly increasing share of Japanese-controlled automobile production in the USA, in 1987 the American market lost the remaining albeit small "independent" producer American Motors. Chrysler bought the 46.1% Renault share in AMC to finally take the ailing company over.

The story of Japanese vehicle manufacturers in Europe is somewhat different. Market entry in Europe is somewhat more difficult for the Japanese as many European producers offer similar products (small vehicles) and because governments in several countries barred the door. Nevertheless, Nissan is producing in the U.K. and in Spain and Honda is a joint partner in the British Rover group. Toyota has some ties with Volkswagen and a recent article reported the planned expansion of Toyota's sales network to East Germany (WSJ: 2.5.1990). Europe is becoming the focus of Japanese motor vehicle manufacturers that saw their exports decline, though remaining at a high level. Recent announcements confirm a Japanese rush into the European market. New construction of capacity is underway in the U.K. Toyota and Honda are building new plants while Nissan is adding capacity to turn out 425,000 units a year by 1997. Most recently, Mitsubishi has reportedly embarked on a joint venture with Swedish Volvo to turn out 200,000 units in Belgium (II Manifesto: 27.4.1990). Altogether, the planned Japanese expansion in Europe will more than double to reach a possible output of 1 million units.

Europe's 1992 program - geared towards the completion of the internal market of the European Community - will increase competitive pressures in the European automobile industry. Easier access for Japanese exports may be extended to previously tightly closed markets like Italy and France. Currently the European manufacturers are lobbying hard to limit the "free trading plans". Japanese vehicle manufacturers, however, are not waiting for favorable government action. They are very busy establishing themselves in Eastern Europe, too, as an alternative back-door route into the Western European market.

Suzuki jointly produces in Hungary and Toyota most recently announced a joint venture with a Turkish producer to eventually produce 100,000 units a year (WSJ: 28-3-1990). Without regard to the Japanese, European and American automobile manufacturers are planning major expansions in Eastern Europe after the opening. Joint ventures are established or underway in the USSR (Fiat, Citroen, Porsche), East Germany (Volkswagen, Mercedes Benz, Opel/GM), Bulgaria (Volkswagen), Hungary (GM), Poland (Fiat), Yugoslavia and Rumania (Renault). Most recently Volkswagen defeated Renault in the bid to take over Czechoslovakian Skoda. The German group announced investments up to DM 10 billion and job guarantees to virtually all former Skoda employees (FR: 11.12.1990). Volkswagen management proved its willingness to make these costly concessions to achieve longer term goals - a strike threat in favor of the Volkswagen takeover certainly contributed to the government decision to lean towards the German manufacturer.

Major realignments also occurred within Western Europe. Volkswagen bought Spanish Seat. Italian Fiat further increased its grip on the Italian market with the purchase of Alfa Romeo. Chrysler again tried to enter the European theater with the purchase of Italian Maserati. A new Chrysler factory in Austria - highly subsidized by the government - is planned, too. The established European manufacturer Ford from the USA now controls British Jaguar and Saab has been taken over by GM, another US company firmly entrenched in the old world (Opel/Vauxhall). Most recently, Renault and Volvo announced a strategic partnership. It is rumored that this deal

might result in further restructuring. French Peugeot might be bought by a foreign manufacturer (Fiat or Chrysler or Toyota) and Fiat is negotiating with Ford in search of a partner in the commercial vehicle segment. The Federal Republic of Germany's biggest industrial conglomerate Daimler-Benz (Mercedes) additionally sent shockwaves throughout the world with the decision to commence discussions with Japan's industrial giant Mitsubishi on cooperation across the whole product range including motor vehicle production.

The realignment in the vehicle manufacturing industry is geared towards coping with future recession. "Good times" earned the resources to prepare for the approaching "bad times". Vehicle sales after eight years of almost uninterrupted growth started dipping in 1989. Thus, much of the expansion undertaken during recent years is coming on line just when auto sales are starting to decline again. The next recession might bring yet another round of selection among the players, some of whom are well prepared to swallow the losers.

The stronger companies, as shown above, used their savings to continue growing in some geographical areas, frequently by setting up joint ventures. Every company hoping to survive is said to need a presence in the three volume markets (Japan, USA, Western Europe) and a beachhead in the growth markets of the future (some countries in Latin America, South-East Asia and Eastern Europe).

The relatively closed Japanese automobile market, finally, is under heavy international pressure, too. But, unlike the European and American theaters, Japan is not yet a dramatic scene of change. Nevertheless, increasing imports of vehicles (and thus OE tires and parts) are very likely and other Asian countries, most notably South Korea and Taiwan, serve already as manufacturing locations for easier export to Japan. American automobile manufacturers have acquired stakes in Japanese and Taiwanese producers (Chrysler: Mitsubishi, GM: Suzuki and Isuzu, Ford: Mazda) and European manufacturers entered technology agreements with Taiwanese companies (Renault: San Fu, Peugeot: Yeu Tyan). Ford is operating in Taiwan (Ford Lio Ho). All Japanese manufacturers have stakes in the Taiwanese producers and GM controls the South Korean manufacturer Daewoo.

Automobile companies have thus realigned themselves internationally and cross-penetrated all strategic and volume markets, either independently or by forging alliances with important competitors. The result with respect to supply companies has been an enormously increased concentration of customer power in a time of strong pressures on profit margins. Production is predicted to grow no more than 1.5% annually over the coming years, worldwide.

The volume markets accounted in 1987 for 83% of world motor vehicle production. Global production reached 45.7 million units. North America produced 12.6 million, the European Community and Japan produced 13.2 and 12.2, respectively. New vehicle registration gives further insight into the challenges for supply companies. Whereas Japan's automobile production is comparable to that of Europe and North America, registration of new vehicles in Japan is not - only 3.3 million new registrations, compared with 10.3 million in the USA and 12.4 million in Europe as a whole. Thus companies that have not signed supply contracts with Japanese manufacturers face a shrinking market alone due to the redistribution of production in favor of Japan Inc. Compared to the previous pattern, the "national champion" production share of motor vehicle producers - outside Japan - slipped considerably and therefore altered the pattern of who is producing the OE equipment parts. Additionally, internationalization increased the reliance on global sourcing and buy-cheap policies of the manufacturers.

All in all, these are difficult times for the producers of the four to five tires per vehicle and of some (rubber) parts out of the 7,000 different items that are assembled into a finished vehicle (Gummi, Fasern, Kunststoffe: 8/1989, p.379).

To be sure, the strategic moves of the vehicle manufacturers described above have resulted in a highly disruptive process; major industrialized regions turned into industrial wasteland and many workers in the automobile industry have paid a heavy price for company automation, relocation and union busting. One particular aspect of the "modernization" of automobile manufacturing spells havoc for the workers in related industries. Among these, rubber manufacturers are ominously prominent, for there is no single alternative rubber products customer of comparable importance.

The logistics revolution

Parallel to the process of internal technological innovation in the rubber industries, supply businesses and their labor force experienced the consequences of the restructuring of their customers in general and external technological progress implemented by the vehicle manufacturers in particular.

The implementation of new logistics concepts by the auto manufacturers was possible via application of the "communications revolution". (1.1) "Nissan's (telecommunication) network helps to manage the company, tying together 3,000 factories and salesrooms around the world. And it helps it manage the delivery of components for its vehicles. A part can be delivered as little as two hours before it is needed. The volume of Nissan's network traffic is growing at about 20% a year, three times faster than its sales" (The Economist, March 10, 1990, p.32).

Japanese automobile manufacturers were the first to exploit computer aided planning and manufacturing (CAD/CAM), to lower production costs by reducing overheads and to provide for flexible manufacturing. An IBM manager described the idealized aim behind the implemented changes to use the equipment more efficiently in simple words: "You punch one button to produce an automobile, another button to produce a toaster." To facilitate the only somewhat less dramatic change in production, all steps of the production chain had to undergo vast changes.

Transportation - supply of raw materials, delivery of finished products and the linking of the different production levels - constitutes an expensive and time-consuming element in any production process. Traditionally, the logistics chain was organized to sustain the rather inflexible, long-term planning of the automobile manufacturers, a typically "Fordistic" system of mass production. Most logistical functions were organized by the manufacturers. Automobile companies, for example, produced many units of one product, examined the quality of supply parts after arrival "in-house", kept a long-term supply stock, provided the internal transportation services and delivered the finished products with their own transportation fleet. "Modern" Japanese style production looks quite different.

Japanese manufacturers, for example, buy 80% of the vehicle parts and accessories from "independent" companies whereas American manufacturers still produce 60 to 70% "in-house". The figure for European auto companies is somewhere in the middle. The high external supply figure for Japanese manufacturers is possible because of investment in communications equipment. They were first to apply the new communications technology to effectively alter the logistics chain in their favor.

The Just-in-Time (JiT) logistics chain modifies traditional manufacturing significantly. (1.2) The starting point for the organization of JiT production is a Materials Requirement Planning (MRP) system. The introduction of an MRP system changes the organization of the production process and builds the basis of Computer Integrated Manufacturing (CIM). These concepts require a separation of the production process into small units to effectively plan the new logistics chain. Japanese companies also have pioneered the "quality circle" production process which groups workers as a team rather than sustaining the old Taylorist division of work into a series of specialist, repetitive tasks.

Traditional "think big" companies had to cope with the Japanese challenge that demonstrated a wholly different approach summarized by the idea that "You have to shrink to grow". However, while JiT production led to decentralization of large and complex production units, locally, it has been a powerful force for the international centralization of capital at the same time. Companies increasingly organize production around short-term market developments which are additionally influenced by offering a wider variety of products, changeable at short notice. This factor actually results in a multiplication of the 7,000 vehicle parts mentioned above. Due to model variation, legal differences of customer markets, etc., a VW Passat can be delivered with up to 21 different gas tank versions, for example.

Because the JiT/CIM concept is set up according to production flow rather than bulk production, the resulting need for synchronisation forces supply companies to provide any quantity of supply parts at short notice. Quality control has been handed over to the parts manufacturers (Gummi, Fasern, Kunststoffe, 7/1989, pp. 318-320 and 328-329). All the new concepts implemented by the vehicle manufacturers have been pushed upstream subsequently. Virtually every link in the production chain, from raw material extraction via transportation services to the manufacture of supply parts, had to be synchronized with the ultimate output of automobiles. Consequently, supply business became much more directly and totally controlled by the giant motor vehicle producers.

Logistical costs, depending on industrial sector, run from 18 to 24% of a company's turnover. Copying the JiT concept in Europe, for example, has cut transit times by 60 to 90%, reduced stocks by up to 50% and lowered warehousing and transportation costs by 20%. Quality improvements and quantitative flexibility as well as productivity have been increased by 25% (ibid., p.320).

These implemented changes required reduction of the number of supply companies to reduce communications and consultation and also necessitated substantial changes in those that remained. Suppliers have been forced to hook up to their customers' communications networks in order to be integrated into product planning and R&D "cooperation" and to generally facilitate the organization of the logistical process. Supply companies were forced

to be able to manufacture as flexibly as their customers. Automobile companies evaluate the performance (quality, management, pricing, etc.) of their suppliers continuously and select their "partners" according to strict criteria.(1.3)

Strategies of the suppliers to remain in the market thus had to shift from product innovation (which is jointly carried out) to characteristics of logistics and production efficiencies. Too much so for many small traditional workshops and likewise for a good portion of the mid-size and bigger companies. Preferably, suppliers had also to become more international so as to provide for uniform quality standards and product availability ("single sourcing") and to meet the global sourcing challenge posed by "buy cheap" orders of vehicle manufacturers ("global sourcing"). In short: Follow the customer or shrink to death.(1.4)

Thus, customer power combined with new production techniques plus the new and increasingly internationalized production and sales pattern turned out to be a strong combination of factors responsible for change in the auto supplies sectors. This development has been reinforced additionally by political decisions which lowered barriers against market entry (e.g., the US/Canadian free trade agreement and the 1992 single market project of the EC). The safe "national champion" market for automobile manufacturers shrank with the arrival of foreign competitors and history repeated itself in the supply business where thousands of small companies have already lost, or stand to lose, their business.

CHAPTER 2:

GLOBALIZATION OF TIRE MANUFACTURING

"Tires are Globetrotters" argues Goodyear in its 1989 annual report. The report mentions the export of tires produced by Goodyear in the USA to the European automobile makers, Goodyear's European-made products to Japan, and "Japanese" Goodyear tires to the USA

To use a picture recently applied to describe the frightening trend of global monopolization in the communications industries, the tire world has become a "global village". As the media world village is governed by the Murdochs, Maxwells, and Mohns, so the tire village is tightly controlled by the Goodyears, Michelins and Bridgestones. While some of the names of the tire "Lords" have changed during the last five years, the globe has been shrinking further with the continuing centralization of tire capital and the rapidly advancing globalization of tire businesses.

Worldwide sales of this industry totalled \$47,000 million in 1989. Production in the USA comprised tires (92%), inner tubes (2%) and tread rubber (6% of value of shipments in 1982). Also in 1982, 79 percent of all tires produced in the United States were passenger car tires, 15 percent truck and bus tires and 6 percent aircraft, industrial and bicycle tires (MLR: 6/1989, p.20). The following table lists the biggest companies; data on 1985 serve to show in part the enormous gains of the major companies.

Table 2: Top Ten in Tire Manufacturing (1989 tire sales -\$m.- only)

| Company | Country | 1989 | employees | '89 profits \$m |
|--------------------|-----------|-------|-----------|-----------------|
| Michelin | France | 9.640 | 142,508 | 418 |
| Bridgestone | Japan | 8.471 | 93,193 | 70 |
| Goodyear | U.S. | 7.881 | 109,899 | 207 |
| Continental | FRG | 3.724 | 45,400 | 121 |
| Pirelli | Italy | 2.955 | 69,329 | 234 |
| Sumitomo | Japan | 3.240 | 20,000 | 49 |
| Yokohama | Japan | 1.727 | 10,750 | 65 |
| Toyo | Japan | 862 | N.A. | N.A. |
| Cooper | U.S. | 722 | 6,041 | 58 |
| South Pacific Tyre | Australia | 619 | N.A. | N.A. |

Source: European Rubber Journal, 1988/1989 special issue, R&P News: October 2, 1989, p.11

In line with this industry's historical development, the transnational automobile manufacturers continue to be the trend setters for the development of the tire industry, in various ways. They have become far more demanding since tires contribute significantly to the consumer's driving experience. But to stay in business, tire companies did not only have to meet new quality standards. A whole set of pressures forced substantial changes throughout the industry - the single strongest parameter being the relocation of motor vehicle production. "Domestic (US) tire makers face not only contraction in the domestic tire market, but also a growing import share. Tires from France, Japan, South Korea, and other nations accounted for 23.7 percent of the US replacement tire market in 1987, compared with 10.8 percent in 1980" (MLR: 6/1989, p.21).

At the same time, however, the extent to which the tire industry has been taken in tow by the automobile manufacturers should not be overestimated, because the important replacement market accounted for 74% of passenger car and 80.3% truck tire units shipped in the US (Modern Tire Dealer, 1/1989, p.32).(2.1) The replacement market is only indirectly influenced by automobile makers' OE decisions which tend to have an impact on customers' replacement purchases. Replacement tire demand on the other hand is strongly influenced by gasoline prices. The average amount of miles driven in the USA declined by 1000 miles per automobile from

1978 until 1980. But, nevertheless, the “world automobile” certainly called for “world tires”. Tire manufacturers felt the dominant influence of global vehicle manufacturers and moved strategically to cope with the challenge or simply gave up.

Unlike the experience of previous periods when international expansion was basically achieved through exports and direct investments, the last decade witnessed the shakeup of established oligopolies, with aggressive merger and takeover activity knocking out bigger and bigger companies.(2.2) In many industries, including the tire sector, powerful enterprises lost their “independence” only to be incorporated into even stronger manufacturing fortresses. It is not so much the notion of giant “monopoly” manufacturers that has to be seen in relative terms. Instead, we have to reconsider the role competition plays nowadays even for a giant enterprise. At the same time, “the imperatives of competition do not preclude cooperation of cartels when they are profitable” (Kolko: 1989, p.89). Without regard to the many examples of licensing and technology agreements, cooperation in marketing and distribution and even joint production - strategic alliances between major companies - became, irrespective of mergers and takeovers, the most important feature of “cooperation” during the 1980’s.

In fact, “cooperation” has increased in line with takeovers. Before looking more closely at the features of competition and cooperation between today’s giant tire manufacturers, the breath-taking process of restructuring the tire business will be analysed. To place recent developments in a historical perspective, a short review of the historical development of concentration, centralization and internationalization of the tire and inner tube industry is given first.

The Local Village

Early in its history, the tire industry experienced two parallel developments. On the one hand, a small number of companies achieved a dominant position in tire manufacturing shortly after establishment of the industry. In the USA, Goodyear, Firestone, Goodrich, and US Rubber conquered 55% of the market by 1919. In Europe, Michelin (France), Dunlop (U.K.), and Pirelli (Italy) secured a hegemonous market share in their home countries. At the same time, the number of tire producers grew rapidly (West: 1985, p.227/8).

International competition at this stage was actually regional competition, with US companies taking each other on and Europeans fighting Europeans. “It is to be emphasized that this regionalization of competition did not result from any agreement between major companies to divide up markets, and so represented a lower stage of internationalization in comparison with later periods” (ibid., p.228).

The Village Goes Global

After World War I, tire manufacturers expanded exports and some countered increasing tariff barriers with direct investments (Dunlop and Michelin in the USA, Goodyear in Canada, Goodrich in Japan). Slower growth in the respective home markets was a driving force in this fuller development of internationalization which led to direct conflicts between major European and US companies (ibid.).

The Great Depression of the 1920’s and 1930’s resulted in a process of reduction and concentration. Many small producers went out of business and concentration increased rapidly in the USA. Internationalization at the same time reduced concentration in Britain somewhat despite the failure of smaller U.K. companies as producers from other countries took their places. The focus of direct foreign investment, however, “shifted from the developed to the underdeveloped countries...15 out of 21 investment entries made by the major producers were in non-industrialized countries” (ibid., p.230). The birth of the majors’ control in the less developed countries (LDC’s) can thus be traced to the world recession and accompanying trade controls. Although the LDC markets were as depressed as markets elsewhere, the major producers lacked local competitors and anticipated undisturbed growth in the future. Apart from investments in Argentina, India and South Africa, the majors began to conquer markets in developed countries lacking a dominant producer (Germany, Belgium, Switzerland and Sweden). Some divestment occurred also, with Michelin pulling out of the USA and Goodrich lowering its stake in the U.K. (ibid.).

World War II reversed history, bringing internationalization to an almost complete halt. The dominant trend went towards nationalization, as foreign companies were deprived of their subsidiaries for reasons of military strategy. One exception to the rule: US companies invested in an additional number of countries far away from war-ravaged regions (Peru, Cuba, Columbia, Chile, Venezuela).

Building the Village: Regional Hegemony

After World War II, the process of internationalization truly universalized. Between 1945 and 1975, 89 foreign manufacturing subsidiaries and affiliates of the major companies were established compared to a total of 52 prior to that date. Almost two-thirds of all investments were in third world countries (West: 1985, p.231). Capacity was added in countries with established tire production and new industries were set up in many countries. "In total, 43 developing countries now (had) at least one tire plant, 14 being in Latin America and the Caribbean, 14 in Africa, 10 in Asia, and 5 in the peripheral European countries" (ibid., p.232).

During this time span of roughly 75 years, concentration and centralization in the industry continually increased. Companies did not only grow horizontally (concentration). The erection of ever higher barriers against market entry of competing companies was achieved by the vertical integration of tire businesses. Upstream investments in the supply business (production of natural and synthetic rubber, cord and fabrics) and downstream expansion into retailing and maintenance expanded the majors' control over the whole production chain.

Looking at this period of the tire industry's history, observers comment on increasing dominance by the major transnational companies. "Although the degree of oligopolistic competition has fluctuated, there has been no 'cycle from monopoly to oligopoly to workable competition,' said by Vernon to characterize many international products" (ibid., p.232). Instead, direct foreign investment facilitated the majors' control over production throughout the world. At the same time expansion still allowed for regional dominance of some big tire companies in each of the most important volume markets. Almost prophetically, however, an observer emphasized in 1985 the role of crisis, excess capacity, slack demand and fierce price competition, all factors that may forge a "reorganized and perhaps more concentrated oligopoly in the future" (ibid., p.255). A future that turned into history five short years later.

A Village of Giants

Developments after World War II cast great doubt indeed on the significance of judging industry concentration by "national" market indicators. Steeply increasing market shares accompanied by vertical integration and the elimination of competitors have been taking place both nationally and internationally and many aspects can only be fully understood by looking at the world market as a whole.

In 1975, Michelin of France again started production in the USA, thereby challenging the concentration level of the biggest US producers. However, at the same time, this allowed researchers to start writing a new chapter on the globalization of tire manufacturing. Michelin's move marked a breakout by the major tire producers from their position of dominance in their domestic markets, into a new role as big players in the markets of other leading producers. The relative resilience of the biggest volume market, North America, disappeared. Except for the somewhat less important, remaining resilience of the Japanese market, the tire world has been redistributed among the major companies. The following table shows the positions of the major companies in different geographical areas in 1987.

The table indicates how close the three major companies are in terms of world market share and their respective strongholds which, however, are challenged by the others - except that the Japanese retained sole dominance in the Asian and Pacific market. Thus, Michelin's re-entry into North America, 12 years before the distribution described above, marked the beginning of an even higher stage in the internationalization of tire manufacturing.

To establish truly global factories during the 1980's, tire businesses no longer targeted other major companies as competitors but rather as obstacles to further growth. While the majors previously invaded the territories of the other dominant players, still some degree of regional dominance by the individual companies could be observed. Japanese majors did not sell and produce much in Europe and the USA while the European majors were weak in the USA and in Japan, while even the US companies, though clearly most advanced, did not reach every region in the world.

Modern tire history, as we have seen, is closely linked to developments in vehicle manufacturing. Since the period of higher oil prices, growth in vehicle manufacturing has slowed considerably. Many markets are already highly saturated (US and some European markets in particular) and problems arising from pollution and urban congestion limit further growth in the volume markets. By the end of the '70s, a crisis was looming large in the vehicle sector. Rapidly advancing Japanese automobile manufacturers departed from their wholesale reliance on exports, establishing "manufacturing transplants" and thereby contributing strongly to the remodelling of

Table 3: Market share (passenger car and commercial vehicle tires) of the dominant tire manufacturers in different geographic areas

| Market share | total | | W.Europe | | N.America | | Asia/Pac. | | S.America | |
|----------------------|-------|-----|------------|------------|------------|------------|------------|------------|------------|------------|
| | PT | CVT | PT | CVT | PT | CVT | PT | CVT | PT | CVT |
| %share of the region | 98% | 93% | 30% | 14% | 44% | 32% | 18% | 34% | 6% | 13% |
| Companies | | | | | | | | | | |
| Michelin* | 26% | 22% | 33% | 41% | 28% | 23% | 2% | 1% | 12% | 19% |
| Goodyear | 20% | 21% | 14% | 14% | 30% | 30% | 6% | 6% | 31% | 34% |
| Bridgst. | 17% | 21% | 6% | 8% | 15% | 14% | 36% | 38% | 27% | 21% |
| Conti | 9% | 5% | 14% | 15% | 8% | 8% | — | — | 2% | 4% |
| Sumitomo** | 6% | 7% | 7% | 6% | 3% | 5% | 19% | 17% | — | — |
| Pirelli | 6% | 4% | 13% | 10% | 4% | — | — | — | 21% | 12% |
| Yokohama | 3% | 5% | — | — | — | 1% | 16% | 14% | — | — |
| Toyo | 2% | 3% | — | — | — | 1% | 9% | 7% | — | — |
| Cooper | — | — | — | — | 5% | 5% | — | — | — | — |
| Various | 11% | 12% | 13% | 6% | 7% | 13% | 11% | 17% | 7% | 10% |
| Total | 100 | 100 | 100 | 100 | 100 | 100 | 99 | 100 | 100 | 100 |

* with Uniroyal/Goodrich; ** with Ohtsu; pt = passenger tires; cvt = commercial vehicle tires (emphasis added)

Source: Goodyear/Le Journal de l'Automobile, September 1988

automobile manufacturing all over the world. Cross-penetration of the volume markets and transplanted production of motor vehicles challenged a tire industry that struggled badly against the problems arising from overcapacity during the cyclical crisis of the early 1980's.

Limited growth for the automotive industries after the recession of the early '80s, therefore meant limited growth for the tire industry too. OE tire sales in the USA rose from 44 million units in 1983 to only 53.5 million units in 1988 (+ 9.5 million). Replacement sales instead rose from 134 million to 156 million units (+ 22 million) respectively. Moreover, OE sales peaked in 1985 (55 million units) reflecting both the slow growth of new automobile registrations and rising imports. 28% of all new automobiles sold in the USA (16 million OE automobile tires) were imported in 1988 (Modern Tire Dealer, 1/1989, p.32).

Intrinsic expansion being very limited by the general market conditions, tire companies sought salvation by "consolidation", i.e. mergers & acquisitions (M&A). Particularly the US market became a battlefield of the tire giants. Without a presence in the biggest market, future failure for a tire manufacturer seemed sure. And, whereas US companies were present in the most important overseas markets, during the 1970's they still seemed insulated from European and Japanese competition at home. But much as the American companies finally proved incapable of preventing the introduction and dispersion of European-made radial tires in the US market

during the '70s, the privileged position of several "national US champions" at home all of a sudden diminished during the '80s.

Volume Markets: Reshuffling the Cards

The following table provides information on the geography of world tire production (1980 and 1988, volume markets). The importance of the volume markets in North America, Japan and Western Europe appears clearly in the numbers.

| Country | Passenger Tires | | Commercial Vehicle Tires | |
|------------------|-----------------|----------------|--------------------------|---------------|
| | 1988 | 1980 | 1988 | 1980 |
| USA | 174,341 | 130,020 | 37,010 | 28,200 |
| Canada | 21,992 | 18,142 | 2,479 | 3,324 |
| N.America | 196,333 | 148,162 | 39,489 | 31,524 |
| Japan | 97,351 | 65,100 | 49,877 | 45,700 |
| France | 54,043 | 44,320 | 5,800 | 6,180 |
| W.Germany | 44,131 | 33,800 | 5,290 | 4,220 |
| Italy | 27,081 | 23,830 | 2,947 | 2,790 |
| UK | 26,144 | 22,900 | 3,961 | 3,447 |
| Spain | 21,075 | 14,400 | 3,127 | 2,972 |
| Benelux | 6,233 | 7,800 | NA | NA |
| W. Europe | 178,707 | 147,050 | 21,125 | 19,609 |
| USSR | 24,000 | NA | 28,000 | NA |
| Brazil | 20,500 | 18,160 | 4,150 | 3,940 |
| S.Korea | 12,100 | 7,970 | 7,995 | 3,740 |

* 1987

Source: European Rubber Journal 1988/1989 World Tyre Report, p.16

Before the reshuffling of tire production, approximately 32% of all tires were produced by major American manufacturers, 27% by Japanese and 34% by European major companies. Today, only 20% are made by American manufacturers. The Japanese and European shares have risen to 33.5% and 40%, respectively. The following table indicates the dramatic change in industry ranking.

Table 5: Changes in World Tire Market Rankings by Revenue (1978-88)

| Ranking | 1978 Country | 1988 Country |
|---------|-------------------|-------------------------|
| 1 | Goodyear U.S. | Michelin France |
| 2 | Michelin France | Goodyear U.S. |
| 3 | Firestone U.S. | Bridgestone Japan |
| 4 | Bridgestone Japan | Continental FRG |
| 5 | Dunlop U.K. | Pirelli Italy |
| 6 | Uniroyal U.S. | Sumitomo Japan |
| 7 | Goodrich U.S. | Yokohama Japan |
| 8 | Pirelli Italy | Toyo Japan |
| 9 | General U.S. | South Pacific Australia |
| 10 | Yokohama Japan | Cooper U.S. |
| 11 | Continental FRG | (Hankook S.Korea) |
| 12 | Armstrong U.S. | (Kumho S.Korea) |
| 13 | Sumitomo Japan | (Modi India) |
| 14 | Toyo Japan | (MRF India) |

Sources: Stockholding Reports; in brackets: European Rubber Journal 1988/89 special issue, ranking according to sales

As can be seen from the table, four out of five top American producers disappeared and both Japanese and European companies improved their positions considerably.

Sumitomo of Japan was actually the first company to establish a combined manufacturing presence in the USA, Europe and Japan. Completing the acquisition of Dunlop in 1986, the Japanese company - smallest of the six big competitors in terms of its tire business - delivered the model for industry regrouping (R&P News: 10/17/1988, p.37). Apart from Dunlop UK&D, Dunlop France and Dunlop USA, Sumitomo also bought Ohtsu in Japan and owns a 20% share of Sweden's Nivis Tire. (2.3)

After Michelin's entry into the US market in 1975, Bridgestone cut the next slice off the US cake. In 1982, the Japanese manufacturer began its purchase of Firestone, buying a Tennessee radial truck tire plant where subsequently production has been expanded to include auto tires. By 1988, Firestone was completely integrated into the Bridgestone business which paid \$2.6 billion for the acquisition. This purchase was the world's third biggest industrial takeover of 1988. Firestone employed a workforce of 54,000. Bridgestone also purchased a 36% share of Lassa (Turkey), a company that was subsequently renamed BRISA. Customer reactions were not exactly favorable for Bridgestone. General Motors cancelled all Firestone orders after the buyout - a move that is certainly limiting Japanese manufacturers' enthusiasm for foreign takeovers (EIU: 9/1988). However, Bridgestone now has a strong manufacturing base in each of the world's three major tire markets and remains the industry leader in Asia.

Although already the most internationalized company among the majors, even Goodyear has expanded further internationally over the past few years. Apart from the purchase of Dunlop Olympic Ltd. (Australia) the company advanced through expansion and joint ventures (see below "cooperation"). But Goodyear faced enormous troubles arising from financial speculation. As recently as 1986, Goodyear had to fight against a hostile takeover attempt by British-French financier James Goldsmith. In the process of defending its independence, Goodyear slimmed down by 12%, streamlining its tire business and divesting itself of some other business lines. Until now, three tire plants in the USA and Canada have been closed. It was only in 1989 that Goodyear definitively lost its longstanding number one place in tire industry ranking to Michelin.

West German Continental AG bought Austrian Semperit (75%) in 1985 and US General Tire from GenCorp for \$628 million in 1987. In 1989, 60% of Mabor (Portugal) was acquired, too. Most recently, Conti took over Swedish tire manufacturer Nivis. Nivis had already been using Conti technology. These purchases pushed Continental to fourth place in world tire manufacturing. Conti also intends to buy the remaining 25% of Semperit.

In 1988, Italian Pirelli bought Armstrong Tire Company for \$197 million after being fended off in its attempt to purchase Firestone. Previously, Metzeler and Pneu Tropical had been bought in 1986. Although still remaining the fifth-biggest tire producer, Pirelli is widely seen as a candidate for further "restructuring". A rumored merger with Goodyear, however, did not materialize. Only recently, Pirelli restructured the company and decided to list all of its tire business on the Dutch stock exchange because it wanted to be regarded as a truly international operation. The ill-fated attempt by Pirelli to take over Continental in 1990/91 seems to have backfired badly. Although Pirelli claimed to have a silent majority of Conti stock at the beginning of the bidding, it seems to have counted without the closing of ranks by German industrialists, led by the major automobile companies who proved mightily displeased with the prospect of buying their OE tires from a foreign owned supplier. The resulting rejection of Pirelli's bid may yet turn into a counter-bid for the Italian undertaking which exposed its own relative weakness in the hard-fought campaign. Observers regard some rationalisation of the positions of the fourth and fifth ranking tires producers to be inevitable in the medium term.

In 1989, Michelin's purchase of the previously combined tire businesses of BF Goodrich and Uniroyal Inc. (\$1.5 billion) gave this company a very strong presence in the United States and the number one position in the tire industry worldwide. Though the takeover was approved by the US antitrust authorities in 1990, Michelin was not made universally welcome. The American business daily Wall Street Journal reported possible complications in the pending antitrust review. Michelin's chairman was understood to be expecting a rejection of the takeover, due to a Goodyear lobbying campaign. To counter Goodyear's activities, Michelin announced its intention to invest a reported "\$690 million or more" in cash put aside for the Uniroyal Goodrich purchase and its expansion in the USA (WSJ: 14.3.1990). In any case, Michelin can expect strong challenges on US territory. In a move similar to its reaction to the Bridgestone/Firestone takeover, GM is expected to lower the dependency on the Michelin/BF Goodrich Uniroyal supply source by cancelling existing contracts with the takeover target.

This case was not the only one where Michelin ran into trouble with antitrust authorities. The £140 million takeover of National Tyre Services, a 420 outlet tire distribution chain in the UK has been attacked by the British Monopolies and Mergers Commission. Michelin was asked to divest some truck tire outlets, but the French giant had already sold the chain to a subsidiary of Continental. Michelin already owns the 540-outlet Associated Tyre Services chain in the UK (FT: 8.3.1990). The antitrust authorities of the European Community keep several files on secretive Michelin, too. Michelin has entered several joint ventures in Asia (see below: "cooperation") and has a strong lead over all foreign competitors in the Japanese tire market.

Also in 1989, US producer Mohawk was bought by Yokohama for \$150 million, providing the Japanese company with its first US production unit. Previously, a joint venture was established with General Tire (Conti).

Still in the US, Cooper is reported to be considering the takeover of Fidelity Tire and has bought a former Firestone plant in Georgia that will commence production in 1991. Cooper is currently expanding at a rate of 10% annually.

Due to the declining US dollar, the major wave of foreign purchases of American companies occurred after 1986. Additional factors for the takeover wave may lie in the recent most favorable conditions for foreign investment in the USA, as against the prospect of future interference by newly created state laws against foreign takeovers and strong lobbying for a similar federal law.

But these factors may account merely for the tight timing of events. In fact, the merger push on the US battlefield for transnationals could be interpreted as merely catching up with an international development previously delayed by the sheer size of the US home market. Thus, additional companies around the globe changed hands, a fact that increases the likelihood of further steps to consolidate production elsewhere. The recent takeover moves between Pirelli and Conti prove that restructuring of the world tire industry is far from complete even yet. The signs are that further rationalisation and consolidation of tire production is still to come as a result of past and future mergers. Michelin recently announced that some 1,300 employees of the former Uniroyal Goodrich plants in France would lose their jobs. The Federated Miscellaneous Workers Union of Australia likewise fears Bridgestone may close either its New Zealand or Australian manufacturing site following the Firestone merger. Due to their recent acquisitions, all major players except Pirelli enjoy original equipment sales in the US market. While not yet supplying OE, however, Pirelli is said to have a fair chance of entering this illustrious circle in the USA through its Armstrong purchase and high OE sales with all major companies throughout Europe.

Downstream integration: tire makers buy distributors

Automobiles usually live longer than tires. The US replacement tire market is about three times the size of the OE market. Single customers - the overwhelming majority of tire purchases are made by individual car owners

- lack the power to impose the low prices motor manufacturers can ask for. Therefore, the replacement market really is the "money maker" for the tire companies. "Thus vertical amalgamation has been going on since the 1970's, as all major tire manufacturers have either set up their own retail chains or bought up independent sales outlets which have continued to operate under the existing name. In most cases, manufacturers have allowed the sale of a variety of brands, in view of the competition from established independent traders. However, the competitiveness of the independents is being endangered by strong pressure from manufacturers and may lead to the establishment of buyer cooperatives (EIU: 3/1989, p.26).

For quite some time tire manufacturers have recognized the importance of dealers and dealer networks. The sales share of retail tire specialists in West Germany, for example, increased by 7% between 1975 and 1987 to reach 62% of the total market. More recently, the big six producers further strengthened their efforts to directly control "who is selling what". Recently, an impressive list of takeovers and participations have been reported in this segment.

Continental's purchase of Nivis Tyre (Sweden) added a dealer network in Sweden and Norway. The company also bought a 13% interest in Kwik-Fit (600 outlets in the UK, France, the Netherlands and Belgium) and a 50% stake in Birkenshaw Tire "Smiley" (UK, 45 outlets). Conti's injection of capital will allow the chain to add 150 outlets throughout the UK and continental Europe up to 1992. Although Conti is the second largest European tire manufacturer, its market share in the UK is only a low 1.5%. In Germany, Conti bought Heinrich Maurer & Co. K.G. which operates 18 retreading and distribution sites. Conti subsidiary Vergölst is one of the biggest West German retail chains with approx. 150 outlets. Continental's exclusive replacement market distributor Yanase also functions as exclusive import agent for Mercedes and Volkswagen in Japan (R&P News: 17.10.1988).

Michelin and Bridgestone, together with their US tire manufacturers, have acquired large dealer networks. Bridgestone is adding a further 300 outlets to Firestone's US network. Worldwide, Bridgestone's network then will include 1540 outlets.

Sumitomo bought 70% of Motorway (UK) from the sole remaining UK tire manufacturer Avon for \$67 million. What had been Dunlop's old empire now in the hands of the Japanese group included the West German Holert-Kunz group with 76 outlets.

Goodyear reported in its 1989 annual report that its number of outlets had been doubled in Canada. Goodyear's Kempen chain in West Germany has more than 100 outlets, over 50 of which are franchise businesses. The company remains Number 1 in the retail chain operations, commanding more than 2,200 locations globally.

All the large companies are aggressively acquiring tire distribution chains to increase their direct grip on the (higher margin) replacement markets. Due to the resistance of independent dealers, many stakes are acquired anonymously. Continental, for example, now owns wholly or partially three retail chains in the U.K. and four in N. America. Not all investments were considered "friendly" by the targets. Conti's "acquisition of a 13% share of the previously independent retail chain Kwik-Fit ... was received altogether negatively by the management there" (FR: 14.3.1990).

"Cooperation" between Major Tire Companies

Several major types of alliances can be distinguished between the leading tire groups. When circumstances are appropriate, competition gives way to cooperation at almost every operating level. Cooperative ventures exist in the tire sector in production, marketing and distribution, supply of raw materials, technical development and licensing.

In one way or another, practically all of the major companies are linked with one or more competing enterprises. Cooperation is particularly important for the second-rank triumvirate and for the smaller players to match the worldwide presence of the big three. But the big three engage in various cooperation arrangements, too. Short of a full-scale merger, these types of cooperation are usually set up for a specific period of time. Nevertheless, the sheer quantity of recently formed joint ventures and alliances changes the appearance and functioning of competition in the industry. An important motive for cooperation is the desire for market penetration at lower initial investment cost even at the risk of allowing a competitor to become familiar with one's own markets and products. Common interests of joint partners can be seen in the mutual desire to protect businesses against pressures from vehicle manufacturers and other competitors in the tire business (increasing barriers against market entry).

For a long time now, tire manufacturers have cooperated to produce synthetic rubber. Not long ago, Bridgestone built a new SR plant in Thailand together with Siam Cement (R&P News: 17.10.1988). The company is also investing \$170 million to modernize and expand a Turkish plant together with production joint partner BRISA. BRISA's other owner, Sabanci, is also jointly producing steel cord with Belgium's Bekaert Group and nylon tire cord with Du Pont (R&P News II: 19.6.1989, p.6).

Production cooperation constituted the principal vehicle of Goodyear's international expansion during the 1980's. In 1985, the company established a joint venture with Toyo and Mitsubishi Corp. of Japan, the owners of Giant Tire Co. Ltd. In 1986, Goodyear started to produce automotive and industrial products with Formosan Rubber Group Inc. in Taiwan. The company also "entered into an agreement with Pacific Dunlop Ltd. to combine all tire manufacturing, marketing and retailing in Australia, New Zealand and Papua Guinea...Involved are five tire production facilities, 27 retread plants and 425 retail outlets" (Moody's: 1989, p.2982/3).

Michelin entered into a venture with Okamoto, a Japanese condom maker, to build tires for the Japanese market. Other joint ventures were established with Wuon-Poong (South Korea: Michelin Korea Tire Co.) and Siam Cement (Thailand: Michelin Siam Cy).

Continental entered two joint venture agreements that expire in 1997. Continental's American subsidiary cooperates with the two smaller Japanese producers Toyo and Yokohama. The takeover of General Tire plus the joint venture agreements provided this "second row player" with production and distribution capacity in the three main tire markets, too.

Many rumors about a possible joint venture of Pirelli and Hungarian Taurus have been rejected by Italian managers as premature for a long time. Currently Bridgestone's Firestone is coproducing tubeless radial truck tires with the Hungarian company. However, Pirelli announced in a recent shareholder meeting joint venture contracts for tire production in the USSR, Poland and Hungary and for cables in Czechoslovakia (La Repubblica: 21.4.1990).

In Europe, Continental and Michelin are jointly engaged in technological development. Together, the two companies are trying to develop a new type of "runflat tire" with the aim of jointly "monopolizing" production and forcing other tire manufacturers to buy the license (ERJ: 1988/89, p.31).

Technology exchange agreements are widespread throughout the world. Just ten companies provide more than 50 companies (predominantly in the developing world and Eastern Europe) with the technology to manufacture diverse types of tires (ERJ: 1988/89, p.20). In particular, Italian Pirelli is very active in technology licensing. After recent deals in Egypt and China, the company provides 10 businesses with technological expertise. BTR's technology contracts with China, Nigeria, Zimbabwe, Iraq and Turkey are valued at \$70 million. Via its Dunlop International Technology Ltd unit, the British conglomerate participates in the worldwide technology exchange program with Sumitomo's Dunlop facilities. Yokohama recently became part of the technical cooperation between Conti, its subsidiary General Tire, and Toyo in the USA, and bought a piece of the new GTY Tire Co., a truck tire facility jointly owned by the three. Only recently, the secretive Michelin changed its policy to provide technology to minority owned subsidiaries (ibid.).

The trend towards "technology networks" is yet another aspect of the process of internationalization. Companies band together with all parties expecting to profit from lower R&D expenses and prepared to meet strong market competition from their partners subsequently. The reason for this is obvious to many antitrust officials: in the short and medium term, far-reaching strategic alliances work in a very similar way to monopolies. Markets are divided between major companies, thereby preventing smaller companies from entering the area. Stronger competition from new players in current conditions of overcapacity for tire production would result in even stronger price wars turning company balance sheets into the red.

Expansion: Heading towards Overproduction?

Having reviewed recent M&A (merger and acquisition) activities as well as cooperation arrangements, an important part of the restructuring of tire and inner tube manufacturing has been described. This process has involved enormous problems for employees and unions. Many jobs were lost, at least temporarily. In the USA, for example, 31,500 workers and non-supervisory employees have lost their jobs since 1977. Sometimes, however, plants previously shut down have been reopened by their new owners who were able to invest huge amounts of money to modernize earlier loss-making facilities. However, in the course of the recent takeover wave most

companies have accumulated considerable burdens of debt. The following table describes the debt level of the majors against current assets.

Table 6: Tire manufacturers' current debt levels

| | | | |
|-------------|-----|----------|-----|
| Pirelli | 45% | Goodyear | 63% |
| Bridgestone | 55% | Michelin | 69% |
| Continental | 48% | | |

Source: Stockbroker Reports

Goodyear's debt level still reflects the company's expensive defense against the hostile takeover bid by Goldsmith. Its long-term debt load of \$3.3 billion requires over \$300 million a year in servicing costs - equivalent to three dollars for every tire the company makes.

Furthermore, all of the big manufacturers have been on a spending spree quite apart from the takeovers. Not much, of course, has been invested in the labor force. All the companies have instead invested enormous amounts in automation efforts which offset most of the possible employment gains from capacity expansions and work time reductions. Despite increasing output, therefore, employment has been shrinking in many countries - in relative and absolute terms.

Although the growing importance of the replacement market reduced the cyclical effect on tire manufacturing to some extent (therefore making planning easier), most observers agree that the industry in the meantime has created substantial overcapacity - particularly in the USA "With one new auto and three new truck tire plants under construction, along with capacity expansions planned by virtually every major tire manufacturer, added production capability will easily outstrip any demand growth, said Harry Millis, an analyst with McDonald & Co. Securities Inc." (R&P News: 13.11.1989, p.1).

By the beginning of 1991, tire makers had invested almost \$3 billion in the USA to increase capacity by a further 45 million units (ibid.). The total investment published during the last three years reached almost \$4 billion.

Most of the spending is being carried out by the foreign buyers of American tire companies to upgrade their newly acquired but dated facilities. Worldwide, investments announced by tire manufacturers in 1989 totalled \$4.5 billion with more than half of the spending channeled into the USA

10 new tire plants bring to 30 the number of new projects announced since 1987. New production comes on line, however, at a time of shrinking OE and slow growth replacement markets. Capacity utilization has dropped under 90% and is expected to reach only 85% in the near future. After the destructive period of the early '80s, capacity utilization stood at 100% in 1984.

Apart from dubious capacity expansion in North America, the trend in the Asia-Pacific region should be carefully observed. "Asia and the Pacific rim look poised to be the tire industry's next big battleground", writes an industry analyst. "The world's leading manufacturers - Michelin, Goodyear and Bridgestone - already have plants established in South-East Asia and have ambitious plans for further expansion, despite estimates of overcapacity and an automobile population in Korea, Taiwan and Thailand that is not expected to see a significant boom" (stockbroker report). Bridgestone is aggressively shifting production from Japan to supply emerging automobile production growth in the cheaper labor countries of the Pacific rim. Goodyear operates plants in six countries and is building a \$110 million Korean site to produce another 3 million radial tires annually. Michelin entered three joint ventures in the region. While exports to Japan might increase due to political pressures and labor cost aspects, Japanese transplanted of automobile production on the other hand lowers the prospects of substantial absorption of Pacific rim production. In any case, Japanese tire workers might find themselves watching their jobs running away to other production areas rather soon.

Table 7: Geographical distribution of tire investments

| Region | (announced in 1989) Investments |
|--------------------|------------------------------------|
| N.America | \$2.335 million |
| Asia | \$885 million |
| W.Europe | \$645 million |
| Africa/Middle East | \$265 million |
| Australia | \$170 million |
| Latin America | \$100 million |
| Eastern Europe | \$85 million |

Source: ERJ: 1988/89, p.17

In Europe, Sumitomo's investments in acquired Dunlop facilities in France reached \$500 million. Bridgestone invested \$170 million in its minority owned Turkish company BRISA, targeting its production for the Middle East market, which had previously been exported from Bridgestone's Indonesian facilities. Continental spent \$36 million on Semperit after purchasing it and invested \$49 million in its 60% owned Portuguese Mabor subsidiary.

Swedish Trelleborg is building a new plant in Belgium (\$8.5 million) which will increase capacity for solid tires by 30% (R&P News: 13.11.1989, p.12).

In Eastern Europe, new investment can be expected from Pirelli in the USSR, Poland and Hungary and from Continental in the eastern half of Germany. One Soviet deal by Pirelli involves a commitment to produce 5 million tires yearly at Nizhnekamsk where Pirelli licensed technology in the past. 85% of the production is for the Soviet market (FT: 5.12.1989). Continental's Semperit already has a subsidiary in Yugoslavia and the Financial Times reported that Conti is exploring ways to establish a tire manufacturing company as well as a distribution chain in East Germany (FT: 14.4.1990).

East German tire manufacturing collective Pneumant has scheduled ambitious expansion projects. Its tire cord plant has been expanded by 400 metric tons and a further 50% expansion is scheduled. The company purchased steel cord processing equipment and added curing presses at its Riesa tire plant and three new mixing lines in Fuerstenwalde. It is also renovating its Neubrandenburg facility to increase capacity (R&P News: 4.12.1989). Conti was reported to be involved in takeover negotiations with Pneumant until recently when it backed off the deal. However, some sort of cooperation with Pneumant and three more firms in former Eastern Germany is likely to continue. Although Pneumant is seeking to pursue an independent strategy, it is extremely unlikely that the company can survive on its own.

Conti also agreed to study a joint venture option with Czechoslovakia's tire manufacturer Barum (R&P News: 25.6.1990, p.1) - a move which anticipated the German-Czech automobile manufacturing link of Volkswagen-Skoda. With many automobile manufacturers establishing joint ventures in the recently opened Eastern sphere it is not difficult to imagine more tire producers following suit. The growth potential in Eastern Europe is huge. While the West European market is good for more than 10 million automobile sales yearly, up to now Eastern European economies of similar size sold only some 2 million units annually.

Another reason for new capacity construction has been rising demand for high-performance (and high-margin) tires that has led tire manufacturers to invest in new facilities capable of meeting demand for tires able to stand up to the quality control procedures required. "But", according to a stockbroker report, "the shift to high performance alone does not explain the rise in spending, and all tires are under more stringent quality demands."

New investment in computerized equipment is very expensive, of course. The value of a tire manufacturing job has increased enormously during the last decade and has at the same time saddled the workforce with greater responsibilities. To make full use of costly equipment and speed up the process of capacity expansion, company pressure on workers and their unions to lengthen the equipment utilization time rose steadily. In many countries literally all production workers and an increasing share of white-collar employees are forced to work shift turns.

An ICEF investigation revealed some very "creative" aspects of rubber companies' "innovative" work assignments. Fully continuous shift work has been expanded, additional shifts have been added and more and more managers are trying to deprive their employees of well-deserved free weekends. Conti was exempted from German labor laws in North Rhine Westfalia to work two additional 12-hour shifts over the weekend. Goodyear hired 400 special weekend shift workers in England who will only work 32 hours a week, but 24 of these hours will be on Saturday and Sunday. Another 400 workers in France work weekend shifts and there is a lot of pressure to add more. Already, 24,500 rubber workers in France are working 3x8 or 4x8 shift turns including Saturday shifts. Sunday work has been reported for continuous shift workers in Spain, Canada, United States and South Africa. All ICEF member unions except those from Australia, Austria, Denmark and the UK reported that the normal work week includes Saturday. Continuous shift work in the tire sector involves an extraordinarily high number of workers in practically all countries. Lowest were Denmark (10%), Germany (30%) and Japan and Italy (40%). The other countries average more than 70% workers on continuous shifts. In absolute terms it can be estimated that more than 60% of all tire sector employees are working shift schedules and around 30% have to work at night (see chapter 7).

The driving force behind the enormous expansion of the individual companies, clearly, is competition-led pressure from the new configuration of the motor vehicle and tire production world and the desire not to keep expensive new equipment idle. As companies were operating up to the limits of capacity during much of the second half of the 1980's, expansion seemed the only way not to lose business with increasingly demanding customers - reasonable from the perspective of each individual company threatened by competitors that grew bigger and bigger. However, the attempt to rapidly increase production by adding capacity, fully utilizing equipment and filling in every last gap in the workday does not ultimately help the companies and has a detrimental impact on the workers. The cumulative effect in the market place is overcapacity. This is a "dirty word," according to an industry observer who suggests the alternative description "price cutting, plant closings,

layoffs." However, the following comment spells out a warning for the companies that should be particularly well understood by the workers and their union representatives:

"Individually, none of the tire makers believe they will be caught in an overcapacity crunch. It's always 'the other guy' whom they expect will get hurt. But if an excess capacity situation is in the offing, everyone will be the 'other guy'" (R&P News: 13.11.1989, p.8).

This warning, voiced in November 1989, has turned out to be thoroughly justified. Overcapacity is once again approaching 20 percent and profit margins are expected to turn from bad to worse in the near future due to shrinking motor car sales and higher oil prices. Most of the major companies already had to sell gloomy news to the capital market: Michelin is warning that the company will face three or four difficult years. The company is to slash 2,000 jobs in France. Goodyear moved into a net loss situation towards the end of 1990 and is expected to cut its European workforce by some 1,200 people. Bridgestone's losses on Firestone operations in the USA and Europe exceeded \$300 million in 1990 with correspondingly dire results for consolidated group performance, despite a relatively buoyant Japanese market. Continental reported a massive profits plunge in 1990 to under DM 100 million against a previous year's performance of DM 227.8 million.

The last overcapacity crisis precipitated the industry shakeout of the 1980's. The current situation - intensified by price wars and strategic oversupply - is likely to be costly for workers too.

Competition, R&D, Automation

It has been stressed that new quality demands by auto manufacturers and generally intensified competition have caused considerable investment in R&D by the tire manufacturers. For instance, the major tire manufacturers spent "millions" on the expansion of existing test tracks and the construction of new ones. Sumitomo, for example, has spent \$35 million to build circuits in Japan, FRG and North America and to expand technical centers. Goodyear will invest \$100 million to build a technical center in Japan and Bridgestone doubled a testing track site there (\$30.7 million). The following table shows the recently strongly increasing R&D spending by the major companies.

| Company | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 |
|-------------|------|------|------|------|------|------|------|------|------|
| Michelin | 14.3 | 14.2 | 8.7 | 4.9 | 4.1 | 4.7 | 4.8 | 6.5 | 9.4 |
| Goodyear* | 2.9 | 3.3 | 3.5 | 5.1 | 6.0 | 8.0 | 6.8 | 4.7 | 5.4 |
| Firestone | 3.6 | 4.5 | 5.2 | 6.0 | 6.7 | 5.7 | 6.3 | 6.1 | — |
| Bridgestone | 10.7 | 7.7 | 4.5 | 6.4 | 7.6 | 7.8 | 5.4 | 5.7 | 8.1 |
| Continental | n.c | 4.9 | 4.1 | 4.5 | 4.2 | 5.1 | 5.8 | 5.9 | 5.7 |
| Pirelli | n.c | n.c | n.c | 5.5 | 5.5 | 6.9 | 7.0 | 8.4 | n.c |
| Sumitomo | n.c | n.c | n.c | 5.9 | 5.7 | 5.7 | n.c | 5.5 | 7.7 |

*Source: Société d'Expertise Comptable et d'Analyse Financière 1989
Report to the European Commission*

Research spending seems to follow a twofold perspective. "Automation has been introduced progressively over the past few years, not just to reduce the labor costs but to improve dimensional consistency", writes an industry analyst. "Equipment designed and manufactured by the tyre manufacturers themselves is now capable of producing tyres virtually without human intervention." Pirelli, a company that operates most successfully in the higher performance / higher margin segment of the industry, seems to be looking for the most advanced production technology, too. One new plant's equipment in Italy (Bollate) requires 12 weeks of operator training. The new plant's output should be sufficient to supply 15% of Pirelli's European orders. Planned expansion of this "showcase and testbed for the technology of the future" will double capacity by 1993. Similar developments have been seen in the UK, where Pirelli decided to re-invest heavily at the company's Burton-on-Trent plant and at the Carlisle factory. In the UK, the focus is even stronger on 'revolutionary working practices', which shift the burden of quality control increasingly onto workers themselves. "Like Ford, Pirelli has computerised its factory

floor. The workforce does not sign or clock in - it logs onto the mainframe which responds with information about the day's tasks and targets. This same computer keeps a record - and a printout where applicable - of every batch operation. Quality control processes, essential with tire building, can be back-checked to individuals." (Financial Times: 20.6.1990, see also below chapter 'Factory 2100').

Workers and unions saw themselves increasingly confronted with technological modernization in the dispersion of radial technology. The aging of older tire production plants led to widespread closures and to the building of new, heavily automated facilities for radials "to allow for a continuous flow of materials from the beginning of the manufacturing process to the end. Computer monitors are now being used to schedule the wide variety of styles and sizes to ensure that all capital equipment is being fully utilized" (MLR: 6/1989, p.24). Tire manufacturers succeeded in handling each stage of the tire building process more "efficiently". New technology reduced the human labor input in raw materials handling, mixing, calendaring, extrusion, tire building and curing with the result of steeply declining employee hours from 1976 onwards. Additionally, tire manufacturers seem to have been able to increase the "utilization" of their employees. The following table provides information on productivity gains in the US tire industry.

Table 9: Average annual rates of growth in output per employee hour and related measures in the American tires and inner tubes industry, 1958-86

| Measure | 1958-73 | 1973-86 | Acceleration (+) or slowdown (-) |
|--|---------|---------|-------------------------------------|
| Output per employee hour | 3.9 | 4.3 | +0.4 |
| Employee hours | 1.7 | -5.0 | -6.7 |
| Capital | 6.1 | -3.7 | -9.8 |
| Capital per employee hour | 4.4 | 1.3 | -3.1 |
| Capital effect* | .6 | .1 | -.5 |
| Intermediate purchases | 5.2 | -4.0 | -9.2 |
| Intermediate purchases per employee hour | 3.4 | 1.1 | -2.3 |
| Intermediate purchases effect** | 2.1 | .6 | -1.5 |

* Capital per employee hour multiplied by the share of capital income in total output
 ** Intermediate purchases per employee hour multiplied by the share of intermediate purchases income in total output
 Source: *Monthly Labor Review*, 6/1989, p.23, emphasis added

Increasing output and steeply declining employee hours translate into less workers with an increasing workload despite greatly improved material efficiency and automation. The slowdown of the 'capital effect' (indicative of the extra productivity returned by each new dollar of investment) shown in the table above suggests that a "capital saturation" situation was being reached in the US tire and inner tube industry in the mid-eighties. The increasing desire of tire manufacturers around the world to expand plant utilization time is one more indicator for capital saturation. With regard to actual capital investment, however, more than half of total investments in the world's tire industry are still going into the USA. This reflects the lifting of tire operations onto a new plane over recent years where both technical and managerial techniques are combined to achieve a revived trend for the dominance of technology over the production process. International cooperation of trade unions therefore must not only imply tackling problems of comparative wages and benefits, but also exchanging experiences on the revolution taking place in the work process and methods of protecting workers against the implications of changing job categories and the intensified exploitation of labor.

The "intermediate purchases" effect listed in the above table brings to the fore one more aspect of international change in the tire producing industry. This problem requires the examination of the tire manufacturers' grip on "upstream" industries. Among other strategies, vertical integration clearly is predominant.

Reshuffling the "Intermediaries": Vertical Integration and Controlled Supply Companies

Tire companies consume a great amount of raw materials and intermediary products. "Intermediate purchases are composed of materials, fuels, electricity, and purchased services. Of these components, materials is by far

the largest, constituting 84 percent of intermediate purchases on average" (MLR: 6/1989, p.23). In 1982, the materials input in American tire production consisted of:

Synthetic Rubber 29%
Tire Cord (nylon and polyester) 24%
Carbon Black 19%
Natural Rubber 18%
Rubber Processing Chemicals 11%

Similar to their more recent downstream investment in retail chains, tire companies increased historically their market power via control over supplies. This control, however, has become much more pronounced during the recent period of restructuring.

Michelin is the foremost world manufacturer of thin tire cord. Michelin, Goodyear and Pirelli have a significant captive capacity in Europe's steel cord production with Belgium's Bekaert B.V. occupying the position of the leading independent producer (R&P News: 21.8.1989, p.32). Pirelli's takeover of Armstrong added two raw materials facilities in the USA to existing units in Europe and South America. Bridgestone will expand Firestone's synthetic rubber and synthetic tire cord operations and thus further increase intermediary purchases from company owned sources. Goodyear operates facilities to produce all input products except carbon black (e.g. synthetic rubber in the USA and Brazil, cord, fabric and rubber processing chemicals in the USA and natural rubber in various locations). Continental owns carbon black producer Deutsche Gasrußwerke. All major tire manufacturers are designing and producing tire making equipment.

These examples are far from exhaustive. Particularly the first rank triumvirate companies are vertically integrated businesses and the second rank three try to match this structure. Takeover and merger activities further strengthened the upstream integration and vastly increased the customer power of the tire giants as well as their reliance on global suppliers. Goodyear, for example, "has replaced Rocson Inc. with Truflex Rubber Products Co./Pang Rubber Co. as its exclusive supplier of tire repair materials to Goodyear Authorized Retreaders in North America and Europe...Goodyear selected the maker of tire patches and related materials partly because of its worldwide supply capabilities..." (R&P News: 10.7.1989, p.4).

To gain a better understanding of the "chain reaction" of international restructuring and of tire companies' attempts to control the whole production chain, a somewhat deeper analysis of carbon black and natural rubber production will round off the examination of the tire industry during the 1980's.

One Company, One "Color": Fewer Carbon Black Producers

Carbon black production, though mostly not in the hands of the tire manufacturers directly, is closely dependent on the six leading tire companies. 70% of world production of carbon black goes into tires with the remaining 30% supplying oil color production. Total production capacity outside centrally planned economies stands at 4.7 million metric tons annually. The leading producer region is North America with 1.65 million metric tons (35% of Western capacity). The Asia-Pacific region ranks second (1.24 million) closely followed by Europe (1.17 million).

During the 1980's, the carbon black industry underwent a process of change no less impressive than the changes in the tire sector itself. After the crisis period of the mid-seventies "the importance of quality management and assurance in the automotive field (pushed) these concepts upstream, nowhere more strongly than in tire manufacturing, and, in turn, in the manufacture of carbon black" (R&P News: 1.5.1989, p.22). Tire manufacturers heavily-handedly demanded quality, uniformity and global reproductibility from their carbon black suppliers. "As the world's tire industry regroups into large core business multinationals and small nationals, so too has the carbon black industry been forced to reorganize" (ibid.). Only four companies (Cabot, Degussa, Columbian Chemicals and J.M Huber) now share more than 50% of worldwide sales. These four companies have been expanding, aggressively.

Degussa (FRG) purchased four European plants from Phillips Chemicals Co. in 1987. Last year, the German raw materials and pharmaceutical giant invested big bucks (\$58.5 million) to purchase Ashland Oil Co.'s carbon black production facilities in the USA. Worldwide, Degussa now is the second biggest producer. Two of its European facilities are joint ventures and the company operates a plant in South Africa. "Once Degussa had made its deal with Phillips and changed from being solely a German (carbon black) producer to a multinational, a US presence became essential to establish a prime source relationship with the American tire majors on the

worldwide basis they demand" (ibid., emphasis and brackets added). In 1990, the company will expand its global carbon black capacity by another 17.3% to 880.000 metric tons. One plant in Botlek (Holland) alone will almost double capacity (R&P News II: 26.2.1990), p.1).

Carbon black accounts only for 15% of Degussa's total sales.

Cabot (US), on the other hand, has been busy divesting other activities in an apparent attempt to concentrate on carbon black production. The world leader produces in 19 countries all over the globe. A new facility in France has been added recently. During the last years, the company invested \$200 million in South-East Asia and a joint venture with a Chinese company has been established. The American giant also purchased the carbon black plants from Mitsui Toatsu Chemicals Co. (Japan) eventually preparing for a showdown with Japanese independent manufacturers. Japanese producers have all been buying American technology and so far have not demonstrated an interest in international expansion. The biggest producer in Japan is Tokai Carbon Co. with five more producing a total of 766,244 metric tons. However, carbon black is one of the products where Japan's imports are more than three times greater than its exports. One reason, perhaps the reason, for the dominance of American manufacturers is their strength in R&D. Even Degussa purchases technology rather than developing its own.

Comparing the strategies of the two leading producers it is noteworthy that Degussa's emphasis on diversification might prove the superior strategy. A recent attempt by Cabot to raise "black" prices by 4% had to be reversed because of pressure from the tire companies. In Europe, aside from Degussa, only two "independent" producers remained. The state owned oil companies in Spain and Portugal, however, are likely future privatization candidates and carbon black production might be sold subsequently.

Internationalization of carbon black production thus followed the pattern of international expansion of tire manufacturing. Carbon black producers had to follow the requirements of the tire giants and tried to protect their market power at the same time. The small group of companies once described as "conflicting oligopoly" has arrived in calmer waters since. The following tables provide information on their market shares worldwide and in the USA and Europe.

| Company metric tons | Country | Capacity share | Plants | % |
|------------------------|---------|-------------------|--------|------|
| Cabot | US | 1.000.000 | 22 | 20.2 |
| Degussa | FRG | 730.000 | 10 | 14.2 |
| Columbian Chemicals | US | 470.000 | 10 | 12.5 |
| J.M. Huber | US | 244.550 | 3 | 6.3 |

Source: R&P News: 31.9.1988, p.5

Tire Production and Third World Agriculture: Natural Rubber

Historically, the production of natural rubber (NR) has been particularly subject to the pressure of transnational rubber companies and the vagaries of international politics. To draw a complete picture, we also have to take into account the beginning of the rubber production chain. Several million brothers and sisters of workers in industrial rubber manufacturing labor everyday in plantations to facilitate the supply of the natural rubber used by rubber products manufacturers. Many plantation workers are directly employed by the leading tire manufacturers; many more are toiling nominally as "independent" farmers (smallholders). The natural rubber tappers in countries like Malaysia, Indonesia, Liberia or Brazil find themselves at the very bottom in terms of income and working conditions among all the employees in the rubber sector.

Most natural rubber (NR) today is planted in South-East Asia. Total world production reached 4,795,000 tons in 1988, an all-time high yet not enough to meet demand. The following table provides latest information on production and consumption of NR.

Table 11: Production and consumption of NR

| Country/ Region | 1988 (production) | 1988 (consumption) |
|--------------------|----------------------|-----------------------|
| World | 4795.0 | 4935.0 |
| plantation | 1520.0 | |
| smallholding | 3210.0 | |
| Malaysia | 1600.0 | |
| plantation | 429.1 | |
| smallholding | 945.1 | |
| Indonesia | 1200.0 | |
| plantation (87) | 318.1 | |
| smallholding (87) | 871.9 | |
| Thailand | 950.0 | |
| India | 250.0 | 303.0 |
| China | 240.0 | 550.0 |
| Sri Lanka | 125.0 | |
| Philippines | 85.0 | |
| Japan | — | 586.0 |
| other Asia | 111.0 | |
| Liberia | 85.0 | |
| Nigeria | 59.0 | |
| Ivory Coast | 60.0 | |
| other Africa | 50.4 | |
| Brazil | 30.0 | 120.0 |
| other L.A. | 25.0 | |
| U.S. | — | 800.0 |
| Western Europe | — | 990.0 |
| Eastern Europe | — | 363.0 |
| Australia | — | 36.0 |

Source: *Rubber Statistical Bulletin, Vol.43 (1988/89)*

The production/consumption pattern displays the typical "international division of labor" dependency features. A few third world producers of raw materials supply advanced industrial manufacturing in the developed world. Behind the numbers there is a whole set of pressures on developing nations that in turn decisively influence rubber workers' lives there. "Wages were very low, and since they were advanced food and clothing by their employers, they 'owed their souls to the company store' as much as any US coal miner of the period. Most died young" (R&P News: 10/16/1989, p.58). This statement describes the situation of rubber tappers in Brazil during the 19th century. However, it also describes today's circumstances not much less accurately despite the dramatically changed configuration of the world's political system and the development of enormous economic resources.

Whereas rubber tappers' living standards earlier in history were severely affected by the cyclical movement of the economy, today's schemes of international regulation mitigate the forces of competition in the rubber trade, raising in theory the opportunity of improving the economic conditions for third world agriculture. In this process, government policies of the industrialized nations play an important role quite apart from the influence of tire and other rubber manufacturing transnational companies.

The upstream investment of tire manufacturers in NR plantations moves us back in history. Rubber manufacturers from industrialized countries began to plant NR when trade with the valuable material gained war strategic importance. "Tires were important in World War I, but in World War II and later wars they became as indispensable as guns" (R&P News: 22.8.1988, p.84). During World War I, (non-British) compa-

nies began to send representatives to Singapore to directly buy NR because of a British embargo on rubber shipments. American companies then followed the example of British Dunlop, which already in 1910 had started a NR plantation in the then British colony of Malaya. In 1916, Goodyear began growing its own rubber in Sumatra (Dutch East India), a colony outside the British empire. Today Goodyear operates seven NR plantations: Marathon Estate (Brazil), Las Delicias Estate (Guatemala), Dolok Merangir Estate and Aek Tarum Estate (Indonesia), Mindanao Estate, Zamboanga Estate and Pathfinder Estate (Philippines) and has a NR purchasing unit in Singapore (Moody's: 1989, p.2982, Goodyear: 1989 annual report).

Following the examples of Dunlop and Goodyear and trying to circumvent British control over raw material supplies in 1924, American manufacturer Firestone started plantations of NR in Liberia. In 1926, Firestone acquired one million acres of jungle from the Liberian government destined to be cultivated for NR plantations. Recently, the purchase of Firestone gave Japanese manufacturer Bridgestone control of Firestone's remaining plantations (Harbel, Liberia and Makilala, Philippines). The Brazilian operation Tres Pancadas had been sold to Michelin in 1984 and a Firestone plantation in Ghana was discontinued in 1981 (Moody's: 1989, Bridgestone: 1989).

After the purchase of Tres Pancadas French tire manufacturer Michelin increased production at this plantation by 78% within three years, making the former Firestone estate the biggest in Brazil. Early in 1989, Michelin acquired a majority stake in Ararami Rubber Estates (Nigeria). Other holdings include Plantações E. Michelin

Ltda (Brazil), Osse River Rubber Estates Limited and Utagba Uno Rubber Estates Limited (Nigeria), and M.S. Enterprises Holding Co. Ltd in Thailand (Michelin: 1989). Prior to the Ararami purchase, Michelin's natural rubber holdings covered over 54,350 Acres and yielded nearly 30,000 m tpy (R&P News II: 08/28/1989, p.4). Today Michelin probably produces more NR than for example the whole of Brazil's output.

Pirelli operates plantations in Pará and São Paulo (Brazil) (EIU: 9/1989).

Rubber manufacturers wield additional influence over NR prices, quality, etc. through trading associations. Although virtual trading monopolies for a long time, from early on rubber (tire) manufacturers succeeded in offsetting their dependence on the dealer networks by investing in rubber plantations and by direct purchasing. The bigger manufacturers like the influence they gain via direct buying. Uniroyal Goodrich, for example, bought 60% of NR directly and estimates a figure of 75 to 90% "more normal" for the future (R&P News: 16.10.1989, p.60).

Still greater control over NR supplies has been gained by industrial nations and rubber manufacturers via technological development: World War II gave birth to the synthetic rubber industry. From then on, demands from underdeveloped countries could be checked by the availability of a substitute material supplied by the developed nations' chemical (and tire) industry. The following table provides information on the production and consumption of synthetic rubber.

| Country/ Region | 1988 (production) | 1988 (consumption) | Country/ Region | 1988 (production) | 1988 (consumption) |
|--------------------|----------------------|-----------------------|--------------------|----------------------|-----------------------|
| World | 9910.0 | 9885.0 | India | 45.0 | 78.0 |
| U.S. | 2335.0 | 2090.0 | Australia | 39.0 | 54.0 |
| Canada | 170.0 | 311.0 | Brazil | 258.0 | 260.0 |
| EC | 2020.0 | 1649.0 | Mexico | 147.0 | 110.0 |
| Eastern Europe | 2982.0 | 3035.0 | Argentina | 55.0 | 32.0 |
| Japan | 1176.0 | 971.0 | South Africa | 53.0 | 50.0 |
| Taiwan/S.Korea | 320.0 | 250.0 | *estimates | | |
| China | 275.0 | 325.0 | | | |

Source: Rubber Statistical Bulletin, Vol.43, 1988/89, International Rubber Digest, Vol. 41, 1988, No.12

Since the 1940's, NR lost its virtual monopoly as the raw material for rubber manufacturing. Despite the strong recovery after the war and the extremely rapid growth of the rubber industry owing to demand pull from the automotive sector, production of NR increased only slowly and continuously lost world market share to synthetic rubber (SR). This process was determined by:

- a) the technological evolution of SR,
- b) improved competitiveness of SR due to reductions in relative costs,
- c) better marketing methods of SR producers,
- d) vertical integration of SR producing and consuming industries
- e) insufficient availability of NR (Smit: 1982, p.1).

More than 90% of SR is produced in industrialized nations and centrally planned economies. Among NR producers, only Brazil has a significant SR industry.

The development of SR as a substitute for NR decreased the industrial manufacturers' dependence on distant and unstable sources. Technological progress lowered the price of SR subsequently and consequently kept the price of the substitute material NR down, too. Thus the advantage of industrialized countries was reinforced by war-induced technological progress and fixed the status of NR production.

Repeating the earlier moves to expand business upstream (investment in NR plantations), the giant tire manufacturers did not miss the chance to increase their control over the SR market. Immediately after the war, the American SR industry, although government owned, was operated by the tire and oil companies for a fee

(Solo: 1980, p.34). Then, Goodyear for example, in "...1956, jointly with a Firestone Tire & Rubber Co. subsidiary and two other companies, formed International Synthetic Rubber Co. Ltd. to construct a \$12,000,000 synthetic rubber plant near Fawley, England, with annual capacity of 50,000 long tons" (Moody's: 1989, p.2982). Today, almost every major tire and general rubber producer owns or is linked to a chemical manufacturer of SR.

Major SR producers today include Goodyear, General Tire (Continental), Firestone (Bridgestone), Uniroyal (Michelin) among the tire companies. Others are Exxon, Du Pont, Bayer, Polysar, Shell, Nippon Zeon, Mitsubishi Chemicals, DSM, Hoechst Celanese, Enichem, Arco, Shell, Dow Chemical, Ethyl Corporation, American Cynamid, Rhône Poulenc, BF Goodrich, Petrarch, Monsanto - to name just the majors - producing some or all kinds of the different synthetic rubbers used.

The tire (and oil and chemical) companies thus managed to reap huge profits in another rapidly growing market at the expense of agricultural producers. Despite some growth of NR consumption in absolute terms, the "third world" producer nations were kept at arm's length. Various efforts have been made by NR supplier countries to escape the deadly connection. "Although there has been a diffusion of production and expansion of capacity worldwide, the marketing of raw materials remains in the hands of the giant traders, and there is both oligopoly and, now primarily, oligopsony (market control by a few buyers, D.P.) as TNCs control the marketing of 70-80 percent of the world's commodity trade" (Kolko: 1988, p.168).

Crisis Management: International Regulation

At the time of rapidly increasing oil prices after the formation of OPEC and stronger cooperation between the major NR producing countries, the process of substitution of NR by SR came to a sudden halt. The big South East Asian producers strongly lobbied for their case after the political organization of the ASEAN countries was established. This reversal of the post World War II history of SR/NR consumption was reinforced during the 1970's by the wider dispersion of radial tires which consume a higher percentage of NR. And, more recently, environmental issues boosted the prospects of NR because it is the less polluting material (Smit: 1982, p.127-132).

After 1973, NR consumption increased slightly and is expected to remain stable at the somewhat higher level. Today, for every ton of NR approximately two tons of SR are consumed.

When NR again gained relative importance after 1973 and then after the second "oil price shock" of 1978 (i.e. the success of a raw material producer cartel), industrialized countries' interest in international regulation of NR increased, all of a sudden. Earlier demands for stable markets and prices from the supply countries had fallen on deaf ears.

Negotiations between leading NR producing and consuming nations and major rubber manufacturers under the auspices of the United Nations thus eventually led to the International Natural Rubber Agreements (1979). Three years of negotiations resolved the first of several so-called "integrated raw material programs" in the context of the U.N.'s World Trade Conference (UNCTAD). The most important 30 producer and consumer nations (more than 90% of world exports and imports, respectively) joined the International Natural Rubber Organization (INRO) headquartered in Kuala Lumpur. The International Natural Rubber Agreement (INRA) aimed at balanced growth of supply and demand, stable trading without excessive fluctuations in prices and was an attempt to increase the revenues from NR trade for the producer countries (Stiepel: 11/1982, p.615).

The INRA did not share the fate of most other international commodity agreements that rapidly disintegrated after establishment. Given the participation of consumer countries, INRA is not a producer cartel, in fact. This partially explains the relative success of the agreement, as well as its deficiencies with regard to its stated goals. Despite earlier reluctance to cooperate on the side of the industrialized consumer nations, traders and manufacturers, INRA recently was labeled a "great success" by these groups. "The secret of its success", argues a trade journal, "outwardly, is simple: Unlike other commodity agreements that have come and gone, INRA never has tried to fix prices at unrealistic levels" (R&P News: 10/16/1989).

Although producer nations (particularly Indonesia) criticized low price levels (and were naturally accused of unilaterally trying to raise them), the impact of the international debt crisis prevented increased pressure from producing nations anyway. Cooperation between the major producing countries remained very limited despite the organization of ASEAN. An important factor in the rejection of the idea of fully cartellizing the NR market remains the "appreciation of the inherent weakness of any such cartel in the face of determined competition from synthetic rubber..." (EIU: 12/1988, p.40).

While Malaysia, Indonesia, Thailand and the Philippines share a common interest in high prices of NR, these countries compete strongly in their mutual attempts to industrialize their economies. Without regard to cooperation in the context of INRA, no further policies have been developed in the field of rubber agriculture. Any such cooperation would qualify national development priorities set by the respective governments. Recent calls for intensification of cooperation by Malaysia have been rejected "by the other major Asean rubber producers, who feel that their lower cost structures enable them to compete effectively even at international price levels low enough to reduce the profitability of the relatively high cost Malaysian producers" (ibid.). Lower "cost structures" in turn almost entirely depend on extremely low wages for plantation workers and an even lower return for the "independent" smallholders. This factor, however, seems to play only a very marginal role in national "development" strategies.

All that the transnational rubber giants want is now provided by "international regulation": stable production guaranteeing uninterrupted supply, low prices and all the power to hold the desire for "independence" in check by means of international finance and debt management. Joint R&D programs facilitated by INRA cartel funds furthermore enabled the manufacturers to raise the quality of NR and thereby lower material deficiencies which can be extremely costly in the production process. Still, transition in the tire industry and quality management makes life difficult for NR producers. "Companies can't agree on raw material specifications, even from plant to plant. As they compete ever more vigorously for market share, this means they are looking for greater efficiency and new mechanization", said Thomas E. Cole of the Rubber Manufacturers Association adding that concerns are demanding more predictability, consistency, uniformity, processability and freedom from contamination (R&P NewsII: 5/8/1989, p.8).

Despite similar pressures from tire companies, SR production does not at all share the fate of NR agriculture. "As the tire industry consolidates, global sourcing of raw materials is becoming more important", notes Hercules' Schultz. Currency exchange rates and the emerging presence of foreign tire and auto makers in North America have done much to boost the volume of shipments and plant-utilization rates of synthetic rubber producers in the USA and Canada during the past two years" (Chemical Week: April 19, 1989, p.44). SR production is geographically much more independent than the production of NR with capital flowing freely. And the SR producers are among the world's biggest enterprises which are busily restructuring their worldwide operations. Last year, for example, DSM from the Netherlands bought Copolymer Rubber and Chemical Corp. Most recently, Canadian Nova Corporation sold Polysar for US\$1.06 billion to Bayer. The German giant outbid Japanese, German, Dutch and Italian competitors to further boost its North American presence (FT: 22.5.1990, p.1). SR manufacturing thus simply follows the process of globalization of automobile and tire production while NR agriculture remains niche-production.

The fate of the rubber workers in LDC nations does not frequently appear on the agenda of policy-makers, neither nationally, nor internationally. Particularly the disastrous circumstances of wage earners or smallholding "independent" farmers in South-East Asia, Africa, and the Americas is a natural area of concern and involvement for trade unions at the international level.

Conditions of Rubber Tappers

Compared to rubber manufacturing workers in industrialized countries, the situation of workers in developing countries deteriorated much more rapidly during the last decade. The enormous debt burden and resulting austerity policies of developing countries are among the structural features that deprive workers in Asia, Africa and Latin America of decent living conditions. Openly anti-union policies are frequently sustained by the major transnational companies and contribute decisively to the misery at specific locations. Compared to the working and living conditions of agricultural workers, the manufacturing workforce in underdeveloped countries usually does a little better. Still, a full day's work does not often earn enough to keep a family. As previously demonstrated, many rubber tappers are directly linked to the major tire and general rubber companies.

Recently, a strike by a 65,000-strong Malaysian plantation workers' union sent rubber prices higher on the Kuala Lumpur Commodity Exchange. "The strike came after plantation owners and the workers' union failed to reach an agreement over demands for a monthly wage, union officials said" (Herald Tribune, 31.1.1990). Malaysian plantation workers receive a daily wage of \$4.40 according to this source. For ten years now, plantation owners have been refusing to improve individual job security by paying monthly rather than daily remuneration. Although the Malaysian government this time chose not to intervene on behalf of the plantation owners, the union's demand has, once again, not been met. If Malaysian workers cannot gain much, other Asian rubber tappers will receive even less. Malaysia is in a better position to meet workers' demands than Indonesia or the Philippines because of its R&D network and superior productivity.

Labor efficiency, however, is not likely to jump substantially and thus yield higher margins and possibly a greater income to be redistributed. Rubber tapping today is almost as labor-intensive as it was 50 years ago. "Rubber tappers still get up at 5 every morning, go out and tap 300 trees, then go back in the afternoon to collect the latex" (R&P News II: 8.5.1989, p.8). Therefore, improvement of rubber workers' conditions is only feasible if NR yields a higher price on the world market.

A 1989 conflict in Thailand in fact directly addressed the price issue when a rubber workers' strike was launched to demand higher rubber prices instead of higher wages. "Police said about 20,000 rubber plantation workers ended a two-day protest in southern Thailand after the government promised to find ways of shoring up weak rubber prices..." (IHT: 19.12.1989). After the disruption of train services between Bangkok and southern Thailand, Thailand's agricultural minister agreed to forward a demand for 20 to 30 cents higher subsidies per kg rubber.

The low price of NR is particularly detrimental to the fortune of rather marginal producers. Brazil for example, at the end of 1988, set a price increase of 20% for NR to keep production at a low level. NR producers had hoped to see an increase of 48% and Sudhevea, the industry's management and planning supervisory body had hoped to see a price rise of 78%. Figures calculated by Sudhevea reveal that a 78% price rise would just be enough to pay a rubber collector a \$53 monthly salary if production stood at 500,000 kg a year. Already about five processing plants had to cease operations as they could not get enough revenue from selling the rubber to pay off bank loans. Producers feel that price rises below inflation are decapitalising their sector (Plastics & Rubber Weekly: 11/12/1988, p.10).

Of course, these factors are not working for companies like Michelin or Pirelli. Michelin, for example, increased production of one plantation in Brazil by 78% during three years. On the 9.800 ha. estate, Tres Pancadas, live 11,000 people in several villages. About 2,500 work on the plantation. The company did not pay wages in cash until September 1987. The laborers received credit notes which they could use at the Michelin supermarket (MOL: 1988, p.7). Out of the total workforce, about 600 are unionized and backed the union when it went on strike for improved working conditions in 1986. Since then, the company refused to implement the terms of the agreement.

About 300 children work on the plantation and 70% of the workforce has back problems due to the heavy loads that have to be carried. Other problems include groundwater and chemical pollution from pesticide spraying, leading to skin and eye diseases. In obvious defiance of the law, Michelin sacked many of the activists after the union went on strike. In this respect, Michelin continues the dubious practices of its predecessor. Firestone dispossessed small "independent" rubber farmers when it acquired the plantation in 1984.

Tire Manufacturers and the Environment

Another problem looms for the tire makers as governments finally decide to implement tougher measures to curb emissions from motor vehicles to cope with the so called "greenhouse effect" - the global warming of the atmosphere. Motor vehicle emissions strongly contribute to this environmental damage and higher gasoline prices, 'pollution taxes' and other measures might soon create strong incentives for citizens to drive less. Fewer miles driven in turn means fewer tires needed. Rubber workers as much as auto workers therefore certainly need to participate in the discussion on how to cope with environmental issues that - if no positive alternative is proposed and accelerated - can easily mean pitting jobs against the environment. Both concerns, clearly, are in the interest of trade unions.

It is not possible in this document to examine the effects of global warming control on tire manufacturing employment. A much broader ICEF study of this problem is underway as an urgent necessity. However, the associated environmental issue of waste disposal and recycling is equally of concern to the tire industry and must be considered. Tire companies produce a sophisticated product that withstands heat, cold, pressure, etc. These strengths of tires at the same time create a big problem once they are worn. They are equally resilient against recycling efforts and create what an industry journal related to as the "scrap tire mess".

As long as tires were made of natural rubber, the problem did not exist. Only with the substitution of NR by SR, and the inclusion of synthetic fibers and steel cord, did the reclamation of old tires turn into the widespread problem of waste tires filling junkyards and landfills. Tires are a good example of how "technological change" can create new environmental problems. Unfortunately, tire manufacturers have proven to be much less enthusiastic about dealing with the technical problems of recycling than about developing a new product. Despite several available reclaiming options including chemical reclaiming, mechanical regeneration, whole uses and clean burning for energy, "worn tires continue to pile up by the millions" (R&P News: 8/1988, p.129).

Many in the tire industry favor burning old tires since the cement industry is buying a good number for this purpose. Conventional burning, however, consumes only a fraction of the energy available, leaves a good portion of waste, and contributes dangerous emissions to the environment again. A tire-to-energy project of Garb-Oil & Power Corp. in Southern California, for example, had to be abandoned after 8 years of planning and \$6.3 millions' worth of investment "because there (was) too much opposition" (R&P News: 2.4.1990, p.4). Similar projects elsewhere in the USA seem to have been more successful despite current legislative efforts on the federal level to encourage alternatives to incineration (R&P News II: 26.3.1990, p.8). In fact, the tire manufacturers are said to be "concerned" with the current "hostile" attitude toward burning and are trying to develop more neutral language for the new scrap tire bill.

One alternative used in the USA has been developed by Air Products and Chemicals Inc. The company is in an early marketing phase for a new recycled rubber compound which could substitute more expensive synthetic rubber material. Air Products envisions building 5 to 20 plants each handling 10 to 20 million pounds of recycled rubber compounds a year (R&P News II: 18.12.1989, p.2).

The Dutch government identified 30 streams of waste which should be modified to cause less damage to the environment. Among the identified products are tires. The project to eliminate landfill by the year 2000 in the Netherlands aims to use half the recycled tires in other tire applications and the remaining half in crumb rubber for other purposes (R&P News: 25.12.1989, p.3). "Japan and West Germany are among the leading nations worldwide in scrap tire recycling. In both countries, less than 7 percent of scrap tires end up in dumps" (R&P News: 8/1988, p.129).

A British delegate to the 1990 ICEF World Conference on the Rubber Industries reported that 36 percent of scrap tires produced in the UK are still dumped into landfills, despite a major fire at such a site in Wales in early 1990. A newly formed Tire Industry Council is calling for a levy in order to fund proper tire disposal, borrowing from schemes already in place in Austria and Switzerland.

At the extreme end of this problem, 74.6 percent of US tires end up in the American countryside. One industry source identifies the absence of a market for tire waste in the USA as the major reason why its record on disposal is so abysmal, unlike the situation in Japan, for example. Japan's "... shortage of natural resources has turned the country's attention more keenly to a number of waste forms, tires among them," according to industry journal Rubber & Plastics News. Japan uses reclaimed and crumbed rubber in shoe soles, packaging and rubber mats, for example. (R & P News: 28.5.1990, pp. 29f). The US government is now trying to improve the situation by trying to stimulate a similar market. Tire makers are to be required in future to prove their use of recycled material. The positive side of such an approach for the companies is in that better environmental image is now a tangible commodity in an increasingly environmentally-conscious market.

Currently, most nations leave the task of dealing with scrap tires to their local municipalities thereby creating inequality and ineffectiveness. "If tires continue to pile up at their current rate, though, they become a social problem, and national governments are more likely to get involved" (ibid.). As tire manufacturers seem to be happy with the way things are going right now, unions can help to push for effective and environmentally sound ways of recycling - if necessary, demanding federal programs to solve the problem. "In the end", writes Bruce Davis in Rubber & Plastic News wisely, "social pressures likely will determine what direction an individual country will go with its tire disposal" (ibid.).

CHAPTER 3:

RUBBER COMPONENTS SUPPLIERS

Non-tire end use of rubber accounts for roughly 40% of all rubber consumption in the most industrialized countries, somewhat more elsewhere. More than 50% of SR production is supplied to automotive part makers with tire and tire products accounting for 42% of SR consumption (Chemical Week: April 19, 1989, p.40). NR thus seems to play a less important role in auto parts compared to its 30% share of total rubber input in tires. In fact, about 80% of all NR is used in tire production. These figures reflect the shift towards new, industrially produced materials for use in many mechanical parts.

Much more even than the tire industry, many of the molded rubber product makers are having a difficult time resulting from their customers' constant drive to cut costs. Unlike their tire counterparts, most of the part makers lack the size and market power to more comfortably adjust to the sales squeeze and to counter their customers' demands. This statement can be made because a considerable part of the non-tire end use of rubber is also in the automotive industry.

According to a recent analysis of the North American market, "Auto parts accounted for 57% of all mechanical rubber goods sales in 1988, general industry 19%, off-highway equipment 9% and appliances 5%. By 1993, the auto industry's share of the market will fall to 55%, general industry will advance to 20% and appliances to 6%. The gasket and seal business accounted for 30% of all sales in 1988; dynamic components 22%; weatherstripping 17%; bushings, grommets and small bumpers 7%; and bellow diaphragms and boots 6%. Dynamic components are expected to grow 10% in the forecast period." (CBNB 01/09/89).

This section will concentrate on rubber auto components. But for various reasons it is difficult to describe the situation of auto and other parts suppliers exclusively by tackling rubber part makers. The literature on auto suppliers seldom deals with the rubber segment specifically. An additional complication is that "many products, which were end-uses of rubber in the past, are now partially or completely made of plastics" (Smit: 1982, p.59). Finally, many rubber parts are manufactured by businesses not predominantly active in the rubber industry.

However, a good deal of literature has been written recently on the prospects of auto supplying industries in general which is worth wider investigation. The importance of dividing companies according to the materials predominantly used in the manufacturing process is declining anyway due to the trend towards supplying whole system solutions; e.g., automobile companies ask for delivery of the whole air conditioning/heating system instead of separate supply of all the small parts used to build them.

Table 13: Important Rubber Product Manufacturers in Germany, location and type of production

| Company | Plant location | Products |
|-------------|-------------------------------|--|
| Continental | Hannover | technical rubber products, automotive driving belts seals, car components, rubber soles |
| | Northeim | technical rubber products, conveyor belting, seals car components, printing cloth |
| | Korbach | technical rubber products, bicycle and wholly rubber tires, car components |
| Metzeler | Breuberg | technical rubber products, rubber soles, car components motorcycle tires |
| | Höhr-Grenzhausen Memmingen | car components other rubber articles |
| Phoenix | Hamburg-Harburg | conveyor belting, hose, seals, technical rubber products, car components |
| Clouth | Cologne | industrial belting, hose, roller covering |
| Meteor | Bockenem | sealing systems, specialty rubber articles, car components |
| Veritas | Gelnhausen | technical rubber articles, hose, car components |

Source: ICEF Rubber Questionnaire 1990 (West Germany)

Total production value of all auto supplies in West Germany oscillates between \$20 and \$100 billion, depending on different estimates (FAST: 1988). European non-tire rubber production in 1987 was \$10 billion. The following table provides an impression of the product range of important rubber companies in Germany.

Total production value of diverse rubber products in West Germany grew from some \$3.4 billion in 1985 to about \$4 billion in 1989 indicating a relatively strong position within the European market. US non-tire rubber shipments totalled \$12.5 billion in 1989 compared to \$11.1 billion in 1985. In Japan, non tire rubber sales totalled \$8.5 billion in 1986 (+10%).

The following table identifies the biggest auto component makers in Europe (predominantly rubber: bold), thereby actually introducing most of the globally important firms.

Table 14: Component Manufacturers in Europe (automotive sales over \$1 billion; including tires)

| Ranking (all auto motive) | Company/Country | Parent | Sales \$ million |
|---------------------------------|------------------------|------------|---------------------|
| 1 | Michelin/France | | 8070 |
| 2 | Bosch/FRG | | 7611 |
| 3 | Philips | | |
| 4 | Pirelli/Italy | | 2900 |
| 5 | Valeo/France | | 2063 |
| 6 | Magneti Marelli | Fiat/Italy | 2038 |
| 7 | GM Components/US | | 1997 |
| 8 | Lucas/UK | | 1989 |
| 9 | ZF/FRG | | 1942 |
| 10 | GKN/UK | | 1803 |
| 11 | SKF/Sweden | | 1779 |
| 12 | Continental/FRG | | 1772 |
| 13 | Goodyear/US | | 1673 |
| 14 | BASF/FRG | | 1667 |
| 15 | Allied Signal/US | | 1330 |
| 16 | Teves/FRG | ITT/US | 1306 |
| 17 | T&N/UK | | 1080 |

Source: Paul A.C. Sleigh, *The European Automotive Components Industry, The Economist Intelligence Unit Special Report No.1186: London 1989*

The following table further identifies additional auto supply companies predominantly active in rubber part production.

Table 15: Rubber component manufacturers in Europe

| Ranking (all auto motive) | Company | Parent | Sales \$ million |
|---------------------------------|--------------------|-----------------|---------------------|
| 22 | BTR/UK | | \$820 |
| 29 | SP Reifenwerke/FRG | Sumitomo/Japan | |
| | Dunlop France | Sumitomo/Japan | \$635 |
| 30 | Freudenberg/FRG | | \$607 |
| 44 | Hutchinson/France | Total SA/France | \$342 |
| 47 | Gates Corp./US | | \$300 |
| 48 | Phoenix/FRG | | \$284 |
| 79 | Saiag/Italy | | \$67 |

Source: Paul A.C. Sleigh, *The European Automotive Components Industry, The Economist Intelligence Unit Special Report No.1186: London 1989; R&P News: 19.2.1990, p.30*

This list, obviously, is far from being complete. Other Japanese rubber component makers include Toyota Gohsei, NOK Corp., Inoue MTP, Tokai Rubber, Toyo, Yokohama Rubber, Mitsuboshi, Bando Chemical Ind. and Kinugawa Rubber Ind. (ICEF Questionnaire 1990). Among the 80 companies analysed in the study cited above, another 10 to 20 are active in rubber parts production. Among them: Champion Spark Plug (wiper blades in Italy and Belgium); Gilardini (Fiat subsidiary producing rubber, plastic, glass, fibre components and rubber items such as mats etc; GM Automotive Components Group (components including rubber hose products). This is also true for all companies with, for example, a braking system production (e.g. Bosch, Knorr-Bremse etc.). Rubber components also feature in the products of seat manufacturers (like Epeda-Bertrand Faure/France) and producers of shock absorbing systems (e.g. Fichtel & Sachs). And, of course, in the product range of the huge chemical companies which manufacture SR materials. BASF (FRG) ranks 14th among European auto supplies companies and American chemical giant Du Pont de Nemours is the 33rd biggest auto supplies producer in Europe.

Apart from the tire manufacturers which (in 1987) managed rubber sales between 56% (Pirelli = \$2.7 billion) and 5% (Michelin = \$400 million) of total sales outside the tire segment (3.1), few big manufacturers with rubber product sales have their main activity in rubber manufacturing.

Aside from European manufacturers Freudenberg and Hutchinson, American producers Gates, Rubbermaid, Standard Products and Bandag, and Japanese producers Tokai Rubber and Toyoda Gosei (all more than \$1 billion rubber sales), a large number of chemical, automobile and electronics producers hold a substantial share in "rubber" sales. Vice versa, many manufacturers predominantly active in the rubber segment, have been diversifying production. The big three tire manufacturers, for example, also supply the wheels on which their tires have to fit. Pirelli recently "diversified" in this direction and like FRG's Freudenberg the company is adding business in the fields of metallurgy, plastics, textiles or fluid technology to build up system supply capacities. Many rubber companies produce plastic and other material components. Gates Corp., for example, in 1988 bought Spun Steel Inc., a manufacturer of pulleys, tensioners and accessory driving systems (R&P News II, 10.4.1989, p.2).

Of course, there are some medium and many more small, nationally operating companies. In fact, Europe's technical rubber goods industry "is splintered, with 10 firms posting sales greater than \$200 million, 200 more with sales of \$10 million to \$200 million..."(R&P News: 22.1.1990, p.19). According to another source, the European Community currently has 1,500 rubber converting firms (CBNB PR: 20.12.1989, p.4-5). Italy's rubber tube sector, for instance, is made up of 21 companies; three are 100% subsidiaries of Pirelli; one is owned by Fiat; Saiag and Alfa Gomma each operate two plants with the remaining enterprises belonging to other groups or being family owned (Databank 1985, p.8). 50% of Italy's rubber industry can be attributed to five tire companies. Another 55 companies struggle for the remaining market (45%) of mechanical rubber products (and sanitaryware) and 5% footwear. Italy's tire manufacturer Pirelli alone sells around 2.000 different rubber articles.

Changes originating from the restructuring of the automotive manufacturers thus hit national rubber industry segments dominated by a few, internationally operating giants - rubber companies and others. While these companies usually enjoy strong financial resources, the industry's many weak "backyard shops" certainly were much less prepared to stand up to the challenges described subsequently.

In the old days, some of the gigantic profits of the auto industry trickled down to the supply businesses. Not any more. Today, "Cost saving ideas are the responsibilities of suppliers as a way of maintaining partnerships with their customers" (R&P News: 11/27/1989, p.25). American YSH chief manager Friedman gives details: "In the past five years raw materials prices have increased 15 percent - none of which have been passed on to automakers" (ibid.). Automobile manufacturers, as previously described, forced their suppliers to adjust to their new systems of production during the last decade. The demand for reduction and even relocation of supply companies by Ford (number of suppliers reduced worldwide from 30,000 to 10,000) or Fiat (from 2,500 to 500) are just two examples of a whole set of pressures particularly devastating for "captive" suppliers.

American manufacturer Vulcan International Corp., for example, delivered rubber mats for Ford's Thunderbird and Lincoln models until August 1988. Then the company was told that the contract would go to a competitor. "The impact on Vulcan was immense. Sales fell by \$3 million, resulting in a 20-percent decline in revenue for the year, to \$24.1 million...With the biggest rubber mat customer gone..., Vulcan had to discontinue the mat operations" (R&P News: 10.7.1989, p.1). As a result, the workforce was cut by 32.5% to 396, down from 587. As automobile companies try to move away from vertical integration and to reduce their stocks by arranging "just-in-time" logistics, supply delivery is crucial for uninterrupted production. Typically for a "monopsony" (monopo-

istic customer power) situation, "cooperation" need not be asked for but can simply be demanded. Supply companies can be expected to cooperate, or go out of business. The trend thus goes toward concentration also in the rubber parts industry due to the reduction of the supplier base by the major auto makers.

Renault, for example, has 1,000 suppliers in France and 1,400 in Western Europe (all components). The company says "it is not possible to have a partnership with 1,000 companies, so it is looking to reducing this to a figure of 200" (Sleigh: 1989, p.25). Renault has been very open in its opinion on the supply industries. The company works particularly closely with the big components groups "of which 20 represent 40 per cent of the world market. Twenty companies, likewise, are regarded by Renault as big enough to survive independently - or 15 excluding the Japanese companies" (ibid.).

Global competition during the last decade reinforced the concentration trend because of increasing availability of foreign products frequently supplied by the very same companies that used to produce "at home". Due to rapidly changing exchange rates, the automobile companies gained additional leverage in the cost cutting game by increasing their reliance on "global sourcing". This factor and the automobile producers' desire to purchase uniform products led to rapidly advancing internationalization of auto supplies companies. Automobile companies indeed did not only increase "global sourcing" but preferably purchased globally from a single source. "Why pay more than one company," said a Ford vice president, "to develop a new component or system when one man can do the job and the same product can then be built in half a dozen countries?" (Sleigh: 1989, p.14)

Supply Agreements

Vehicle makers have indeed been very creative in their attempt to hold down costs. By way of forging formal "partnership contracts" that usually last several years, auto makers managed to squeeze a yearly cost reduction out of their suppliers. Nevertheless, many suppliers are eager to take the deal, in spite of its striking similarity to ancient torture methods. Longer-term contracts "lease" life and at least provide the possibility to plan rationalization and retooling - longer term investments that require business stability. It is, however, not hard to imagine that supply companies that are forced to "make concessions" will recover some profits by passing the burden on to their employees. Concessionary bargaining and relocation in cheap labor countries (modeled after US developments) are likely to be observed in many more places including some Western European countries and in Japan.

The president of the Federal Anti-Trust Office in Germany, W. Kartte, recently predicted a "fight to the death" in the auto business. His formula for survival in Europe follows the American experience and emphasizes "partnership" to increase activities and offer solutions to problems. However, Kartte tried to dissuade independent supply companies from certain partnerships using an impressive story: "A smart hen offers to a less intelligent pig a cooperation to produce ham and eggs. The pig agrees, not considering the consequences. Subsequently the hen delivers the eggs, claiming the ham. Only then does the pig realize what it has agreed to" (Frankfurter Rundschau: 2/2/1990). According to Kartte, "among German auto suppliers, there are many poor pigs" - and for "German", you could substitute the name of any European country.

The most important aspect of the "partnership" development, however, is the implied segregation within the supply industry. "There is emerging a new sector...in what today is being called the "first tier" automotive components manufacturer ...The accent is on competence and quality, the ability to innovate and to carry out full programmes of research and development. With these responsibilities must go hand in hand the ability to invest heavily in plant and technologies and in taking over the process of design, development and testing. In return the vehicle manufacturers will allow these 'preferred' first tier component manufacturers to be involved right at the concept stage of a new model. Those who will be selected for this substantial role will have to have adequate "critical mass" and ultimately operate on a world scale" (Sleigh: 1989, p.21).

Expansion and Internationalization - or, Elimination and Cooperation

These "first tier" - predominantly system - suppliers have been on an investment and acquisition spree for a while. The strategic goal again is to be present in all the important vehicle manufacturing countries, the volume markets. In the USA, Japanese auto parts manufacturers' market share rose from 20% to 35% in only two years (1986 - 1988). During this period another 300 Japanese supply companies introduced themselves into North America

(FAST: 1989, p.8). Of course, Japanese and European companies in the USA are attempting to expand their business with the US big three vehicle manufacturers as well as "transplanted manufacturers". European companies here have a big advantage. Many of them already supply the American automobile companies in Europe.

But American firms have to get involved with Japanese automobile manufacturers in the USA and in Japan "to stay stable" (R&P News: 19.2.1990, p.22). In fact, the desire for business with the Japanese transplants of American companies has to be seen as one major reason for the strong presence of Japanese companies in the American market too, since many Japanese have linked up with American manufacturers. Nishikawa Standard Co. (Nisco), for example, is a joint venture of Standard Products Co. (US) and Nishikawa (Japan). The liaison looked back on a 20 year history. Following cross licensing and technology agreements in the mid 1980's, the partners decided to "marry" and officially formed a joint venture (R&P News: 19.2.1990, p.27). Uniroyal Plastics Co. Inc. and Okamoto Industries Inc. also signed a technical collaboration pact to develop advanced interior materials, with an eye to the foreign vehicle transplants. Uniroyal provides manufacturing, engineering and service, Okamoto will supply process and formulation technology. Uniroyal, too, is vying to become a significant supplier to foreign automotive transplant companies in the USA as foreign firms increase their penetration of the US market and demand for local sourcing is growing (R&P News: 10/31/1988, p.9). One more example is GenCorp's technical licensing agreement with Kurashiki Kako Co. Ltd. GenCorp will use Japanese technology to supply vibration control components and supply them to Mazda (R&P News II: 4.12.1989, p.1).

However, "local" sourcing should certainly not always be understood in its narrowest sense. Cadillac Rubber, for example, moved production to Mexico to take advantage of low labor rates. The company, recently bought by Avon P.L.C. (UK) for \$57 million, produces rubber and plastic vacuum harnesses for auto emission, cruise and seat controls and windshield washer systems (R&P News: 4/24/1989, p.1).

Many more European rubber part suppliers flocked to the USA as well. Germany's Freudenberg, for example, is one of 15 European companies that recently expanded in the United States. The desire for strategic cooperation led Freudenberg to merge its US subsidiary Freudenberg Engineered Components with NOK Inc., the US subsidiary of Japan-based NOK Corp. The partners had long before commenced cooperation in Europe and operate 22 factories in the USA. This partnership allows the German giant to enter business with the Japanese transplants while NOK profits from Freudenberg's links with European and US auto manufacturers. Recently the group purchased Lord Corp.'s Fluidlastic Mount operations which gave it a Chrysler contract of \$4 million annually (R&P News: 19.2.1990, p.36).

Other European rubber auto supply companies expanding in the USA include Trelleborg from Sweden, BBA Group, and BTR from England, Gummi-Metall Technik GmbH, Karl Jon Gummiwarenfabrik from Germany and Hutchinson S.A. from France. BTR bought Schlegel Corp. (\$200 million). The remaining 8 European companies in the USA operate in various segments of the rubber industry such as production of inflatable life rafts, gloves, fabrics, belts, hoses, seals, and gaskets (R&P News: 11/27/1989, p.6). Semperit, Conti's Austrian subsidiary signed a letter of intent to buy an American company and thus joins another illustrious group of companies that are seeking North American takeover targets: Pirelli and Ziliani S.p.A. from Italy, Swiss Daetwyler A.G. and Phoenix and Arntz Optibelt A.G. from Germany (R&P News II: 12.2.1990, p.4).

Thus, similar to last decade's tire developments, the USA has been more completely integrated in the "world market" for rubber parts. With most of the foreign automobile transplants now purchasing supplies from domestic US production (US or foreign owned), the prospects for the US rubber industry are not that bleak. Furthermore, since the US dollar is declining, exports to Japan are rising. "Mazda Motor Manufacturing (USA) Corp. said it purchased \$65 million worth of US-produced supplier parts for export back to Japan in fiscal year 1989, with that figure expected to climb to \$100 million this fiscal year" (ibid.). The story might, however, be very different for the companies' employees. Industry journals do not frequently speak about the problems of workers resulting from the accelerated M&A activities (e.g.: relocation, new management styles, automation, 'rationalisation', etc.).

In Europe, the completion of the internal market will add further incentives to the "Europeanisation" of component manufacturing. "Amalgamations have been numerous and will continue" (Sleigh: 1989, p.23) - with the Japanese "invasion" yet to come. Due to the relatively late transplantation of Japanese automobile production to Europe, major Japanese suppliers are still waiting to make decisions on where to settle there. So far only four important Japanese rubber companies have arrived. Sumitomo moved in via its Dunlop purchases, Bridgestone through the Firestone acquisition. NOK Corp. has been present since 1976 when the company entered a 40/60 joint venture with the West German Freudenberg group. Similarly, Mitsubishi Belting Co. teamed up with Conti

subsidiary Semperit in 1983 (R&P News: 19.2.1990, p.30). One more smaller company, Uchiyama Manufacturing Co., established a 40/60 joint venture with Procal S.A. to make molded goods and gaskets in France. Two very significant ventures have been established between other giant system suppliers. French Valeo linked up in Spain with Nippondenso and British Lucas teamed up with Sumitomo Electric Industries (FT: 16.5.1990, p.IV). Nippondenso also bought IMI Radiator (UK) and looks for a partner in France. Japanese Calsonic wants to establish another joint venture with Valeo to supply GM (ibid.).

Major Japanese "green field" investments and takeover activities can be expected in the UK since both Honda and Nissan have decided to settle there and Toyota has scheduled a move. Toyota also wants to expand into Eastern Germany. The company has an agreement with Volkswagen in Western Germany and now wants to expand its dealer and distribution network. Japanese "first tier" component suppliers are estimated to number 300 and "their structure and ownership are quite different from those of their West European counterparts. They have closer financial and operational links with the vehicle manufacturers and shareholdings in them by Japanese vehicle manufacturers are common" (Sleigh: 1989, p.15).

US companies are already well entrenched in the European component market. Among the 80 big companies reviewed by Sleigh (1989, p.10), 15 are US subsidiaries with sales of more than \$10 billion. "While Japanese manufacturers have yet to gain a foothold in Europe, no fewer than 12 US (rubber) companies have set up shop in Europe, operating 28 plants with four new ones due on line in the coming months" (R&P News: 19.2.1990, p.30)

Among the big American players in Europe are:

- * Gates Corp. (transmission belting: Germany, Scotland Spain)
- * Sheller Globe Corp (molded goods, window seals etc.: England and Wales)
- * Parker Hannifin Corp. (molded goods, seals etc.: Germany, England and Italy)
- * Eagle Picher (seals, gaskets, molding: England, Spain, Germany)
- * Aeroquip Corp. (hose: Germany, Spain, Wales)

Source: R&P News: 19.2.1990, p.30/31

Three of the four US rubber companies that bought into Europe during 1989, are auto suppliers. Federal Mogul formed a 49/51 joint venture with G. Bruss K.G. (FRG) to produce automotive seals in Ireland and Spain. J.P. Industries Inc. took Tako S.p.A. (Italy) over thereby acquiring three automotive gasket and seal factories in Turin. Dayco Products entered a joint venture with Uniroyal Manuli S.p.A. in Italy which makes automotive synchronous belts. Rubatex Corp. has been purchasing Evered Holdings British polymer operations for \$35 million. CR Industries jointly distributes engine seals with Timken Europa. Additionally, Standard Products British subsidiaries are expanding operations. Silent Channel is investing in a new automotive window and door seals plant whilst Oliver Rubber is building a new tread rubber factory (British report to the 1990 ICEF World Conference on the Rubber Industries).

"The transactions bring to 16 the number of US R&P product firms with operations in Europe. Two more, Carlisle Rubber and Adler Brady Rubber, are in the process of setting up joint ventures in Eastern Europe. In addition, Lord Corp. and Plumley Companies Inc. are scouting Europe for acquisitions or joint venture possibilities" (R&P News: 11/27/1989, p.6; emphasis added). As a major incentive for the recent European expansion, the American companies cited the 1992 single market project of the European Community.

Within Europe, the German auto supply industry enjoys relative supremacy. 36 of the 80 companies reviewed by Sleigh (1989, p.10) are German owned and the Federal Republic is the principal country of manufacturing for 43 companies. "Increasingly R&D in the West European vehicle industry is centered in West Germany and to a lesser extent in France and Italy but very little in the UK and Spain" (ibid., p.12). The UK component industry, for example, is almost selling out to other European and American manufacturers. Most recently, Lucas Industries sold its automotive supply group TI to Fiat's Magneti Marelli "because it was not prepared to develop these businesses to become world suppliers" (ibid., p.13). BTR sold its George Angus subsidiary to Freudenberg after only seven years of ownership in an attempt to concentrate on its non-rubber activities and on expanding overseas.

Other companies, many of them not primarily active in rubber manufacturing, are well prepared too. BASF (FRG), for example, is expecting 15-20% growth in the market of high performance composite materials (world market value: US \$2 billion). The company invested \$30 million in a research and production center at Ludwigshafen, West Germany. The new production is set up to serve aerospace, automotive and aeronautical industries (Chemical Industry: 1/2/1989, p.3).

Two years ago, French rubber & plastic transport parts maker Melco (subsidiary of Matra) was acquired by BP Chimie. Melco sold parts to the aeronautics, aerospace and armament sectors and to the railways (braking systems). BP already owns Bristol Composite Materials Engineering (UK) and HITCO (US) manufacturing high resistance and technical composite materials (InfoChimie: 11/00/1988, p.32).

US Chemical giant Du Pont (ranking 33rd in Europe's automotive component sector) has "...combined all its businesses in automotive materials and technologies into a new Automotive Products Department (APD)" (Sleigh: 1989, p.101). This business accounts for \$2.5 billion and \$500 million sales worldwide and in Europe, respectively. The company is moving upstream away from supplying solely materials. Du Pont "...is now involved in the production process at every point in the supply chain..." (ibid.). According to the company, 60 products are offered to the motor vehicle industry and its presence in Europe will become even stronger in the future. There are important differences between the majority of rubber companies and the giant chemical enterprises. According to Germany's rubber manufacturer Phoenix "the chemical industry, with major global companies like Bayer, BASF, Hoechst, ICI, Du Pont, Rhône-Poulenc, DSM, Akzo or Monsanto, exhibits an oligopolistic - perhaps even monopolistic - structure and therefore has great control over pricing...Terms like 'discount' are unknown at many large chemical firms...Acceptance of change is denied, even seen as frivolous" (R&P News: 22.1.1990, p.19).

Due to the "Europeanization" of business in the European Community, national antitrust worries increasingly fall on deaf ears. Most recently, for example, then independent German auto supplier Ymos sold out to the Belgian group Cockerill Sambre (stock market value: \$75 million). Ymos searched for a big partner because cash was badly needed for expansion. Similar to the merger of Glyco/Federal Mogul, the transaction is not expected to be blocked by the antitrust officials. In the Glyco/Federal Mogul case, the increasing Europeanization of auto suppliers was cited against the problem of dangerously strengthening the market position of Glyco (Frankfurter Rundschau: 2/8/1990, p.8).

More effective, ironically, are the automobile companies. France's biggest and Europe's second biggest auto component supplier Valeo two years ago made a hostile takeover bid to acquire Epeda Bertrand Faure S.A., France and Europe's biggest maker of auto seating and bedding. The move was opposed by Peugeot and Renault, and Valeo's important shareholder Michelin finally stopped it (R&P News II: 11/21/1988, p.7).

Continental (FRG) has been notably active in the non-tire rubber segment. The company set up a different division (thus following the examples of companies like GM and Du Pont) for non-tire products and is "openly courting more acquisitions in automotive components, especially in France and Italy" (R&P News: 19.2.1990, p.31). Conti established a 35/65 joint venture with Elastomeras Riojanas (Spain) and a 80/20 joint venture with Cizmeci Sanayii (Turkey). From Italy's Fiat the company bought the rubber facilities of Gilardini. This was a major acquisition since Gilardini's rubber firm Ages employs 1.100 workers and reports a yearly turnover of more than \$100 million (Frankfurter Rundschau: 9.5.1990).

Hutchinson from France is expected to expand aggressively. Italian auto parts supplier Saiag invested L7.5 trillion on constructing a rubber and plastic profiles factory at Viller-la Montagne, France. Apart from seven Italian plants, Saiag operates a conveyor belting factory in Ghent, Belgium (European Rubber Journal: 2/0/1989, p.6). Two more European producers are adding facilities in Spain. Boge (FRG) is constructing a \$4.1 million plant for rubber-metal parts in Barcelona and British Laird Group started production in the same city. Generally speaking, the southern European countries are likely to house new production in the course of the completion of the European market due to their lower labor costs and potential for local market development.

With respect to Japan, the main finding of the examination of tire industry developments has to be repeated. Unlike the volume markets in Western Europe and the USA, Japan still seems to be rather insulated from the dramatic M&A activities. However, production in Japan is likely to decline quite a bit in the next period due to the transplantation of its companies to overseas locations. Among the European rubber giants, only Freudenberg seems to have some ventures in the Asia-Pacific region (a joint venture with NOK, minority interest in Japan Vilene Company with joint affiliates in Hong Kong, South Korea and Taiwan). Pirelli provides technology to Japanese rubber manufacturers but has not intensified these links. Goodyear supplies another example of US-Japan Inc. entering a belting venture with Bridgestone in Taiwan to supply the Asia-Pacific market. Bridgestone already teamed up with Gates Rubber Corp. in 1984 (R&P News II: 11/7/1988, p.1, 8).

Japanese auto suppliers in general profit from increasing sales of luxury vehicles due to the abolition of a special commodity tax. Purchases of automobiles with an engine capacity above 2000cc are reported to have risen by over 10% in 1990. Thus some of the decline of local production due to auto and supply part manufacturing transplantation will be offset by more valuable sales. Nevertheless, the political pressure to open the Japanese

internal market for American and European competitors increasingly frustrated with Japan's huge trade surplus, plus the 'local content requirements' being instituted in many countries, will force Japanese workers also to confront the implications of globalization.

Recently, the Malaysian government raised local content requirements from 30 to 60%. Due to economic nationalism, the governments of the ASEAN countries could not agree hitherto on joint vehicle production thereby leaving the automotive industry to the industrialized countries. None of their national economies is big enough to support an independent industry in the long term. Malaysia's Proton model is hard to sell outside the country and total sales are stagnating around 80,000 units. The newly created common market of the South East Asian Nations, however, will help to develop the ASEAN component industry and force Japanese, European and American suppliers to move production there. Major Japanese supply companies already have scheduled considerable investments after the new local (i.e. ASEAN) content regulation. Shipments of auto components from one ASEAN country to another are rising and Japanese owned Malaysian distributor Oriental (Honda), for example, will invest \$74 million in Malaysia. The Indonesian government has approved foreign investment commitments totalling \$624.3 million and \$1.3 billion domestic investments to build 41 new rubber based manufacturing plants (STBT 256/1/90, p.4). Although most of these plants will not turn out automotive goods, the attempt to raise exports of manufactured products (currently only 20% of total rubber exports) is highly significant.

Even A Dying Cow Can Be Milked?

Having reviewed the major M&A activities and stressed the trends in the volume markets and some important second tier economies, one question appears most important: What is going to happen in the near and medium future? The simple but nevertheless true answer to the question is: Much more of the same! The world market share of the first tier motor vehicle suppliers is likely to increase strongly as industry captains believe in a market share of 10% plus for any component/system to earn the money necessary for R&D. The lowest estimates of the future total number of auto supply companies (the "world-class") imagines 50 to 100 global players. For Europe, a rubber company manager foresees four or five companies controlling 75% of the (rubber component) market (R&P News: 22.1.1990, p.19).

"There will be at least five years of turmoil in pricing based on market forces", argues a representative of Gates Rubber Co. (R&P News: 19.2.1990, p.22). Compared to the tire industry there is a striking similarity of globalization. The equally striking difference: many small companies supplying auto parts are still waiting to share the fate of small tire companies that long since went out of business.

Internationalization of component manufacturing has not yet erased all national "niche production" where many small businesses mushroom. However, "competition of the automotive parts original equipment and replacement sectors will be fierce in the 1990s, resulting from slow growth and pressure from transplant suppliers seeking to increase market share" (R&P News: 19.2.1990, p.21). In summary, the 1980's built up heavy clouds in the non-tire rubber sky, the 1990's will see some hurricanes.

Survivors in the auto supply business, according to GM's ACG manager McCabe, all have to advance full system solutions. "The numerous small and independent suppliers...won't be able to keep up with this development" (Manager Magazine: 1/1990, p.47). General Motors, much like other big component players, therefore, reorganized its own supply companies under a separate roof exemplifying a tendency to streamline vertical integration and at the same time increasing competition even for the fully owned subsidiaries (Manager magazine: 1/1990, p.51-52). Many rubber component makers are in fact "suppliers to suppliers". Hence, either they will be swallowed by companies that offer whole systems to the automotive industry (including rubber parts) or rubber component makers have to diversify into supplying systemic solutions themselves. Only a few companies will be specialized elastomer suppliers and these have to start selling to an enormous number of automotive system suppliers.

A recent US analysis provides similar details for the USA. Despite some forecast growth in rubber component manufacturing, "many companies will be forced to acquire or be acquired and to slash less-profitable product lines. Makers will need to focus on cost reduction, just-in-time inventory and new product innovations to stay competitive...The road to survival will be combinations with Japanese firms. Companies that enter joint ventures with Japanese companies that already have established supplier relationships with the Japanese auto transplants in N America will have the best chance of success" (CBNB 01/09/89).

In Europe, the situation for small companies will be particularly aggravated by the Community's 1992 plan. "Aggressive acquisition, action, and joint ventures and mergers will be the order of the day" of what Tofield, chief of Dowty (U.K.), understands as phase two of rubber industry development in Europe. Currently companies still try to improve productivity, capital investment, returns, and services (phase one). The third phase will figure as strategic globalization of the rubber industries. Survivors have to see their companies grow (through acquisition or organically) in the places with the biggest markets. According to most experts, British companies, for instance, will fail after 1992, because they, unlike American, German, Dutch, and French competitors, are starved for capital investment (R&P News II: 10/23/1989, p.7). But many more changes, takeovers, etc. are yet to come. As if responding to McCabe's suggestions, German rubber manufacturing association head, Gert Silber-Bonz, found fault with the pressures from the automotive industry. According to him, prices for tires and molded products are "slightly to strongly declining", leaving insufficient cash for necessary investments (Frankfurter Rundschau: 1/30/1990). The article seems to support the argument that German rubber parts manufacturers and their European counterparts still have to face the implications of increased international competition: e.g., about 70 percent of German rubber parts makers still do their business with German automobile makers only.

On the other hand, some rubber parts suppliers are way ahead of their smaller competitors already exploring what has been referred to as phase three. German Freudenberg for example occupies fifth spot in the European list of the biggest rubber companies with rubber sales of over \$1 billion and a manufacturing presence around the globe. Its primary rubber business includes automotive seals, gaskets, and vibration damping components. Rubber sales account only for 50% of total sales - still enough to rank 12th in the list of the world's largest rubber companies. Only BTR from the U.K. has a lower rubber sales ratio (25%), the total rubber sales still being more than twice that of Freudenberg. Both BTR and Freudenberg are major suppliers of rubber parts to the automotive and other industries (R&P News: 7/10/1989, p.27 and 11/27/1989, p.1).

The developments described above indicate that the ongoing restructuring in the automotive supply industries have a strong impact on rubber parts makers. Strategic goal, as with tires, is cross penetration of the three major markets USA, Europe, and Japan. The giant rubber parts producers seek to counter the increasing reliance of automobile manufacturers on "global sourcing" by globalizing the sources also. Takeovers, direct investments, and strategic partnerships are the principal means to stay competitive.

Although these strategies were geared towards shielding the parts suppliers from competition, recent developments have led to a much tougher fight. The downward trend in automobile production can be expected to lead to the failure of many companies and thus further increase the trend towards centralization. But not only smaller companies are under threat. Although it has not harmed its business, Dayco Products Inc. (US) has had three owners since 1986: first Dayco Corp., then Armtex Inc. and now the company is part of the Mark IV Industries Inc. empire. The new international setup of the industry will force and allow the transnational giants to streamline their operations in the various national economies. Unions certainly need to keep track of the ongoing merger wave to prepare for the coming changes. Particularly the links between unions in (first tier) high labor cost countries and (second tier) industrializing countries with runaway investments should be increased to be better prepared against arbitrary and irresponsible decision making by transnational manufacturers.

CHAPTER 4:

BELTING AND HOSES: THE 'DUMPING SEGMENT'

The previous chapter looked at the overall context of the second most important segment of the rubber industries - rubber parts production. Most of the rubber production delivered for use in motor vehicles is made up of **Belting and Hose (B&H)**. Therefore developments in B&H will be examined in somewhat more detail. Looking at the industry from a product angle, some further insight is possible. The need for a sufficient world market share and fierce competition between the major producers in this sector found a complex expression in large scale "dumping" into opposing suppliers' markets. In fact, major restructuring in the USA and Europe is underway, speeded up by anti-dumping charges against Asian and European producers which subsequently moved production to North America and to countries not affected by import duties levied by the US government.

OE production of B&H, most of which goes to vehicle manufacturers and industrial consumers, has reached an estimated \$250 to \$300 millions both in the European and North American markets. Replacement sales are estimated at \$1 billion a year by a Goodyear manager responsible for automotive replacement goods (R&P News: 19.2.1990, p.22).

A recent analysis describes important developments in the US industry: "Establishments in the industry are large, but have significantly declined in size during the study period (1972-1987, D.P.). In 1972, 19 establishments with 500 employees or more accounted for 21 percent of all establishments, 76 percent of employment and 75 percent of the value of shipments. In 1982, by comparison, nine establishments with 500 employees or more accounted for only 6 percent of all establishments, 44 percent of employment and 39 percent of the value of shipments" (MLR: 7/1990, p.27).

The declining number of employees per establishment (1972: 354; 187: 124) in the USA does not indicate a process of deconcentration. Instead, companies have strongly improved productivity and specialized production in smaller factories compared to their earlier reliance on huge plants with many product lines. The industry structure differs significantly in the USA and Western Europe. "The numbers speak for themselves", comments a journalist writing about the production of conveyor belting. "In North America, there are five factories producing conveyor belting; in Japan, nine; in Western Europe, 32, with 18 more operating in Eastern Europe" (R&P News: 6/12/1989, p.30).

Particularly European managers are convinced of the need for consolidation. Aside from the comparatively numerous plants, the European industry is pressed by overcapacity. However, a number of "gardeners" already started the task of "weeding out". The all-too-familiar names of the forceful laborers: internationalization, take-over, strategic partnership. In short, there is little new here, except for the anti-dumping cases, which came as an additional factor.

In 1988, the US International Trade Commission imposed duties on four belt-exporting nations: Japan, Singapore, Germany and Italy. Charges against South Korea, Taiwan, Israel and the UK were dropped, despite similar findings of "unfair business" conduct by producers located in these countries. The original petitioner for the belt-dumping case was American manufacturer Gates Corp, probably the world's biggest producer of industrial B&H. Gates' 1986 "acquisition of Uniroyal Inc.'s power-transmission unit gives the company more than 50% of the belt market" (Business Week: 11.5.1987, p.64).

The investigating commissioners found that the import volume of industrial belts in the USA had increased 40.1 percent between 1986 and 1987 and another 4.2 percent the following year. These findings suggest that currency fluctuations may have played an important role. Freudenberg, for example, lost approximately \$70 million during the same year, a "decline in total sales (that) was entirely attributable to the fluctuations in exchange rates" (Sleigh: 1989, p.131). However, price comparisons revealed "substantial underselling", according to the investigators. Additional evidence of lucrative import business: Shields Rubber Corp., based in Pittsburgh, could be fined \$500,000 after the company and several employees pleaded guilty to charges of removing "country of origin" markings from rubber hose imported from Italy (R&P News II: 4.12.1989, p.1).

Import taxes were levied across the whole range of products from Japan and against selected items from the other countries. As a consequence, import duties now affect approximately 75% of all belting imports into the USA. Some of the producers affected considered moving production to the USA and other countries to limit the damage to their businesses. In spite of possibly resulting "fairer pricing", American manufacturers thus will meet stiff competition from incoming investors.

The following table names major B&H producers in Asia, Europe and North America. Unfortunately, no information on Africa, Latin America and Australia could be obtained. Information on B&H sales is limited, too.

Table 16: Major B&H producers

Asia

| | |
|------------------------------|--------|
| Bridgestone | Japan |
| Mitsuboshi | Japan |
| Bando Chemical Ind.Ltd. | Japan |
| Teito Rubber Ltd. | Japan |
| Nitta International Inc | Japan |
| Dunlop Belting Products Ltd. | Japan |
| Tokai Tire & Rubber Co. | Japan |
| Yokohama Rubber | Japan |
| Magam United Rub. Ind. | Israel |
| NOK | Japan |

North America

| | Country | Sales 1989 (US\$ millions) | Employees | Locations |
|------------------|---------|-------------------------------|-----------|-----------|
| Gates Rubber Co. | US/Can. | 1,040 | 13,000 | 13 |
| Goodyear | US | NA | NA | 10 |
| Dayco | US | NA | NA | 10 |
| Dana Corp. | US | NA | NA | 4 |
| HBD Industries | US | NA | 1,200 | 5 |
| Victor Balata | US | 12 | 185 | 2 |
| Plumley | US | 60 | 957 | 5 |
| Parker Hannifin | US | NA | NA | 14 |

Western Europe

| | | 1988 | 1985 |
|---|-------------|------------------------|--------|
| | | B&H Sales (\$millions) | |
| Freudenberg | FRG | | |
| Arntz Optibelt Group | FRG | | 111.00 |
| Continental A.G. | FRG | | |
| Phoenix A.G. | FRG | | |
| PAGUAG GmbH | FRG | | |
| Semperit (Conti) | Austria | 65.00 | 30.00 |
| Trelleborg | Sweden | 120.00 | 30.00 |
| Pirelli Transmission Industriali S.p.A. | Italy | | |
| Saiag Industria | Italy | | |
| S.I.G. | Italy | | |
| CIGO S.p.A. | Italy | | |
| Depreux S.A. | France | | |
| J.H. Fenner & Co. | UK | | |
| Scandura Mining Products Co. | UK | | |
| A/S Roulunds | Denmark | | |
| Ammeraal Conveyor Belting B.V. | Netherlands | | |
| Fapobol | Portugal | | |
| ICB | Portugal | | |
| BIS | Portugal | | |

Eastern Europe

| | |
|-----------------------|----------------|
| Matador | Czechoslovakia |
| Buchov | Czechoslovakia |
| Taurus Hungarian Rub. | Hungary |
| Z.Z.T.T. | Poland |
| Rekord Gummiwerke | Yugoslavia |
| Vulkan | Yugoslavia |
| Sava Kranj | Yugoslavia |
| Balkan Rubber Works | Yugoslavia |

Note: Many companies operate plants in several countries. Some subsidiaries are not listed here.

Restructuring B&H

Given the different structures in the major producer countries, it does not take a prophet to forecast rapid change and a future industry structure in Europe more similar to American and Japanese economies of scale. The need for higher capital expenditure to introduce computerization and other productivity measures are strongly favoring the larger companies in this segment of the rubber industries as elsewhere. If US developments are matched in Europe, a lot of organized workers could be under threat in the near future. Smaller units of production and less employees in general due to higher productivity play into the hands of anti-union employers. Due to the impact of the anti-dumping case, however, developments in the United States have to be watched, too. "The big thing to remember is that anti-dumping actions are directed toward countries, not companies...What will happen is that the affected companies will either build plants here, which they've already started to do, or else they'll build plants in countries that aren't charged duties" (R&P News: 6/12/1989, p.18).

Mitsubishi's MBL Corp., unable to import belts from Japan and Singapore anymore, doubled US capacity to deliver 1 million belts a month to its customers. Another Japanese subsidiary in the USA, Bando Chemical (10% owned by Mitsubishi), followed suit and Germany's Arntz Optibelt Group is also said to be considering the construction of an American facility. The Japanese companies' prime customers are the Japanese automobile transplants. "Some of our OE customers have had a massive transfer of R&D to the USA. Therefore we will have to match these (developments)", argues a Bando manager (*ibid.*, p.20). The company plans to produce 80% of its US sales inside the country. A new site in Bowling Green, Kentucky will create 100 new production jobs.

Industrial Belting and Supply Inc. bought H.J. Schroeder thus adding \$4 million to its annual sales. The company now employs 131 workers. Habasit expects a sales increase of as much as 30% after opening a new sales and service center in Quebec.

Gates Corp., the biggest player in the belting and hose segment, is building a £10 million synchronous belt extension to its existing Dumfries plant as part of a major investment program across Europe.

Cadillac (US), a subsidiary of British Avon Rubber, agreed with Teito from Japan to jointly market hose to Japanese automobile and truck manufacturers in North America. The companies are considering further steps towards joint venturing. American manufacturer Plumley provides an example of how joint ventures with overseas manufacturers pay off. The joint production with Mitsubishi and Marugo Rubber from Japan allowed the company to get OE contracts with Japanese vehicle manufacturer Nissan Motor Corp. in the USA and subsequently led to a supply contract for Nissan's Japanese production. In Europe, Plumley supplies gaskets to Ford and considers independent or joint venture direct investment. Plumley calculates on achieving a great advantage for bigger US auto suppliers in Europe because of superior CAD/CAM equipment and experience with tougher emission standards. "If (the European suppliers) can't change, they'll fall by the wayside" (*ibid.*, p.21).

Some already did. The most recent move was Trelleborg's (Sweden) purchase of Nokia Corp. Trelleborg, even before this acquisition, was one of the world's leading B&H producers, operating plants throughout Scandinavia as well as in other countries. Nokia will add \$60 million to Trelleborg's sales. The former Finnish company operates facilities in Finland, Germany, Japan and the USA. Moreover, Trelleborg recently entered into a joint venture with Taurus Hungarian Rubber works thus gaining easy access to the increasingly important Eastern European market. In the Soviet Union two auto V-belt plants are to open this year. The two sites are turnkey

projects delivered by German Hermann Berstorff Maschinenbau GmbH (\$48.5 million contract). The plants coming on stream this year are among the largest in the country (R&P News: 4.12.1989, p.3).

The Austrian subsidiary of Continental, Semperit, purchased Kleber Industrie's conveyor belting operations. In 1989, \$12.5 million were set aside for investments in this operation. Another \$2.1 million were spent on the V-belt joint venture with Mitsuboshi. Further reduction of the number of companies and (more harmful for the workers employed) a significant reduction of plants are expected. Continental itself wants to buy the other 50% of Clouth Gummiwerke GmbH in Germany currently held by Philips Kommunikations Industrie A.G. In 1981, the Monopolies Commission was still refusing the request, but with 1992 coming up, the Commission might change its mind. Clouth reported sales of \$161 million in 1988 (R&P News: 22.1.1990, p.24).

Apart from the shifting of production to the USA, future Eastern European exports are expected to be a leading factor in the continuing process of restructuring and reduction of production in the most developed industrialized countries.

Factory 2100

There has been much talk about automation, rationalization and new working systems (quality circles, team working, flexibility, etc.). Certainly there have been many changes on the shopfloor during the last decade. Particularly workers confronted with newly popular Japanese management styles are well informed about the changes that can be experienced if the proposal comes from the top of the hierarchy. Many more employees in Europe and North America were confronted with demands for changes allegedly modelled after "Japanese" examples. Often, however, this is a familiar story of the students becoming much more radical than their professors. One European company in particular is best suited to describe the extent of this workplace revolution. To observe the most revolutionary experiment, we need to look at Italy's Pirelli.

In 1985, Pirelli closed a cable factory in Aberdare (Wales) which it had operated since 1971. The company then constructed a fully automated plant at the same location re-employing, however, only 40 of the previously 80 workers. A plant ruled by a computer. One clause in the workers' contract advises them to "promptly carry out all instructions given by the unit's management or an electronic display" (FT: 12.11.1988). Most of the instructions are indeed delivered by the facility's computer integrated manufacturing system. Pirelli abolished the traditional division of job categories to make the most flexible use of its workforce. "Workers clock on in the morning using something that looks very like a credit card. The magnetic strip on the back of the card contains a record of their skills. As they register for work the central computer automatically calculates what labor is available, what tasks need to be done and how workers should be deployed around the plant" (ibid.). The new system not only allows Pirelli to use workers flexibly in production, but also tore down most of the demarcations between production, maintenance and administration. Administrative and production jobs are essentially carried out via computer terminal. Payment of the workers depends mostly on the skills acquired. The philosophy runs like this: whoever qualifies for more jobs can be used more flexibly and, finally, receives better pay. Of course, the company prides itself on its "computerized interactive training system". Workers can sign up to acquire new "skill modules".

Pirelli regards this project "as a prototype for the whole Pirelli group. It is an example of what factories may be like in the 21st century" (ibid.). If that is true, all unions have to be prepared to consider new contract modes like that negotiated by the GMB of the UK, which organizes about 80% of the 140 workers at the Pirelli plant. Pirelli preferred the single-union, no-strike agreement against the non-union plant solution as it was well aware that an anti-union stance would meet with strong and continued opposition from the unions which was likely to disrupt its plans in the long term.

The question remains how unions can cope with such a computer-controlled industrial relations future. Should unions invest in R&D to finally produce "Brother Computer"? The new electronic representative hooks up with the company version to cut a deal. In case of conflict, the bigger memory wins, alas. This fanciful scenario omits the essential factor of organized labor intervention, just as does the management vision of a future with workers subordinated to computer controllers. Workers dissatisfied with such a development still have an option: Pull the plug!

CHAPTER 5:

OTHER RUBBER INDUSTRY SEGMENTS

5.1: GLOVES AND CONDOMS

Rapid "internationalization" is a top issue in the industry of rubber sanitaryware, too. Yet, the mechanisms at work in the other rubber industry segments have been reinforced by an additional factor. During the 1980's, humankind has been challenged by an epidemic that sparked hysteria at times: AIDS.

Rubber sanitaryware is generally associated with the health business.(5.1) Therefore, companies operating in this segment have to meet a special social responsibility, which they never fail to emphasize to promote their products. How "responsible" some of these health businesses are when they face actual demands that cost money could be observed recently in the USA where the manufacturing association of the health industry tried to stop the date stamp requirement for condoms as introduced by a New York state bill (R&P News II: 4/10/1989, p.3). Here too, it's "business as usual".

Gloves

World rubber glove demand rose to 12 billion pieces in 1988 with the USA being the primary market. Enormously surging demand during the 1980's led to the installation of a lot of new capacity. Taiwan's glove exports, for example, increased nearly sixfold in 1988 compared to 1987. Today, gloves rank first in this nation's medical equipment industry (12th in 1987). Shipments reached \$14.0 million in value. Traditionally the glove market had experienced slow growth (R&P News: 10/16/1989, p.10).

Typically for such a "boom" situation, global capacity was soon increased disproportionately as too many producers smelled the opportunity to make money. Many companies mainly from the USA, Europe and Taiwan rushed into cheap labor reservoirs in South-East Asia with most of the investment going to Malaysia. A dipping line from Taiwan, for example, costs only \$100.000 (R&P News: 12/12/1988, p.12,13). Because even inefficiently handled investment yielded considerable returns for a while, the many new sweatshops created rapid overcapacity which in turn led to the failure of most of the new companies. Of course it was the workers who suffered most from the entrepreneurs' desire to meet their "special responsibility".

Around one third of Malaysia's 93 glove facilities face shut down. This country alone can produce 28 billion pairs of rubber gloves annually. Rapidly declining NR prices caused distributors in the USA to cancel their contracts to take advantage of cheaper production in Taiwan and China. The Malaysian government declined to impose export taxes for NR latex to China and Taiwan to protect Malaysian glove producers (Gummi, Fasern, Kunststoffe: 7/1989, p.343).

Due to the overcapacity squeeze, Ansell International's plant in Malaysia, for example, operated at 25 - 30% capacity between April and June 1988. The company faulted the Malaysian government for granting too many glove production licenses, but considered a \$39 million investment opportune for a new operation in Sri Lanka where it is the first major producer. Ansell reported 1989 total sales of \$301 million compared to \$268 in 1988. The company increased glove sales in North America by 28% (R&P News: 10/16/1989, p.45) In the latex product area, Ansell holds the position of the world's largest latex dipping operation.

Germany's Beiersdorf A.G. and Italy's Pirelli also expanded in Malaysia. The former company has started three dipping lines in Malaysia (Medical-Latex Sdn. Bhd.) thus entering new business in gloves. The products are marketed in the USA and in Europe. Employment in the Senai Industrial Estate near Johor Bahru grew to 545 (1988) from 375 (1987). This estate also packages condoms and makes balloon catheters ((R&P News: 12/12/1988, p.17). The latter company set up a new glove operation (Moldip Malaysia Sdn. Bhd. subsidiary). Investment totals \$5 million.

The major glove makers - transnational companies based in the industrialized countries - finally are not badly affected by the turmoil. In the United States, for example, more capacity is under construction than in Malaysia.

A group of businessmen in the Akron area have formed North Coast Latex Corp in order to open a 260m units a year latex glove factory. The major US producer, Baxter Travenol, is expanding production rapidly - competitors say "to spoil it for everyone" (R&P News: 12/12/1988, p.13). In 1989, Ansell International (Pacific Dunlop, Australia) tried to raise its stake in the American market acquiring the Edmont glove division (six plants, assets worth \$94 million) of Beckton Dickinson. Other US production facilities of Ansell include Dothan, Ala., Salem, Ore, and Snow Hill, N.C. The deal, however, has been blocked on antitrust grounds. Under a proposed agreement, Ansell and Edmont each have to divest one plant before the \$228 million deal can be completed. Five competing companies as well as the United Rubber Workers criticized the consent agreement (R&P News: 18.12.1989, p.3). However, following the union's protest, the group of investors that eventually bought the two facilities announced that it would operate the plants with the previous workforce (R&P News: 26.2.1990, p.1).

Particularly Ansell (Australia, leading producer), London International Group (UK) and Baxter Travenol have a decisive competitive advantage. They all rely on a huge international distribution network. New companies only have a chance to survive if they are linked with such downstream connections. Malaysian producer Excel Rubber Products Sdn. Bhd. is safe in this respect. This company is wholly owned by National Dental Supply (US) which has the distribution network advantage in the USA and in Europe. "We are the buyer, the manufacturer and the seller" (R&P News: 12/12/1988, p.18).

The major producers are seeking to further increase their direct control over distribution. Ansell International recently terminated its contract with Smith and Nephew plc which previously distributed Ansell gloves in the UK. Smith and Nephew itself is a major glove producer. Outside the UK, the firm employs at least 800 workers in two American units. Ansell wants to come closer to the end-user as competition gets fiercer. The company currently is the only firm apart from LIG that meets strict British government regulations. The authorities in Britain, however, are considering bids by two more producers to increase competition. Ansell already sells directly in France.

The impact of transnational companies' decisions has been particularly evident in the United States trade balance. US glove imports surged 138% in the 1988 turmoil resulting in a 168.9% erosion of the trade balance (R&P News: 12/19/1988, p.3).

Condoms

Also due to the AIDS crisis, the market for condoms has expanded rapidly during the last decade. Many governments actively support the promotion of condoms, in spite of sometimes harsh criticism from religious and conservative voices. This climate frequently supported rather dubious marketing strategies of various condom manufacturers. In Hong Kong for example, US Secure Co. had Santa Claus distributing its "ReadiSkin" condoms to young children "to support the 'prevent AIDS' campaign of the government".

Condom manufacturing has become a very lucrative business. There is one company particularly well prepared to benefit: London International Group from the UK is the world's largest producer of branded condoms. Long before the AIDS crisis loomed LIG described itself as a "company with a mission". During the last year LIG continued to increase the market share of condoms and the special "mission" is to grow further worldwide. Overall profits were boosted by 16% in 1988.

International expansion has been coupled with restructuring of the manufacturing presence. The 1992 program to unify the European market in particular is regarded as an opportunity in this respect. (LIG: 1989, CBNB PR 31/03/89). LIG enjoys a 50% market share in Europe and holds 31% of the US market. Recently Hatu-Ico of Italy has been acquired. Other areas of expansion include Eastern Europe. LIG won a 5 million pound sterling contract to supply 2 condom manufacturing plants in the USSR. The agreement was signed between Techmashimport, the Soviet Government agency, and LIG's Italian subsidiary Hatu-Ico. Production is scheduled for 100m latex condoms.

Another \$12.86 million Soviet contract has gone to Japan's Mitsui & Co. and the biggest Japanese condom manufacturer Okamoto Industries Inc last year. The new plant will supply 300m condoms annually. Demand in the Soviet Union has reached 1 billion a year. Production capacity covers only one-fourth of this (R&P News: 8.1.1990, p.3). Back in 1986, the Japanese partners delivered two plants to India's Hindustan Latex Ltd. raising Indian production capacity by 480 million units. Mitsui & Co. sales totalled \$85.4 million in 1989.

International expansion, as usual, has not worked in favor of the workforces in some countries. In the USA, LIG axed Schmid laboratories condom division in Little Falls, NJ, and the Schmid condom manufacturing plant in Anderson, SC. Other closures have been announced in Germany and in the Netherlands for the mid 1990's. The condom production facilities are to be concentrated at Chingford in the UK, Barcelona in Spain, and at Bologna in Italy (R&P News: 2/10/89 p.1 and 5, ERJ: 1/10/1989, p.4). Automated equipment in Barcelona guarantees better compliance with hygiene regulations, according to LIG. A major reason for the relocation of production from Germany to Spain probably lies elsewhere. Spanish women working in the Barcelona plant are allowed to work at night and over the weekend. And the Spanish wages are lower.

Similar trends can be observed elsewhere. Ansell International closed the sole Australian condom plant at the end of August 1989. During the last two years, tariffs in Australia have been lowered from 35 to 20%, thus enabling Ansell to supply that country with its Lifestyle and Checkmate brand condoms manufactured at its Dothan, Ala., factory. Ansell had produced condoms in Australia since 1905 and was bought by Pacific Dunlop in 1969 (R&P News: 10/23/1989, p.7). According to the report, however, a consortium of businessmen is conducting a study on whether to construct a new Australian plant.

Ansell, too, is heavily involved in worldwide restructuring. In 1989, the company acquired the Mates condom business thereby gaining a 20% market share in the UK where LIG previously figured as a virtually exclusive monopoly (R&P News: 10/16/1989, p.45).

Strong single supplier positions are not exceptional. Julius Schmid Candada Ltd., for example, controls a condom market share of 45% (Sheik condoms) in Canada (R&P News: 10/30/1989, p.4). In Germany, five companies share 80% of the market. London Rubber Company (LIG), MAPA, Rimbacher Gummiwerke, Ritex and Orien, however, do not plan to produce in Germany in the future. Once the remaining LIG plant has been closed, all of them will import the products from cheap-labor countries. Only packaging etc. remains in the country.

As in the glove segment, South-East Asia is developing a strong manufacturing base for condoms. Malaysian Takaso Rubber Products, for example, expanded rapidly in that country. The company invested in China and future plans include expansion to Eastern Europe and India. A multimillion dollar expansion at home added 100 employees to the payroll. The new plant in Muar allows quadrupling of capacity. But whereas industry leader LIG produces its own machinery, the dipping equipment for the Malaysian company's "Romantic" condoms has been bought from West Germany (R&P News: 12/12/1988, p.16). Dunlop Malaysia Industries has set up a plant this year to make 140 million condoms annually for export to Dur-A-Vend Ltd., a British company. Workers will have to work three shifts from Monday through Saturday. This plant is a part of Dunlop Malaysia's \$15 million investment in tire, glove and condom production (R&P News: 5.3.1990, p.5).

5.2: RUBBER FOOTWEAR

Footwear production, like sanitaryware, was moved to cheap labor countries when automation could no longer reduce production costs enough to compete with South-East Asia and Latin America in this labor-intensive segment. Rather than thinking about upgrading the incomes of their workers in industrializing countries, companies are certainly counting on the continuation of the wage gap.

Some remaining producers in industrialized nations, however, are protected by substantial tariffs. United States number one or two producer of rubber boots, Servus Rubber Co. reports sales of \$18 million yearly and employs 500 workers. The necessity of tariffs for survival is clearly stated by manager Figge. Proposed reductions "would hurt us badly. The industry would change dramatically if it existed at all" (R&P News: 12.6.1990, p.6).

Total footwear production in the USA stands at around 206.4 million pairs. This figure compares with combined imports of 796.5 million. Most of the imports come from Taiwan and South Korea, but China, Thailand and Indonesia have increased their shares recently. Whereas most of the shoes are not classified as rubber footwear, many have a significant rubber content (soles etc.).

US manufacturers produced 72.1 million pairs of rubber footwear compared to imports of 171 million pairs. The import penetration rate for all shoes in the USA is 80.3%, for rubber classified footwear the number is slightly lower (73.6%). The following table provides information on foreign countries' market share in the USA.

Table 17: Import shares of South-East Asian countries in the U.S. footwear market

| Country | Share |
|-----------|-------|
| Taiwan | 27% |
| S.Korea | 19% |
| China | 15% |
| Thailand | 2% |
| Indonesia | 1% |

Source: R&P News II: 12.2.1990, p.2

Apart from Servus, the US United Rubber Workers' Union reported three more unionized footwear producers: Kaufman Footwear, LaCrosse Rubber and Tingley Rubber. US wages in this industry segment are very low. According to government figures, a US footwear worker takes home an average \$1,138.- monthly, less than half what workers make in tire manufacturing. Despite this fact, German Adidas closed its one and only US plant in September 1989, idling 200 workers and employees.

Pirelli and Continental continue to produce rubber soles in Germany. But, elsewhere in Europe, much of the production of footwear and rubber footwear has been relocated, too. Particularly Portugal has become a new major site of footwear production. The German shoe industry, for example, produces more pairs of shoes in Portugal than in Germany.

German manufacturers Ara, Bama, Gabor, Rieker, Rohde, Sioux and Freudenberg have all chosen to take advantage of low wages in that country.

Rubber giant Freudenberg provides a typical example. The company historically started in the leather business and only later became an important rubber industry player. Freudenberg's Elefanten-Schuh is one of the most important children's shoe brands in Europe. Only two of the former seven factories are still in Germany. Its 4,000=strong workforce of the late 1970's had declined to 1,400 by 1986. 75% of Freudenberg's sales in Germany are now imported from the company's foreign subsidiaries in Austria, Portugal, Brazil and Iran. In the shoe segment, Freudenberg employs more people abroad than "at home" and the relocation process continues.

Similar developments occurred in the Asia-Pacific region. Between 1985 and 1988, four Japanese companies either went bankrupt or reduced their workforce drastically. Tsurigane Ind. closed its doors in 1985 leaving 55 union members of JRW and 17 non-union workers without a job. Kohshinn Rubber Co., Sekaicho Rubber Ind. and Hiroshima Chemical Industries took 579, 141 and 207 workers off their payroll, respectively. The Japanese Rubber Workers Union cited increasing imports due to the appreciation of the Yen and fierce competition from the Republic of Korea as the major reasons for the difficulties. Apart from these companies, Toyo Tire & Rubber, Asahi Rubber and Achilles Corp. are reportedly producing rubberized footwear in Japan.

5.3: RUBBER ROOFING

The rubber roofing segment of the rubber industry has been the fastest-growing for some time, but depends also on the cyclical housing market as well as in changes in architectural style. Annual increases in the USA reached only 8 to 9% recently compared to 25 to 30% increases during the 1970's. While predictions of a \$1 billion market failed to materialize until now, one billion square feet sales of rubber roofing material (EPDM membrane) yielded a still considerable amount of \$350 million in the USA alone.

Chemical giant Du Pont actually invented the EPDM material in 1963 which subsequently (in the 1970's) became widely applied when demand for alternatives to oil-based asphalt solutions surged. Compared to other roofing materials in the US, rubber roofing is predicted to gain further in the future.

Table 18: Roofing activity forecast (million square feet)

| | 1989 | 1990 | %growth |
|---------------------------------|-------|-------|---------|
| Commercial roofing | 3.088 | 3.178 | 2.9 |
| Single-ply roofing | 1.880 | 1.940 | 3.2 |
| Rubber-based single ply roofing | 1.240 | 1.333 | 7.5 |

Source: R&P News: 7.8.1989, p.14

The Japanese rubber roofing market is comparatively small. In 1989, only 280.8 million square feet were sold, an increase of 4% from 1988. The biggest companies in the segment are therefore American rubber manufacturers, but the takeover wave of the 1980's put the single biggest supplier, Firestone, under Japanese control. The following table lists the biggest rubber roofing manufacturers.

Table 19: Rubber Roofing Manufacturers

| Company/Country | Sales million sq.ft. |
|--|-------------------------|
| Carlisle/U.S. | 310 |
| Firestone (Bridgestone)/Japan | 300 |
| Colonial Rubber Works (M.A. Hanna Co.)/U.S. | 270 |
| Goodyear/U.S | 140 |
| Mitsuboshi Belting Ltd./Japan | 55 |
| Toyo Tire & Rubber Co./Japan | |
| Hitachi Densen/Japan | |

Source: R&P News: 7.8.1989, p.14 and 21.8.1989, p.3

Bridgestone, as part of the \$1.5 billion investment plan for Firestone's worldwide operations, constructed two new roofing plants in the USA. This capacity expansion - alongside competing efforts of the other producers - is likely to further increase competition which already drove several smaller companies out of this business. Aggressive price cutting has been cited by Reeves Brothers Inc. as the major reason for leaving the market. Bearfoot Corp. diversified out of the declining footwear market into roofing and floor materials. The company finally had to give up in 1984, too (R&P News: 7.8.1989, p.14).

The leading American producer is "going east". Carlisle Corp. has signed a joint venture agreement in the USSR. The enterprise (Krovtekh) will manufacture and sell synthetic rubber roofing materials (SUBTAZ 30/09/89, p.4).

French company MTS has introduced "Apastuff", a waterproof elastomer resin coating for balconies, terraces, and roof parking bays (World's New Prod.: 01/10/89 .5). Otherwise, little information is available on European companies.

The names of the survivors and their position in the market tell the familiar story of the "winners" after the 1980's decade of change: the big transnationally operating giants with their vast resources. For the moment, competition in this segment seems to work as suggested by mainstream economists. However, once the market is finally divided among the major "survivors", price cutting will certainly disappear as the companies are now trying to undercut prices to gain market share.

CHAPTER 6:

ICEF 1990 SURVEY OF RUBBER EMPLOYMENT, WAGES AND CONDITIONS

In preparation for the 1990 ICEF World Conference on the Rubber Industries, a questionnaire was sent to member unions of the International seeking information on the condition of rubber industry workers throughout the world. Fourteen member unions of the ICEF returned information on the situation of their members employed in the rubber sector. Their contribution has been supplemented by some information available from elsewhere and from presentations made at the Conference itself, to provide insights into the aspects of the rubber industry usually omitted by industry and government sources. Although one of the outcomes of the World Conference was to improve the ability of unions through the ICEF to collect and analyse the necessary data to enable comparisons to be made internationally, the following tables do allow for some comparison and may prove useful at the bargaining table and for educational purposes.

Employment

Most recently a number of companies in Europe and North America have announced **reductions in their workforce** numbers. A new recession is clearly on the horizon, which will have stronger negative impact on rubber industry employment than the figures for the period to 1989 show historically. Total rubber industry employment has not changed dramatically during the last five years, in general. This is largely due to the absence of major economic slow downs. On the other hand, the statement needs to be qualified. Germany is the only country that reported a significant number of new jobs during the period (2,500). France lost more than 10,000 rubber jobs and the United States 13,600.

Significantly, in the USA, **more white collar workers had to look for new jobs** than production workers. This suggests that new work organization systems have been aimed at reducing administrative and general servicing costs now that the production process has been trimmed to the bone.

Some jobs were added in Australia and slightly more than 2,000 have been lost in South Africa. Table 20 provides more details.

Table 20: Rubber Industry Employment

| Country | total 1989 | workforce 1985 |
|--------------------|---------------|--------------------|
| Austria | 7025 | 7353 |
| Denmark | 856 | n.a. |
| France | 76900 | 86300 |
| Germany | 97839 | 95244 |
| Luxembourg | 4050 | 4059 |
| UK ¹ | 220600 | n.a. |
| Canada | 25400 | 25366 |
| USA | 221400 | 235000 |
| S.Africa | 15600 | 17734 |
| Sri Lanka | n.a. | ² 70000 |
| Japan ³ | 187740 | n.a. |
| Australia | 1350 | 910 |

1: Rubber & Plastic; 2: 1982 data; 3: 1986 data

Source: ICEF Rubber Questionnaire 1990

In the tire sector, almost all countries reported job losses. Again, 5,000 white collar jobs lost in the US tire industry are highly significant. Another 3,400 salaried workers of Bridgestone's Firestone have been offered "early out packages". Jobs have been lost in Europe due to continued automation. More recently reductions have been planned because of over-capacity. Michelin has been reported to reduce its European workforce. Production cuts of 6 to 7 per cent are scheduled for this year. The company employs 120,000 workers in 59 plants worldwide. Most cuts are expected at Michelin's Clermont-Ferrand headquarters where the current workforce stands at 20,500.

Additionally, Michelin announced most recently that it will close the French Uniroyal Goodrich facility employing 1,300 workers (FR: 10.1.1991). This move comes after completion of the take over of the American tire manufacturer - a strong indication that takeovers often precede a reduction in capacity that is very costly in job losses.

Table 21: Employment Tire Sector

| Country | workforce | |
|---------------------|-----------|-------|
| | 1989 | 1985 |
| Austria | 2760 | 2760 |
| Denmark | n.a. | n.a. |
| France ¹ | 50300 | 59400 |
| Italy | 13935 | n.a. |
| Luxembourg | 1083 | 1156 |
| Spain | 3826 | 4070 |
| Sweden | 680 | 680 |
| Canada | 7616 | 7720 |
| USA | 64000 | 65100 |
| S.Africa | 7152 | n.a. |
| Sri Lanka | 1773 | 1812 |
| Japan | 32822 | n.a. |
| Australia | 600 | 420 |

1: all categories

Goodyear too recently announced reductions of more than 1,000 jobs in North America and Europe. Table 21 provides information on tire sector employment.

The tire industry - almost everywhere - is an almost exclusively "male" industry. Table 22 reveals the extraordinarily high percentage of male workers in the tire sector. Only in Denmark, Sweden and Japan are 30% or more of those employed in this industry women. **The percentage of female workers in "other rubber" is much higher.** Only in Japan, however, do women outnumber men (57%).

The Austrian country report to the 1990 World Conference mentioned that **women are being increasingly forced out of the workplace as companies introduce continuous shiftwork** as a regular norm in the industry. Legislation which bans women from performing night work in many countries and was often introduced as a socially protective measure is actually causing a specific discrimination against women workers in the sector. Similar contradictions between social regulations and company strategies with negative consequences for female employment in the tire industry are apparent in other European countries as well. The natural question arises whether night work schedules are good for the health and welfare of either women or men - all the indications of research on this matter to date are that they are no good for either.

The percentage of **foreign workers** in the tire sector rose in Austria from 11.4% (1985) to 15% (1989) and in Sweden from 39.1% to 43.4%. On the contrary, the share of foreign workers in France has dropped to 10% from 13%. 40% of Luxembourg's tire workforce is made up of foreign workers.

Most countries did not have information on foreign workers. Contingent employment seems to be rather low in most countries. Only France and Japan expressed serious concerns over the use of short-term and part-time contracts. In France, the contingent workforce numbers 3,000 with a tendency to grow.

Employment should be correlated to production (and sales) to understand the underlying trends. By this measure, employment has been reduced relatively more than absolute figures reveal. Most countries reported a 5 to 10% higher sales value in 1989 over 1985.

Table 22: Male/female workers percentage (tire sector)

| Country | Male | workers | Female | workers |
|----------------------|------|---------|--------|---------|
| | 1989 | 1985 | 1989 | 1985 |
| Austria | 84.4 | 83.2 | 15.6 | 16.8 |
| Denmark ¹ | 70.0 | n.a. | 30.0 | n.a. |
| France ¹ | 80.0 | 79.0 | 20.0 | 21.0 |
| Germany ¹ | 80.0 | 82.0 | 20.0 | 18.0 |
| Italy | 89.8 | n.a. | 10.2 | n.a. |
| Luxembourg | 99.0 | 98.4 | 1.0 | 1.6 |
| Spain | 95.2 | 94.9 | 4.8 | 5.1 |
| Sweden | 66.0 | 67.7 | 34.0 | 32.3 |
| Canada | n.a. | n.a. | n.a. | n.a. |
| USA ¹ | 66.0 | 66.0 | 34.0 | 34.0 |
| S.Africa | 95.0 | n.a. | 5.0 | n.a. |
| Japan ² | 62.6 | n.a. | 37.4 | n.a. |
| Australia | 85.0 | 85.0 | 15.0 | 15.0 |

1: total rubber sector workforce; 2: all figures: 1986

Union Information

Table 23 provides information on the percentage of tire and other rubber workers organized with ICEF member unions and on the percentage of workers covered by collective agreements.

Spain, Luxembourg, Denmark and Canada display a relatively low organization ratio in the tire industry with France reporting by far the lowest rate. The United Rubber Workers' Union in Canada organizes a higher percentage of workers in other rubber than in tires. It is interesting to note that these statistics underline the viscerally anti-union policies of just one of the major tire producers - Michelin. **In general, tire workers seem to be a highly unionized group of industrial workers.** This fact certainly contributed to the relative "satisfaction" expressed by union officials regarding their relations with the other rubber companies.

Table 23: Union Organization Rates

| Country | % organized | | % covered by agreement | |
|---------------------|-------------|------------------|------------------------|-------|
| | tire | other | tire | other |
| Austria | 100 | 80 | 100 | 100 |
| Denmark | 30-40 | 50-60 | 100 | 100 |
| France | 5 | 3 | 100 | 100 |
| Germany | 65 | 65 | 65 | 65 |
| Italy | 70 | 65 | 100 | 100 |
| Luxembourg | 25 | — | 100 | 100 |
| Spain | 16 | n.a. | ca.35 | n.a. |
| Sweden | 100 | 98 | 100 | 100 |
| UK ¹ | ca.100 | n.a. | ca.100 | n.a. |
| Canada ² | 37.0 | 60.0 | 37.0 | 60.0 |
| USA ² | 75.0 | 40.0 | 75.0 | 40.0 |
| S.Africa | 100 | 34 | 100 | 34 |
| Sri Lanka | n.a. | 15 | ³ 0 | 100 |
| Japan | 53.2 | 19.4 | 97.5 | 33.4 |
| Australia | ca.45 | ⁴ 100 | 100 | 100 |

1: production workers; 2: URW members only; 3: collective agreement for tire sector workers forthcoming; 4: only Bridgestone

Table 24: Industrial Relations "Climate"

| Country | good | fair | many problems | hostile | improved | deteriorated |
|------------|----------------|----------------|---------------|---------|----------|--------------|
| Austria | X | | X | | | |
| Denmark | X | | | | | |
| France | | | X | X | | |
| Germany | X | X | | | | |
| Italy | X | X | | | | |
| Luxembourg | | | X | | | |
| Spain | | X | | | | |
| Sweden | | X | | | | |
| UK | | X | | | | X |
| Canada | X | X | | | | |
| USA | X | X | | | | |
| S.Africa | | | X | X | | |
| Sri Lanka | X | | | | X | |
| Japan | X ¹ | X ² | | | | |
| Australia | X | X | | | | |

1: Japan's Bridgestone union; 2: Japanese Rubber Workers' union JRW

Most unions described industrial relations in the rubber industry of their country as 'good' or 'fair'. But the general good picture is disturbed by the particularly bad situation in South Africa and in France. Many problems seem also to exist in Luxembourg and Austria. The British TGWU reported a "deterioration" of relations in recent years. The general picture also has to be qualified with respect to individual companies. **Michelin in particular was excluded from the 'good report' in many of these responses,** where the general industrial

relations climate is seen as above average. More detailed responses showed that Michelin causes trouble for many unions around the globe. The company tries to avoid union organization by using all available means to create an extremely paternalistic "company spirit". In Canada, Michelin even succeeded in changing provincial (state) laws to keep the URW out. **This situation suggests that Michelin might be a good candidate for close international union cooperation at company level - a decision which the 1990 World Conference saw as being important to its future program.**

The following table 25 compares the national collective bargaining systems for the industry.

| Country | local | company | regional | industry | mixed |
|---------------------|-------|---------|----------|----------|-------|
| Austria | | | | X | |
| Denmark | | | | | X |
| France | | X | | X | X |
| Germany | | | X | X | X |
| Italy | X | X | | X | X |
| Luxembourg | | X | | | |
| Spain | | X | | | |
| Sweden | X | X | | X | X |
| UK | X | | | | |
| Canada ¹ | X | X | | | X |
| USA ² | X | | | | X |
| S.Africa | X | | X | | |
| Sri Lanka | | | | X | |
| Japan | | X | | | |
| Australia | | X | | | |

1: Standard Product locals negotiate together; 2: master agreement with Firestone, Goodyear, UGTC etc.

Industrial Conflict

Although the rubber industries are not exactly strike-prone, a number of conflicts, both big and small, have been reported. Danish workers went on strike every year from 1985 to 1988 with more than 2 million hours lost in 1985. In Sweden, 680 workers were involved in collective action in 1985. The Italian rubber workers struck Michelin in 1986, Pirelli in 1988 and both companies in 1989; all strikes were company-wide over restructuring issues. French rubber unions have adopted a variety of tactics against Michelin including a 6-week strike in 1988.

131 Goodyear workers went on strike in Canada for 105 days back in 1985 and 1,300 workers at Uniroyal Goodrich walked out for 53 days in 1989. This strike was over the introduction of 7-day operation, pensions and insurance, wages and contract language disputes. In the USA, McCreary Tire locked 230 URW members out in 1986. The company succeeded in becoming non-union after the conflict. Rubber manufacturer Dayco also locked 400 workers out during the same year. A major strike occurred in 1989 when 1,450 US tire workers struck General Tire over a variety of issues including wages and cost of living adjustments.

Two major struggles involving international support show the nature of problems faced by ICEF member unions in this sector:

Major Industrial Disputes in the Rubber Industry

British Tyre and Rubber (BTR) South Africa

In April 1985 the Metal and Allied Workers Union struck the BTR Sarmcol plant at Howick in Natal. The strike was a legal strike in support of demands for the recognition of their union. There was a history of 10 years' effort by progressive trade unions to successfully organize the workers. The company response was to dismiss all 970 strikers, most had very long service with the company. The area is a rural one close to the Kwa Zulu homeland. There is no other employer of any size in the area. The strike, now the longest industrial dispute ever to take place in South Africa, has been marked by massive violence and repression. BTR has earned the title 'Blood, Tears and Repression' throughout the world.

ICEF responded immediately with a campaign against the company. Affiliates who negotiate with the company elsewhere protested strongly to their local managements and to the head office of the company. Contacts were made between ICEF affiliates in the United Kingdom and Trinidad and Tobago, where other disputes took place against the company.

The response of the workers, now members of the National Union of Metalworkers of South Africa, was to establish a series of cooperatives with their union to generate relief funding and raise awareness of the dispute. The cooperatives include a health screening project (severe levels of malnutrition have been found in the families of the dismissed workers) and food buying and producing cooperatives. The coops, known collectively as SAWCO, Sarmcol Workers Cooperatives, also include a cultural project producing a play describing the history of the dispute, called "The Long March", and a group of singers ("The Long March Singers") as well as a T-shirt printing collective. These two projects are of crucial importance to the profile of the international campaign as well as being essential in raising relief funding for the workers and their families.

ICEF affiliates in the United Kingdom provided financial support which allowed the union to employ a South African exile to act as international coordinator of sales of the coop products abroad (principally t-shirts printed with the emblems of the progressive unions in South Africa). Extensive tours of the United Kingdom have also taken place by both the play and the singing group.

The ICEF participated in an informal hearing organized by the socialist group of the European Parliament. The hearing, set up to examine whether or not BTR had followed the E.C. Code of Conduct for multinational investment in South Africa, strongly criticized the company's behavior. The severe weakness of the Code, however, was shown to be its voluntary nature and the lack of any formal enforcement or monitoring procedures. The company simply ignored the findings of the hearing.

ICEF affiliates in the United Kingdom together with delegations from NUMSA have participated in demonstrations at the parent company's annual shareholders meetings.

The dispute has been exceptionally violent with many deaths directly related to the dispute. Among these were the deaths of three union activists, including the chairman of the strike committee, who were murdered by vigilantes linked to the Inkatha organization. A further death was that of Jabu Ndlovu, a senior shopsteward of NUMSA who was brutally attacked by vigilantes linked to Inkatha on May 21, 1989. Her house was attacked and burned to the ground, and as she and her family fled they were shot. Her husband and daughter died immediately, Jabu herself was critically burnt and died a week later in hospital. Jabu Ndlovu was well known to our affiliated unions in the United Kingdom having been part of the singing group "The Sisters of the Long March", which toured the UK raising awareness of the union campaign against the British multinational BTR and raising essential relief funds for the workers in dispute. Jabu was very active in COSATU local activities and in community affairs in Imbali.

NUMSA believed that her death was directly related to her participation in a press conference where COSATU made very serious allegations related to close cooperation between Thulani Ngcobo (a local Inkatha "warlord") and the police. The police have frequently been seen to act in support of Inkatha vigilantes; the community of Mphophomeni where many of the BTR strikers live won a court order protecting them from the police. However Inkatha attacks on the township have continued.

The ICEF will continue to support NUMSA in their international campaign against this company and urge all affiliates to give their full weight to the campaign to pressure the company to the negotiating table.

Rubber dispute in Turkey

A major dispute took place in Turkey when the Turkish Rubber, Petroleum and Chemical Workers Union, LASPETKIM-IS reached a dead-lock in their negotiations with the subsidiaries of three multinational tire companies, Goodyear, Pirelli and Brisa-Bridgestone. The negotiations were carried out through KIPLAS, the Association of Chemical, Pharmaceutical, Petroleum and Rubber Employers which has a record of deliberate confrontation with trade unions. Goodyear and Pirelli are wholly owned subsidiaries of the parent companies, whereas Brisa-Bridgestone is a joint venture with SABANCI Holding, the second largest private group in the country. All together, these companies produce 5 million tires, with 1.8 million exported.

All three companies have, over several years, introduced modernization and increased their production. The labour force played an important role in adopting the new technology and increasing productivity.

The negotiations broke down on wage claims and the inflation adjustment clause. The companies refused to even discuss the inflation adjustment, claiming that such a clause would cause mass redundancies and even closure of various plants. In 1989 the rate of inflation was 75.4 per cent, with a higher rate predicted for 1990. Alternative proposals of the Union tied to a share of the productivity increases were also flatly refused by the employers.

LASPETKIM-IS took a strike ballot, which is not required by law and is not common in Turkey. All the members involved in the dispute voted in favour of the strike action. The Union struck Goodyear in their two plants, located in Kocaeli and Sakarya on 10th March, 1990, with a decision to go on strike at Brisa-Bridgestone and Pirelli on 2nd April, 1990. At Goodyear, 1.850 workers struck and were joined by 750 workers in Pirelli and 1.300 workers in Brisa-Bridgestone.

LASPETKIM-IS, an independent union, asked the International for solidarity action. Affiliates protested to local subsidiaries and the overall parent companies with the result that the companies reached a final agreement well within the target settlement area, ending what was a clear attempt to break the union within the Turkish rubber sector.

These examples of recent practical solidarity work by unions in the rubber industry acting through the international coordination of the ICEF are only indicative of a continuing process of support and intercommunication. Other examples of information exchange on key questions of collective bargaining or on health and safety issues, can be multiplied many times over. The development of the network to support such actions is one of the major decisions of the 1990 ICEF World Conference on the Rubber Industries.

The Bargaining Agenda

Reduction of working time and wage improvements (particularly for the workers on lower incomes) are very high on the bargaining agenda in many countries. France's CFDT is particularly concerned about the attitude of Michelin. The French union wants to reevaluate the salary structure and to alter the hierarchical division of work in Michelin plants. Australian union the FMWU is trying to find a way to limit the extraordinarily high rate of turnover in employment in the sector. These and other qualitative bargaining objectives (including protection against layoffs and health and safety) figure prominently in the list of demands shown below. Table 26 provides information on the variety and diversity of bargaining issues specific to each country.

Table 26: Important Bargaining Goals

| Country | demands |
|-----------|---|
| Austria | higher minimum wages; shorter hours |
| Denmark | paid time off for training, health & wage raise |
| France | new salary structure; changes in the work process 35 hour work week |
| Germany | 35 hour work week; monthly wage |
| Spain | wage raise, pension fund, work organization & health |
| Sweden | wage raise, just wage structure, improving of lower wage rates |
| Canada | grievance procedure improvements; suspension & discharge protection; welfare & pension issues |
| USA | protection against plant closures and layoffs, impact of technological change; opposition to unwarranted concessions and two-tier wage structures, wages, vacation, company refrainment from public and employee communication of bargaining issues, etc. |
| Sri Lanka | better industrial relations and living standards |
| Japan | wages, shortening of working time (Bridgestone union); additional retirement pay and accident compensation; introduction of childcare and nursing leave (Japanese Rubber Workers Union) |
| Australia | higher wages, training, reduction of very high turnover (30% annually !) |

Wage Structures

The following table compares basic monthly wage rates (as far as such information was readily available). The workers employed by Goodyear in Luxembourg by far lead the European league, well ahead of other northern European high wage countries and are roughly comparable to North American wages. Japanese wages are comparable with Northern European wages. Australian wages appear to be lower than Southern European wages. This fact might partly explain the extremely high turnover rate in the industry. South Africa's rubber wages display the extreme pattern of racial discrimination. However, wages of black South African rubber workers are higher than those of Brazilians.

In comparing these figures, great caution needs to be exercised. Volatile exchange rates, widely different wage systems (where the basic rate may be more than doubled by local premia) and, above all, different "social wage" benefits make most comparisons tenuous at best.

Table 27: Basic Wage Rate per Month

| Country | unskilled | skilled | supervisory | white collar |
|---------------------|-----------------|----------------------------------|-------------|--------------|
| Austria | \$1314 | \$1818 | \$2088 | |
| Denmark | \$1439 | \$1651 | \$2.059 | \$1557 |
| France | \$ 955 | \$1179 | \$1379 | \$1089 |
| Germany | \$1413 | \$1646 | \$1824 | \$1490 |
| Italy | \$1297 | \$1377 | \$1884 | |
| Luxembourg | *\$13.83 | *\$14.45 | \$2591 | \$2296 |
| Spain ¹ | \$1409 | \$1516 | \$1992 | \$1302 |
| Sweden | \$1682 | \$1701 | | |
| UK | \$1400 | (average) | | |
| Canada ² | \$2300 | \$2300 | \$3.090 | n.a. |
| USA ² | \$2543 | \$2543 | | |
| Brazil ³ | \$ 156 | | | |
| S.Africa | average monthly | income for 1988 in rubber sector | | |
| | "Black" | "Colored" | "Asian" | "White" |
| | \$490 | \$699 | \$599 | \$1209 |
| Japan ⁴ | \$1447 | \$1537 | \$1695 | |
| Australia | \$1055 | \$1298 | | |

* per hour: monthly rate comparable to U.S.; 1: includes shift supplements etc.; 2: government figures: average production workers reduced by overtime; 3: average wage at Goodyear in Americana;

4: Yokohama workers age 35 with 17 years of service, includes housing allowance of \$85;

Exchange Cross Rates May 11, 1990, FT: May 14, 1990, p.29; rounded figures

To underline the problems inherent in international wages comparisons, examples supplied by ICEF member CFDT of France are highly indicative of the shortcomings of trying to decide generalised wage levels in an industry riddled with differentials.

Wages of the 1700 Goodyear employees in Amiens, France, are significantly higher than the figures given for France in Table 27 which correlate with the wages of the majority of French (Michelin) tire workers. However, the following figures indicate a huge difference in male and female earnings. Unqualified Goodyear male workers make \$1530 per month compared to only \$1190 paid to women. Qualified male workers earn \$1933 - qualified women take home more than \$500 less each month. The wage gap narrows somewhat in the case of supervisory workers. Men receive \$2240, women \$1890. The smallest (but still significant) difference exists among white collar functions. Here the paycheck for men holds \$1590, while for women it is \$1450. Under these circumstances, trying to indicate an overall average can not only be difficult to calculate, but can obscure many important differences. All of which supports the need for more work to be done on international statistical collection and comparison.

The following table 28 indicates further wage aspects including shift supplements, 13th and 14th monthly wages and additional payments.

| Country | shift \$ or %/h afternoon/night | 13th | 14th | additional |
|----------------|---|-------------|-------------|---|
| Austria | \$0.62/1.24 | yes | yes | local bargain |
| Denmark | yes: n.a. | no | no | bonus, premium, seniority |
| France | 7-15% | yes | no | seniority: +15% |
| Germany | 0.4/1.6 | yes | no | 2.5% -5% difficult work |
| Italy | 12%/12%+\$6 | yes | yes | local bargain |
| Luxembourg | 20% | yes | no | Sat. 50%/Sun. 70% holiday 100%, seniority: \$28/year |
| Spain | yes: n.a. | yes | yes | 16th & 17th |
| Sweden | 3.3% | no | no | sun. 4.4 hol. 8.8 |
| Canada | \$0.3/0.45 | no | no | profit sharing, dirty bonus, other |
| USA | 0/\$0.218 | no | no | profit sharing, productivity gain sharing, contract |
| Brazil | 50% night | | | |
| S.Africa | yes/n.a. | varies | | service awards |
| Japan | 13 to 17.5% of monthly wage excluding family allowance | yes | | housing, dependents transportation, dirty others |
| Australia | 15% | no | no | n.a. |

Shift allowances are high in countries with relatively low wage rates like Italy, France or Australia. But companies in Luxembourg and Japan also pay a high percentage of the basic rate in lieu of shift premia. Spanish workers receive 17 monthly wages a year whereas Australian, American, Canadian, Swedish and Danish workers do not even receive a thirteenth month's wage.

An ICEF study of shiftwork is now in preparation and the 1990 ICEF World Conference on the Rubber Industries resolved to concentrate greater effort in future on trying to achieve a database of information on wages and collective bargaining materials internationally that could be used as a source for comparative study.

Working conditions

The following tables compare working conditions in the various countries. Table 29 provides information on weekly working time, legal provisions, collective agreements and overtime. Overtime is very common in this industry thereby countering the trend towards shorter hours provided by collective agreements.

Table 29: Weekly Working Time

| Country | legally | collective agreement | overtime |
|------------|--------------|-----------------------------|------------------------------------|
| Austria | 40h | 38.0h | 0 |
| Denmark | n.a. | 37.5h | 3.5% (men) 1.9% (wom) |
| France | 39h | 39h/47h* | '89: 3 million h '90: much less |
| Germany | 48h | 38.0h 39.0h ¹ | 2.5% (average) |
| Italy | 48h | 40.0h ² | 5.5% |
| Luxembourg | n.a. | 40.0h | 4.39 per worker/y |
| Spain | 40h | 38.5h | 3h per worker/y |
| Sweden | 40h | 40.0h ³ | 200.000h/year |
| UK | | 37.5h | 2.5h per week |
| Canada | Ontario: 44h | 40.0h | 2.3h |
| USA | 40h | | 4.9h (tire) |
| Brazil | | 44.0h | |
| S.Africa | 46h | 41.2h 45.5h ⁴ | n.a. |
| Sri Lanka | 45h | 45.0h | 20h/month |
| Japan | 44h | 42.6h actually worked | 4.9h |
| Australia | 38h | | 12h/month |

* agents de fabrication; 1 rubber contract/chemical ind. contract; 2 effective hours worked by shift workers : 36h; 3 shift workers: 38h; 4 best and worst contracts.

Table 30 shows the frequency of weekend work (which also relates to answers given on shift work) and compares vacation and holiday entitlements.

Table 30: Weekend work and vacation

| Country | Saturday | Sunday | vacation | holidays |
|------------|------------------|--------|----------------------------------|-------------------|
| Austria | no | no | 30 days 36 days | 13 |
| Denmark | no | no | 30 days | 9 |
| France | yes ¹ | few | 25 days | 11 |
| Germany | shift | few | 30 days | 10 |
| Italy | yes | no | 24 days 30 days ² | 8 |
| Luxembourg | yes | no | | |
| Spain | yes | yes | 30 days 2-7 days ³ | 14 |
| Sweden | continuous | schift | 25 days | 0 |
| UK | no | no | 25 days | 8 |
| Canada | no | no | *10 to 30 | 11 |
| USA | continuous | shift | *10 to 30 | 11 |
| S.Africa | varies | varies | 14 days | 6-11 ⁴ |
| Sri Lanka | yes | no | 17 days | 15 |
| Japan | partly | no | 12-20 days | n.a. |
| Australia | no | no | 24 days | 11 |

1: 17 per year for 30,000 workers; *: vary by company. In major tire agreements, it is 2 weeks for 1 year service, 3 weeks after 5, 4 weeks after 20 and 6 weeks after 25.

Table 31 provides an overview of other time off. The two tables taken together prove clearly that all the major multinational companies operate much differently as between their different locations. If they can afford good vacation and time-off provisions in some countries, there seems to be no moral reason why the same conditions should not apply generally, since most of the operations are otherwise similar with regard to machinery and product. It is the value of international comparisons of collective bargaining data that they can be used very often to counter company arguments of the "Can't Pay" variety.

Table 31: Other Time Off

Country

| | |
|-----------|---|
| Austria | 7 days medical care, educational leave for works council members |
| Denmark | trade union work, shop stewards, maternity, health and safety work |
| France | no |
| Germany | educational leave, maternity, family reasons, works council obligations |
| Italy | educational leave, trade union work, maternity |
| Spain | trade union work, family reasons |
| Sweden | educational, maternity, family and trade union |
| UK | trade union work, family |
| Canada | union leave, personal, government service, maternity |
| USA | trade union work, personal reason, military service, government service |
| S.Africa | no |
| Japan | marriages (own and relatives'), bereavement leave, child birth for male worker, maternity, trade union work |
| Australia | trade union training, after 15 years service 3 month paid leave for long service, 3 days bereavement leave |

Table 32: Shift and Night Work

| Country | rotating shift (day/aftern./night) | night work |
|----------------|---|-------------------|
| Austria | 60% | 60% |
| Denmark | 10% | 10% |
| France | 45% ¹ | 45% |
| Germany | 30% ² | 10% |
| Italy | 40% | 40% |
| Luxembourg | 95% | |
| Spain | 80% ³ | 80% |
| Sweden | 47% ⁴ | 15% |
| UK | 70% | 55% |
| Canada* | 100% | 20-25% |
| USA* | 100% | 25% |
| S.Africa | n.a. | all |
| Japan | 40% | 40% |
| Australia | 90% ⁵ | 90% |

1: three and four shifts and irregular; 2: two and three shifts all rubber; 3: four shifts, fully continuous; 4: two, regular and irregular three shifts; 5: tire sector, other rubber: 60%/20%; * ca., original answer: "very high"

Shift Schedules (tire)

Table 32 shows the extremely high percentage of shift work in tire production and the degree to which nighttime is spent in the factories by workers in many countries. In this respect, there is no difference between South Africa, Spain and Australia. More than half of British, Austrian and French workers also have to put in hours at night. The impact of increasing night work on women has been discussed above. The extension of equipment utilization to demand night working and weekend working is increasing universally, as the ICEF study on shiftwork across several sectors will show. Overcapacity of up to 30 percent has not led to any diminution in this trend; rather it has led to layoffs and increasing workloads for the lesser number of those remaining in employment. Capital is still king over natural common sense that would suggest that shorter working time and less strenuous working conditions could be the natural outcome of too much product output.

Social conditions

The following tables display information on pensions, health insurance, and unemployment assistance systems in the different countries covered. This rough statistical comparison certainly cannot even come close to describing the full situation as a variety of factors influence the quantity and quality of the schemes. However, the tables may serve to give an initial overview of the situation. Enormous gaps between employee contribution, level and duration of benefits are good reasons to conduct a deeper ICEF analysis in the future.

Such a study will also attempt to compare the quality of the services covered. Statistics for many countries certainly suggest that a better system is in place than real experience reveals. The need for social system analysis is further *underlined* by the fact that, due to 'deregulation' of financial services and privatization of various social state institutions in many countries, health insurance and pensions are in danger in many countries where a decent "social wage" was won many years ago. According to financial experts, the current recession could bring weak unemployment insurance systems in countries like the USA and UK close to collapse.

In Europe, many governments are attempting to privatize public health insurance which has long been in the public domain. The aim has been to shift increasing financial burdens from the public budget to the private wage-earner. Furthermore, demographic developments in most industrialized countries spell serious problems for pension systems in the future. Ever more old people have to be taken care of by a shrinking number of younger workers. Apart from potential threats from international financial instability, this factor adds to the increasing insecurity of the elderly who have contributed to national pension schemes during their long working life. There have already been bankruptcies among companies controlling pension schemes in the USA, which have betrayed the retirees and older workers who stand to be left without any pension guarantee.

Table 33: Pension System

| Country | state/% wage contribution | company | combined | benefits %wages |
|-----------|---------------------------|---------|------------|---------------------------|
| Austria | X/10.25 | | | 60-80 |
| Denmark | X/0 | | | 37.2 |
| France | X/3.1 | X/6.5 | | 80 |
| Germany | X/9.35 | | | 72 |
| Italy | X/7.29 | | | 75 |
| Spain | | | X/1 | 100 |
| Sweden | X/0 | | | 70 |
| UK | | | X/0.75-5.5 | 75 |
| Canada | X/2.2 | | | \$570 max. + private plan |
| USA | | | X/7-8 | n.a. |
| S.Africa | | X/n.a. | | n.a. |
| Sri Lanka | no | no | no | no |
| Japan | X/7.15 | X | X | 60* |
| Australia | | | X/0 | 25 |

* apart from regular pension, Japanese workers receive a retirement allowance (either lump sum or monthly pension supplement: major rubber companies pay up to \$2.500 after 35 years of service)

Table 34: Health Insurance

| Country | state/ contribution | private | combined | benefits %wages/weeks |
|-----------|------------------------|-----------|----------|--|
| Austria | X/3.15 | | | 100/4 |
| Denmark | X/0 | | | 72.9/52 |
| France | | | X/n.a. | 100/12 then less |
| Germany | X90%/6.4 | X10%/n.a. | X | 100/6 80/72 |
| Italy | X/1.25 | | | 100/15 75/30 |
| Spain | X/6 | X/n.a. | X | 100/75(+) |
| Sweden | X/0 | | | 100/2 90/103 |
| UK | X/n.a. | | | 90%/13 then 50%/13 |
| Canada | | | X/small | \$384 per week 15+ |
| USA | | X/varies | | \$250 per week/ 52 |
| S.Africa | n.a. | n.a. | n.a. | 5 to 6/year |
| Sri Lanka | | X/5% | | 5/15 |
| Japan | X/4.2 | | | 60/1, then 80/72 |
| Australia | X/1.25 | | | 10 days/year (accumulates if unused) |

Table 35: Coverage

| Country | cover | contribution |
|-----------|-----------------------------|----------------------------------|
| Austria | n.a. | |
| Denmark | high | depends on scheme |
| France | 100 | |
| Germany | 96-98 | 2-4 |
| Italy | 100 | nominal fees |
| Spain | 100 | |
| Sweden | high | depends on scheme |
| Canada | n.a. | n.a. |
| USA | high | 80/20 for major medical items |
| S.Africa | n.a. | n.a. |
| Sri Lanka | up to total contribution | |
| Japan | high | 10% worker 20% family member |
| Australia | 100 | |

Table 36: Unemployment Assistance

| Country | benefits (% wages) | duration (months) | conditions |
|-----------|----------------------------------|----------------------|---|
| Austria | 45-55 | 3-12 | |
| Denmark | 73 | 30 | |
| Germany | 63 (single) 68 (married) | 12-32 | age/years of contribution |
| Italy | 75 | 24 | restructuring of plant |
| Spain | 60-220 of minimum wage | 29 (+) | |
| Sweden | 90 | 15 | |
| UK | 25% single 35% with dependent | n.a. | |
| Canada | 68 | 10 (most) | |
| USA | varies | 6 - 9 | 9 months in high unemployment area |
| S.Africa | 45 | 6 | 1 week for each week worked/minimum 13 weeks year of apply. |
| Sri Lanka | 0 | 0 | |
| Japan | 60 80 (low wage) | 3-10 | age/years of contribution |
| Australia | 30 | no limit | |

Particular problems in the rubber industries

The following table lists major concerns and problem areas as perceived by ICEF affiliates in various countries. Pressure by the companies to include Sunday work and safety and health issues figure prominently among almost all unions responding the questionnaire. The problem areas that are defined subsequently, however, cover a much wider range of issues than might have been expected. This "sin bin" supplies strong evidence of the need for international trade union building. The problems cited will shape the agenda for the 1990's.

Table 37: Issues

| Country | |
|-----------|--|
| Austria | pressures to introduce fully continuous operation e.g. weekend shift model |
| France | control and reduction of time; reorganization of the work process |
| Germany | introduction of 18 shift/week-system, pressure to include Sunday work, health (Nitrosamine), overcapacity, automation investment, dismissals speeding up |
| Spain | manipulating company information over economic situation of rubber manufacturing |
| Sweden | working environment, heavy air, monotonous work assignment, work-related illness (e.g. cancer) cardiovascular diseases and problems related to low wages |
| UK | health and safety; overcapacity; new management techniques aimed at weakening trade unionism |
| Canada | U.S./Canada Free Trade Agreement is causing plants to close and jobs to be exported to U.S.; safety legislation; protection from pension fund reversion; 7-day operations: prefer 5-day operation with weekend overtime if necessary |
| USA | overcapacity with resulting layoffs and plant closings |
| S.Africa | health & safety, shift work, compulsory overtime |
| Japan | working conditions (Bridgestone), wage differences between the sexes, type of work environmental issues (JRW) |
| Australia | high turnover (30% annually), lack of career path for unskilled |

The prevalence of concern over health and safety matters in this industry reflects the relatively high incidence of a range of diseases associated with solvent and other exposures. These have been reviewed in the ICEF publication "Health Hazards in the Rubber Industry" by Jeffery Harrod, which is also available. However, there are signs that the spread of the industry to new operating countries (particularly to the high growth industrialising world) has led to a falling off of health and safety protection that has no objective grounds other than the direct intention of some companies to spend less on health and safety whenever they feel they can get away with it. One speaker from the Malaysian National Union of Employees in Companies Manufacturing Rubber Products gave evidence to the ICEF World Conference that the situation in manufacturing industry in his country was actually becoming worse than that in agriculture - traditionally the area of worst abuse in the developing world. In 1988, a total of 90,988 accidents (40,000 of them in manufacturing and 33,000 in agriculture - the rest in service sectors) were reported in his country, plus 575 fatal accidents (92 of them in manufacturing and 159 in agriculture). The number of industrial accidents in Malaysia has actually been increasing strongly during the last five years. Health and safety is therefore very high on the union agenda for collective bargaining, but the management attitude is usually hostile at best.

As a consequence of the information supplied by ICEF member unions and the resulting discussions at the 1990 ICEF World Conference on the Rubber Industries, the International decided to conduct an internationally coordinated campaign to organise the unorganised within the world's biggest multinationally operating companies. The ICEF will employ a 'One World' trade union strategy to match that of the corporate chameleons that are relatively good employers in countries with strongly organised unions, but which take a hard-line, anti-union approach to labor relations elsewhere. Recession, the continuing concentration movement within major industrial corporations, emerging Eastern European economies and associated economic and social problems will all require a higher level of international cooperation between national trade unions than ever before in the period ahead. Based upon strong industrial and national trade union structures, international coordination has a prominent role to play in rallying the response of workers throughout the global rubber industry.

FOOTNOTES

- 1.1 A good survey of telecommunications developments is provided by *The Economist*: March 10, 1990
- 1.2 See: United Nations Centre on Transnational Corporations, 'Transnational Corporations in World Development; Trends and Prospects', United Nations: New York, 1988, p.45 on 'Just-in-Time' and other concepts affecting the new mode of organisation pioneered by Japanese manufacturers.
- 1.3 "Single sourcing" concepts have been pioneered by Japanese manufacturers. To help European parts manufacturers prepare for the future (and particularly to face the Japanese challenge) the European Commission held a conference on "cooperation" of European with Japanese supply companies in Brussels in June of 1990.
- 1.4 Compare U.Bochum/H.R. Meissner, *Entwicklungstendenzen in der Automobilzulieferindustrie*, Berlin: FAST-Studien Nr.9, 1988

- 2.1 West argues that "the internationalization of the tire industry has been linked to that of the automobile industry, (but) this relationship is more tenuous than might be supposed. Indeed, it is often the case that a tire plant is established in a developing country before a car manufacture begins. Even though vehicle exports create the market for replacement tires in the first place, and the companies which sell original equipment tires are benefited by having their product introduced to the market through car exports, too much weight should not be placed on this link. Michelin's penetration of the US market had little to do with sales of French cars there; Pirelli was a major manufacturer of tires to Brazil long before Fiat thought of constructing a plant in the country" (West: 1985, p.239).
- 2.2 See *Informationen über Multinationale Konzerne, Fusionen und Übernahmen*, Sondernummer 1989 for a detailed survey.
- 2.3 For expansions, M&A, etc. in other business segments see the following chapters.
- 3.1 Not all non-tire sales are rubber product sales. However, between 70 and 80% of the tire giants' 1987 total non-tire sales (\$6.3 billion) were reportedly various rubber products.
- 5.1 See Vic Thorpe, *The Multinational Pharmaceutical Industry*, Brussels: ICEF, 1986 for a general analysis of the contradictions within the health business including the gross inequality in worldwide health spending and the problems resulting from the dominance of transnational enterprises.

Abbreviations and Literature cited

| | |
|----------|--|
| CBNB | Chemical Business News Base |
| EIU | The Economist Intelligence Unit Rubber Trends, various issues |
| ERJ | European Rubber Journal, various issues |
| FAST | Bochum, U., Meissner, H.R., <i>Entwicklungstendenzen in der Automobilzulieferindustrie</i> , Berlin: FAST- Studien Nr.9 1988 |
| FR | Frankfurter Rundschau, various issues |
| FT | Financial Times, various issues |
| IHT | International Herald Tribune |
| MLR | Monthly Labor Review |
| R&P News | Rubber & Plastic News (II), various issues |
| Sleigh | Sleigh, Paul A.C., <i>The European Automotive Components Industry</i> , London: The Economist Intelligence Unit 1989 |
| SUBTAZ | Soviet Business and Trade |
| West | West, Peter J., "International Expansion and Concentration of Tire Industry and implications for Latin America", in: Newfarmer, Richard S. (ed.), <i>Profits, Progress And Poverty</i> , University of Notre Dame Press: Notre Dame 1985 |
| WSJ | Wall Street Journal, various issues |

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