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# Shaping *competitiveness* in the Chilean *wood-processing industry*

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The neoliberal view is that outward orientation and general liberalization should result in efficient factor allocation and thus in the formation of competitive economic structures. Its policy recommendations are therefore generally in the "get prices right" mould. The adjustment and learning processes needed for the creation of competitive advantages at the level of enterprises, institutions and the infrastructure, and the support they might receive, are not *a priori* singled out for discussion from this angle. In this article, the author bases his arguments on a dynamic and systemic approach to international competitiveness, summarizing its determinants whose interaction forms a complex system. Primarily, the concept of "systemic competitiveness" is an approach that runs counter to simplistic market ideologies. At the same time, however, it also criticises one-dimensional Statist planning projects. The Chilean wood-processing industry is considered to be an interesting case for examination in this respect for two reasons: firstly, because it is a natural resource-based sector, and it may be assumed that in view of the low efficiency of their industrial sectors, most of the Latin American countries will likewise have to take their first steps towards outward-oriented specialization through modernization of the sectors making intensive use of natural resources. Secondly, analysis of this case reveals that while, on the one hand, such sectors have considerable potential for growth and modernization, on the other hand it must be noted that even in the example in question, which does not appear to be at all complex, it is very difficult to make the transition from the production and export of labour-intensive goods with a low level of processing to industrial products of greater added value, while at the same time ensuring and improving sustainable competitiveness.

# I

## Reorientation of development strategies in Latin America

The Latin American debate on development strategies is gradually leading to a consensus that the development model of protected inward-oriented industrialization (industrialization through import substitution), which dominated the region for decades, has proved unsound. With the small size of domestic markets preventing growth beyond a certain point and excessively high tariff barriers erected for indefinite periods excluding the pressure of external competition, the gap between Latin American and international productivity levels steadily widened, making it impossible to achieve the original goal of gradual integration into the world economy. The internal crisis factors were further exacerbated by world economic trends (e.g. the decline in the prices of raw materials, and high interest rates in the early 1980s). The Latin American countries have

consequently been overtaken by a far-reaching crisis in their development model. It is generally agreed today that patterns of development which ignore the world economy are doomed to failure. Practicable methods of becoming part of the world economy and concepts for developing competitive economies are therefore being sought (ECLAC, 1990 and 1992). The economic policy being pursued by the Latin American economies as they make the transition from excessive inward orientation to an approach focussed on the world economy is essentially determined by neoliberal policy models. The liberalization of foreign trade and the deregulation policies applied are leading—in Mexico and Argentina, for example—to the erosion of the traditional development model and exposing the national economies to international competition.

# II

## How does competitiveness arise?

The neoliberal view is that outward orientation and general liberalization should result in efficient factor allocation and thus in the formation of competitive economic structures. The neoliberal school concentrates on incentives rather than structural factors, so that its policy recommendations are generally in the "get prices right" mould (Bletschacher and Klodt, 1991). The adjustment and learning processes needed for the creation of competitive advantages at the level of enterprises, institutions and infrastructure and the support they might receive are not therefore singled out for discussion a priori from this angle. The structural factors which are at the heart of research on technological innovation (OECD, 1991) do not form part of the neoliberal debate.

This paper takes a position opposed to this simplistic view of how the market works. It is accepted that the inward orientation of their industries led the Latin American countries into a development

cul-de-sac, thus making orientation towards the world market as a frame of reference and efforts to establish competitive economies unavoidable (Messner and Meyer-Stamer, 1992). It is shown, however, that the challenge of achieving industrial competitiveness is not adequately covered by the categories of textbook economics and cannot be met with entirely "market-neutral" macro policies.

If active strategies for integration into the world market are to be developed in Latin America on the basis of sound technology and industrial policies, some fundamental questions, treated as a "black box" by neoliberal theoreticians with a passing reference to the remarkable qualities of the market and to the dynamic Schumpeterian entrepreneur, need to be asked: how do competitive advantages in fact arise, what are their essential determinants, and how does sustained competitiveness that is not based on absolute cost advantages (e.g. low wages, favourable resource

endowment) develop? As Sanjaya Lall puts it: "It is certainly better to get prices right than wrong, but it is a necessary condition for industrial success and not a sufficient one" (Lall, 1990, p. 11).

Chile's rapidly growing woodworking industry will be taken as an example in the discussion of these questions below.<sup>1</sup> Chile is an interesting case because as early as 1973 the military dictatorship began to pursue a radical strategy of outward orientation, which led to the destruction of the traditional development model, whereas the first steps in this orientation towards the world economy are only now being taken in most Latin American countries. After a difficult "streamlining process", which exacted a heavy social and ecological toll, and the collapse of many inefficient industrial sectors, the development of the Chilean economy has looked very promising since the mid-1980s (Muñoz, 1988; Meller, 1990). The driving forces in the country's development are a number of export-oriented, natural-resource-intensive sectors which have specialized in certain products. After a development sequence characterized primarily by an increase in exports of raw materials and products with a limited degree of processing, the country now faces the challenge of placing industrial competitiveness on a broader footing. Chile is thus a "model case": a country that has already completed what others may have yet to begin in terms of entering the world economy (Mármora and Messner, 1991).

The wood-processing industry is worth considering for two reasons:

– Firstly, it is a natural-resource-based sector, and it must be assumed that, given the limited efficiency of their industries, the majority of Latin American countries will similarly take the first step towards world-market-oriented specialization in sectors of the economy which make intensive use of natural resources and which need to be modernized.

– Secondly, the Chilean woodworking industry reveals, on the one hand, that natural-resource-intensive sectors too have considerable potential for growth and modernization,<sup>2</sup> while on the other hand it shows how difficult it is even in this apparently uncomplicated sector to make the transition from the production and export of labour-intensive and largely unprocessed products to that of manufactures with a higher value added, while at the same time achieving and improving sustained competitiveness.

The analytical background to our study is the heuristic concept of "systemic or structural competitiveness". This approach is designed, on the one hand, to extend the debate on the international competitiveness of individual enterprises to include an analysis of their competitive strength in the context of efficient institutions and a suitable macroeconomic environment. It also considers the development of the international competitiveness of economies, which cannot be seen as a simple aggregation of the individual rankings of enterprises in international markets. On the other hand, unlike the standard static textbook models, it not only examines the given structure of comparative advantages and disadvantages but also, and above all, analyses the ways in which firms develop and become more dynamic. The learning processes which the actors and institutions concerned undergo and which underlie the development of competitive advantages are analysed. This view also implies that –although they are very necessary– stable macro policies which facilitate outward orientation are not of themselves enough for the development of international competitiveness.

In a report for the OECD, F. Chesnais summarizes this dynamic and systemic view of competitiveness as follows:

"We recognize the international competitiveness of national economies as being built on the competitiveness of the firms which operate within, and export from, their boundaries, but we also identify the

<sup>1</sup> This article is based on the findings of an empirical study undertaken in Chile in the spring of 1991 by a German Development Institute working group. The study would not have been possible without the support of the "Instituto Forestal" of Santiago, Chile. The empirical phase consisted largely of interviews with 55 enterprises (average duration, including an inspection of the plant: about 4 hours) and discussions with experts of all the various institutions with close links to the forest industries sector. The author was joined in the study by Ingolf Dietrich, Jürgen Friederici, Roland Guttack, Kerstin Kiehl und Wolfram Klein. See Messner, Dietrich, Friederici, Guttack, Kiehl and Klein, 1992.

<sup>2</sup> An interesting example is that of Taiwan. This country is the most important furniture exporter of the developing nations. The 2500 furniture manufacturing companies in Taiwan import wood from the United States and export "ready-to-assemble" furniture worth over US\$700 million per year. The competitiveness of this industry is not based on low-cost resources but on modern enterprises, adaptation of state-of-the-art technology, a solid infrastructure (e.g., training and upgrading institutions for workers, design centres, research and development programmes), and close relations between enterprises in order to improve the entrepreneurial level of the sector (UNIDO, 1986, p. 53).

competitiveness of national economies as being something more than a simple result of the collective or 'average' competitiveness of their firms. We propose the notion of 'structural competitiveness' as a way of expressing the fact that, while the competitiveness of firms will obviously reflect successful management practices by entrepreneurs or corporate executives, it will also stem from the strength and efficiency of a national economy's productive structure, its technical infrastructure, and the other factors determining the externalities on which firms can build" (Chesnais, 1988, p. 86).<sup>3</sup>

This concept goes beyond one-dimensional approaches to an explanation and takes account of the complexity of the determinants of international competitiveness. The factors that influence industrial competitiveness form a complex system, and figure 1 attempts to structure this wide range of determinants. If competitiveness is to develop, stable economic policies that can be anticipated by the various parties concerned are needed at the macro level. Competitiveness emerges and is developed in enterprises that are under the pressure of competition and also develop forms of inter-company division of labour and cooperation, which are becoming increasingly important (micro level). Sustainable competitiveness and the establishment of competitive structures depend on the existence of specific sectoral policies of

private or public institutions (meso level) designed to optimize external economies (e.g. policies on infrastructure, technology and training), to ensure the sustainability of industrial development (environmental policy), and to guarantee social stability and the creativity of employees (social policies). In the final analysis, economic development and thus competitiveness form part of politico-social systems (meta level), although unequivocal causal relationships cannot be established here (Dauderstädt, 1987; Olson, 1982). This "schematic fresco" for approximating the phenomenon of industrial competitiveness requires the backing of empirical evidence if the relative weighting of the various factors influencing it is to be determined.<sup>4</sup>

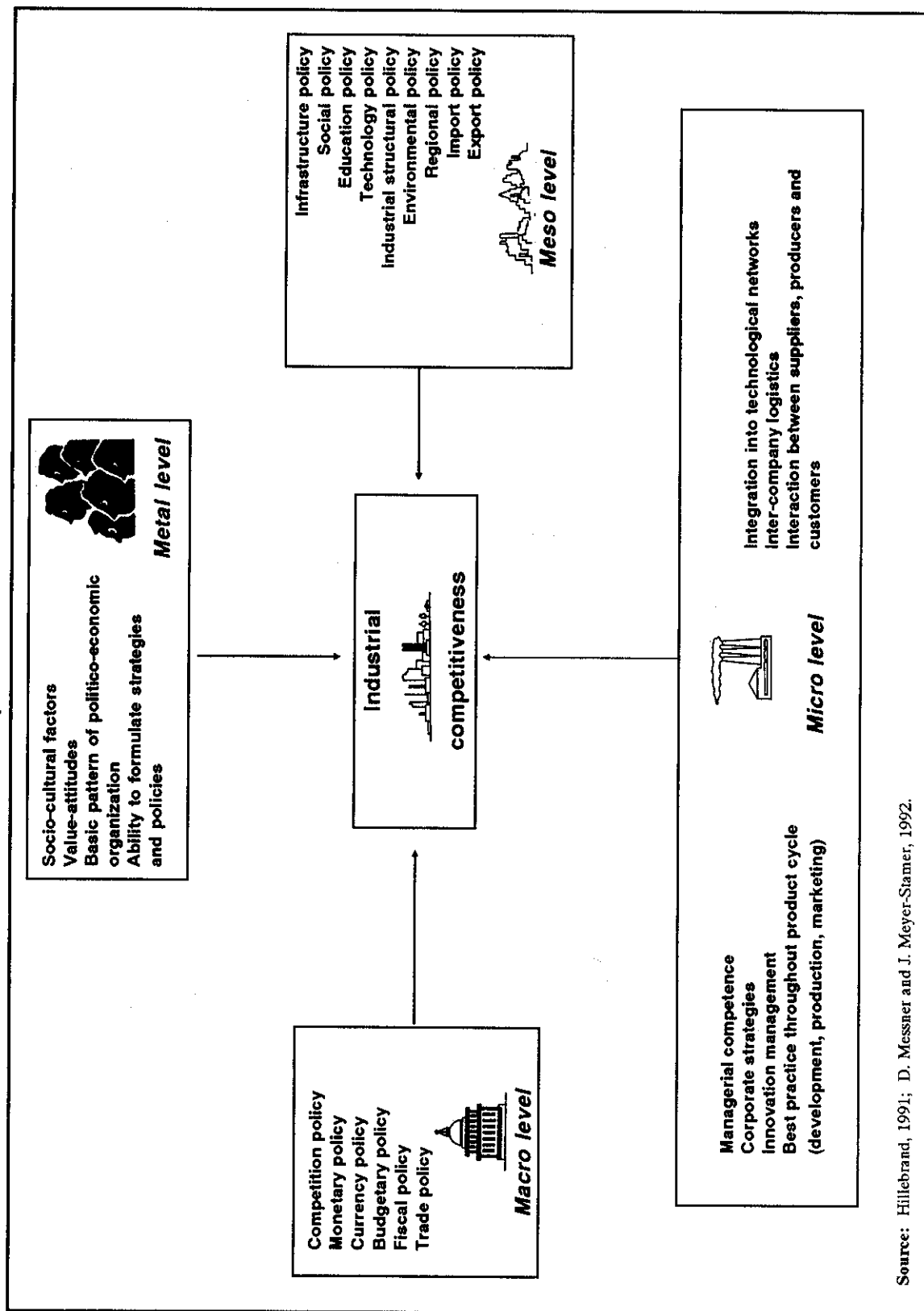
The following sections primarily concern trends at the micro level (sections IV and V) and changes in the relationship between employers' and employees' organizations (meta level, section VI) as the transition is made from inward to world market orientation and competitiveness emerges. It becomes clear that "catch-up modernization" in the area of structural policy (meso level) and a flexible and constructive interplay of entrepreneurial, government and trade union actors and institutions (section VII) are needed in the Chilean wood-processing industry in order to accelerate the emergence of technology-based competitiveness.

<sup>3</sup> A similar view is taken in other, more recent studies on competitiveness, although they differ widely in the importance they attach to the various factors and in the conclusions for economic policy they then draw. See, for example, ECLAC, 1990; Porter, 1990; Best, 1990, and Hillebrand, 1991. Esser (1991b) outlines the challenges that outward orientation poses for the Latin American countries and attempts to distinguish sequences in the development of competitiveness.

<sup>4</sup> This approach should not be seen as functionalist. A State technocratic strategy to make the various influencing factors compatible with the goal of "producing competitiveness" ("blueprints") would be hopelessly overextended. It is important to grasp the societal and social dimension of "competitiveness" (and of socio-economic development as such) in order to correct the reductionism of mainstream economics. Experience shows that quite different development styles and forms of regulation can contribute to the emergence of viable economies. "Workable markets" are undoubtedly only one element of the "wealth of nations", which is likely to depend primarily on the mobilization of creativity in society. Just as wrong as the functionalist version of this concept, of course, would be the assumption that absolutely any approach is viable.

FIGURE 1

## Determinants of International competitiveness



Source: Hillebrand, 1991; D. Messner and J. Meyer-Stamer, 1992.

### III

## The Chilean forest industries sector

With output valued at well over US\$1 billion (1991), the Chilean forest industries sector<sup>5</sup> accounts for slightly over 3.5% of the country's gross national product and employs some 3% (80 000 people) of the total labour force. The role it plays in the economy is more clearly revealed by its contribution to the country's export earnings, for whose favourable trend it has been largely responsible since outward orientation began. While timber and wood-pulp exports accounted for only 3.8% of total exports in 1970, the figure had risen to about 10% by the early 1990s. These relative figures represent a tenfold increase in production over this period.<sup>6</sup> Exports rose from about US\$40 million in 1973 to US\$850 million in 1991. Some 90% of the raw material handed by the wood-processing industry originates from forestry plantations (currently occupying an area of 1.2 million hectares), and only 10% from the remaining natural forests. As the timber potential of the plantations will approximately treble by the year 2010, a concept of sustainable forest management is conceivable in Chile provided the government enforces effective protection of the natural forests (Messner *et al.*, 1992).

Government-subsidized afforestation programmes aside, there have been no specific sectoral policies. The dynamism of the development of the forest industries sector is thus essentially due to macro policies that promote exports and to the enterprises' own dynamism.

Two phases of development are discernible in the Chilean forest industries sector between 1974/75 and 1991, after it had been inward-oriented and far from dynamic in its development until the mid-1970s:

– With Chile's outward orientation, an "extensive export phase" featuring high growth rates began in 1974/75. This upward trend was largely due to exports of such natural-resource-intensive products as round and sawn timber and wood pulp. Absolute cost advantages gained from the natural availability of timber resources (forest growth well above the average), the sharp rise in timber potential due to government-subsidized afforestation programmes (since the 1960s) and low labour, transport and environmental costs, together with a macro policy that encouraged exports (devaluation of the national currency, reduction of import duties, withdrawal of foreign exchange restrictions), formed the basis of the sector's dynamic development and its international competitiveness (factor-driven development). According to World Bank calculations, production costs (from the cost of afforestation to the cost of transport to the export terminals) for logs of the most important species in Chile, Monterey pine (*Pinus radiata*), are only 30% to 50% of costs at such production locations as the USA and the Scandinavian countries, which compete directly with Chile in the world market (World Bank, 1986). A few large enterprises accounted for the bulk of export revenues during this "easy export phase".

– After a serious crisis in the early 1980s, the forest industries sector stagnated until the middle of the decade. Since 1986 there has been a new, dynamic growth phase, accompanied by heavy investments. The value of the sector's output (excluding furniture) increased from US\$492 million in 1985 to about US\$1.2 billion in 1991, export revenues in the same period rising from US\$326 million to about US\$850 million.

Two trends are important in this context: firstly, traditional natural-resource-intensive products continue to be largely responsible for the dynamism of growth, but their quality is being significantly improved, which is already leading to an increase in domestic value added. Secondly, the processing of available timber resources is expanding, and the sawn timber, furniture, board and paper subsectors are diversifying their products. Exports of non-traditional products (e.g. veneers, packaging materials and furniture) and new investment in these subsectors have

<sup>5</sup> The term "forest industries sector" is used henceforth as a synonym for "sector forestal", the standard term in Chile. The sector is divided into the forestry sector (forest management) and the wood-processing industry, which is in line with the classification used in the Chilean literature and statistics.

<sup>6</sup> Timber production grew by 87% between 1974 and 1980, and by 42% between 1980 and 1987, while over the same periods the output of the furniture industry grew by 120% and 37%, respectively. Timber exports increased from US\$9 million to US\$152 million between 1970 and 1987, while over the same period exports of timber and wood pulp together grew from US\$35 million to US\$365 million.



been rising sharply since the mid-1980s (factor-creating and investment-driven development).

In the past five years the domestic market has absorbed a stable share of 30% of the output of the forest industries sector in value terms, which means that it has developed just as dynamically as the trend in exports. There has been considerable diversification of export markets. By the late 1980s the Chilean wood-working industry was exporting to 58 countries (compared with about 40 in the early 1980s). Owing to the persistent economic crisis, the importance of Latin America, which was the leading market until the early 1980s, has waned, while exports to Europe, Asia and even the USA have risen sharply (INFOR, 1990).

The available literature has little to say on the features underlying these macro figures on the growth and modernization of the industry at the enterprise level, changes in the business environment, or the initiators of this structural change. Clearly, the dynamic development in the highly natural-resource-intensive sectors (wood pulp, round timber, sawn timber) was due to heavy investment by the large enterprises in

these subsectors. Product diversification and the export of new products also seems –from an analysis of the available material– to have been largely due to investment by larger enterprises.

As the export statistics (Aldunate, 1990, p. 176) show, however, that over 500 firms in the Chilean forest industries sector were exporting in the late 1980s compared with about 250 in 1983/84, and as the seven largest firms' share of the sector's total export revenues fell from 80.5% in 1986 to 63% in 1990 (Contreras, 1988, p. 248), small and medium-sized firms had obviously emerged and stepped up their exports. It is unclear what led to the dynamic development of the many small and very small firms which are to be found in the various subsectors and which previously supplied the generally undeveloped and still undemanding domestic market. The large number of new export firms indicates, however, that the dualistic structure of the sector which dominated until the early 1980s, with export-oriented large firms on the one hand and small firms geared to the domestic market on the other, had at least begun to change.

## IV

### The development of competitive advantages in the wood-processing industry as a cumulative learning process

The competitiveness of the Chilean wood-processing industry has improved, if the yardstick used is the agreed definition of international competitiveness: the growing ability of a sector to export, accompanied by rising national factor income. Market indicators (rising exports, product and market diversification, a positive trade balance, etc.) reveal whether the competitive position of a sector or economy has changed, but not how or why (Feser, 1990, p. 23). The following pages outline learning and modernization processes at the level of enterprises and institutions, with the object of shedding light on the dynamism of the development of competitive advantages in this world-market-oriented area of specialization. Particular attention is paid to the small and medium-sized enterprises (SMEs) that began exporting in the mid-1980s.

#### 1. Reorientation at the enterprise level in the transition from inward to export orientation

The crisis that occurred in the domestic market in the early 1980s forced more and more SMEs to take a greater interest in exports. The growing number of export-oriented SMEs include sawmills, timber-processing firms (producing packaging materials, toys, wood for the interiors of buildings) and furniture manufacturers. This trend gave the lie both to the export pessimism previously prevailing among SMEs and to the view circulated by exporters of raw materials who had become established by the mid-1980s that the Chilean wood-processing industry's competitive position would decline as soon as it ceased to enjoy the existing comparative cost advantages (low wages; unlimited supply of cheap raw material).

The SMES' growing export orientation was accompanied by a complex organizational and technological learning process. When they first changed their strategy, the "new exporters" had neither enough export know-how in the fields of transport, marketing, international quality standards and protectionism, nor sufficient manufacturing competence (knowledge of technology, organization of work, management strategies, an adequately trained workforce). Consequently, many firms failed in their attempts to export. Moreover, because of the inadequate business environment, even the successful firms needed a great deal of time and starting capital to find their way into the world economy and become accustomed to the production and marketing techniques typically used at the international level. They lacked the viable sectoral structures (e.g. efficient suppliers, systems that provide information on technological and market trends, technology-oriented institutions) on which enterprises in the industrialized countries can normally rely.

Exporting manufactures requires a high level of competence in all areas of business. The most serious problem the firms initially faced was recognizing the completely different requirements of the world market compared with those of the domestic market and translating them into appropriate corporate strategies. It was particularly important to improve such non-price aspects of competition as the organization of work, the technological level of production, product quality, design and image, punctuality of deliveries, and marketing. These heavy demands on the enterprises call for a specialization strategy and the use of external know-how (production- and export-related services). The SMES, which had been inward-oriented until the mid-1980s, were as a rule vertically integrated, had little contact with other firms or suppliers (autarkic mentality) and –because local demand was limited– offered a very wide range of products (from sawn timber through packaging materials to furniture). Overcoming these internationally uncompetitive entrepreneurial structures and strategies was not only a capital, know-how and technology problem but also a mentality problem: in the early stages of reorientation the first generation of "new exporters" were still convinced of the efficiency and viability of the entrepreneurial concepts that had proved successful in the domestic market. Consequently, many initial attempts to export failed, and the continued application of past production concepts led to unwise investments.

Some furniture manufacturers, for example, told us of visits to the USA to seek potential customers for their products. In order to appear as competent producers, they presented a very wide range of products of (as they see it today) mediocre quality. These first attempts failed, resulting at best in requests from the potential customers visited for one or two samples. It is impossible to say how many firms fell at this hurdle. What can be said, however, is that some of the firms visited by our working group had already invested (unwisely) in new manufacturing equipment with a view to exporting a wide range of products, and some of this equipment was standing idle.

## **2. Stages in the modernization of dynamic enterprises**

The enterprises made comparatively rapid progress in marketing and in acquiring and applying the necessary export know-how (quality standards, punctuality of deliveries, etc.). Both the large exporters of raw materials and the medium-sized firms have created joint marketing channels (e.g., establishment of a trading company or of a joint marketing office set up by a trade association) which ease the burden on individual firms in this field. This professionalization has proved to be an important step in improving the competitiveness of the enterprises, which are hardly likely to find their way into the world economy acting alone.

It is evident from the technical problems (adaptation problems, incompetent maintenance, parts of the production apparatus at a standstill) encountered particularly (but not exclusively) in technologically more complex branches of production (furniture, particle boards) that manufacturing competence and the technological level of production are still low. Integration into the world economy almost always coincides with the introduction of imported modern production equipment. The introduction of production technologies commonly used elsewhere is no guarantee that their productivity and performance potential will be fully tapped, however, as is apparent, for example, from the particle board industry. Despite heavy investment in equipment, numerous technological adaptation problems are making it particularly difficult for this sector to achieve international quality standards.

The operating and maintenance personnel clearly do not yet have sufficient manufacturing skills or technological know-how to ensure that the equipment

(imported from Germany or Italy) is used as it should be. A problem area encountered in some cases has been the inability of a firm's own engineers to repair technical faults on production lines (e.g. the failure of microelectronic control systems) and to solve fine-tuning problems in the linking of operations. Although experts flown in by the various machine manufacturers are able to correct technical faults quickly, the general problem of mastering the technology persists. Experience in industrialized countries shows that the installation and optimization of production lines based on the new production technologies is often a process of trial and error, in which close contact between makers and users is essential (Döhl *et al.*, 1989; UNIDO, 1992). In this case, the organization of work is more important than when traditional technologies are being used. According to calculations made with respect to the introduction of electronically controlled equipment, 60% of the profits derived from higher labour productivity are due in this case to organizational restructuring (which varies greatly from one firm to another) (Peres, 1988). As a rule, the maker's and user's engineers work together to optimize production structures and processes. This cooperation does not end with the installation of the machines, but continues in order to ensure the continual optimization of production methods (incremental learning). These synergic effects, which stem from the close relationship between the makers and users of machinery, cannot be copied in Chile. The existence of highly qualified engineers, ongoing training measures for production workers and technological and organizational cooperation among enterprises, which is lacking at present, is therefore all the more important.

Our observations confirm the findings of many empirical studies of technological change in Latin American enterprises, which have shown that firms must be capable of "imitative innovation" and independent "incremental technological change" if the productivity potential of modern production equipment is to be exploited (Herbert-Copley, 1990). The neoclassical conception of a given state of the art is a highly simplified view: "learning by doing" is not enough to ensure the successful application of technologies, their adaptation to the prevailing circumstances, and constant incremental improvements to optimize production; active strategies and conscious decisions by management are also needed (Katz, 1984 and Meyer-Stamer *et al.*, 1991). Unless selective investments are made in the training of workers

and engineers, organizational changes are effected, and technological services are used to encourage the learning of new technologies in the firm, the efficiency potential of production equipment, however modern, will not be adequately tapped. Innovation in this sense of the term is a social process, and can therefore be shaped.

In Chile very few enterprises are currently making an active attempt to increase their manufacturing competence. The dominant view is that the introduction of modern machinery and "passive", uncontrolled or unsystematic learning by doing will raise a firm to international productivity levels almost as a matter of course. This view is also reflected in generally inadequate investment in the formation of human capital. Although the dynamic exporting enterprises attach more importance to the training of their employees than the traditional, inward-oriented firms, the majority nonetheless consider unsystematic on-the-job training to be sufficient to ensure that their workers attain an acceptable level of qualification. Training costs are often regarded as expenditure on consumption rather than as an investment. Without wishing to belittle what the enterprises have done to modernize, it can be said that many entrepreneurs still see low labour costs as more relevant to competition than efforts to improve the organization of work or to increase productivity through training measures. This view is evident from the fact that only a few entrepreneurs are committed to the development of a training system in the wood-processing industry.

It is apparent that the competitiveness of firms is at present based solely on partial rationalization efforts. The conclusion drawn from an evaluation of the modernization process at the enterprise level is therefore ambivalent:

- On the one hand, the sequence of modernization stages (marketing, introduction of new production equipment, limited efforts to improve technological competence, little training) reflects the requirements to be met when the transition is made from inward to world market orientation. Learning processes cannot occur simultaneously at all levels. The rapid improvement of marketing structures and the introduction of modern production equipment are likely to be of fundamental importance if integration into the world economy is to be at all possible.

- On the other hand, competitiveness will depend in the longer term on a constant increase in and the exploitation of technological and organizational

potential at the enterprise level. The tendency to prefer "soft-option" corporate strategies, which are still heavily based on the exploitation of the given factor endowment (low wages, enormous timber potential), was probably encouraged by the military dictatorship. There is a danger that this tendency will prolong the "factor-driven phase" and slow the "investment-driven sequence", in which it will be essential to optimize existing competitive advantages and create new ones. The Chilean forest industries sector, in which these two development sequences currently overlap, should therefore heed Porter's warning of the drawbacks of this blocking mechanism during the transition from the export of natural resources to the export of manufactures: "In a narrow conception of international competition, competitive advantage results from factor abundance. ... In actual competition, however, the abundance or low cost of a factor leads to its inefficient deployment. ... Local abundance of basic factors lulls firms into complacency and deters the application of advanced technology" (Porter, 1990, p. 82). All that needs to be added is that the application of modern technology must in turn be supported by changes in the organization of work and by training offensives.

### 3. Inter-company relations and the integration of enterprises into institutional networks

In the early stages of world market orientation, the new small and medium-sized exporters acted as individual, vertically integrated firms and did not try to cooperate with other firms or institutions. The absence of communication structures prevented rapid joint learning processes and led these firms to take similar misguided decisions that later proved costly (e.g. investment in equipment for the manufacture of too wide a product range). In recent years, however, a tendency to seek "collective efficiency" structures<sup>7</sup> has gradually emerged. The modernization of inter-company relations and the formation of sectoral networks (vertical links and horizontal cooperation) are following the pattern observed at the enterprise level (first, optimization of marketing, later –and still underdeveloped– cooperation in the technology and training spheres).

<sup>7</sup> This term was coined principally by H. Schmitz, who also emphasizes the importance of efficient structures and networks in his studies of the development of small enterprises in developing countries (see, for example, Schmitz, 1990).

In the marketing sphere, efficient private institutions or enterprises which were, interestingly enough, established or sponsored by the dynamic enterprises themselves have emerged. Marketing consortia, joint participation in trade fairs, and marketing offices are improving competitiveness, particularly in the case of the small and medium-sized enterprises.

Sectoral structures that might help to improve the technological dimension of the enterprises have hardly emerged so far. Instances of the enterprises themselves taking action in this respect are rare. They are often unaware that production-oriented services (e.g. maintenance, technical advice) or application-oriented research are vital if production efficiency is to be consolidated and increased. The absence of networks in the technological sphere leads to the dispersion of technical knowledge and hampers the rapid translation of technological know-how into improvements in productivity.

The Fundación Chile, a para-State technology transfer agency (Meissner, 1988), is the only institution to have tried (since the late 1980s, and with a high degree of success) to create an industrial technological environment and to give purposeful encouragement to technological learning processes in the (dynamic) enterprises by creating communication and information structures among them and between entrepreneurs and experts (e.g. seminars on new production technologies, "round tables" for entrepreneurs on technical and organizational problems in such subsectors as furniture, particle boards and sawmills, and ongoing management training).

Besides undertaking these activities, the Fundación Chile is currently establishing in one of the major timber-producing regions a furniture factory which will manufacture furniture parts. Although this firm is intended to operate profitably, it will also –and above all– perform an important "demonstration function". As in the very successful salmon-breeding and export projects run by the Fundación in the early 1980s (Huss, 1991), the aim is to show how best to establish and manage an enterprise in this sector that is capable of exporting: the production equipment at the furniture factory was installed under the guidance of international experts, and the workforce was trained at the factory's own centre, which will be made available to other interested parties in the future. In the first three years the firm will specialize entirely in the production of furniture parts in order to prepare the workforce for the manufacture of

better-quality furniture. The enterprise invites potential new investors and furniture manufacturers to inspect the plant and will offer this target group seminars on technology, marketing and training.

The aim of the Fundación's project is to reduce serious constraints and to "form structures" (networks) in the woodworking industry:

- "Visual instruction" is used as a means of directly counteracting the lack of information and the traditionally individualistic attitudes of entrepreneurs.

- The training of workers (the importance of which is to be demonstrated in the factory itself) is to be professionalized and offered as a service to other firms.

- The installation of the latest production equipment, the emphasis on the organization of work and appropriate linking of work processes, and the development of technological services (plant maintenance, repairs) will help to spread technological and organizational know-how.

The Fundación's involvement in the furniture sector will have an important catalytic effect on domestic and foreign investors and help to improve the regional location of the furniture industry.

If the still-underdeveloped technological dimension is to be strengthened in the current process of structural change, and if there is to be a lasting improvement in conditions for sustainable competitiveness, a major institutional effort will need to be made in the training sphere, where no serious attempts have yet been made to create a national training system.

#### 4. "Islands of efficiency" in the wood-processing industry as stages on the long road to "systemic competitiveness"

To summarize these developments, advances in industrialization have so far been largely due to modernization at the enterprise level. The wood-processing industry is thus still a long way from the model of "competitive industrial complexes" that has been developed in imitation of the model adopted by the East Asian newly industrializing countries.

Although there are examples of efforts to get away from a sectoral structure that was highly dualistic until the mid-1980s, and signs of some emerging "competitive structures", a sound business environment in the form of "islands of efficiency" exists for only a limited number of enterprises (most of which are already dynamic) and in only a few spheres (e.g. marketing).

It is becoming clear that the particularly successful enterprises are those that abandon the incorrect vision of the vertically fully integrated firm and set their sights on a (vertical) division of labour and (horizontal) forms of inter-company cooperation. As a rule, these enterprises also develop contacts with sectoral institutions, universities and service organizations with a view to improving their external economies. In this way learning processes accumulate, communication structures emerge, the traditional distrust between firms is reduced, and "strategic groups of enterprises" form and purposefully shape their business environment. In this socio-economic process, which is induced not only by the market (competition) but also by non-market social factors (cooperation), the competitiveness of the dynamic enterprises and of the "strategic groups of enterprises" that have joined to form "islands of efficiency" based on collective efficiency is gradually improving. These network structures may be illustrated with the help of three examples:

##### a) *Formation of structures through the establishment of joint marketing enterprises*

The marketing enterprise ASUN (Aserraderos Unidos), which was established in the early 1980s, acts as an export agency for some 25 medium-sized sawmills and manufacturing firms in the wood-processing sector and provides marketing and export services. ASUN has a marketing office in Santiago, where it negotiates with buyers. It forges close links with customers, shares out orders that are too large for the production potential of individual firms, handles its member firms' exports, and gathers information on market trends, thus helping to create information and marketing channels without which small and medium-sized enterprises could not gain access to international markets. These services enable the firms to concentrate on production.

Besides marketing, however, ASUN gives advice on technology. The enterprises that export through ASUN, some of which have been in existence for a long time, often underestimate the requirements of the new markets when they make the transition to exporting. Despite the limited manufacturing complexity of their products (e.g. packaging materials, pallets), many enterprises found it almost impossible in the early 1980s to guarantee uniformly high quality (e.g. timber accurately sawn to the correct size, expert impregnation processing and punctuality

of deliveries). As the domestic market did not expect high quality, production equipment was not properly maintained, leading to losses of productivity and quality. ASUN's staff draw the manufacturers' attention to (often considerable) productivity potential that has not been tapped, maintenance techniques and necessary new investment, provide information on technological advances, carry out regular quality checks, which were not usual in the previously inward-oriented firms, and arrange meetings of all sawmill managers at irregular intervals for discussion of the normally similar technical and organizational problems the firms encounter. This division of labour has made rapid cumulative learning processes possible, accelerated and guided technological and entrepreneurial modernization efforts (the information provided by ASUN has at least reduced the incidence of misguided investment) and helped firms to acquire important export know-how (constant quality, flexibility, reliability and punctuality of deliveries). The result is a loosely networked group of competitive medium-sized sawmills with the marketing agency at its centre.

*b) Forms of horizontal cooperation through entrepreneurs' organizations*

Another example is the entrepreneurs' organization ASIMAD (Asociación de Industriales de la Madera), formed by medium-sized industrial enterprises in the wood-processing sector which felt poorly represented by the existing entrepreneurs' association, dominated by the large raw materials suppliers. Here again, the most important practical step in cooperation was the creation of joint marketing channels. The ASIMAD enterprises try to minimize the high transport costs and to offer a diversified range of products as a group. ASIMAD has an office in Santiago and acts as a central agency which importers can approach, establishes contacts between producers and buyers, organizes joint participation in trade fairs and is planning to open a showroom in Santiago so that the products of furniture manufacturers in the south of the country may also be presented to potential buyers. Joint marketing has resulted in a more intensive exchange of information (on design, technical problems, etc.) among the member enterprises, which has undoubtedly accelerated everyone's learning process. ASIMAD is seen in the wood-processing industry as an important information exchange for other enterprises wanting to export their products.

*c) The Fundación Chile's contributions to the formation of "competitive cooperation structures"*

The various forms of cooperation among enterprises are complemented and reinforced by institutional networks. The "sectoral working parties" ("mesas redondas") for "dynamic enterprises" initiated by the Fundación Chile have resulted in some enterprises exchanging engineers and inspecting each other's plants, which contrasts with the view held by entrepreneurs in the past that they must isolate themselves completely from their competitors. These approaches could lead to the emergence of viable and dynamic "competitive cooperation structures". The exchange of information among enterprises, the resulting increase in market transparency and the beginnings of networks of enterprises and institutions are beginning to:

- intensify competition (as enterprises attempt to emulate successful elements of other firms' strategies and to incorporate them in their own);
- facilitate and accelerate individual and collective learning processes;
- create scope for cooperation (e.g. in R&D, the specification of quality standards, the organization of joint seminars with the Fundación on technological problems);
- encourage the identification of joint interests, and
- enable a sector that previously consisted of enterprises isolated from each other to become an entity.

The Fundación Chile is thus making major contributions to the formation of sectoral structures and proving how important institutions are in the process of developing competitiveness. So far, however, it has tended to be a welcome exception. On the whole, the existing institutions have been a less important group of actors in the process of industrial modernization than the dynamic enterprises. The institutions that played a vital role in the structural change of the 1980s were (very largely) created by the dynamic enterprises themselves (e.g. ASIMAD). The other institutions (except in the case of the Fundación Chile) are not therefore paving the way for structural change independently; their modernization and adjustment—inadequate thus far—to conditions and requirements changed by dynamic enterprises tends to come "after the event", and they are typical "latecomers".

**5. The typical development pattern of the "top performers"**

The observations outlined above indicate that the development pattern of the "top performers" among the

dynamic enterprises as they make the transition from inward to world market orientation and try to become competitive may be summed up as follows:

- Orientation towards international efficiency and quality criteria raises the pressure of competition on the enterprises, mobilizes potential for creativity, creates potential for growth and triggers technological and organizational learning processes ("demand which provides the incentive to innovate" (Chesnais, 1988, p. 111)).

- Modernization at the enterprise level usually occurs in sequences: new technologies are introduced, marketing problems are solved, the workforce then undergoes initial and advanced training, good technicians are trained, and work is organized.

- "Strategic groups of enterprises" are formed which establish horizontal cooperation structures (e.g. ASIMAD) and develop vertical links (e.g. ASIMAD, ASUN), thus improving joint supply conditions and also (e.g. through imitation) increasing the internal pressure of competition (they develop external advantages and "spread innovation throughout the economic structure" (Chesnais, 1988, p. 120)).

- The enterprises or groups of enterprises form networks with technologically innovative services, institutions and universities (emergence of "systems of innovation" (Peres, 1988, p. 27)). Alfred Marshall, in his classical study on industrial districts, already appreciated the virtues of such networks when he said that "The information flow is in the air" (Marshall, 1920). Michael Porter comes to a similar conclusion, noting that "At this stage the whole group of enterprises becomes mutually supportive. Benefits flow forwards, backwards and horizontally" (Porter, 1990, p. 151).

This development pattern (which also suggests a time dimension) conforms to Carlota Peres's analysis of the development of competitiveness: "The new standards of competitiveness do not favor isolated enterprises, but those that can profit from the synergy of strong creative networks. They do not favor static enterprises, but those that can constantly innovate." The networking of enterprises and the interplay of enterprises and institutions lead to the emergence of a "national system of innovation". The formation of highly competitive structures is based on "network building, consensus building, focusing on results, decentralization, continuous learning, continuous improvement ... and, obviously, competition as an "ally" in restructuring." (Peres, 1988, p. 27).

As these modernization sequences have hitherto been confined to "islands of efficiency", "catch-up modernization" of the far from efficient business environment is essential if the sector is to develop sustainable industrial competitiveness and consolidate its world-market-oriented specialization. In the future all concerned will need to make even greater efforts to establish in the wood-processing industry a highly competitive "technico-social system" (Esser, 1991b, p. 44) that is capable of learning and feedback.

Networks<sup>8</sup> of enterprises and of enterprises and institutions are appropriate in this context both at the pre-competition stage (e.g. cooperation between several enterprises and universities in basic research, cooperation between the government and enterprises on the specification of standards) and at the competition stage (e.g. technological cooperation among enterprises, joint marketing) (Teece, 1982). Network structures as an alternative to the highly vertically integrated enterprise that tries to subcontract as few activities as possible are particularly appropriate:

- where complementary factors of production can be supplemented and combined, thus enabling costs to be reduced (e.g. exchange of important know-how on markets and technology; exchange of engineers; joint marketing; additions to product ranges);

- in sectors where R&D costs are particularly high and "resource pooling" therefore becomes interesting;

- in sectors where rapid changes in demand and economic instability make heavy investment by the individual enterprise to establish a secure competitive position a very hazardous undertaking and risk-sharing therefore makes better sense than it does in growth segments (Dosi, 1988).

<sup>8</sup> The term is cogently expounded by W.W. Powell (1990, p. 13): "... in network modes of resource allocation, transaction occurs neither through discrete exchanges nor by administrative fiat, but through networks of individuals or institutions engaged in reciprocal, preferential, mutually supportive actions. Networks can be complex: they involve neither the explicit criteria of the markets, nor the well organized routines of the hierarchy. A basic assumption of network relationships is that the parties are mutually dependent upon resources controlled by another, and that there are gains to be had by the pooling of resources. In network forms of resource allocation, individual units exist not by themselves, but in relation to other units. These relationships take considerable efforts to establish and sustain, thus they constrain both partners' ability to adapt to changing circumstances. ... Complementarity and accommodation are the corner-stones of successful production networks."

Many studies show that, as such network structures and joint learning processes call for fair contracts between the partners and good personal contacts (confidence), they go beyond what is otherwise usual in market relations among entities engaged in economic activities (Powell, 1990).

Policies restricted to the macro level are obviously not enough to ensure the comprehensive

modernization of national location and the emergence of an industrial/technological environment. On the other hand, the dynamic development of the Chilean wood-processing industry also shows that a stable, outward-oriented macro policy is in itself capable of mobilizing considerable potential within enterprises for creativity, growth and modernization.

## V

### The importance of old and new export enterprises

#### 1. The "model and catalytic function" of small and medium-sized exporters

The structural change that has occurred since the mid-1980s has led to the emergence of a growing number of small and medium-sized enterprises which are now competitive. They paved the way for a second export phase, which began with the export of processed wood products. Until the late 1980s, the large enterprises in the sector concentrated on the export of primary goods and sawn timber and made little attempt to industrialize. The efforts made by the large enterprises to modernize should not be underestimated, however: for one thing, they have now attained an international level in primary goods and sawn timber; for another, the new investments some enterprises are now beginning to make and their plans for industrial projects indicate that they are likely to be responsible for the bulk of investment in the processing of timber in the future.

The new small and medium-sized exporters (with export earnings from about US\$300 000 to US\$7 million) are of secondary importance when viewed in purely quantitative terms (contribution to foreign exchange revenues, etc.). Nonetheless, they have shown that:

- even small and medium-sized enterprises are capable of integrating into the world economy, and
- they are capable of doing so with exports of manufactures, which not even the large enterprises had previously been able to achieve.

This trend has multiplier effects:

- In recent years the small and medium-sized enterprises have modernized their plants extensively,

penetrated markets and accumulated export know-how, without being able to make large profits during this start-up phase. Past learning processes and investments are only now beginning to translate into economically visible results;

- Both existing enterprises and new investors are being guided by the successes of the pioneering exporters (imitation effect) and are overcoming their fear of international competition. The large enterprises are being joined by a rapidly modernizing "substructure" of small and medium-sized enterprises;

- Although a sound sectoral environment has yet to emerge, the enterprises that are modernizing and the new investors can now take advantage of the experience (partly institutionalized in ASIMAD and ASUN, for example) of the "pioneering exporters". This is facilitating and accelerating learning processes;

- Not even the investment decisions of the large enterprises are likely to be completely unaffected by the success of the small and medium-sized enterprises in industrialization. Cracks can now be seen in the still widespread dogma that the further the Chilean forest industries sector removes itself from static cost advantages (cheap timber, low wages), the less competitive it will become.

Nevertheless, the outlook for small and medium-sized enterprises is still far from idyllic: export enterprises that are now small by international standards must grow to an internationally typical size in the future.



## 2. The "new" type of entrepreneur

Growing world market orientation has helped to produce a broader stratum of businessmen and a "new type of entrepreneur". Unlike their counterparts in other Latin American countries, Chilean entrepreneurs (including those in the sector of small and medium-sized enterprises) have overcome their fear of international competition and made considerable progress in such areas as management, quality requirements, marketing and punctuality of deliveries. Nonetheless, the "new entrepreneurs" are not yet (on the whole) advocates of an integral, comprehensive modernization project. Their priorities do not include investment in human capital, the modernization of labour-management relations or technological innovation. Chile does not have the industrial and craft traditions and inclinations that characterize the European or even the East Asian enterprise culture.

The dynamic Chilean entrepreneurs have so far been particularly neglectful of the primacy of technology, technological competence and the organization of work as determinants of sustainable

competitiveness, and of the fundamental importance of the productivity of labour as an indicator of economic efficiency. They often focus their attention less on changes in their enterprises and the improvement of existing products and the development of new ones than on "the market", exchange rate trends, and price fluctuations in their market segment. They are thus more interested in safeguarding existing competitive advantages than in creating new ones (reactive rather than active behaviour). They have accepted the world market as a frame of reference, but continue to take a very static view of competitiveness ("We do what the market requires").

It is not surprising in these circumstances that, while viable marketing structures have emerged, entrepreneurs have made little effort to join forces with a view to improving the technological infrastructure and the training system. Studies of international competitiveness stress the importance of entrepreneurial attitudes towards product development and especially of technical progressiveness as major determinants in the development of competitive advantages (Schlegelmilch, 1988). Chile still has some catching up to do in this respect.

# VI

## The relationship between entrepreneurs (or their organizations) and trade unions.

### The socio-political dimension of competitiveness

The competitiveness of the forest industries sector is not, in the final analysis, determined solely at the sectoral level: economic development is always a politico-social process.

A marked feeling of distrust between entrepreneurs and trade unions, the entrepreneurs' reservations about (democratic) government and the fear of great social pressure from the trade unions regarding income distribution – after almost two decades of military dictatorship – seemed to impose serious restrictions on the formulation of an economic policy acceptable to society as a whole after the coalition of Christian Democrats and Socialists took power in March 1990. As the change was made from authoritarian to democratic government, it was widely feared that – given the backlog of social demands from the

lower and middle classes – the consolidation of economic development might be neglected, at least for a time. Our surveys of the forest industries sector and its environment qualify the validity of these scenarios, however. There is a political consensus between the government coalition, the employers' associations and the trade unions that:

- Chile's economic development will continue to be based on world market orientation;
- a sustainably viable social policy is not simply a question of redistribution (zero sum game): it must also be compatible with the country's economic development;
- the return to democracy is important in itself and must be defended whatever economic and social crises may occur.

This basic consensus underlies the reorientation of the actors involved in the process of democratization and gives the Economics Ministry more freedom to pursue active strategies aimed at improving the competitiveness of the economy, with the participation of all concerned.

### 1. The trade unions

Not least because they are aware of the catastrophic situation in other Latin American countries, the trade unions have accepted that there can be no going back to the conditions of the 1960s and the inward-oriented model. They support the goals of world market orientation and an improvement in the country's competitiveness and are prepared to join productivity alliances in which the object is both to ensure a high rate of investment and to increase the scope for real wage increases, while at the same time pursuing an active social policy to alleviate absolute poverty. Union activities are, moreover, no longer focused solely on wage rises, as they were in the 1960s, but increasingly on job security, health policy, training opportunities, pollution at the workplace, etc.: that is to say, in more general terms, on improved working and living conditions and also the overdue modernization of enterprises in these respects. The unions were probably prompted to change their attitude partly by the higher wages the more up-to-date exporting enterprises are normally able to pay (because of increases in productivity) and the better working conditions they offer compared with the traditional, undynamic inward-oriented enterprises. It must be borne in mind that after almost twenty years of military dictatorship the development of trade unions capable of taking action and asserting their interests against the well-organized enterprises is a medium-term project.

### 2. The entrepreneurs (and their organizations)

The entrepreneurs and their organizations are aware that they must come to terms with democracy, that a return to authoritarian government is very unlikely, and that they have no alternative but to accept the democratic parties and the trade unions. They do not therefore engage in active opposition to the government, even though, before the referendum on the continuation or termination of the dictatorship, they were very much in favour of Pinochet

staying in power. Most of the "new entrepreneurs" have no fixed political home, but they are guided by the philosophy of the Chicago school. The fixed point in their ideologically influenced thinking is "the market", which they consider as the best and most obvious means for determining resource allocation and industrial relations, for solving the problems of the education and health sectors, and even for preventing environmental degradation. The "new entrepreneurs" see themselves as the protagonists of economic change, a task which tended to be assigned to the government until the mid-1970s, in line with the views of the entrepreneurs of the time. The new entrepreneurs, however, feel completely independent of government and regard themselves as being at least its equal as negotiating partners.

Orientation towards the world market has undoubtedly led to the "modernization of entrepreneurial awareness" both economically and in terms of culture and policy. Compared with their counterparts in other Latin American countries, Chilean entrepreneurs now have a far less pronounced subsidy- and rent-seeking mentality, and not even small and medium-sized entrepreneurs are afraid of international competition. Most are also well aware from their business trips, visits to trade fairs and inspections of plants in Western democratic countries that they derived considerable profit margins from Chilean "capitalismo salvaje" and the accompanying authoritarian suppression of trade unions and democratic parties. This awareness may be at the root of the marked pragmatism and realism that characterizes the attempts being made by the entrepreneurs' associations to define their place in democratic society. The divergent views of different associations of this type and individual entrepreneurs on the trade union question, collective bargaining and the right to work and strike show that there is as yet no definite commitment to a model of industrial relations which employers take as their guide. Considerable interest is therefore being shown in the experience of various democratic countries.

Clearly, the entrepreneurs' associations are also actively redefining their societal attitudes, and after two years of the new government and an initial period of deep suspicion of its intentions (a Socialist as Economics Minister was seen by most entrepreneurs as a definite menace) enterprises are now more willing to talk to the government and trade unions.

### 3. Social cooperation

To summarize the attitudes and changes of view of the social actors and their search for orderly means of settling conflicts within the framework of a growing basic consensus, it can be said that all concerned are showing a considerable degree of flexibility and willingness to compromise. The existence of the basic consensus outlined earlier and the acceptance of fundamental social rules do not mean that political, social and economic conflicts will no longer occur in the future. The participants have, however, agreed on the new contours of a "socio-economic corridor" within which future conflicts will be settled. All sections of society are thus pursuing a common aim which will enable them to pool their potential for creativity and combine their forces, strengthen

the national capacity for transformation, and support the government's ability to establish policies and strategies.

Seen through Western European eyes, this meeting of minds on the foundations for the development of society may seem banal, but it is significant when Chile is compared with other Latin American countries, where this basic consensus has yet to emerge. It encourages the formulation of a longer-term development strategy geared to macroeconomic needs and the expansion of the social, political and ecological dimension of the world-market-oriented development model. In Chile there is thus the prospect of the development of a vision of future change, whereas other countries of Latin America tend to be characterized by manifestations of social decay, political polarization and paralyzation of the State apparatus.

## VII

### Conclusions

*"Competitive advantage is created and sustained through a highly localized process. Differences in national economic structures, values, cultures, institutions, and histories contribute profoundly to competitive success. The role of the home nation seems to be as strong or stronger than ever. While globalization of competition might appear to make the nation less important, instead it seems to make it more so. ... The home nation takes on growing significance because it is the source of the skill and technology that underpin competitive advantages."*

(M. Porter, *The Competitive Advantage of Nations*, 1990, p. 19)

It has become clear that making the transition from the "easy phase of export orientation" to the goal of "competition-oriented industrialization" and developing competitive advantages is not a linear, quasi-automatic process, but depends on lengthy—though optimizable—entrepreneurial and social processes of searching and learning, institution-building and the emergence of national technological competence. The Chilean wood-processing industry is still at the beginning of this process. In view of the profound structural change that has occurred since the mid-1980s, however, there is room for optimism. The continuation of the export-oriented growth strategy is based on stable, transparent macro policies and "clear rules of the game" for those engaged in economic activities. Policies relating specifically to the wood-processing industry (meso level) are also needed to help it overcome its structural problems.

It will be appreciated that there is a need to strengthen a sectoral environment in which the enterprises compete, but also complement each other and cooperate at the pre-competition stage (cooperative competition) in order to create a sectoral structure which is efficient and capable of learning and adapting (systemic competitiveness). We thus agree with the conclusion drawn by Hubert Schmitz in his analysis of processes of modernization of small and medium-sized enterprises that "the issue is not whether small enterprises have growth and employment potential, but under what conditions" (Schmitz, 1990, p. 13). Views differ on the importance to be attached to the various determinants of modernization. Schmitz's analyses suggest that "collective efficiency" is essential for the successful modernization of small and medium-sized enterprises and that modernization at the enterprise level can be virtually derived from this.

## 1. Industrial policies at the sectoral level

Structural policies, based on a suitable set of instruments, could strengthen the sectoral environment and improve the systemic competitiveness of the forest industries sector in the following respects:

- *Training*: The level of training of many workers, especially in small and medium-sized enterprises, is low. As the existing inter-company training centres have been neglected in recent years, they are no match for the new requirements. The development of a modern training system is urgently needed if the sector is to press ahead with technological and organizational modernization. This calls for close cooperation between government, enterprises and trade unions.

- *Technology*: Small and medium-sized producers, in particular, lack such production-related services as facilities for the drying and impregnation of timber, and maintenance, repair, planning and installation services for equipment and machinery. These shortcomings could be overcome by installing technical service and information centres in the wood-processing regions to provide such services and to advise entrepreneurs on technical and organizational matters.

- *Information networks*: Few enterprises have sufficient knowledge of export markets and of recent technological advances. The creation of open information structures is therefore essential. An agency assisted with public funds but run by entrepreneurs' associations might, for example, collect, file and computerize information on markets, prices, environmental protection standards and new trends in the international timber markets by carefully studying the relevant international press and the universally accessible electronic sources of information and make it available to interested enterprises as a service. The flexible forms of cooperation among successful small enterprises in the "third Italy" might be taken as a model for this (Pyke *et al.*, 1990).

- *Promotion of the establishment of small and medium-sized enterprises*: The entry into the market of new, young enterprises in sectors where value added is higher is important for the dynamism of the sector's industrialization. New small and medium-sized enterprises, however, often have difficulty obtaining venture capital for the start-up phase, during which they can expect to have little or no revenue. They are likely to make profits only when they have become established in the market. Private banks

prefer to become involved with young enterprises only when the start-up phase has been completed, whereupon their value can be expected to rise sharply. The Economics Ministry might set up guarantee funds to minimize the difficulties initially encountered by promising enterprises of this type. Other approaches to promoting innovative small and medium-sized enterprises could include the granting of tax concessions for enterprises investing in R&D or undertaking industrial research with other enterprises at the pre-competition stage.

- *Protection of resources*: Ecologically irresponsible overuse of forests and land must be prevented, and the preservation of the several million hectares of Chilean rain forest –the only such ecosystem in the moderate southern latitudes– should be ensured by legislation on protection and use. The democratic government is in the process of amending the Forestry Act to this end. Contrary to short-sighted views, ecologically sustainable use of the natural forest, together with the creation of nature conservancy areas and the expansion of environmentally less harmful plantation agriculture, would be a major competitive factor for the Chilean woodworking industry in view of the growing international awareness of the environment. This would require clear legislation and effective supervisory institutions and instruments.

## 2. A new approach in industrial policy

Our study suggests that the development of competitive factors very much depends on the ability of enterprises to modernize, for which institutional or inter-company networks are no substitute. It is the already dynamic enterprises which are capable not only of increasing their own efficiency but also of tapping further potential for rationalization through the inter-company division of labour and institutional networking. "Collective efficiency" thus occurs only if there is potential for modernization in the enterprises. As a rule, undynamic enterprises are not only overextended by internal requirements but are also unable to take much advantage of external offers and development potential (e.g. R&D funds, complementary opportunities for specialization).

This means that government or public institutions cannot by themselves create competitive structures, this being essentially a task for the enterprises themselves. However, public institutions can and certainly should make a crucial contribution to promoting the modernization potential of enterprises and backing

technological and organizational innovation and learning processes through appropriate policies (Messner *et al.*, 1992). Chesnais is therefore right when he says: "Government assistance in the strengthening of forms of co-ordination and co-operation previously identified by enterprises, notably small and medium enterprises, may lead to a development of externalities on which competitiveness can build and an expansion of the total 'system' within which industrial and technological learning processes take place" (Chesnais, 1988, p. 120).

The concept of "systemic/structural competitiveness" is first and foremost a model that is opposed to simplistic market ideologies. However, it also implies a criticism of excessively Statist planning approaches. In Chile as elsewhere the impending modernization of the economy cannot be a State technocratic act. Unlike classical Keynesianism, which concentrated primarily on demand-oriented macro policies, the emphasis of the structural policies needed to improve the industrial location and the supply conditions of enterprises is on decentralized decision-making structures. In the industrialized countries, industrial policy is pursued more at the regional and local level than at the national level.

Experience in industrialized countries (e.g. the Federal Republic of Germany) shows that regional industrial policy is no longer based solely (or is based less and less) on the classical means of intervention –i.e., legislation (trade policy and import bans, for example) and money (subsidies, promotional funds)– but is complemented by such consensus-oriented "soft guidance instruments" (Krumbein, 1991, p. 41 and Klönne *et al.*, 1991) as the flow of information, persuasion, pooling the know-how of various actors, integration of interests, and the adoption of agreed procedures.

The growing importance of "soft guidance instruments" and the increasing relevance of efficient channels of communication between major social groups, institutions and organizations is revealed by the "regional conferences" that have been set up in some of the States of the Federal Republic of Germany, especially in crisis-hit areas where comprehensive restructuring is about to begin (e.g. North Rhine-Westphalia) (Jürgens and Krumbein, 1991). The government acts as a broker, "facilitating the blending of abilities and promoting structural networking" (Aubert, 1992, p. 5). Many of those involved are trying to agree on future development prospects, to identify bottlenecks in the process of modernization, to anticipate (ecological

and social) modernization costs with a view to reducing them, and so to establish guidelines for political and entrepreneurial decisions. Socio-economic networks embracing entrepreneurs' organizations, trade unions, associations, local administrations, institutes of technology and universities are emerging in the regions. They occupy a position in between the government and the market (meso level), formulate visions –or, to put it more pragmatically, scenarios– of regional development, prepare strategic decisions of principle, and make possible non-Statist political control of economic restructuring programmes and the active and anticipatory shaping of structures. W. Hillebrand explains why such control of market processes is necessary:

"Countries which fail to develop a strategic perspective as the guide for corporate and government action and largely rely on spontaneous, *ad hoc* reactions and processes of trial and error underestimate in particular:

- the importance of the timely and resolute development of physical and above all non-physical infrastructure for the international competitiveness of enterprises;
- the time it takes to develop the main determinants of international competitiveness (human capital and technological infrastructure), and
- the adverse effects which uncertainty and risks have on aggressive corporate strategies" (Hillebrand, 1991, p. 185)

These new approaches to industrial and technology policy differ significantly from "hierarchical, excessively Statist control concepts" and require social actors who are efficient and capable of compromising, learning and transformation (Messner, 1992). In Chile this process of institution-building and the active shaping of structures to improve the economy's "systemic competitiveness" is still very much in its infancy. The direction to be taken, however, has been mapped out: "Although it sounds like some bureaucratic council with a lot of institutions, a successful national system of innovation is more a set of behaviour patterns harmonizing public and private organizations towards a common national goal. It involves deliberate consensus building to define a development strategy and move towards it, as well as deliberate construction of appropriate institutions to promote innovations and steer structural change and to systematically increase structural competitiveness" (Peres, 1988, p. 27).

## Bibliography

- Aldunate, R. (1990): *El mundo en Chile: la inversión extranjera*, Santiago, Chile, Zig-Zag S.A.
- Aubert, J.E. (1992): What evolution for science and technology policies?, *The OECD Observer*, No. 174, Paris, Organization for Economic Co-operation and Development (OECD), February-March.
- Best, M.H. (1990): *The New Competition*, Cambridge, MA.
- Bletschacher, G. and H. Klodt (1991): *Braucht Europa eine neue Industriepolitik?*, Kieler Diskussionsbeiträge, Kiel.
- Chesnais, F. (1988): Technical co-operation agreements between firms, *STI-Review*, No. 4, Paris, OECD, December.
- Contreras, M. (1988): *Más allá del bosque*, Concepción, Chile.
- Dauderstädt, M. (1987): Free markets versus political consensus. The international competitiveness of societies, *Intereconomics*, vol. 22, Hamburg, Verlag Weltarchiv GmbH, January-February.
- Döhl, V. and others (1989): *Neue Rationalisierungsstrategien in der Möbelindustrie*, Munich.
- Dosi, J. (1988): Sources, procedures and microeconomic effects of innovation, *The Journal of Economic Literature*, vol. 26, No. 3, Nashville, TN, The American Economic Association, September.
- ECLAC (Economic Commission for Latin America and the Caribbean) (1990): *Changing Production Patterns with Social Equity*, Santiago, Chile, March. United Nations publication, Sales No. E.90.II.G.6.
- (1992): *Social Equity and Changing Production Patterns: An Integrated Approach* (LC/G. 1701 (Ses. 24/3)), Santiago, Chile.
- Esser, K. (1991a): Anmerkungen zur wirtschaftlichen und politischen Transition in Lateinamerika, D. Nolte (ed.), *Lateinamerika im Umbruch?*, Hamburg.
- (1991b): *Development of a Competitive Strategy: A Challenge to the Countries of Latin America in the 1990's*, Berlin, German Development Institute (GDI).
- Feser, H.D. (1990): Technologische Wettbewerbsfähigkeit und internationaler Handel, H. D. Feser (ed.), *Technologische Entwicklung und Internationale Wettbewerbsfähigkeit*, Regensburg.
- Herbert-Copley, B. (1990): Technical change in Latin American manufacturing firms: review and synthesis, *World Development*, vol. 18, No. 11, New York, Pergamon Press, November.
- Hillebrand, W. (1991): *Industrielle und Technologische Anschlussstrategien in Teilindustrialisierten Ländern*, Berlin, German Development Institute.
- Huss, T. (1991): Transfer of technology: the case of the Chile Foundation, *CEPAL Review*, No. 43, April.
- INFOR (Instituto Nacional Forestal y de Fauna) (1990): *Estadísticas forestales 1989*, Santiago, Chile.
- Jürgens, U. and W. Krumbein (1991): *Industriepolitische Strategien: Bundesländer im Vergleich*, Berlin.
- Katz, J. (1984): Technological innovations and comparative advantages, M. Frisman and K. King (eds.), *Technological Capability in the Third World*, London, The Macmillan Press, Inc.
- Klönne, A. and others (1991): *Institutionen Regionaler Technikförderung*, Opladen.
- Krumbein, W. (1991): Industriepolitik: die Chance einer Integration von Wirtschafts- und Gesellschaftspolitik, U. Jürgens and W. Krumbein, *Industriepolitische Strategien: Bundesländer im Vergleich*, Berlin.
- Lall, S. (1990): *Building Industrial Competitiveness in Developing Countries*, Paris, OECD.
- Mármora, L. and D. Messner (1991): Chile im lateinamerikanischen Kontext: ein Modell für Demokratisierung und Entwicklung in der gesamten Region?, D. Nolte (ed.), *Modellfall Chile?*, Hamburg.
- Marshall, A. (1920): *Principles of Economics*, London, Macmillan and Co., Limited.
- Meissner, F. (1988): *Technology Transfer in the Developing World. The Case of the Chile Foundation*, New York, Praeger.
- Meller, P. (1990): Revisión del proceso de ajuste chileno de la década del 80, *Colección Estudios CIEPLAN*, No. 30, Santiago, Chile, Research Corporation for Latin America (CIEPLAN).
- Messner, D. (1990): *Uruguay: el sector industrial ante la apertura externa*, Berlin, German Development Institute.
- (1992): Die südkoreanische Erfolgsstory und der Staat: von der Allmacht des Entwicklungsstaates zur Krise des "hierarchischen Steuerungsmodells", Vierteljahresberichte No. 130, Bonn.
- Messner, D. and J. Meyer-Stamer (1992): Lateinamerika, von dem "verlorenen Jahrzehnt" zur "Dekade der Hoffnung?", *Blätter für Deutsche und Internationale Politik*, No. 1.
- Messner, D., I. Dietrich, J. Friederici, R. Guttack, K. Kiehl and W. Klein (1992): *Hacia la competitividad industrial en Chile: el caso de la industria de la madera*, Berlin, German Development Institute.
- Meyer-Stamer, J. and others (1991): *Comprehensive Modernization on the Shop-Floor: A Case Study of the Brazilian Machinery Industry*, Berlin, German Development Institute.
- Muñoz, O. (1988): Crisis y reorganización industrial en Chile, *Notas técnicas CIEPLAN*, No. 123, Santiago, Chile, CIEPLAN.
- OECD (1991): *Technology and Productivity. The Challenge for Economic Policy*, Paris.

- Olson, M. (1982): *The Rise and Decline of Nations, Economic Growth, Stagflation, and Social Rigidities*, New Haven, Yale University Press.
- Peres, C. (1988): The institutional implications of the present wave of technical change for developing countries: discussion paper for a World Bank conference on Long-Term Economic Growth Prospects, Washington, D.C., *mimeo*.
- Porter, M. (1990): *The Competitive Advantage of Nations*, New York, The Free Press.
- Powell, W.W. (1990): Neither markets nor hierarchy: network forms of organization, *Research in Organizational Behavior*, vol. 12.
- Pyke, F. and others (1990): *Industrial Districts and Local Economic Regeneration*, Geneva.
- Schlegelmilch, B. B. (1988): Der Zusammenhang zwischen Innovationsneigung und Exportleistung: Ergebnisse einer empirischen Untersuchung in der deutschen Maschinenbauindustrie, *Zeitschrift für Betriebswirtschaftliche Forschung*, No. 40.
- Schmitz, H. (1990): *Flexible Specialization in Third World Industries*, Sussex, Institute of Development Studies (IDS), University of Sussex.
- Teece, D. J. (1982): Towards an economic theory of the multiproduct firm, *Journal of Economic Behaviour and Organization*, vol. 3.
- UNIDO (United Nations Industrial Development Organization) (1986): *Industry and Development*, Vienna.
- (1992): *Production Management for Small- and Medium-Scale Furniture Manufacturers*, Vienna.
- World Bank (1986): *Chile: Forest Industries Sub-sector Study*, Washington, D.C., August.