

The industrial *policy debate*

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This article seeks to rethink the conceptual framework for the formulation of industrial policy in the conditions currently being faced by most of the more industrialized countries of the region; it may be noted that the debate has very similar features in the economies at an intermediate level of industrial development too. The authors review the different theories on government intervention (section II) and the industrial policy arguments (section III). They then consider the situation of the developing countries, taking a structuralist view (section IV) and the interaction of the macro- and microeconomic levels (section V), after which they briefly review the debate in the World Bank on these matters (section VI) and set forth the systemic approach taken by ECLAC (section VII). In their final reflections (section VIII) they argue that every new industrial proposal must take account of the beneficial lessons of the past and the problems associated with the errors made on the way, and they emphasize the need to overcome such limitations and shortcomings in order to follow paths that will lead to the acquisition of dynamic comparative advantages. A system based on an explicit industrial policy will provide coordination mechanisms which are lacking in a free-market economy but can be more efficient in a context where the interdependence and special nature of the assets involved are given importance. Industrial policy must help to coordinate economic change, encourage experimentation and

I

Introduction

The new conditions in Latin America, particularly with regard to stabilization and the opening-up of the economies, are acknowledged to be necessary but not of themselves sufficient for sustaining development in the long term, which requires growth and new forms of specialization. The recognition that there are imperfect markets and that there are weaknesses in the institutions needed to promote the development of dynamic comparative advantages has led to the rethinking of industrial policy, which can hardly be based on the reproduction of the instruments and institutional framework of the import substitution stage. The challenge is the same as in the past, but the international and internal conditions now have different roots.

At the international level, the world is passing through a new phase of internationalization marked by increasingly globalized real and financial markets. The intensification of competition at the country, sector and enterprise level is one of the main features of the environment in which the present international division of labour takes place. In the relation between the new patterns of international trade and the technical and production models now characteristic of the most highly developed countries, growing importance is being assumed by the level of human resources skills and the scientific and technological base as the foundations for the formation of new competitive capabilities.

In the new international setting, the processes of the formation of blocs and new forms of regional integration interlinked with that setting are also becoming increasingly important. Along with the growing economic openness, they are giving rise to a transition from basically semi-closed economies to economies which, though relatively small, are increasingly open, and they are redefining their role in the processes of integration and globalization.

This difficult transition did not start from nothing. Its starting point was in evolutionary processes in which technological capabilities were being developed. The economies had shortcomings at the microeconomic level in terms of factory sizes and the limited

capacity for specialization, and there were also serious macroeconomic imbalances reflected in the ongoing external sector deficits or high fiscal costs associated with the promotion of industrialization. In spite of all these problems, however, the production of industrial goods was accompanied by the generation of a large amount of capabilities in terms of technology, upgrading of human resources, and the development of business skills and institutions. It is on the basis of this background, with all its advances and setbacks, that each country is now facing the challenge of progressing to production chains offering greater added value, overcoming past limitations, and further strengthening accumulated capabilities.

In this respect, the renewed emphasis on the need to develop a competitive strategy incorporating a coordinated industrial policy for strengthening new forms of specialization has a very different context from that of the past. The definition of an industrial policy for relatively small economies which are in a process of change and need to restore the functioning of their economic systems, to which end their stabilization processes must be based on structural changes, will therefore undoubtedly be very different from the import substitution approach. For a start, this policy will be much more complex, since it must meet much more specific sectoral, regional and entrepreneurial requirements, as well as the need for the *aggiornamento* of the relevant institutions to comply with the domestic and international changes already noted. One of its main objectives should be to reduce uncertainty, so that the economic agents—especially small and medium-sized enterprises (SMEs)—can make a better appraisal of the settings in which they will have to deploy their strategies.

This study seeks to rethink the conceptual framework needed for formulating industrial policy in the conditions currently facing the majority of the countries of the region. The problems we will be addressing are not exclusive to them, however, and the debate has very similar features both in the more highly industrialized countries and in those at an intermediate level of industrial development.

II

A brief summary of the theories on government intervention

The role of the State in a market economy has been one of the most controversial issues in economic theory. It includes the appraisal of the possible benefits of industrial policies. Chang (1994) summarizes what has been written in the literature on government intervention, organizing his review in the light of four elements.

1. Efficiency

This concept is addressed in the literature on market failures or the welfare economy, where an analysis is made of failures of the market mechanisms to match social and private costs and benefits and corrective policies through State intervention are set forth. There are three groups of arguments for justifying such intervention:

i) *Public goods*: The feature defining such goods is their “non-exclusive” nature: i.e., once a public good is supplied to someone who pays for it, it is also accessible to everyone else, since it is not economically feasible to exclude those who have not paid. Some authors refer to “non-rivalry in consumption”, which occurs when consumption by one person does not reduce consumption by the others but can also occur even when there are means of excluding other individuals (as in the case of the so-called “club goods”). The problem of public goods is fundamentally one of rights of ownership. In view of the characteristics referred to above, there is always an incentive not to display preferences for this type of goods, so that their supply may be less than optimal. In that case, the State must intervene by applying taxes and providing public goods with the money thus raised.

ii) *Non-competitive markets*: The existence of economies of scale and/or collusive forms of conduct may result in non-competitive market structures. When monopolies or oligopolies predominate in the market, the quantity of goods supplied is less than in a competitive context. The State must then intervene

in order to ensure optimal production. There are also reasons other than those of efficiency for regulating monopolies: for example, the fact that they lead to the concentration of economic and political power in private hands which are not subject to democratic control. Among the measures applied to deal with these problems are anti-monopoly laws or public ownership of enterprises.

iii) *Externalities*: These exist when there are spillover effects from the activity of one individual to those of others, leading to discrepancies between the private and the social cost/benefit structures. In principle, the problem can be solved by defining property rights more precisely and carrying out negotiations between the respective parties. In many cases, however, this is impossible because of the high transaction costs involved in the process: in that case, government intervention is justified to ensure the supply of goods with externalities in socially optimal quantities.

2. Morality

As the representative of the members of a society, the State can intervene in the market, if necessary at the cost of efficiency. The moralist argument takes two forms: i) the State can intervene in the supply of merit goods, which are those whose supply society wishes to promote (regardless of the preferences of individual consumers) or, in the case of demerit goods, it wishes to prevent; or ii) government intervention may also be justified if society believes that market transactions are not morally acceptable in some areas (such as the donation of blood or police services). On the basis of methodological individualism and its politico-philosophical counterpart, contractualism, it was held that all government intervention (except in the case of some minimal functions) is illegitimate because it infringes the liberty of the individual, viewed as the ultimate value of human society. Consequently, liberalism means being willing to sacrifice economic efficiency

for the benefit of individual freedom when such conflicts arise.

3. Intention

The economic policy literature has criticized the approach based on the supposed existence of market failures because it assumes that the intention or objective of the State is to serve the general good. There are three types of arguments which question this assumption:

i) *The autonomous State*. The State can act as an entity with its own objective function which may be different from that of society as a whole.

ii) *Interest groups*. The State is seen as a stage on which economic interest groups or normative social movements struggle or unite to formulate public policy decisions on the allocation of benefits among the various groups demanding them. The most powerful groups will also be those most capable of affecting the decisions of the State, so that economic policies will favour them.

iii) *Bureaucrats protecting their own interests*. It has been suggested that public officials are in no way different from other individuals who pursue their own interests. As officials benefit from the higher salaries they receive and the greater power of their own departments, it is only reasonable that they try to maximize their own department's budget instead of optimizing the social product. Consequently, public officials will produce publicly supplied goods and services in larger amounts than those which are socially optimal.

4. Capability

The assumption of an all-powerful State has been questioned in the literature on government failures on the basis of two arguments:

i) The information argument, which holds that the State can collect and process all the relevant information for correcting market failures only at a cost which exceeds the benefits obtained. This argument has two parts: one concerns insufficient information and the other concerns the uneven access to information (the agent-principal problem) within the State and between the State and the bodies its policies are aimed at.

ii) The rent-seeking argument, according to which government intervention gives rise to additional waste of resources which may more than outweigh the benefits produced: the State is not only responsible for the traditional losses due to its own dead weight, but it also causes some resources to be directed towards unproductive activities in order to obtain the rents generated by its own intervention. The literature on this subject emphasizes that the combined results of individual maximizations may differ greatly, depending on the institutional context.

The debate on government failures occupies a prominent position in the literature on industrial policy. This element will largely determine the result of the policies adopted. In a review of the arguments on this subject made by Shapiro and Taylor (1990), the difficulties that exist are acknowledged, but at the same time the cases where it has been possible to carry out successful interventions are highlighted.

III

Arguments for and against industrial policy

In the 1980s, the intensification of competition among enterprises belonging to highly industrialized countries which entered activities considered to be of high technological complexity led to the rethinking of the question of whether or not government intervention to promote particular patterns of industrialization was advisable or not. On the one hand, the advocates of industrial policy claimed that the

performance of the most dynamic sectors of the economy depended on comparative advantages "created" with government aid. In contrast, their opponents denied such arguments, referring to the "invisible hand" that would cause resources to be allocated to the most desirable uses.

In an article published by the Organization for Economic Cooperation and Development (OECD),

Grossman (1990) makes a useful summary of the conceptual arguments and empirical information supporting the opposing positions on the promotion of new industrial activities. He also formulates a framework for analysing government intervention

based on the welfare economy approach, comparing the benefits generated by a promoted industry with those that could have been generated if the resources had been allocated to another sector of the economy. He distinguishes three components in the surplus generated by industry: i) the producer surplus, which is the excess value of an industrial product over the opportunity cost of the resources used in its production; ii) the consumer surplus, which is the excess utility derived by the consumer from the purchase of a certain amount of a good over the cost of such an acquisition, and iii) the government surplus, which is the excess income collected by it from industry over the subsidies paid.¹

¹ The industry surplus is $W = n [(p+z)x - S(x)] - n(f-v) + [U(c) - pc] - (p-p^*)e - znx - nv$, where W is the total surplus of the industry; n is the number of firms in the industry; x is the level of the product of a typical local firm; p is the price paid by local consumers; z is the subsidy per unit of product; $S(x)$ is the social opportunity cost of the resources used to produce x , net of fixed entry costs; f is the social cost of the resources needed for entry (assumed to be equal to the private entry costs); v is the fixed subsidy to induce entry; c is the level of local consumption; $U(c)$ is the utility obtained from the consumption of an amount c of the good; p^* is the international price of the product in local currency; and $e = nx - c$ is the net exports (net imports if the figure is negative). The first two terms measure the producer surplus. The third term is the consumer surplus. The last three terms reflect the cost of export subsidies (or the income from import tariffs, if p is greater than p^* and e is negative), or production subsidies, and the subsidies for inducing entry which help to cover the fixed costs, respectively. Government intervention changes some of the amounts in the right hand side of the equation. The overall change in W is the result of the changes in the economically determined variables: $\Delta W = W_x \Delta x + W_n \Delta n + W_e \Delta e + W_{p^*} \Delta p^*$. The terms in this equation can be expressed as the sum of seven different effects: 1) The benefits capture effect, $n[p-m(x)]\Delta x$ where $m(x)$ is the private marginal cost. This occurs in oligopolistic markets when the policies induce firms to change their level of production. 2) The externalities effect, $n[m(x)-s(x)]\Delta x$, where $s(x)$ is the social marginal cost. This occurs when the policies induce a change in resource use in situations where the amount that firms pay for their inputs is different from the social opportunity cost. 3) The entry benefits effect, $[px-M(x)-f]\Delta n$, where $M(x)$ is the total private cost of producing x units, net of the fixed entry costs f . It reflects the excess operating benefits obtained by new firms induced to enter by the policies over the private costs of such entry. 4) The entry externality effect, $[M(x)-S(x)]\Delta n$; when the number of firms in the industry changes, this term measures how far the private production costs of the new firms exceed the social costs. 5) The trade volume effect, $(p-p^*)\Delta e$; domestic prices will be different from their opportunity cost (p^*) if there are trade policies. These policies which alter the volume of trade have implications for efficiency, since local decisions are based on prices which differ from the opportunity cost. 6) The terms of trade effect, $e\Delta p^*$, which reflects the benefits obtained by a country when its exports command a higher price on the world market or when it is able to import at lower prices. Policies which induce an expansion in exports generally give rise to a fall in the world price of the good in question and are therefore a negative component of the surplus. Policies which restrict imports have a positive effect if the country has significant status on world markets and affects the international price of the imported good. 7) Consumer surplus effect, $[u(c)-p]\Delta c$, where $u(c)$ is the marginal utility of the good after the consumption of c units. It measures the social gain from an increase in consumption of the good in question.

The author formalizes this approach by, on the one hand, identifying the arguments underlying orthodox thinking, which ultimately criticises all forms of intervention aimed at promoting industrial development.² On the other hand, as shown in table 1, he analyses the factors determining some market failures (economies of scale, externalities, and imperfections in the capital and goods markets) and the distortions they cause in a market operating under assumed perfect competition, establishes a ranking of possible interventions in the light of this, and summarizes the main theoretical and empirical principles justifying the promotion of new industrial activities.

² The orthodox paradigm assumes that there are no entry barriers, that the local firms are small and cannot influence the market price of their products, that there are no externalities, etc. Freedom of entry thus means that the surplus benefits (those that exceed the fixed costs of entry) will be zero. Producers receive $p+z$ per unit of product. This means that $(p+z)x = M(x)+f$. Each firm produces until the marginal cost $m(x)$ equals the price $p+z$ that it receives. The effects are reduced to 1) $-nz\Delta x$ and 3) $-zx\Delta n$. The first of these terms is negative if there is a production subsidy ($z>0$) to promote the expansion of firms. The second term is also negative if a production subsidy is used to induce entry ($\Delta n>0$). For the assumptions adopted in this case, effects 2) and 4) disappear. Effect 7) also disappears, since each consumer selects an optimum level of purchases, with the price of the last unit purchased being equal to its marginal utility: $u(c) = p$. If a subsidy is used to promote exports ($\Delta e>0$), the domestic price p will be greater than p^* and effect 5) will therefore be negative. Finally, if export or production subsidies are used, sales on world markets will expand and the international price p^* will fall. If the country is a net exporter of the good in question ($e>0$), national welfare will go down. Consequently, for export industries, production or trade subsidies only generate negative components in the analysis of the surpluses, so that the promotion of industry through whatever type of intervention only serves to reduce welfare.

TABLE I

Market failures: Factors, effects and possible forms of intervention
(Arguments summarized by Grossman)

Factors responsible for some market failures	Distortionary effects with respect to a market with perfect competition	Possible forms of State intervention	Bibliographical references on theoretical and empirical aspects ^a
I. ECONOMIES OF SCALE			
A. "Static" economies of scale.	High fixed entry costs. Few firms are capable of entering with scales of production that give profits. Existence of minimum scale of operation with diminishing mean costs.	Entry subsidies if the consumer surplus is greater than the private operating losses and the effect is negative because of the decline in profits of existing firms.	Horstmann and Markusen, 1986 Schlie, 1986
B. Learning by doing (within the firm). "Dynamic" economies of scale.	Existence of a pronounced learning curve. Production costs are initially high but go down rapidly as experience is accumulated in the new activity.	Entry subsidies during the learning phase if the consumer surplus is greater than the private operating losses due to such entry. Entry of more than one firm reduces the volume of sales of the existing firms and the rate at which they gain experience and derive benefits from the associated learning process.	Alchian, 1963 Zimmerman, 1982 Lieberman, 1984 Bresnahan, 1986 Baldwin and Krugman, 1987a Dasgupta and Stiglitz, 1988 Trajtenberg, 1989
C. Strategic promotion of entry (particular case of static or dynamic economies of scale).	Size of the world market only permits one firm in the activity in question. The government undertakes to support local firms in their efforts to compete with rival foreign firms for possession of an emerging market.	Entry subsidy because of the monopoly profits obtained by the firm.	Ethier, 1982 Brander and Spencer, 1985 Dixit and Kyle, 1985 Dixit, 1986 Dixit and Grossman, 1986 Grossman, 1986 Horstmann and Markusen, 1986 Baldwin and Krugman, 1987a and 1987b Baldwin and Flam, 1989 Helpman and Krugman, 1989
II. EXTERNALITIES			
A. Research and development.	Significant investments in the creation of knowledge. Knowledge as a "public good". Spread of the fruits of research and development efforts throughout society is efficient and possibly inevitable. Private agents will only assume costs if they can internalize the benefits.	Subsidies for private research and development costs. Encouragement for firms to internalize the externalities associated with the creation of new technologies through the promotion of joint ventures for research and development. Increased protection abroad for intellectual property rights. Use of production or export subsidies, or protection of the domestic market, although at the same time they have negative effects.	Arrow, 1962 Griliches, 1979 Jaffee, 1984 Spence, 1984 Grossman and Shapiro, 1985 Griliches, 1986 Katz, 1986 Bernstein, 1988 Bernstein and Nadiri, 1988 and 1989 Chin and Grossman, 1989 Grossman and Helpman, 1989a and 1989b Lichtenberg and Siegel, 1989
B. Learning by doing (outside the firm).	Productivity gains from production experience may be built up by firms other than that which began the manufacturing process (classic variant of the infant industry argument).	Production subsidy due to the benefits of the externality in question. Trade policy is a substitutive variable which promotes learning but at the same time has negative effects.	Lieberman, 1982 Zimmerman, 1982 Bell, Ross Larson and Westphal, 1984

TABLE 1 (concluded)

Factors responsible for some market failures	Distortionary effects with respect to a market with perfect competition	Possible forms of State intervention	Bibliographical references on theoretical and empirical aspects ^a
C. Investment in human capital and on the job training.	Externalities of investment in human capital. Firms intervene in a sub-optimal manner.	Subsidies for investment in human capital. As in the case of the externalities of research and development, production subsidies or trade policies do not guarantee solution of the problem of appropriability.	Horowitz and Sherman, 1980 Maranto and Rogers, 1984 Simpson, 1984 Barron, Black and Lowenstein, 1987
D. Failures of coordination and vertical linkages.	If the economies of scale are significant and exports are limited by transport costs or trade barriers, entry of a producer may be inhibited the lack of a purchaser for his product. At the same time, a potential producer who uses the above product as an input may be inhibited from entering by his inability to obtain a low-cost supply of that input. The market solution involves a failure of coordination: neither of the two is willing to assume the high fixed costs, although both would benefit if they did.		Scitovsky, 1954 Pack and Westphal, 1986
III. IMPERFECTIONS IN THE CAPITAL MARKET			
A. Divergences between the social and private costs of funds.	An exogenous divergence exists between the social opportunity cost of funds and the rate at which the market makes them available to borrowers. Such divergences may be due to the lenders' inability to make proper evaluations, to their "irrational" aversion to risk, or to their systematic over-estimation of the risk of new activities.	Loan subsidies if the private rates are not appropriate. Subsidies for guarantors or tax compensation for firms' losses in order to relieve part of private exposure if the aversion to risk is too great. Such subsidies and tax benefits must be available for all investors in all sectors, unless the market is known to discriminate systematically against certain types of activities.	Kafka, 1962
B. Uneven access to information.	Borrowers undoubtedly know more about the nature and degree of risk and the probable returns in various alternative situations and about their own capacity to undertake a new activity. This uneven access to information would not be important for lenders if the debt contracts ensured repayment under all circumstances. Credit markets typically involve State protection under limited responsibility laws and therefore expose lenders to the danger that a firm will declare itself bankrupt (the "adverse selection" problem).	Selective interest rate subsidies, only in cases where the market mechanisms systematically select those firms or potential entrants which are least attractive from the social point of view.	Stiglitz and Weiss, 1981 De Meza and Webb, 1987 Flam and Staiger, 1989 Sen, 1989
IV. IMPERFECTIONS IN THE GOODS MARKET			
A. Quality reputation as an entry barrier.	Consumers have imperfect information on product characteristics. New entrants suffer from the problem of lack of an established quality reputation.	"Differential" incentives for firms to produce high-quality goods (e.g., minimum quality standards).	Bagwell and Staiger, 1988 Grossman and Horn, 1988

Source: Prepared by the author on the basis of Grossman, 1990.

^a These bibliographical references are taken from Grossman (1990), where they are given in greater detail.

1. Comparison with the organization of financial markets

The arguments presented by Grossman, which justify selective government intervention designed to secure an increase in social welfare, are complementary and are clearly illustrated, in the particular case of financial markets, in a recent study by Stiglitz (1993). These markets are particularly important for the industrial sector.

Essentially, financial markets are connected with resource allocation, so that it may be said that they form the “brain” of the economic system: the central point in the taking of decisions. It is because of this role of financial markets that their performance is so important: if they fail to do their job properly, not only will the benefits be smaller, but this may even adversely affect the functioning of the entire economic system. According to Stiglitz, there are seven market flaws which can justify government intervention in financial markets: i) problems of the “public good” in matters of financial supervision; ii) externalities of financial supervision, selection and granting of loans; iii) externalities of financial upsets; iv) absent or incomplete markets; v) imperfect competition; vi) inefficiency of competitive markets, in the Paretian sense, and vii) investors lacking the necessary information.

Stiglitz’s study also describes the forms of government intervention most commonly observed in financial markets and a set of principles determining the regulations to be applied to the sector. Finally, he analyses a special form of intervention: financial repression. Stiglitz concludes that the State has a role to play in financial markets because of the market failures described above.

2. Transaction costs and failures of coordination

Another way of interpreting industrial policy stems from the use of the concept of “transaction costs” (see Chang, 1994). The school of thought that stresses the transaction costs of the new institutional economy notes that the market transactions through which resources are allocated in market economies are not exempt from costs, as neoclassical economics assumes: since individuals have only limited rationality, they allocate resources in order to establish safeguards against opportunistic conduct by their

trading partners (to cover the costs of drawing up and enforcing a contract, for example). This recent contribution to economic theory emphasizes that the achievement of efficiency (or the coordination of the forms of conduct of interdependent but also independent agents) involves costs over and above those deriving from failure to obtain the highest possible degree of social welfare. From this point of view, then, costs include not only those involved in the production of goods but also –and to a significant extent– the costs of allocating resources among production units and managing the production process within the units. These costs of coordination between and within economic units, which must be distinguished from purely engineering costs, have been given the name of “transaction costs”.

If transaction costs are those incurred with the aim of defining and redefining the property (and other) rights of economic agents, on the one hand, and drafting, reviewing and enforcing contracts within the existing structure of rights, on the other, then the costs of government intervention can also be reinterpreted as transaction costs. The costs of the information needed to take decisions and apply policies are of this type, and the costs deriving from rent-seeking activities designed to redefine the structure of property rights can also be classified in this way. In the real world, both State interventions and market transactions generate costs, so that a comparison must be made between the costs of allocating resources through market transactions and the costs of doing so through State interventions. This gives rise to a new role for the State: the reduction of transaction costs in the economy.

An important function of the State is to establish and enforce a well-defined system of property rights which reduces transaction costs; if it does not achieve this, then those agents whose decisions are interdependent will have to engage in extraordinary expenditure to solve the problem of externalities. Although this does not necessarily have to be a task for the State, the fact that the government is the only body which has the legitimate right to use force means that the most efficient agent for carrying out this function is indeed the State. Another role for the State in bringing down transaction costs is the reduction of macroeconomic instability. When faced with growing macroeconomic instability, agents with limited rationality will devote resources to activities that seek to create suitable conditions for enabling ratio-

nal calculation (for example, by drafting, revising and enforcing long-term supply or subcontracting contracts, or maintaining stocks). As macroeconomic instability is essentially a lack of coordination between the activities of different individuals, this argument can be extended to the problem of coordination in general (for example, the establishment by the State of a system of weights and measures or technological standards).

In order to achieve this coordination, the State does not necessarily have to completely take the place of market transactions. Indeed, such an exercise could be prohibitively costly, as the central planning practices of the Socialist countries have shown. There are ways in which the State can reduce transaction costs without eliminating all market transactions: i) by changing the institutional configuration of society (for example, by giving legal backing to the organization of agents in larger groups and the reduction of the number of bargaining processes needed, as in the case of the social corporativism applied in Scandinavia or Austria); ii) through its influence on the educational system and the communications media, promoting a "national ideology" or system of values which helps to reduce the costs involved in the exchange of information and in negotiations (as in South Korea and Japan, which are considered to be homogeneous societies); iii) by providing a "focal point" or consensus around which decisions can be coordinated (as occurs in investments in complementary projects in France and Japan).

An industrial policy system offers coordination mechanisms which may be lacking in a free market economy. As a coordination mechanism, industrial policy may be more efficient in a context where the interdependence and special features of assets are important considerations. In this case, coordination through the market would involve high negotiation costs, while coordination through centralized planning would involve high information costs, whereas industrial policy would probably have low costs in both cases. Industrial policy also appears to be a superior way of promoting technical progress. On the one hand, it does not eliminate the profit motive, as centralized planning does, and through the socialization of risks it can promote changes over and above those that the market can induce by itself.

In examining the logic underlying industrial policy, it is desirable to separate the roles it plays in the

static and in the dynamic dimensions. In both cases, the function of industrial policy is the same: to avoid failures of coordination. As Chang (1994) notes, when the assets have special features, ex post coordination through the market can be anti-economic, since the failures of coordination involving specific assets gives rise to a net reduction in the total amount of resources available for the economy. One of the features of modern industrialized economies is their use of production technologies which require large fixed investments and therefore involve economies of scale. Moreover, a large part of their assets are specific or "sunk". The result is an oligopolistic industry in which there is strategic interdependence of the firms' decisions.

Under certain likely conditions, this interdependence leads to inefficient results which would justify State intervention. In this case, the intervention would not necessarily take the form of an anti-monopoly policy, since the benefits of breaking the oligopoly could be offset by higher costs resulting from suboptimal scales of production. Here, industrial policy can play a distinguished role through measures such as the following:

i) *Coordination of investments*: as overinvestment or underinvestment are problems of strategic uncertainty which can cause a number of firms to go bankrupt and lose the resources invested, the State can intervene in the industry in question to ensure that there is an optimal level of entry into it, assuring possible entrants to this effect;

ii) *Recession cartels*: when there is a temporary fall in demand, it is preferable to organize recession cartels rather than to allow firms to start a price war which can lead, among other things, to the loss of social resources or the survival only of the strongest firms, which will later collect monopoly benefits when the economy starts to recover;

iii) *Negotiated reduction of production capacity*: when a persistent fall in demand makes it necessary for some firms to leave the industry, it may happen that none of them wish to do so because they themselves would benefit from the withdrawal of other firms. This could lead to a war of attrition among the firms which would benefit no-one, thus justifying intervention.

Some opponents of industrial policy claim that although this may solve the static coordination problem, it may be harmful in the long term because it impedes the functioning of the natural selection

mechanisms of the economy and hence the achievement of dynamic efficiency, as the countries with centrally planned economies show. They do not mention, however, that economic changes may also require coordination in order to be successful. Moreover, if the risks must be assumed only by individuals, it may be that the necessary changes do not take place at all. The socialization of risk through State intervention is a way of promoting changes which involve interdependence.

Industrial policy must help to coordinate economic change, to promote experimentation, and to preserve diversity. In a world of interdependent relations, the fact that a better alternative exists does not necessarily mean that there will be a corresponding change. In the real world, many changes involve interdependent decisions. Likewise, infant industries may need certain guarantees (for example, regarding the entry of possible competitors) in order to embark on a path which can lead to the extensive creation of knowledge. It may be desirable to protect such industries and coordinate projects that may compete with each other. When the market in question has matured, all that is needed is to apply static industrial policies in such cases as the organization of "recession cartels". When the market has passed this stage and is over-mature, industrial policy once again has a role to play in the coordination of negotiated withdrawals and elimination of installed capacity. With regard to the relation between industrial policy and the product cycle, it may be observed that dynamic industrial policy is only called for in the first of these stages.

Finally, as Nelson (1989) notes, it is preferable to waste resources through the duplication of innovation efforts than to advance in only a single direction which may later prove to be mistaken. Diversity has its advantages, since no-one can be sure of the future. Industrial policy's place in technological innovation lies in complementing an imperfect capital market, subsidizing the entry of firms into activities with high fixed entry costs, and coordinating university research and its linkages with the world of production. For Chang, growth is due to the fact that agents have experimented with new things and new ways of doing them. To make this possible, many institutions were set up which allowed the risks inherent in innovation to be socialized. The State can provide more of these institutions.

3. Constructing the market

In an effort to construct a conceptual framework for a new approach to industrial policy in an open economy, Bianchi (1993 and 1994) has prepared a number of extremely useful elements. He has taken up once again Adam Smith's idea of the market, which was developed for a situation marked by emerging capitalist societies and runs counter to the qualities of "loyalty and protection" of the feudal mechanisms, which were rigidly based on hierarchical exchanges determined by the social position of the actors. For Smith, the market is a complex social institution and a meeting point for horizontal relations in which relative power is not a given value but is attainable on the basis of the ability to organize productive activity. This market requires collective rules and an authority capable of supervising and stimulating competition among the economic agents, which is the foundation for structural change. The efficiency of production depends on the capacity to organize it so that specific skills are developed and it is continually strengthened by the feedback from specialization and complementarity. In Smith's scheme, social interaction is not only competitive but also cooperative, since the division of labour is based on the complementary specialized capabilities of individuals and firms. It is obvious that the stimulus for social dynamics is all the greater when there is plurality and diversity: that is to say, when there is a large number and variety of subjects interacting in the economy.

Government intervention is justified insofar as it increases the division of labour, expands the market and facilitates the use of the whole power of the market to develop competitiveness. Such intervention is not sufficient if it only takes place at the individual level: it will have more effect if there are progressive coalitions designed to generate reactions towards innovation which cause the individual and social benefits to come closer to each other. Smith reminds us that an economy based on the development of the market forces requires a strong State, not only to guarantee property rights and to legitimize private contracts, but also to ensure those positive externalities that no individual citizen could maintain unaided, such as defence, justice, and the public activities needed for collective growth (including, *inter alia*, communications and the educational and health systems).

Smith was against any kind of protectionism and was an ardent defender of free trade, which to him meant the broadening of the market and, hence, an increase in the multiplicity of competing agents. In particular, when economic underdevelopment is combined with the deterioration of institutions, what is needed is not to “return to the market” but to “construct the market”. This means acting on the institutions of collective life and providing the capabilities that will allow the majority of the subjects to take part in them effectively. Likewise, public policies for furthering industrial development must be designed not only to favour a change in the institutional environment in which firms operate but also to take concrete measures to favour industrial cooperation among firms, so as to make possible individual specialization in a context of complementarity and broadening of the market.

In the event of a change in the situation—for example, the upsets accompanying processes of greater trade openness—the policies needed to speed up structural and institutional changes must be identified, in order to establish the necessary conditions and rights of participation of the economic agents (with full equality of opportunities) and to strengthen their capabilities so as to facilitate active and growing integration into the globalization process. For this, it is necessary to construct a system of consensual interrelations in which the systemic conditions

form the backbone of macroeconomic policies supported by feedback from “everyday capability building”. This means establishing or strengthening networks, strengthening the links between institutions and firms, and enhancing spatial relations at the local, regional, national and international level.

A situation of autarky is always difficult, as there is the danger of growing domestic dissatisfaction and the emergence of regressive coalitions which block change. In this context, a protectionist movement may be either a regressive result or an intermediate solution for enabling domestic reorganization which could turn potentially regressive coalitions into coalitions capable of identifying ways of collective development through redefinition of the division of labour. A regional-level economic integration agreement can therefore be a means of guiding the processes of openness and structural adjustment in such a way as to sustain them without causing damage through over-hasty action or falling into situations of indefinite protectionism. It is possible to generate dynamic effects if the transition towards a customs union is regulated in time so as to permit the adjustment of the national production structures during the transition: this would give rise to a progressive coalition which will press towards complete openness, increasing the number of agents capable of sustaining it through a rapid structural adjustment process.

IV

The case of the developing countries: a structuralist approach

Many authors have studied the reasons for the very uneven results obtained by semi-industrialized countries in their efforts to ensure a self-sustaining economic growth process and to improve their social welfare. Among them, Lall (1992a and b; 1993; 1994a and b) centers his attention on the industrial policy debate and its links with the concept of technological capabilities in order to try to explain the different degrees of industrial and technological development.

The need for an industrial policy stems from the problem of the efficiency of markets. If markets work perfectly, they will give optimal results which, by definition, could not be improved by any type of intervention. When markets do not work perfectly, there could be a need for intervention to improve the economic performance. This will depend on the nature and magnitude of the market failures and the capacity of governments to design and implement the necessary intervention measures (while at the same

time appraising the possible costs of government failures). Lall puts forward three alternative approaches to the role of industrial policy: the neoclassical approach, the market-friendly approach, and the structuralist approach. The differences between them derive from the assumptions each of them make on how markets operate in the developing countries and how capable governments are of overcoming market failures, when these exist.

According to the **neoclassical approach**, all markets are perfect and any intervention would distort resource allocation; the static optimization of resource allocation obtained through the functioning of free markets also leads to the maximization of growth.

According to the **market-friendly approach**, the developing countries do suffer from market failures and functional, selective interventions are therefore needed to overcome them, but in practice only the former are feasible and desirable, either because those failures which call for selective remedies are of insignificant importance for industrial development or because selective interventions are inherently more costly than the flaws they are supposed to correct (government failures are always worse than market failures in this type of situation). This approach abandons some of the assumptions of the neoclassical approach. It acknowledges that factor markets may not operate perfectly, and that education markets, in particular, may call for interventions in order to create the human capital base required by industrialization, but these interventions must be market-friendly (i.e., non-selective) because of the implicit assumption that skills are generic. It recognizes that there may be market failures in the coordination of investment decisions in industry due to various reasons: absence of information markets, shortcomings in the capital market, economies of scale, interdependent investments in vertically related activities, externalities in the creation and learning of skills, and multiple linkages.

The **structuralist approach** holds that both functional and selective interventions are needed to promote development, and that governments are capable of carrying them out. Industrialization may still take place in the absence of selective interventions, but its pattern and depth will be affected, and in the developing countries it will tend to be fragile in most circumstances. As market failures differ in their incidence and intensity in different activities, the interventions to correct them must necessarily be

selective. Without them, this approach predicts, resource allocation would be sub-optimal and growth would be restricted. The distinction between market-friendly and selective interventions is a false dilemma. There is no economic basis for drawing a distinction between functional and selective interventions: any intervention which corrects a market failure is automatically market-friendly. Nor does economics find any justification, *a priori*, for the argument that except in the case of functional interventions the government will probably do more harm than good. This is a political argument of dubious empirical value.

On the basis of this structuralist approach, Lall develops a series of arguments centered on the acquisition of technological capabilities and the flaws encountered in this process. He notes that in manufacturing, these capabilities are not limited to the technology embodied in physical equipment or in manuals, plans and patents acquired by the firm, although these do indeed represent the means through which these capabilities are put to work. Nor are they limited to the educational qualifications of the workers, although a base which is receptive to the acquisition of skills does depend to a large extent on the education and training of the workers involved. Nor are they limited to the skills and training that individuals receive in the firm, although these do represent the bricks with which capabilities are built at the micro level. Instead, capabilities are the way in which an institution –such as a firm, for example– combines all the foregoing in order to function as an organization, with ongoing interaction among its members, effective flows of information and decisions, and a synergy which is greater than the sum of all the individual skills and knowledge. It is conceptually useful to consider the development of competitiveness at the level of the firm as investment in embodied technology, accompanied by investments in skills, information, organizational improvements, and relations with other firms and institutions.

Exposure to international markets provides various stimuli for the development of capabilities. International competition stimulates efforts to reduce costs, to improve quality and to introduce new products; makes it possible to obtain economies of scale, and provides constant information on improvements in designs and processes that speed up the achievement of higher productivity (gains in dynamic technical efficiency). In order to reach international

levels of efficiency in complex technologies –with dissemination of externalities and feedback to strategic activities–, however, time, investments and efforts are needed. It would be very hard for firms to cover the costs involved if they are exposed to global competition from the start, and moreover the capital markets are not generally prepared to back them. Consequently, there are arguments connected with the treatment of infant industries which are valid for the protection of new industries, but not in the usual sense of low and uniform protection. The duration and scope of protection cannot be uniform when different technologies have different costs and learning curves.

Not all market failures require intervention. The need to intervene arises when solutions do not appear or need some kind of stimulus to appear. The risk of a government failure must be faced whenever political solutions are recommended for market flaws. The government, like the market, can have different degrees of success or failure and, like the market, governments can improve with time and effort. In some cases, there may be no alternative to State intervention. In others, a reasonable balance needs to be drawn between the costs and benefits of intervention, on the one hand, and the market flaws on the other. It is generally agreed that the provision of basic education and infrastructural services connected with industrial and technological development should be in government hands. In this respect, the need to strengthen the capabilities of the government and improve its performance seems to be unavoidable. The most serious problem arises when the forms of intervention adopted are more selective. Such policies require great skill, information and discipline on the part of the government, since they usually foster rent-seeking forms of conduct and the appearance of pressure groups. They could prove very costly if they are badly formulated or applied, but if they are carried out properly they will determine the nature and success of the industrial development process.

Firms from developing countries have to face various market failures. The nature of these failures is not always the same. They depend on each country's specific objectives as regards the activities they wish to enter, the growth in incorporation of local inputs that they are pursuing, and the level of technological competence and endogenous innovative capacity they wish to develop. The need for intervention must be determined within this context. Indus-

trial development does not only mean embarking on new activities. As economies progress and mature, this means a deepening of the process in some or all of the following four ways: introducing technological improvements in products and processes in industry, embarking on new activities which are more complex and demanding, increasing the proportion of local content, and mastering more complex technological tasks in firms (ranging from assembly operations to those required for activities involving greater added value, adaptation, improvement, and finally design, development and innovation). Each of these has its own learning costs. Progressive deepening is a natural part of industrial development, up to a certain point, but it is not automatic and inevitable. Its pattern and incidence differ widely, depending on the strategies followed by the societies in question.

The process of forming capabilities can come up against various market flaws. With regard to products, free markets may not give the right signals for resource allocation, while with regard to factors, they may not lead to an optimal supply of inputs, especially in the case of skills and information.

Free markets may suffer from two different types of flaws: i) those that affect optimum allocation of investments between simple and complex activities, and ii) those that affect such allocation between physical investments, purchase of technology, and domestic technological efforts. The first-named provide the arguments in favour of the classic case of protection for infant industries. When there are costs involved in learning, a late entrant into an industry necessarily faces greater disadvantages than those who embarked on the learning process earlier. In view of the uncertainty, the lack of information and the imperfections in the capital market which are endemic in the developing countries, full exposure to competition from imports can inhibit entry into activities involving relatively complex technologies. Because learning costs differ from one activity to another, intervention to ensure efficient resource allocation must be selective rather than uniform.

The second type of allocation problems, which affect the deepening of capabilities in industrial activities, can also be affected by market flaws. Arrow (1962) noted quite a long time ago that the free market can fail to ensure optimal innovative activity because of the imperfect appropriability of information and skills. The developing countries also face another problem. It is generally easy to import techno-

logical “packages” from abroad, where the process has already been commercially tested: the vendor supplies the equipment and programmes, puts them into operation, carries out the necessary training and adaptations, and runs the operating and marketing aspects. In its most extreme form, this procedure is tantamount to foreign direct investment (FDI). Although it represents an effective and relatively less risky way of gaining access to technology, it does not cause developing countries to acquire greater capabilities, other than the skills needed for the production activities. Moving on from those activities to innovation involves a different strategic decision which foreign investors in those countries are not very willing to take. There is thus a risk of market failures in the process of deepening capabilities because of the learning costs, which are of a very similar nature to those involved in the case of an infant industry. In order to ensure socially optimal allocation it may be necessary to selectively restrict the importation of technological “packages” and promote that of “externalized” technologies (licences or equipment). Many technologies, however, are only available through FDI, or else they are too complex for local capabilities, and must therefore be imported in the form of packages. It may also be necessary to promote the emergence of larger-scale firms. Technological deepening can be a legitimate objective of industrial policy, however, as the development of endogenous design and innovation capacity has various positive externalities.

These considerations are also applicable to the deepening of local integration through the development of local suppliers and subcontractors. As well as bringing benefits in terms of production, the resulting interrelations speed up the spread of technology, increase specialization, and enhance industrial flexibility. In particular, the development of local equipment suppliers can increase the generation and spread of technologies. Because of these externalities, there may be justification for the promotion of clusters of related activities which would otherwise not be capable of coordinating their investments and the selection of groups of activities considered to have greater learning potential because they use advanced technologies. Once again, the nature of the possible market failures will depend on the particular economy in question and its technological ambitions.

As the needs for skills and information differ in the different industrial activities, interventions in these factor markets must be integrated with those

designed to promote the activities in question or to further technological deepening. Interventions to facilitate the functioning of the market must therefore necessarily be selective, inasmuch as the skills and information become specific rather than generic. Finally, as protection reduces the incentive to invest in the development of capabilities, industrial policy must offer compensatory incentives in the form of performance requirements (entrance into export markets in a short space of time).

The development of industrial competitiveness and its dynamic evolution over time mean that firms must continually invest in learning new capabilities and improving existing ones. The learning process comes up against various market flaws which conventional theory overlooks. Once these are taken into account, the scope of industrial policy for creating and sustaining comparative advantages becomes much clearer. In most developing countries the problem is not the establishment of new industries—since they already have significant industrial structures—but the fact that the existing ones are inefficient. Such countries have invested relatively little in the formation of industrial capabilities or have developed capabilities of the wrong type (designed to produce with the available materials or to adapt products for protected domestic markets, rather than to reduce costs, raise quality and constantly introduce new products). Consequently, they need to restructure the existing industries and reallocate resources efficiently. This involves the liberalization of the rules governing trade and competition, the disappearance of activities which cannot become competitive within a reasonable length of time with an acceptable level of investment in restructuring, and the progress of activities which could be efficient if they improved their technological and management capacity and renewed their equipment. A careful programme of liberalization by stages, together with a coherent set of support measures in the areas of technology and skills, could enable certain activities to reach international standards.

In short, the promotion of industrial development may call for interventions to overcome market failures in resource allocation between activities and within firms. These interventions may be selective and fit in with the learning processes of the firms. They may cover certain activities or sets of activities, and they may require action to promote the emergence of larger-scale enterprises. They may be inte-

grated with selective interventions in the factor markets, including measures affecting the way technology is imported, and they must be offset by incentives to invest in the formation of capabilities.

The scheme shown in table 2 was developed by Lall (1993) to analyse the determining factors of industrial and technological development, the market failures that may exist, and possible corrective policies. The long process of development of capabilities comes up against an important set of market failures for which very varied forms of intervention may be suggested. Experience indicates that differences in performance between countries are associated with institutional policy design, and it also indicates that policy failures are one of the dangers of not properly applying the corrections needed from the economic point of view.

Justman and Teubal (1991), coinciding also with Bianchi, note that structural changes are a necessary condition for growth, so inability to generate them may impede subsequent development. They also concur with Lall about the fundamental importance of specific capabilities and skills and the need for a "critical mass" of efforts for their implementation. The combination of these two factors gives rise to an infrastructure of specific skills, while their absence encourages a form of resource allocation by the market which may not be efficient. This infrastructure may make it necessary to decide between alternative growth paths, which may be mutually exclusive if resources are limited and the critical mass required by one or the other of them is relatively large. There is no reason why such a choice should be more efficient if made in a decentralized manner. It may be that a coordinated effort among different economic agents is needed in order to ensure that the most desirable path is followed.

This structuralist approach means that the capacity to generate "technology-driven" structural change is a source of comparative advantages in itself, and it brings out the importance of accumulating both physical capital and intangible resources. It also suggests that the government has a new and more complex role to play in the pursuit of industrial growth, due to the possibility of generating comparative advantages through the promotion of structural change. Although structural change is difficult, it can speed up economic growth once it is materialized. This speeding-up is associated with a "violent reallocation" of resources that accompanies such change.

According to the structuralist approach, the generation of comparative advantages is a complex process in which the accumulation of physical capital interacts with the accumulation of specific skills and the development of specific elements of the technological infrastructure. This specificity leads to policy aims that go beyond achievement of the optimal rate of saving or the optimal growth rate of any aggregate variable: instead, it involves the identification of structural changes which would be desirable for the economy and the definition of the type of infrastructure (including the types of capabilities) that must be developed for bringing on such changes. These issues are of an inherently strategic and long-term nature and mean deciding on one of the possible development paths, which are relatively indivisible. The consequent investment decisions are practically irreversible and affect a broad spectrum of present and future economic agents.

Structuralist authors note that market failures are characteristic features of development and occur particularly in the "nodes" of structural change, so that they cannot be considered as isolated or exceptional phenomena. In these nodes, structural change is feasible but the economy may fail when trying to implement it. In order for such change to take place, it is necessary to carry out a violent reallocation of resources ("creative destruction"). Coordination is therefore essential in order to ensure that the desired form of reallocation takes place without leading to excessive social and political upsets. In the structural change nodes, a critical mass of more than one of the resources may be needed (for example, skills plus capital investment). Without increased investment in physical capital, it might not be beneficial to acquire advanced skills, while without a critical mass of trained labour the yield on the capital invested might not be sufficient. The indivisibilities that exist suggest that the market will not always coordinate automatically in an optimal manner. This is not a problem that only exists in the first phases of development: it arises in all the structural change nodes that require the concerted accumulation of critical masses of specific resources. The formation of this type of technological infrastructure is "strategic", because particular configurations may determine the group of industries in which future comparative advantages are being generated. The problem facing the economy is how to select indivisible investment programmes, each of which leads to a different

TABLE 2

Intervention for promoting industrial and technological development (ITD)
(Proposals by Lall)

Determinants of industrial and technological development (ITD)	Market failures	Policy remedies
Incentives: Macroeconomic policies.	Not applicable.	
Foreign competition.	Full exposure to competition leads to underinvestment in ITD because of externalities, unpredictable learning, lack of understanding of ITD process, investment complementarities, information gaps, risk aversion.	Infant industry protection for difficult new activities (very selective, monitored, limited in duration, with safeguards, integrated with development of skills and institutional development). Phased liberalization, taking account of relearning costs.
Domestic competition.	Market power, economies of scale and scope, complementarities, need of large size to enter world markets and undertake advanced training and R&D.	Ensure competition, regulate monopolies, but create large firms where necessary to exploit scale economics in ITD and marketing.
Skills: Of workers and supervisors Technical. Production engineering. Design and development. Scientific and basic research. Managerial, organizational, marketing.	Investments in formal education suffer from lumpiness, missing markets (lack of supply of teachers and facilities), risk, imperfect foresight, lack of information. Quality control and curriculum content suffer from information gaps. Investments by firms in training suffer from externalities (lack of appropriability), lack of knowledge of benefits of training, risk aversion, and capital market failures.	Government support of schooling, higher level education and special training. Control of education quality and content. Selectivity in creation of high-level skills, geared to industrial strategy. Information, incentives, subsidies for in-firm training. Support for foreign training, importation of foreign trainers.
Information and technical support: Knowledge of need for ITD efforts Knowledge of kind of efforts needed to promote ITD Access to information from other firms, institutions, universities, etc. Standards, metrology, testing facilities. Technical extension services Contract research, design, training. Information services on technical sources, trends. Basic research support. Access to technological information worldwide.	Information gaps and fragmented information markets (on sources of technology); "learning to learn" delays; lumpiness of infrastructure facilities; public goods features of some information (externalities and lack of appropriability); skill gaps; risk aversion; absence of technological intermediation. Underdeveloped interfirm linkages, leading to poor diffusion of technology. Inadequate cooperative efforts by firms to enforce standards and quality. Absence of links with foreign research.	Information and persuasion on need for technical activity. Strengthening of intellectual property rights. Provision of infrastructural services; setting up R&D institutions for selected industries (and ensuring linkages to enterprises). Technical extension services for small firms. Information services on sources of technology. Support for cooperative R&D by industries. Some mission-oriented R&D support. Encouragement of subcontracting and local procurement. Links with foreign R&D.
Finance for ITD: Availability of finance on appropriate rates and in sufficient quantity for R&D or the commercialization of innovations. Equity sharing finance for innovators. Special finance for small and medium sized enterprises.	Capital market failures due to asymmetric or missing information, adverse selection, moral hazard, cost of evaluation or enforcement of ITD loans; risk aversion or over-conservative policies by financial intermediaries. Lack of relevant financial intermediation skills.	Creating technology financing capabilities in banks, with training subsidies (to start with only); special financial provision for ITD efforts that link up with R&D institutes; financial instruments for SMEs; venture capital and other schemes to provide special instruments for risk sharing. Targeting of sectors with exceptional technical potential.
Technology policies: Technology imports, FDI, promotion of local R&D, other interventions to strengthen ITD.	Insufficient investment in local R&D (due to the above factors). Transfer of technology suffers from international technology market imperfections, monopolistic or oligopolistic suppliers, asymmetric information. Absorption of imported technology limited by local absorption capacity, plus other failures above that deter ITD.	Fiscal and other incentives for R&D; procurement of products incorporating local innovations; information service on sources of technology; selective control of FDI and negotiation to ensure local "know why" development. Selective support for R&D projects with large potential benefits and externalities.

Source: Lall, 1993, pp. 746-747.

growth path and is associated with static and dynamic economies of scale. While there is no reason why the market will necessarily select the most appropriate alternative, this does not mean that the government has the capacity to do so. It is increasingly clear, however, that the government must play a role in coordinating the change. Firstly, it can provide a forum for debate among the interested parties in the economy, and it may serve as a means of strengthening mutual commitments for embarking on a process of change. Secondly, it can be a link between professional analysis and the political forces which is

necessary in order to solve the problems of distribution and equity which invariably accompany structural change.

The debate on government failures occupies a leading place in the literature on industrial policy, since such failures largely determine the results of the policies adopted. Shapiro and Taylor (1990) have made a review of the arguments put forward in this respect in which they note the difficulties that exist but at the same time highlight the cases where it has been possible to carry out interventions in this direction.

V

Macroeconomic/microeconomic interaction

When we look at policies for promoting development, we see that the problems of macroeconomic coordination occupy a secondary place, merely serving as a context for more specific policies. However, the interaction of the macroeconomic and microeconomic configurations largely conditions the growth potential of an economy.

In analysing the problems of coordination at the macro level, the contribution made by Leijonhufvud (1981) is of fundamental importance for trying to understand some features of the behaviour of developing economies in situations of imbalance. His view may be summed up as follows: the economic system will behave differently, depending on the type of shift away from the path of "full coordination"³ that takes place. If the shift is moderate and the system is within a range that Leijonhufvud calls a "corridor",⁴ the homeostatic mechanisms will come into play and

correct the tendencies. Outside the corridor, these mechanisms are weaker, and the system is increasingly exposed to "effective demand failures".⁵ Within the corridor, the multiplier repercussions are weak and are dominated by neoclassical market adjustments; outside the corridor, they are strong enough to amplify themselves endogenously as a result of the effect of shocks on the previous state. Consequently, the multipliers will increase with the distance from the ideal path.

Conventional macroeconomics considers that shifting away from the path leads economies to locate themselves within the corridor, so that the imbalance will only be temporary and the policy problem consists of seeking instruments that will make it possible to reduce the length of time that the economies are out of balance. As Fanelli and Frenkel (1995) note, however, this is not the right approach to take when analysing macroeconomic problems in the Latin American economies, because of the magnitude, duration in time and recurrence of their macro-level imbalances. These economies tend to be

³ "Full coordination" means that the existing markets are cleaned up; it refers to the state in which all excesses of demand and supply are eliminated. It does not mean "efficient allocation".

⁴ The breadth of the corridor is variable and is mainly determined by the stock of liquid assets maintained by the economic agents. These stocks act as buffers when shocks hit the economy. When these shocks are very large and unexpected, the buffers are exhausted, thus further heightening the problems of coordination.

⁵ "Effective demand failure" is the failure of the markets to transmit messages on desired transactions from one place to another.

located systematically outside Leijonhufvud's corridors, so that their imbalances are further increased.

There is a feature which sums up the variety of factors that help determine an economy's propensity to give rise to coordination failures: the degree of stochastic volatility and unpredictability in the evolution of the basic variables. The greater this volatility, the more difficult it will be to anticipate its evolution and the economy's propensity to generate macroeconomic imbalances. An economy with these features will give rise to forms of conduct at the microeconomic level which are absent when these elements are not found and which may even go in the opposite direction to that which might be expected if the phenomenon were sporadic. It is one thing to pass through a stage of imbalance, but quite another thing to have to live in an economy likely to generate such a state systematically. In this latter situation, the influence of the macro configuration over the micro structure will be much more permanent and visible. There are features in the economic structure which cannot be explained solely in micro terms, without reference to the macro context in which they take place. The mutations observed are related in one way or another with the fact that, in an economy marked by high macroeconomic uncertainty, flexibility for changing past decisions has an economic price. "Extreme preference for flexibility" has fundamental consequences for real resource allocation, the finan-

cial morphology, and –through its effects on investment and innovative capacity– for growth.

Just as different macroeconomic configurations determine different forms of behaviour and structures at the micro level, so the structural characteristics of each economy (the micro factors) are important in determining the degree of macroeconomic instability. On the one hand, the greater the number and severity of market failures and the lower the degree of development of the institutions related with economic activity, the greater will be the level of weakness –or even complete absence– of market mechanisms which can act as buffers against imbalance and hence the greater the tendency of the economies in question to generate imbalances and follow dynamic adjustment paths which tend to reproduce or amplify those imbalances instead of correcting them. This is because the self-regulation capacity of the economy depends on the degree of development of its markets and institutions, which are responsible for handling the uncertainty inherent in all economic activities. On the other hand, the lower the degree of diversification and sophistication of production, the less capacity there will be to reallocate resources quickly to new activities when lasting shocks take place, and hence the longer the period during which the economy will operate in a state of imbalance. Both these situations are typical of developing Latin American economies.

VI

The debate in the World Bank

In the 1980s, the position adopted by the World Bank on the role of government intervention in the economy, and especially in industrial development, was clearly expressed in the set of policies based on what Williamson (1990) called the Washington Consensus. According to this approach, countries should adopt the measures indicated in the neoclassical growth model, which claimed that the market forces alone would permit optimal resource allocation, discarding the fundamental role that the less developed countries had previously been assigning to selective intervention by the State as the "motor of development". Thus, for the Washington Consensus industrial policy was definitively ruled out as a way of

improving any economic situation. Policy criteria were linked together through economic openness, deregulation and the privatization processes which formed the foundations for the structural reforms proposed by the World Bank and were essential requisites for obtaining loans.

In the course of the World Bank's own operations, however, little by little different points of view arose within the institution on the role of the State in economic development, so that the pure neoclassical view which had prevailed in the Bank's prescriptions was questioned in relation to both its theoretical and its empirical bases. Thus, within the World Bank itself, staff members' reports began to appear which

reexamined the Bank's arguments; at the same time, changes were made in the conditions that countries had to fulfill in order to obtain loans and receive positive appraisals from the institution. One of the first challenges to the Bank's position came in documents prepared by its Industry and Energy Department.

An example of this is a study requested from that department and carried out by Atiyas, Dutz and Frischtak (1992), the objective of which was to establish a conceptual framework for the problems of industrial reconversion. The analytical framework prepared in that report is put forward as an instrument for guiding government actions designed to create an environment that will stimulate efficient industrial reconversion. It identifies the main obstacles to the adoption of the right reconversion decisions, grouping them in three main categories: discipline, mobility/versatility, and resources. Obstacles to discipline are those which protect firms from the effect of competition, prolong their survival, and allow managers to put off reconversion decisions. Obstacles which restrict mobility reduce the capacity of firms to reallocate factors in response to a changing environment. It has been observed, however, that discipline and mobility are not enough to give rise to relatively efficient reconversion processes when the necessary resources (experience, information and finance) are not available. For each group of obstacles, the report classifies the government actions needed to eliminate distortions in the policies applied, provide rules and mechanisms that make up for market failures, and create institutions to apply those rules.

In another report, Frischtak (1993) claims that labour flexibility and the ability to relocate capital quickly are the most important requisites in the initial or defensive phases of reconversion. In order to achieve labour flexibility, it is necessary to eliminate restrictive labour regulations, to introduce adequate unemployment compensation, and to support activities for relocating and retraining labour. In trying to relocate capital quickly, the most burdensome restriction is usually shortage of credit, so that useful measures are those providing subsidies for withdrawal from certain activities, financed with taxes on the industries that remain in those activities, or subsidies for change of activity which make it easier for firms to give up the least profitable lines of production. When reconversion is successful, it usually increases the productivity and profitability of firms. Maintenance of the position thus attained requires a good

deal more effort on the part of the entrepreneurs and the application of various measures designed to secure successful reconversion, however. These include adopting an aggressive attitude in the technological field, obtaining finance for investments and innovation and, above all, a new organizational culture emphasizing the long-term benefits of such investments and innovations.

The performance of a number of East Asian countries over the last quarter of a century has caught the attention of the whole world. This group of nations kept up high and sustained growth rates for a long period of time, accompanied by an appreciable improvement in their populations' income and in the distribution of that income. In the 1980s, the success obtained by these countries was considered to represent confirmation of the neoclassical recipes advocated by the World Bank, in contrast with the experience of those nations which had followed the import substitution path through protection of the domestic market and active government intervention. However, the differences perceived between the policies applied by the East Asian countries and those prescribed by the World Bank led the Japanese delegation to that Bank to suggest the execution of a study designed to review the role played by the government in the economic –and especially the industrial– development of the region (see OECF, 1991).

The suggested study was duly made (World Bank, 1993).⁶ Among its most important conclusions is that in the East Asian economies, in one way or another, the government intervened –systematically and through multiple channels –to promote development. It classifies the policies applied in two main groups: basic macroeconomic balances and selective interventions. Among the first-named, the most important include macroeconomic stability, major investments in human capital, stable and reliable financial systems, limited price distortions, and openness to foreign technology. Selective interventions include moderate financial repression (maintaining low but positive interest rates), managed credit, selective industrial promotion, and export-oriented trade policies.

⁶ The study was entitled *The East Asian Miracle: Economic Growth and Public Policy*. It was carried out by the World Bank in 1993, under the direction of J. Page, and was designed to study the development process of the East Asian nations.

The study centers on a type of economic problems –failures of coordination– which may lead to market failures, especially in the early stages of development, and it interprets some of the interventionist policies applied by East Asian countries as a response to these problems of coordination. Such policies place emphasis on cooperative forms of conduct among private firms and transparent standards for measuring success, based on performance.

Some of the East Asian countries covered by the study went one step further and created economic contests combining competition with the benefits of cooperation, both between firms and between the government and the private sector. The key feature of each contest is that the government distributes rewards (allocations) according to the performance of the firms, which is verified by the government and by the competing firms. Such contests need competent and impartial judges: that is to say, strong institutions. A high-quality civil service capable of verifying performance and immune to political interference is therefore an essential element in allocation based on contests like those described. Naturally, a high-quality civil service also strengthens the government's ability to design and implement policies not based on contests.

The rapid growth of the East Asian countries had two complementary elements. The first, and most essential, of these was attainment of the basic macroeconomic balances. Their macroeconomic management was unusually good and their macroeconomic performance was unusually stable, thus providing a favourable setting for private investments. Policies designed to increase the integrity of the banking system and make it more accessible to non-traditional savers increased the levels of financial saving. Educational policy, which was focussed on primary and secondary education, generated rapid increases in labour skills. Agricultural policies forced changes in productivity, while not overburdening the rural economy with taxes. Finally, all the countries kept price distortions within reasonable limits and opened up to ideas and technology from abroad. The second element was cautious policies of intervention. The prerequisites for success, however, were so stringent that policies formulated in other developing countries which have tried to follow similar paths have often failed. In this respect, the study in question emphasizes the importance of the institutional base in attaining these levels of performance.

The conclusions reached by this World Bank study on the reasons for the East Asian miracle gave rise to a new debate which is still under way and was recently reviewed in a special section on this subject in *World Development* (1994), edited by A. Amsden, which reproduces a number of reports summarizing some of the critical analyses made in this respect.

The first of these reports is by A. Amsden himself, who notes that, by concentrating on the basic macroeconomic balances, the World Bank study suggests that economic growth is quite a simple process. This is at variance with all the new growth models, which emphasize that, because of imperfect information, rising yields, dependence on the particular path chosen, self-reinforcing mechanisms, and other dynamic properties, the growth process does not have a single explanation. This disagreement is due to the World Bank's mistaken belief that it is possible to consider the basic macroeconomic variables (investment, education, exports) in isolation from their underlying microeconomic bases or institutions. When these variables and bases are integrated with each other and the basic microeconomic variables are placed within the context in which policies are formulated and implemented, growth becomes a more complex matter, as the new formal models indicate. The World Bank's attempt to ascribe most of East Asian development to "market fundamentalism" is misleading. For example, if East Asia has had high rates of saving and investment, these only arose in conjunction with a particular structure of enterprises and of the financial system (all banks in South Korea and Taiwan were publicly owned).

Lall, for his part, believes that the World Bank study fits in with the market-friendly view set forth in the *World Development Report* (World Bank, 1994). After making a number of criticisms on the study in the light of his "structuralist" view linked with technological capabilities (arguments which we set forth earlier in the present article), he indicates that the success of the industrial policies of the East Asian countries must be judged as a function of the different strategies that they followed. What a government considers to be a market failure depends on its own objectives: what might have been viewed as satisfactory progress in Hong Kong might be seen as unsatisfactory (and hence subject to market failures) in South Korea. The appraisal of market failures calls for an examination of the technological learning process at the micro level. There were crucial differ-

ences of technological objectives among the countries studied. The consequent strategies lead to substantial differences in terms of industrial structures, the types of exports in which to specialize, the degrees of local content, endogenous technological capacities, dependence on different forms of technology transfer, and government involvement (continuous or not). The effects of industrial policies cannot be evaluated without reference to the strategies followed. In order to judge such policies properly it is necessary to take account, among other things, of the complexity of industrial activities within and across industries, the composition and technological sophistication of exports of manufactures, the extent of local integration, and local technological deepening. These were the facets of East Asian industrialization where the strategies of the various countries differed; they identified their market failures, and their interventions were aimed at correcting them. The countries which made most progress were precisely those which applied strong policies of selective intervention, such as Japan and South Korea, and which registered the greatest distortions in relative prices, as the World Bank data show.

Recently, there have been fresh symptoms of change in economic thinking. In September 1996, the Inter-American Development Bank (IDB) orga-

nized in Washington the Conference on Development Theory and Practice, and it was in this context that John Williamson presented his study "The Washington Consensus revisited". This new study by Williamson is not an official revision of the original "Consensus" but rather reflects a change in the international economic policy scene. Subjects which were previously taboo are now at the centre of discussion. Among the new ideas put forward by Williamson are: an increase in saving, while maintaining fiscal discipline (which of itself is not sufficient); the reorientation of public spending towards well-targeted social expenditure; tax reforms that incorporate the externalities of the environment; supervision of the banking system by the State; a competitive exchange rate; use of the bargaining power of economic blocs in trade liberalization; promotion of competition in markets; well-defined property rights within the reach of all (reduction of inequalities in land distribution); the creation of State or mixed institutions for carrying out social and promotional activities, and the improvement of education by increasing expenditure and redirecting it towards primary and secondary education. Finally, a recent article by Joseph Stiglitz (1996) sums up the reappraisal of the East Asian experience, with emphasis on the role played by government interventions.

VII

The systemic approach of ECLAC

A recent ECLAC document (ECLAC, 1995) analyses the exogenous factors in the international setting, with special emphasis on the exploration of interrelated policies: i) macroeconomic policy, especially financial flows; ii) trade policy, and iii) microeconomic and mesoeconomic policy. Within the framework of a systemic approach, it seeks to group together the different proposals in a coherent manner, while noting the difficulty of generalizing in a regional context marked by an enormous diversity of different situations.

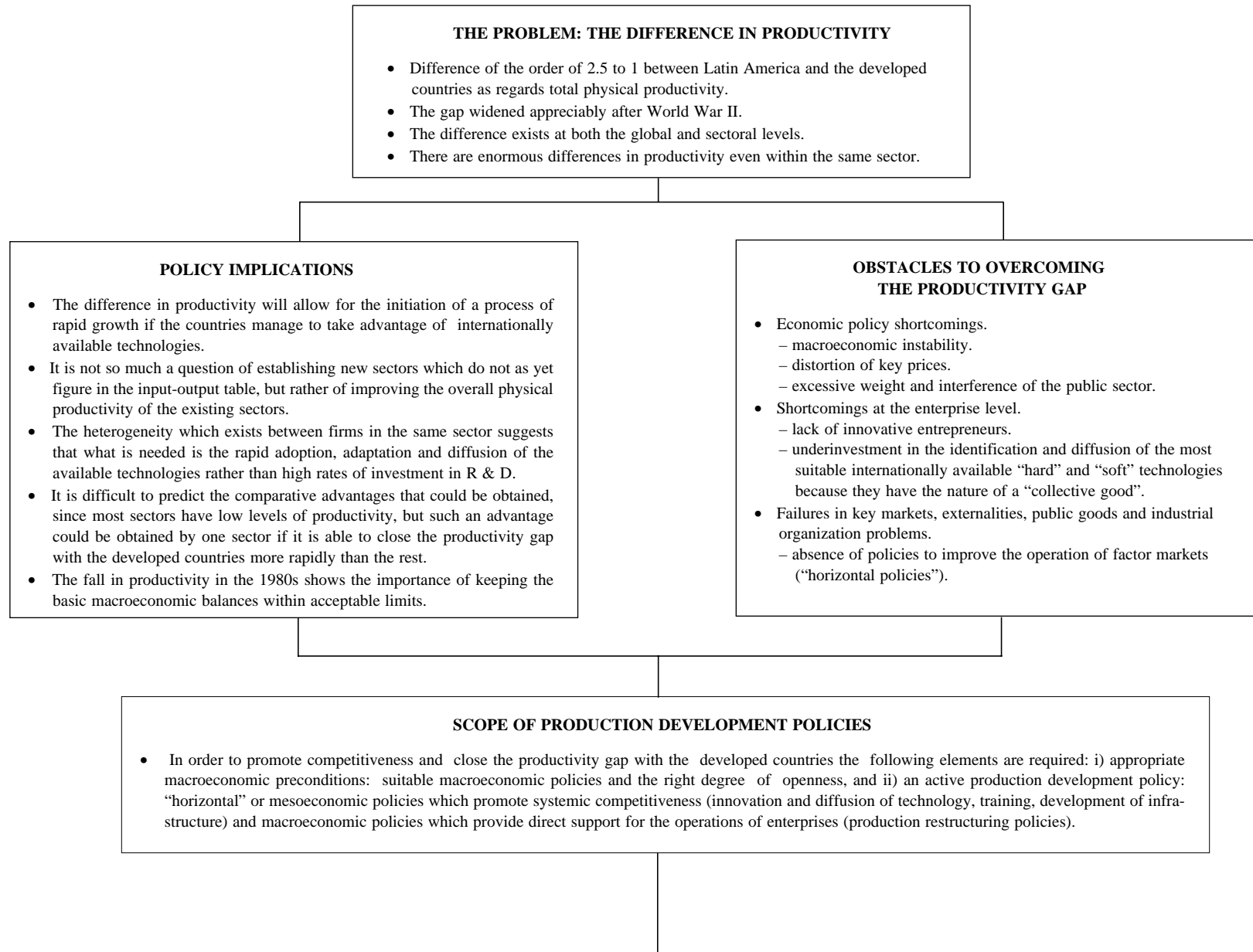
The mesoeconomic and microeconomic policies for production development put forward by ECLAC start from the basic assumption that it is necessary to have suitable macroeconomic, institutional and

trade policies and to investigate the causes of the productivity gap between the Latin American and the developed countries and to seek policy recommendations for overcoming it. Figure 1 shows ECLAC's current proposals, indicating their policy implications, the obstacles to overcoming the productivity gap, and the theoretical and empirical grounds for pursuing an active production development policy.

Likewise, Ramos (1996) notes that, as the economies of Latin America have been stabilizing, there has been a resurgence of interest in the region in designing longer-term development strategies which will make it easier to progress from a slow growth path to a much faster one, like those achieved by the

FIGURE 1

Bases for a production development policy: the current ECLAC view ^a



THEORETICAL GROUNDS FOR AN ACTIVE POLICY

- Incomplete markets.
Asymmetric information, externalities and lack of appropriability, problems of scale, etc. This is reflected in the existence of different conditions in the markets for technology, human capital, capital (especially long-term capital) and foreign exchange.
- Problems of industrial regulation and organization. These conditions are reflected in special features of each of the economic agents in the industrialization process (SMEs, economic groups and transnational corporations).
- Increasing returns and strategic complementarities.
The existence of increasing returns to scale at the level of each firm generates pecuniary external economies at the aggregate level and, ultimately, strategic complementarities which justify action to ensure coordination between private agents and the economic authorities.

EMPIRICAL GROUNDS FOR AN ACTIVE POLICY

- In most of the late-developing countries the State has played an active role in completing or perfecting markets, providing substitutes for them when necessary and generating an environment that stimulates investment and innovation.
- The efforts of the public sector should extend as far as its real capacity permits. Experience suggests that its participation will be effective when i) it seeks to facilitate the operation of the market rather than trying to take its place, and ii) it acts in a selective and transparent manner with an awareness of its own limitations and tries to obviate private rent-seeking activities.
- Experience indicates that there is a wide range of alternatives with regard to intervention: development led by conglomerates (South Korea) or by SMEs (Taiwan); growth led by local firms (South Korea, Taiwan and Japan) or by public or transnational enterprises; development based on natural resources with subsequent linkages (Denmark, Sweden and Finland in the past; Thailand, Malaysia and Indonesia at present) or on direct initial manufacturing development (Japan, South Korea, Taiwan); initial openness based on export promotion with limited import liberalization (most of the recently industrialized Southeast Asian countries) or free trade almost from the start (Hong Kong and Singapore).
- Although much of Latin America's import substitution strategy was devoid of economic rationality, it nevertheless made possible important advances in industrial development, even in technologically sophisticated sectors (the motor industry in Brazil and Mexico).
- Experience suggests that competitive advantages can be acquired through industrial policy if: i) the incentives provided are only transitory; ii) scales of production are sufficiently large (because of a large domestic market, promotion of exports from the very beginning, or the production of natural resource-based intermediate goods which can easily be exported in the event of insufficient domestic demand); iii) the use of either outdated technologies or those which are still in an experimental stage is avoided.

Source: Prepared by the author on the basis of ECLAC (1995).

^a This figure does not include other aspects (macroeconomic, trade, finance, etc.) which form a systematic part of the global proposal set forth in ECLAC (1995).

successful East Asian late-developing countries. His analysis highlights two central aspects: first, the process of greater openness and restructuring in which the Latin American countries have been engaged

since the mid-1980s, and second, the enormous difference in productivity which exists between the enterprises of the region and those of the developed world which use the best international practices.

VIII

Final remarks

Any new industrialization proposal requires a suitable appraisal of the positive aspects of the learning process generated in the past and the problems associated with the errors committed. One of the first great challenges is to generate suitable conditions for taking advantage of the experience accumulated. This has given rise to considerable stocks of technological, economic and skilled human resources, but at the same time it is essential to overcome its shortcomings and limitations in order to advance towards the acquisition of dynamic comparative advantages.

The possibility of attaining increasingly high levels of competitiveness and maintaining them in the long term cannot be limited to the action of a single individual economic agent. International experience shows that successful cases are due to a whole set of variables and that it is the overall functioning of the system which makes it possible to achieve a solid base for developing competitiveness. Thus, the systemic notion of competitiveness takes the place of individual efforts, which, although they are a necessary condition for attaining this objective, must necessarily be accompanied by innumerable other aspects which form the surrounding environment of firms (ranging from the physical infrastructure, the scientific and technological apparatus, the network of suppliers and subcontractors and the systems of distribution and marketing, to cultural values, institutions and the legal framework). Competitiveness which is sustainable in the long term can only be attained through systematic efforts to acquire comparative advantages and to consolidate an "ongoing endogenous process" covering all the above aspects, simultaneously defining the responsibilities of the entrepreneur within his industrial plant and the conditions making up its environment, including both other private agents and the public sector.

This systemic notion of competitiveness is valid for each of the markets concerned. Consequently, it

must be applied both to potential export and import markets. Latin American experience has shown that it has been possible to expand various types of production, but sometimes on clearly weak bases. These forms of competitiveness have been described as "spurious" (Fajnzylber, 1990) because they did not progress in the acquisition of comparative advantages but were based instead on one or more of the following factors: low wages, processing of natural resources without preserving the environment, excessively high exchange rates, recessions in the local market, excessive protection of inefficient local production sectors against imports, high export subsidies, etc. These faulty forms of competition gave rise to fragile individual successes but were incompatible with benefits of a social nature. Such successes could not be maintained in the long term and eventually ran into crises due to the performance of the firms in question and/or the high social costs involved.

Industrial progress and the attainment of the strategic objectives pursued will depend on the capacity and creativeness of governments in designing and implementing actions best adapted—in terms of time, intensity and coverage—to the patterns of behaviour of the various economic agents. The design, formulation and implementation of active, explicit and transparent government policies, together with their necessary incorporation in a long-term strategic concept, will call for harmonious and coordinated action by public bodies, as well as suitable linkages with short-term policies. It will also be essential to redefine the necessary "institutional engineering". The weakness and even technical fragility of the State structures means that efforts must be focussed on actions whose transparency facilitates the necessary subsequent evaluation of their results. In this sense, the possibilities of developing and implementing selective policies are limited and conditioned by the fragility of the public sector.

A consistent macroeconomic framework is an indispensable condition for the implementation of industrial policies, which must themselves include some clear basic criteria. In particular, such policies must be explicit, active, and as general and neutral as possible. They must also give priority to actions which will have the greatest effect in terms of propelling the economy as a whole and spreading positive externalities through it. With regard to this latter point, the consolidation of infrastructure and the upgrading of human capital are two of the most important aspects (Ffrench-Davis, 1990; Teubal, 1990).

The proposal of an explicit policy must necessarily be associated with a prior and subsequent social evaluation, the calculation of the corresponding budgetary implications (especially who is to receive resources and who is to finance them), the assurance of total transparency, the clear and precise definition and quantification of objectives, and a clear time sequence with promotional elements which should preferably go down over time. It is therefore necessary that there should be a system of rewards, but also one of penalties if the promised objectives are not attained.

These aspects are of vital importance for achieving the desired objectives. There are countless examples of countries which began to support the process of maturity of infant industries, but without achieving final success. There is no doubt that the problems involved in selecting the right sectors and techniques are by no means insignificant, but appraisal of these cases has shown that one of the most crucial aspects is connected with the fact that learning processes do not take place automatically with time but are instead the result of deliberate and explicit efforts to generate

stocks of technology and train human resources. It is therefore necessary to implement a suitable technological and production strategy associated with investments aimed at generating or adopting ongoing technical changes in order to bring about a process of maturity which is neither automatic nor instantaneous but calls for ongoing deliberate efforts.

When there are economic problems as well as fragile institutions, what is needed is not to "return to the market" but to "reconstruct the market": i.e., to take action to change the institutions governing collective life and to endow them with the capabilities needed to allow the majority of the population to participate effectively in them. Likewise, public industrial development policies should be aimed not only at promoting changes in the institutional context in which enterprises operate, but also at carrying out concrete actions designed to further industrial cooperation among firms and thus make possible individual specialization within a context of complementarity and further extension of the market.

Industrial policy regimes can provide coordination mechanisms which are lacking in free market economies. Where the interdependence and special nature of assets are important, industrial policy can be more efficient than the market. Industrial policy must help to coordinate economic change, to promote experimentation and to preserve diversity. In the real world, many changes involve interdependent decisions. When analysing the logic of industrial policy, a distinction must be drawn between the role it plays in two different dimensions: the static and the dynamic. In both cases the function of industrial policy is the same: to avoid lack of coordination.

(Original: Spanish)

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